



# TPC Benchmark™ C Full Disclosure Report

## Unisys ES7000 Aries 520 Enterprise Server

using

**Microsoft SQL Server 2000 Enterprise Edition**

on

**Microsoft Windows Server 2003,  
Datacenter Edition**

**First Edition  
April 4, 2003**

Unisys Part Number 4500 5246-000

## First Edition – April 2003

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

All performance data contained in this report was obtained in a rigorously controlled environment, and therefore results obtained in other operating environments may vary significantly. Unisys Corporation and Microsoft Corporation 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.

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Printed in USA, April 2003.

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## **Overview**

This report documents the methodology and results of the TPC Benchmark C (TPC-C) conducted on the Unisys Corporation ES7000 Aries 520 Enterprise Server. The operating system on the server was Microsoft Windows Server 2003, Datacenter Edition. The DBMS used was Microsoft SQL Server 2000 Enterprise Edition. The operating system on the clients was Microsoft Windows 2000 Server. The clients ran Microsoft's Internet Information Server 5.0 and COM+.

## **TPC Benchmark Metrics**

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

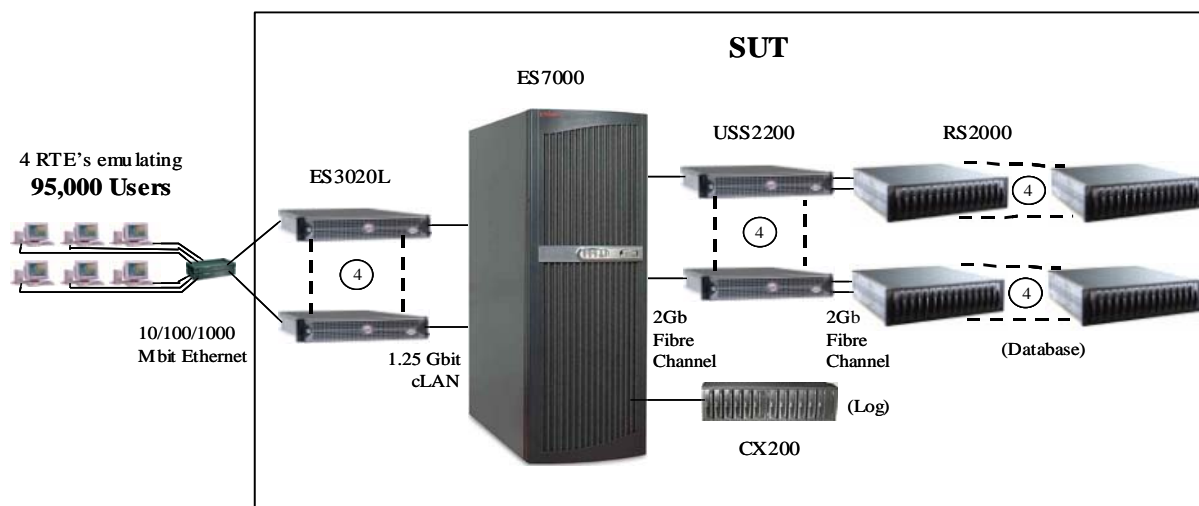
## **Executive Summary**

The following pages contain the executive summary results of the benchmark.

## **Auditor**

The benchmark configuration, environment, and methodology used to produce and validate the test results, along with the pricing model used to calculate the cost per tpmC, were audited by Lorna Livingtree of Performance Metrics, Inc. to verify compliance with the relevant TPC specification.

<b>UNISYS</b>	<b>ES7000 Aries 520 Enterprise Server</b>		TPC-C Rev. 5.1
			Report Date April 4, 2003
<b>Total System Cost</b>	<b>TPC-C Throughput</b>	<b>Price Performance</b>	<b>Availability Date</b>
<b>\$657,533</b>	<b>118,381.38 tpmC</b>	<b>\$5.56 / tpmC</b>	<b>May 30, 2003</b>
<b>Processors/ Cores/Threads</b>	<b>Database Manager</b>	<b>Operating System</b>	<b>Other Software</b>
8/8/16 Database 8/8/8 Clients	Microsoft SQL Server 2000 Enterprise Edition	Microsoft Windows Server 2003, Datacenter Edition	Windows 2000 Server w/ IIS 5.0 and COM+ Microsoft Visual C++
			<b>Number of Users</b>
			<b>95,000</b>



**Clients (each of 4)**  
**ES3020L Server**  
 2 x 2.4GHz Intel® Xeon™  
 w/ 512KB L2 cache,  
 1 GB memory,  
 1 x 18GB internal disk,  
 2 Inbuilt 10/100/1000Mb  
 Ethernet (1 used),  
 1 x PCI cLAN controller

**ES7000 Aries 520  
Enterprise Server**  
 8 x 2.0GHz Intel® Xeon™ MP  
 w/ 2MB L3 cache,  
 64 GB memory,  
 1 internal disk controller,  
 1 x 30GB internal disk,  
 5 x PCI Fibre Channel controllers,  
 4 x PCI cLAN controllers

**Storage**  
**USS2200/RS2000 & CX200**  
 224 x 18GB + 10 x 73GB  
 Hot-Pluggable,  
 External Fibre Channel disks,  
 6 x FC RAID controllers

System Components	Server		Clients (each of 4)	
	Quantity		Quantity	
Processors/Cores/Threads Cache	8/8/16	2.0GHz Intel® Xeon™ MP with 2MB Level 3 Cache	2/2/2	2.4GHz Intel® Xeon™ with 512KB Level 2 Cache
Memory	4	16 GB	2	512 MB
Disk Controllers	5	PCI Fibre Channel	1	Inbuilt SCSI
Disk Drives	10	18GB FC (16.4 GB useable)	1	18GB SCSI (16.9 GB useable)
	10	73GB FC (60.4 GB useable)		
	1	30GB boot (28.0 GB useable)		
Total Storage		4.2 TB		16.9 GB
Tape / CD-ROM	1	IDE CD-ROM	1	IDE CD-ROM
Terminals	1	Console Monitor	1	Console Monitor



## ES7000 Aries 520 Enterprise Server

TPC-C Rev. 5.1

Report Date  
April 4, 2003

Description	Part No.	Third Party		Unit Price	Qty.	Extended Price	3 yr.Maint. Price
		Brand	Price				
<b>Server Hardware:</b>							
SYS: ES7000-520, 8x2.0GHz, 64MB Cache, 64GB Mem.	ES7520083-640		1	\$163,200	1	\$163,200	\$4,980
Inbuilt Disk Controller, 1x 30GB Disk (boot media)	Included						
Sentinel System Management S/W and Media	Included						
CTRL: Fibre Channel HBA, 2-Port, 64-bit PCI	FC76222-P64		1	\$2,720	5	\$13,600	
CTRL: cLAN, PCI Host Adapter & Cable	PCI10001-CXG		1	\$721	4	\$2,884	
I/F: Monitor, 15-inch Color, Kybrd, Mse & Cable	ES70003-UIF		1	\$544	1	\$544	
<b>Server Software:</b>							
O/S: Microsoft Windows 2003 Datacenter & SQL Package	WXQ320808-L	2	1	\$116,235	1	\$116,235	\$28,800
SRVC: Microsoft Database Server Support Package*	PRO-PRORS-16U-01	2	2	\$1,950	3	\$5,850	\$5,850
<b>Server Subtotal</b>						<b>\$296,463</b>	<b>\$39,630</b>
<b>Storage Hardware:</b>							
DISK: 18GB Drive, 15Krpm, 2Gb FC, SCA	JBD201815-2F		1	\$551	224	\$123,424	Spared
DISK: 18GB Drive, 15Krpm, 2Gb FC, SCA 10% spares**	JBD201815-2F		1	\$551	23	\$12,673	\$12,673
DISK: 73GB Drive, 10Krpm, 2Gb FC, SCA	CXR7310-2GF		1	\$1,668	10	\$16,680	Spared
DISK: 73GB Drive, 10Krpm, 2Gb FC, SCA 10% spares**	CXR7310-2GF		1	\$1,668	2	\$3,336	\$3,336
RCK: FC 2Gb Storage, Standard, Copper/Copper I/F	JBD2002-SA		1	\$3,051	8	\$24,408	\$4,320
RCK: FC 2Gb Storage, Standard, Optical/Copper I/F	JBD2011-SA		1	\$3,257	8	\$26,056	\$4,608
CTRL: Symmetric Disk Virt. 2x2GHz, 512MB Mem	RMM20103-ELS		1	\$5,252	4	\$21,008	\$4,656
CTRL: USS, Fibre Channel HBA, 1-Port, 64-bit PCI	RMM20701-TAR		1	\$2,108	12	\$25,296	\$5,472
APP: Unisys Storage Sentinel 2200 SDV Software	USS10300-SW		1	\$8,160	1	\$8,160	\$4,068
APP: Storage Sentinel SDV SW, 5TB License	USS20305-LIC		1	\$29,467	1	\$29,467	
CBL: FC, Copper, HSDC2 Conn's, 0.3m	JBD20003-CCL		1	\$52	8	\$416	
CBL: FC, 50um Dupx, LC->LC Conn's, 10m	JBD2010-OCL		1	\$164	13	\$2,132	
RCK: Rack Mount Kit, Disk Enclosure	JBD2000-RMK		1	\$175	16	\$2,800	
CTRL: DPE: 2 RAID Cntrl, 1GB Cache ea., 0 Disk	CX200-DPE		1	\$18,133	1	\$18,133	\$2,988
SYS MGT: Storage, Navisphere Manager	CXN200-T3		1	\$3,627	1	\$3,627	\$744
SYS MGT: Storage, Navisphere Agent	CXN600-WIN		1	\$907	1	\$907	\$204
SWTCH: Switch, 10/100/1000Mb Ethernet	GS516-T16		1	\$2,720	1	\$2,720	
SWTCH: Switch, 8-port KVM	SWC81-SXR		1	\$1,451	1	\$1,451	\$1,116
CBL: Cable, KVM, 12 foot	CBL121-SWC		1	\$136	8	\$1,088	
KBD: Keyboard & Drawer, Rackmount	KBR28301-SXR		1	\$317	1	\$317	
MON: Display, Rackmount LCD	MON2145-LCD		1	\$2,448	1	\$2,448	
PWR: Distribution Strip, 9-Plug, 220V	SFR9-PWR		1	\$154	4	\$616	
CBL: Power, U.S. (Domestic), C20 - L6-20P	USE1936-LC6		1	\$82	4	\$328	
CAB: 36U x 19" x 41" Open Front Cabinet	HRT361941-OFT		1	\$1,360	2	\$2,720	
DOOR: 36U x 19", Rear	HRT3619-RDR		1	\$453	2	\$906	
PNL: 36U x 41" Side Skins, L&R HRT	HRT3641-SDS		1	\$453	2	\$906	
INSTL: Stabilizer Foot	RM1936-FOT		1	\$154	2	\$308	
<b>Storage Subtotal</b>						<b>\$316,322</b>	<b>\$44,185</b>
<b>Client Hardware:</b>							
SYS: ES3020L w/ 1x 2.4GHz Proc., 0MB Mem	ESL30201-240		1	\$1,486	4	\$5,944	\$5,232
PROC: 1x 2.4GHz Intel Xeon/512KB Cache	CPL3020241-512		1	\$635	4	\$2,540	
MEM: 1GB, 2x512MB DDR DRAM PC133ECC	DIM3000022-1GB		1	\$891	4	\$3,564	
RCK: ESL2026 Disk Backpanel, 1x4	HBP3020101-51		1	\$253	4	\$1,012	
DISK: 18GB 10Krpm U160 3.5 Internal	HDM18110-DC4		1	\$317	4	\$1,268	
CTRL: cLAN, PCI Host Adapter & Cable	PCI10001-CXG		1	\$721	4	\$2,884	
RCK: ES3020L Universal Rack Kit	ESL3020-VRL		1	\$317	4	\$1,268	
<b>Client Software:</b>							
O/S: Microsoft Windows 2000 Server	C11-00821	2	2	\$738	4	\$2,952	* Inc. above
ACC: Microsoft Visual C++ Standard	254-00170	2	2	\$109	1	\$109	* Inc. above
<b>Client Subtotal</b>						<b>\$21,541</b>	<b>\$5,232</b>
<b>Total</b>						<b>\$634,326</b>	<b>\$89,047</b>
						(\$64,727)	(\$1,113)

**Notes:**

1. 3rd Party Brand & Pricing: 1 = Comark Product Price, Unisys Maintenance Price  
2 = Microsoft
2. HW & SW maintenance figured at 24 x 7 w/ 4 hr. max. response time for spares.
3. \*\* = 10% spare disks added in place of onsite service.

**Three Year Cost of Ownership: \$657,533**  
**tpmC Rating: 118,381.38**  
**\$/ tpmC: \$5.56**

Benchmark results and test methodology audited by Lorna Livingtree of Performance Metrics, Inc.

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

## Numerical Quantities Summary

**MQTh, Computed Maximum Qualified Throughput: 118,381.38 tpmC**

### Response Times, in seconds

Transaction	90th %ile	Average	Maximum
New-Order	0.61	0.39	5.83
Payment	0.57	0.35	5.14
Order-Status	0.59	0.37	7.53
Delivery (interactive portion)	0.39	0.23	3.59
Delivery (deferred portion)	0.25	0.20	2.41
Stock-Level	0.92	0.65	3.97
Menu	0.39	0.23	3.75

### Response time delay added for emulated components, in seconds

RT Response time	0.1
Menu Response time	0.1

### Transaction Mix, in percent of total transactions

New Order	44.92%
Payment	43.02%
Order-Status	4.01%
Delivery (interactive portion)	4.01%
Stock-Level	4.01%

### Keying / Think Time Times, in seconds

Transaction	Minimum	Average	Maximum
New Order	18.01 / 0.00	18.01 / 12.03	18.03 / 120.31
Payment	3.01 / 0.00	3.01 / 12.03	3.03 / 120.31
Order-Status	2.01 / 0.00	2.01 / 10.07	2.03 / 100.70
Delivery (interactive portion)	2.01 / 0.00	2.01 / 5.06	2.03 / 50.61
Stock-Level	2.01 / 0.00	2.01 / 5.06	2.03 / 50.61

### Test Duration

Ramp up time	57 minutes
Measurement interval (M)	120 minutes
Transactions (all types) completed during measurement interval	31,618,206
Ramp-down time	306 minutes

### Checkpointing:

Number of checkpoints	4
Checkpoint interval	30 minutes

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## Document Structure

The TPC Benchmark C Standard Specification requires test sponsors to publish, submit to the TPC, and make available to the public, a full disclosure report for any result to be considered compliant with the specification. The required contents of the full disclosure report are specified in Clause 8.

This report is submitted to satisfy the specification's requirement for full disclosure. It documents the compliance of the benchmark implementation and execution reported for the Unisys ES7000 Aries 520 Enterprise Server using Microsoft SQL Server 2000 Enterprise Edition on Microsoft Windows Server 2003, Datacenter Edition.

## TPC Benchmark C Overview

The TPC Benchmark™ C Standard Specification Revision 5.1 was developed by the Transaction Processing Performance Council (TPC). It is the intent of the TPC to develop a suite of benchmarks to measure the performance of computer systems executing a wide range of applications. Unisys and Microsoft Corporations are active participants in the TPC to define and develop such a suite of benchmarks.

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

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

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

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

## 0.1. Order and Titles

*The order and titles of sections in the Test Sponsor's Full Disclosure report must correspond with the order and titles of sections from the TPC-C standard specification (i.e., this document). The intent is to make it as easy as possible for readers to compare and contrast material in different Full Disclosure reports. (8.1.1.1)*

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

## 0.2. Executive Summary Statement

*The TPC Executive Summary Statement must be included near the beginning of the Full Disclosure report. (8.1.1.2)*

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

## 0.3. Numerical Quantities Summary

*The numerical quantities listed below must be summarized near the beginning of the Full Disclosure Report: (8.1.1.3)*

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

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

## 0.4. Application Code Disclosure

*The applicable 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. (8.1.1.4)*

Appendix A contains the client application code used in this TPC-C benchmark. Appendix B contains the SQL stored procedures which implement the TPC-C transactions.

## 0.5. Benchmark Sponsor

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

This TPC benchmark C was sponsored by Unisys Corporation. The benchmark test was developed by Microsoft and Unisys. The benchmark was conducted at Unisys, Mission Viejo, California.

## 0.6. 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: (8.1.1.6)*

- *Data Base tuning options*
- *Recovery/commit options*
- *Consistency/locking options*
- *Operating system and application configuration parameters*

Appendix C contains the configuration and system parameters used in running these TPC-C tests. It also contains all the client and server OS and SQL Server tunable parameters.

## 0.7. Configuration Diagrams

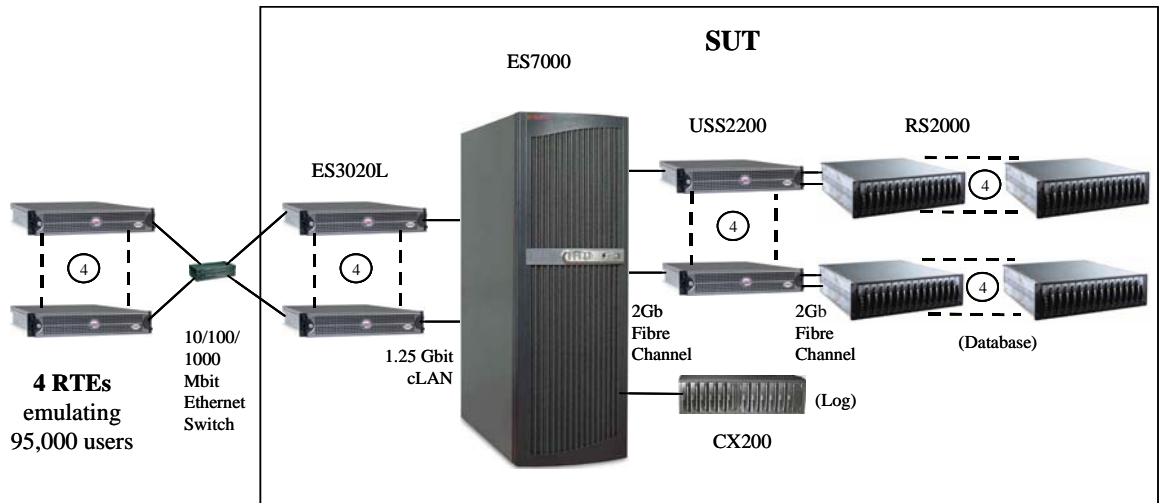
*Diagrams of both measured and priced configurations must be provided, accompanied by a description of the differences. This includes, but is not limited to: (8.1.1.7)*

- *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.).*

The Remote Terminal Emulator (RTE) software used for these TPC-C tests is proprietary to Unisys. The benchmarked configuration of the RTE and Unisys ES7000 Aries 520 Enterprise Server is illustrated in Figure 0.1. Tables 4.3 and 4.5 contain a detailed explanation of the disk configuration.

The priced configuration for the Unisys ES7000 Aries 520 Enterprise Server is shown in Figure 0.2.

**Figure 0.1: Benchmarked Configuration**



**Clients (each of 4)**

**ES3020L Server**

2 x 2.4GHz Intel® Xeon™  
w/ 512KB L2 cache,  
1 GB memory,  
1 x 18GB internal disk,  
2 Inbuilt 10/100/1000Mb  
Ethernet (1 used),  
1 x PCI cLAN controller

**ES7000 Aries 520**

**Enterprise Server**

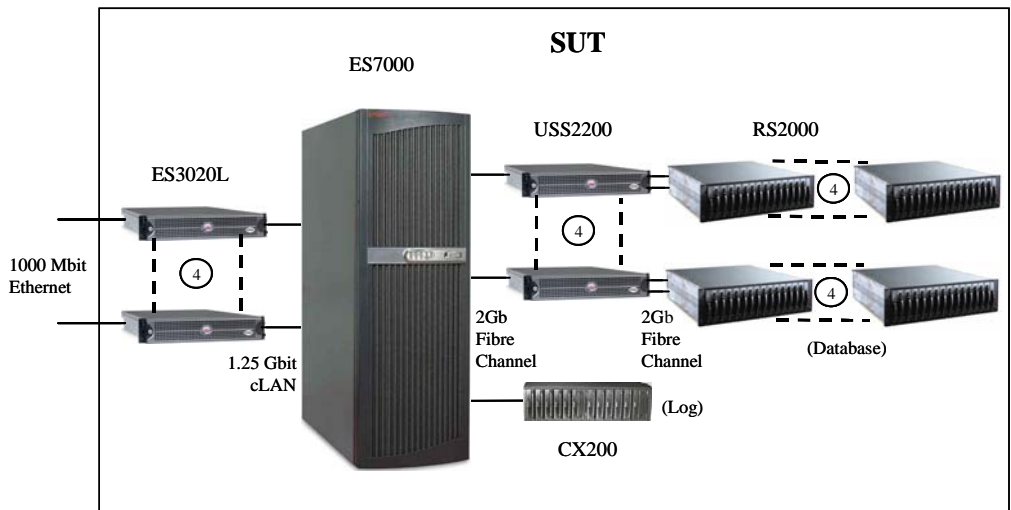
8 x 2.0GHz Intel® Xeon™ MP  
w/ 2MB L3 cache,  
64 GB memory,  
1 internal disk controller,  
1 x 30GB internal disk,  
5 x PCI Fibre Channel controllers,  
4 x PCI cLAN controllers

**Storage**

**USS2200/RS2000 & CX200**

224 x 18GB + 10 x 73GB  
Hot-Pluggable,  
External Fibre Channel disks,  
6 x FC RAID controllers

**Figure 0.2: Priced Configuration**



**Clients (each of 4)**

**ES3020L Server**

2 x 2.4GHz Intel® Xeon™  
w/ 512KB L2 cache,  
1 GB memory,  
1 x 18GB internal disk,  
2 Inbuilt 10/100/1000Mb  
Ethernet (1 used),  
1 x PCI cLAN controller

**ES7000 Aries 520**

**Enterprise Server**

8 x 2.0GHz Intel® Xeon™ MP  
w/ 2MB L3 cache,  
64 GB memory,  
1 internal disk controller,  
1 x 30GB internal disk,  
5 x PCI Fibre Channel controllers,  
4 x PCI cLAN controllers

**Storage**

**USS2200/RS2000 & CX200**

224 x 18GB + 10 x 73GB  
Hot-Pluggable,  
External Fibre Channel disks,  
6 x FC RAID controllers





# 1.

## ***Clause 1: Logical Database Design***

---

### **1.1. Table Definitions**

*Listings must be provided for all table definition statements and all other statements used to setup the database. (8.1.2.1)*

Appendix B contains the SQL definitions of all the required database files, filegroups, tables, indexes and stored procedures, plus a listing of the program used to load the database and establish the required initial populations of each table.

### **1.2. Physical Organization of the Database**

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

The disk space was allocated to SQL Server according to the data in Tables 4.3 and 4.5. The SQL definitions are contained in Appendix B.

### **1.3. Insert and/or Delete Operations**

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

There were no restrictions on insert and/or delete operations to any of the tables.

### **1.4. Partitioning**

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

Partitioning was not used for any table in this implementation.

### **1.5. Replication, Duplication or Additions**

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

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

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



## 2.

# ***Clause 2: Transaction & Terminal Profiles***

---

### **2.1. Random Number Generation**

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

The drivers used the Unisys RTE program, which was independently audited. The initial population of the database was performed by the loader program from V4.21 of the Microsoft TPC-C toolkit, which was also independently audited. Furthermore, the auditor sampled various initial and runtime distributions produced by this implementation to verify correctness.

### **2.2. Input/Output Screen Layout**

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

The screen layouts are based on those in Clauses 2.4.3, 2.5.3, 2.6.3, 2.7.3, and 2.8.3 of the TPC Benchmark C Standard Specification. There are some minor differences in appearance due to the use of a web client implementation.

### **2.3. Priced Terminal Feature Verification**

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

This was verified by the auditor.

### **2.4. Presentation Managers or Intelligent Terminal**

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

Application code running on the client implemented the TPC-C user interface. A listing of this code is included in Appendix A. No presentation manager was used on the client, as screen manipulation and data input/output was handled for each user by the Microsoft Internet Explorer web browser running on each user PC.

### **2.5. Transaction Statistics**

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

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

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

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

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

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

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

Table 5.4 in Section 5 contains all these statistics.

## **2.6. Queuing Mechanism of Delivery**

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

Deferred deliveries are queued by making an entry in an array within the application process (tpcc.dll) running on the client systems. Background threads within the application process asynchronously process the queued delivery transactions and log the results to a file upon completion.

## 3.

# ***Clause 3: Transaction & System Properties***

---

### **3.1. Transaction System Properties (ACID)**

*The results of the ACID tests must be disclosed along with a description of how the ACID requirements were met. This includes disclosing which case was followed for the execution of Isolation Test 7. (8.1.4.1)*

The TPC Benchmark C Standard Specification defines a set of transaction processing system properties that a system under test (SUT) must support during the execution of the benchmark. Those properties are Atomicity, Consistency, Isolation, and Durability (ACID).

This section defines each of these properties, describes the steps taken to ensure that they were present during the test and describes a series of tests done to demonstrate compliance with the specification. All ACID property tests were executed successfully.

### **3.2. Atomicity**

*The system under test must guarantee that data base 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.*

#### **3.2.1. Completed Transaction**

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

The balances from a randomly selected warehouse, district, and customer row were retrieved by customer number from a script. A Payment transaction was submitted with the same warehouse, district and customer identifiers for a known amount. After completion of the Payment transaction, the balances of the selected warehouse, district, and customer were again retrieved to verify that the changes had been made correctly.

#### **3.2.2. Aborted Transactions**

*Perform the Payment transaction for a randomly selected warehouse, district, and customer (by customer number) 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.*

The balances from a randomly selected warehouse, district, and customer row were retrieved by customer number from a script. A Payment transaction was submitted with the same warehouse, district and customer identifiers that issued a ROLLBACK command rather than a COMMIT. After the transaction completed, the balances of the selected warehouse, district, and customer were again retrieved to verify that no changes had been made to the database.

### 3.3. Consistency

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

The benchmark specification requires explicit demonstration of the following four consistency conditions:

1. The sum of the district balances in a warehouse is equal to the warehouse balance;
2. For each district, the next order id minus one is equal to maximum order id in the ORDER table and equal to the maximum new order id in the NEW ORDER table;
3. For each district, the maximum order id minus minimum order id in the ORDER table plus one equals the number of rows in the NEW-ORDER table for that district;
4. For each district, the sum of the order line counts in the ORDER table equals the number of rows in the ORDER-LINE table for that district;

In order to demonstrate this consistency, the following steps were taken:

1. Prior to the start of a benchmark run, the consistency of the database was verified by testing successfully conditions 1-4 described above with a script.
2. A run under full user load was executed for over 10 minutes with a checkpoint during the run.
3. After completion of that test, the consistency of the database was again verified by successfully testing using the same consistency script as in step 1.

### 3.4. Isolation

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

The benchmark specification defines seven required tests to be performed to demonstrate that required levels of transaction isolation are met. These tests, described in Clauses 3.4.2.1 - 3.4.2.7, were all performed from a script and verified by the auditor. In Isolation Test 7, Case A was observed. In addition, the phantom tests and stock level tests were executed and verified to be successful.

### 3.5. Durability

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

Three durability tests were executed to satisfy the requirements of the specification. The tests for loss of memory and instantaneous interruption were combined and performed with a fully scaled database with all emulated users. The loss of log and loss of data tests were performed on the same database with 12,000 emulated users. To the best of our knowledge, these tests prove that the fully scaled configuration used for the throughput test would also meet all durability tests.

#### 3.5.1. Loss of Log Disk and Loss of Data Disk

The following steps were taken with only 12,000 emulated users to demonstrate durability in the case of loss of a log disk and loss of a data disk:

1. The database was backed up to extra space on a backup volume.
2. The D\_NEXT\_O\_ID fields for all rows in the district table were summed up to determine the initial count of orders present in the database.
3. The RTE was started with 12,000 users. On the driver systems, committed and rolled back New-Order transactions were recorded in a “success” file.
4. After five minutes of running at steady state, a hot-pluggable log disk was removed from the disk cabinet, with no effect on the OS or SQL server.
5. After 5 additional minutes of operation, a hot-pluggable data disk was removed from the disk cabinet.
6. Windows Datacenter and SQL Server encountered IO errors due to the missing disk and recorded these errors in the system event log and SQL Server error log, respectively. The RTEs also recorded errors.
7. First, the RTEs and clients were stopped, then SQL Server was used to backup the transaction log to the backup volume.
8. Next, scripts were executed to drop the database and all its files. Then, SQL Server was shutdown.
9. A data disk was inserted in the disk cabinet to replace the one removed. The RAID controller, via Storage Sentinel Manager, was used to recreate the stripe set containing the new data disk. (The missing log drive was not replaced.)
10. The SUT was restarted, SQL Server was then restarted, and a new (empty) database created as part of the restore database process. That process loaded the initial database into the new database, but did not perform any recovery. Next the transaction log was restored, followed by transaction recovery. The latter step restored all committed transactions to the database.
11. Consistency condition 3 of Clause 3.3.2.3 was executed to verify database consistency.
12. Step 2 was repeated to determine the total number of orders. This number was subtracted from the count obtained previously in Step 2 to determine the number of additional orders added to the database.
13. The contents of the “success” files on the drivers were sampled to verify that the records in the “success” file for committed New-Order transactions had corresponding records in the ORDER table. Moreover, the counts were matched with those obtained in step 12.

### **3.5.2. Instantaneous Interruption and Loss of Memory**

Instantaneous interruption and loss of memory tests were combined because the loss of power erased the contents of memory. This failure was induced by removing the primary power to the System Under Test while the benchmark was executing.

1. The D\_NEXT\_O\_ID fields for all rows in the district table were summed up to determine the initial count of orders present in the database (count1).
2. On the driver systems, committed and rolled back New-Order transactions were recorded in a “success” file.
3. The benchmark was executed at full load with all emulated users for a minimum of 5 minutes.
4. The system’s primary power was then turned off.
5. After transaction failures were noted by the RTEs, the RTEs and clients were shutdown.
6. Power was restored to the SUT, the system rebooted, SQL Server was restarted, and automatic database recovery was performed. The database recovery used the transaction log to reapply all committed transactions and rollback any (in progress) uncommitted transactions, so that the database disks were correct.
7. After recovery finished, Consistency Condition 3 of Clause 3.3.2.3 (no gaps in NO\_O\_ID) was executed to verify that the database was consistent.
8. Finally, step 1 was repeated to determine the total number of orders (count2). Count2 minus count1 was not less than the number of committed New-Order records in the “success” file from the drivers.

9. The contents of the “success” files on the drivers were sampled to verify that the records in the “success” file for committed New-Order transactions had corresponding records in the ORDER table.



## 4.

# Clause 4: Scaling & Database Population

### 4.1. 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. (8.1.5.1)

The TPC-C database for this test was configured with 9,500 warehouses. The cardinality of each table in the database is listed in Table 4.1

**Table 4.1: Initial Cardinality of Database Table**

Table	Occurrences
Warehouse	9,500
District	95,000
Customer	285,000,000
History	285,000,000
Order	285,000,000
New-Order	85,500,000
Order Line	2,849,989,329
Stock	950,000,000
Item	100,000

No rows of the warehouse table were inactive while executing the measurement runs.

### 4.2. Constant Values

The following values were used as the constant C input values to the NURand function during Build and Run time for this implementation.

**Table 4.2: Constant C for NURand**

Function	Value
C_LAST (Build)	123
C_LAST (Run)	208

### 4.3. Database Layout

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

Tables 4.3 and 4.5 list the distribution of the database over 224 18GB disks and the transaction log over 5 mirrored pairs of 73GB disks for the benchmark configuration. In addition, there was one 30GB disk in the host server containing Windows Server 2003, Datacenter Edition and SQL Server 2000 code and the Master database plus the paging file. Unused-space partitions on the database drives were used for database backup. These partitions were not used during the measurements. The tested and priced disk configurations were identical.

### 4.4. DBMS: Data Model and DBMS Interface/Access Language

*A statement must be provided that describes: (8.1.5.3)*

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

Microsoft SQL Server 2000 is a relational DBMS.

The client software interfaced to SQL Server through Stored Procedures invoked through ODBC calls embedded in the C application code.

### 4.5. DBMS Partitions/Replications

*The mapping of database partitions/replications must be explicitly described. (8.1.5.4)*

No table partitioning or replication was done.

### 4.6. DBMS Space Requirements

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

Appendix E lists the space requirements for the 60-day space as well as the logical log space for eight hours.



**Table 4.5: Disk Management Configuration**

Disk Management Configuration			
System Disks	Logical Disk#	Partition 1 Drive Letter	File System
30 GB Disk CD-ROM	0 CD-ROM 0	C: System D:	NTFS Capacity=27.95GB

		Logical Disk#	Partition 1 Size=301.96GB FS=Raw Junction Point
CX200	SP		
1	A	1	C:\BigDb\dbLogs\tpcclog

Disk Management Configuration						
USS	HBA	Logical Disk#	Partition 1 Size=4.16GB FS=Raw Junction Point	Partition 2 Size=6.60GB FS=Raw Junction Point	Partition 3 Size=3.53GB FS=Raw Junction Point	Partition 4 Size=54.07GB FS=NTFS Junction Point
1	0	2	C:\BigDb\cabA\ord1	C:\BigDb\cabA\cs1	C:\BigDb\cabA\misc1	Unallocated
	0	3	C:\BigDb\cabA\ord2	C:\BigDb\cabA\cs2	C:\BigDb\cabA\misc2	Unallocated
	0	4	C:\BigDb\cabA\ord3	C:\BigDb\cabA\cs3	C:\BigDb\cabA\misc3	Unallocated
	0	5	C:\BigDb\cabA\ord4	C:\BigDb\cabA\cs4	C:\BigDb\cabA\misc4	Unallocated
	0	6	C:\BigDb\cabA\ord5	C:\BigDb\cabA\cs5	C:\BigDb\cabA\misc5	Unallocated
	0	7	C:\BigDb\cabA\ord6	C:\BigDb\cabA\cs6	C:\BigDb\cabA\misc6	C:\BigDb\dbBackups\backupB6
	0	8	C:\BigDb\cabA\ord7	C:\BigDb\cabA\cs7	C:\BigDb\cabA\misc7	C:\BigDb\dbBackups\backupB7
	1	9	C:\BigDb\cabA\ord8	C:\BigDb\cabA\cs8	C:\BigDb\cabA\misc8	Unallocated
	1	10	C:\BigDb\cabA\ord9	C:\BigDb\cabA\cs9	C:\BigDb\cabA\misc9	Unallocated
	1	11	C:\BigDb\cabA\ord10	C:\BigDb\cabA\cs10	C:\BigDb\cabA\misc10	Unallocated
	1	12	C:\BigDb\cabA\ord11	C:\BigDb\cabA\cs11	C:\BigDb\cabA\misc11	Unallocated
	1	13	C:\BigDb\cabA\ord12	C:\BigDb\cabA\cs12	C:\BigDb\cabA\misc12	Unallocated
	1	14	C:\BigDb\cabA\ord13	C:\BigDb\cabA\cs13	C:\BigDb\cabA\misc13	C:\BigDb\dbBackups\backupB13
	1	15	C:\BigDb\cabA\ord14	C:\BigDb\cabA\cs14	C:\BigDb\cabA\misc14	C:\BigDb\dbBackups\backupB14
2	0	16	C:\BigDb\cabB\ord1	C:\BigDb\cabB\cs1	C:\BigDb\cabB\misc1	Unallocated
	0	17	C:\BigDb\cabB\ord2	C:\BigDb\cabB\cs2	C:\BigDb\cabB\misc2	Unallocated
	0	18	C:\BigDb\cabB\ord3	C:\BigDb\cabB\cs3	C:\BigDb\cabB\misc3	Unallocated
	0	19	C:\BigDb\cabB\ord4	C:\BigDb\cabB\cs4	C:\BigDb\cabB\misc4	Unallocated
	0	20	C:\BigDb\cabB\ord5	C:\BigDb\cabB\cs5	C:\BigDb\cabB\misc5	Unallocated
	0	21	C:\BigDb\cabB\ord6	C:\BigDb\cabB\cs6	C:\BigDb\cabB\misc6	C:\BigDb\dbBackups\backupB6
	0	22	C:\BigDb\cabB\ord7	C:\BigDb\cabB\cs7	C:\BigDb\cabB\misc7	C:\BigDb\dbBackups\backupB7
	1	23	C:\BigDb\cabB\ord8	C:\BigDb\cabB\cs8	C:\BigDb\cabB\misc8	Unallocated
	1	24	C:\BigDb\cabB\ord9	C:\BigDb\cabB\cs9	C:\BigDb\cabB\misc9	Unallocated
	1	25	C:\BigDb\cabB\ord10	C:\BigDb\cabB\cs10	C:\BigDb\cabB\misc10	Unallocated
	1	26	C:\BigDb\cabB\ord11	C:\BigDb\cabB\cs11	C:\BigDb\cabB\misc11	Unallocated
	1	27	C:\BigDb\cabB\ord12	C:\BigDb\cabB\cs12	C:\BigDb\cabB\misc12	Unallocated
	1	28	C:\BigDb\cabB\ord13	C:\BigDb\cabB\cs13	C:\BigDb\cabB\misc13	C:\BigDb\dbBackups\backupB13
	1	29	C:\BigDb\cabB\ord14	C:\BigDb\cabB\cs14	C:\BigDb\cabB\misc14	C:\BigDb\dbBackups\backupB14

**Table 4.5: Disk Management Configuration (Continued)**

Disk Management Configuration						
USS	HBA	Logical Disk#	Partition 1	Partition 2	Partition 3	Partition 4
			Size=4.16GB FS=Raw Junction Point	Size=6.60GB FS=Raw Junction Point	Size=3.53GB FS=Raw Junction Point	Size=54.07GB FS=NTFS Junction Point
3	0	30	C:\BigDb\cabC\ord1	C:\BigDb\cabC\cs1	C:\BigDb\cabC\misc1	Unallocated
	0	31	C:\BigDb\cabC\ord2	C:\BigDb\cabC\cs2	C:\BigDb\cabC\misc2	Unallocated
	0	32	C:\BigDb\cabC\ord3	C:\BigDb\cabC\cs3	C:\BigDb\cabC\misc3	Unallocated
	0	33	C:\BigDb\cabC\ord4	C:\BigDb\cabC\cs4	C:\BigDb\cabC\misc4	Unallocated
	0	34	C:\BigDb\cabC\ord5	C:\BigDb\cabC\cs5	C:\BigDb\cabC\misc5	Unallocated
	0	35	C:\BigDb\cabC\ord6	C:\BigDb\cabC\cs6	C:\BigDb\cabC\misc6	C:\BigDb\dbBackups\backupC6
	0	36	C:\BigDb\cabC\ord7	C:\BigDb\cabC\cs7	C:\BigDb\cabC\misc7	C:\BigDb\dbBackups\backupC7
	1	37	C:\BigDb\cabC\ord8	C:\BigDb\cabC\cs8	C:\BigDb\cabC\misc8	Unallocated
	1	38	C:\BigDb\cabC\ord9	C:\BigDb\cabC\cs9	C:\BigDb\cabC\misc9	Unallocated
	1	39	C:\BigDb\cabC\ord10	C:\BigDb\cabC\cs10	C:\BigDb\cabC\misc10	Unallocated
	1	40	C:\BigDb\cabC\ord11	C:\BigDb\cabC\cs11	C:\BigDb\cabC\misc11	Unallocated
	1	41	C:\BigDb\cabC\ord12	C:\BigDb\cabC\cs12	C:\BigDb\cabC\misc12	Unallocated
	1	42	C:\BigDb\cabC\ord13	C:\BigDb\cabC\cs13	C:\BigDb\cabC\misc13	C:\BigDb\dbBackups\backupC13
	1	43	C:\BigDb\cabC\ord14	C:\BigDb\cabC\cs14	C:\BigDb\cabC\misc14	C:\BigDb\dbBackups\backupC14
4	0	44	C:\BigDb\cabD\ord1	C:\BigDb\cabD\cs1	C:\BigDb\cabD\misc1	Unallocated
	0	45	C:\BigDb\cabD\ord2	C:\BigDb\cabD\cs2	C:\BigDb\cabD\misc2	Unallocated
	0	46	C:\BigDb\cabD\ord3	C:\BigDb\cabD\cs3	C:\BigDb\cabD\misc3	Unallocated
	0	47	C:\BigDb\cabD\ord4	C:\BigDb\cabD\cs4	C:\BigDb\cabD\misc4	Unallocated
	0	48	C:\BigDb\cabD\ord5	C:\BigDb\cabD\cs5	C:\BigDb\cabD\misc5	Unallocated
	0	49	C:\BigDb\cabD\ord6	C:\BigDb\cabD\cs6	C:\BigDb\cabD\misc6	C:\BigDb\dbBackups\backupD6
	0	50	C:\BigDb\cabD\ord7	C:\BigDb\cabD\cs7	C:\BigDb\cabD\misc7	C:\BigDb\dbBackups\backupD7
	1	51	C:\BigDb\cabD\ord8	C:\BigDb\cabD\cs8	C:\BigDb\cabD\misc8	Unallocated
	1	52	C:\BigDb\cabD\ord9	C:\BigDb\cabD\cs9	C:\BigDb\cabD\misc9	Unallocated
	1	53	C:\BigDb\cabD\ord10	C:\BigDb\cabD\cs10	C:\BigDb\cabD\misc10	Unallocated
	1	54	C:\BigDb\cabD\ord11	C:\BigDb\cabD\cs11	C:\BigDb\cabD\misc11	Unallocated
	1	55	C:\BigDb\cabD\ord12	C:\BigDb\cabD\cs12	C:\BigDb\cabD\misc12	Unallocated
	1	56	C:\BigDb\cabD\ord13	C:\BigDb\cabD\cs13	C:\BigDb\cabD\misc13	C:\BigDb\dbBackups\backupD13
	1	57	C:\BigDb\cabD\ord14	C:\BigDb\cabD\cs14	C:\BigDb\cabD\misc14	C:\BigDb\dbBackups\backupD14



## 5. Clause 5: Performance Metrics & Response Time

### 5.1. Measured Throughput (tpmC)

*Measured tpmC must be reported. (8.1.6.1)*

The measured tpmC was 118,381.38.

### 5.2. Response Times

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

**Table 5.1: Response Time Data**

Transaction	Average	Maximum	90th %ile
New-Order	0.39	5.83	0.61
Payment	0.35	5.14	0.57
Order Status	0.37	7.53	0.59
Delivery (interactive)	0.23	3.59	0.39
Delivery (deferred)	0.20	2.41	0.25
Stock-Level	0.65	3.97	0.92
Menu	0.23	3.75	0.39

### 5.3. Keying and Think Times

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

**Table 5.2: Keying Times**

Transaction	Minimum	Average	Maximum
New-Order	18.01	18.01	18.03
Payment	3.01	3.01	3.03
Order Status	2.01	2.01	2.03
Delivery (interactive)	2.01	2.01	2.03
Stock-Level	2.01	2.01	2.03

**Table 5.3: Think Times**

Transaction	Minimum	Average	Maximum
New-Order	0.00	12.03	120.31
Payment	0.00	12.03	120.31
Order Status	0.00	10.07	100.70
Delivery (interactive)	0.00	5.06	50.61
Stock-Level	0.00	5.06	50.61

## 5.4. Response Time Frequency Distribution Curves

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

Figure 5.1: New Order Response Time Distribution

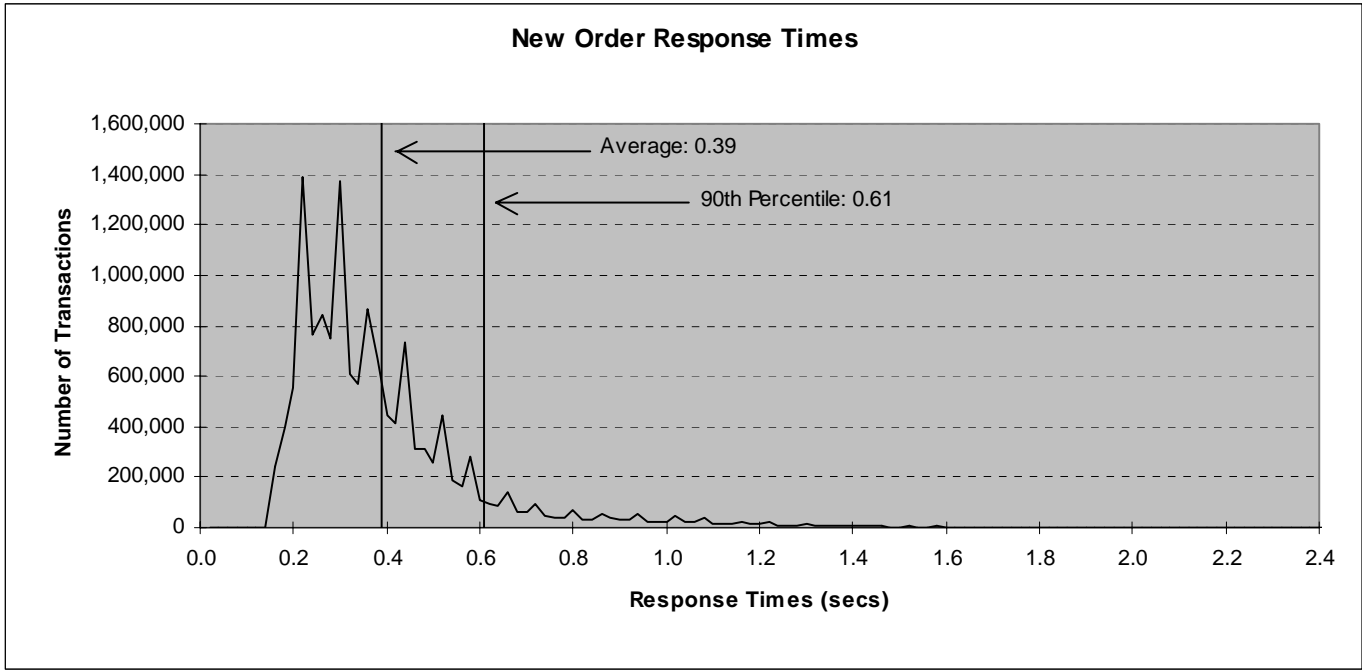
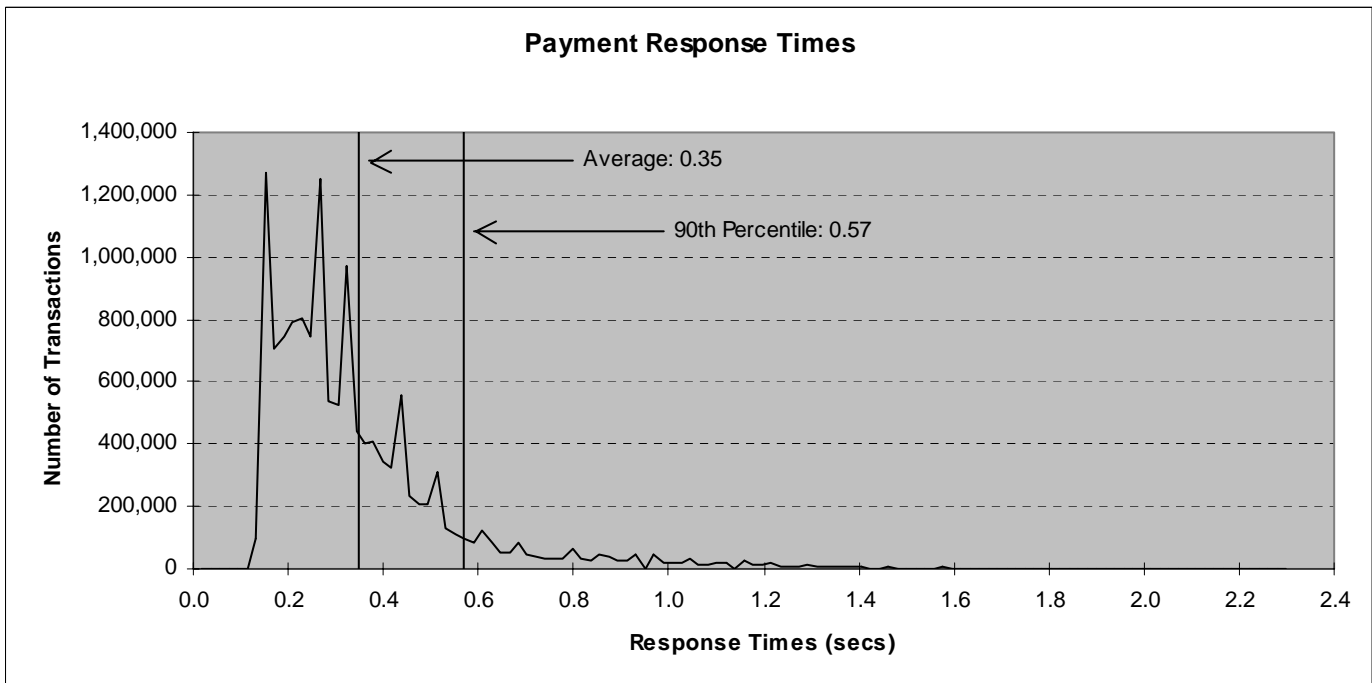
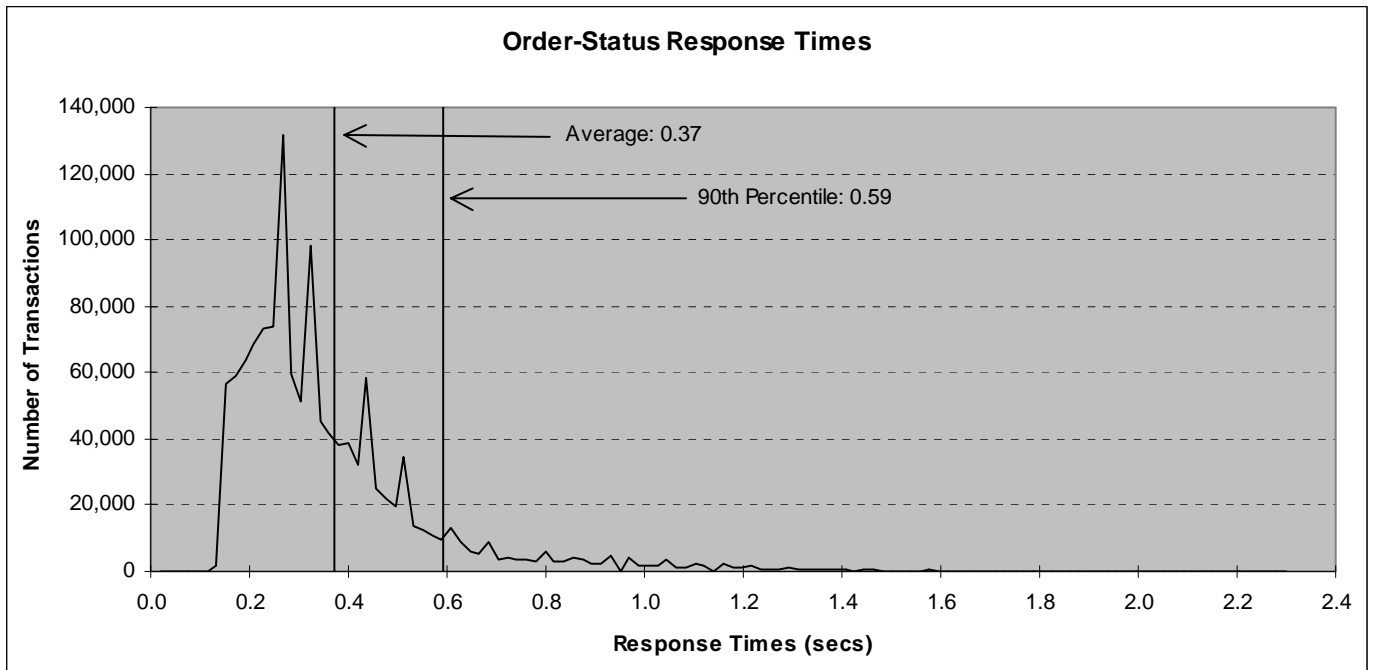


Figure 5.2: Payment Response Time Distribution





**Figure 5.3: Order Status Response Time Distribution**



**Figure 5.4: Delivery Response Time Distribution**

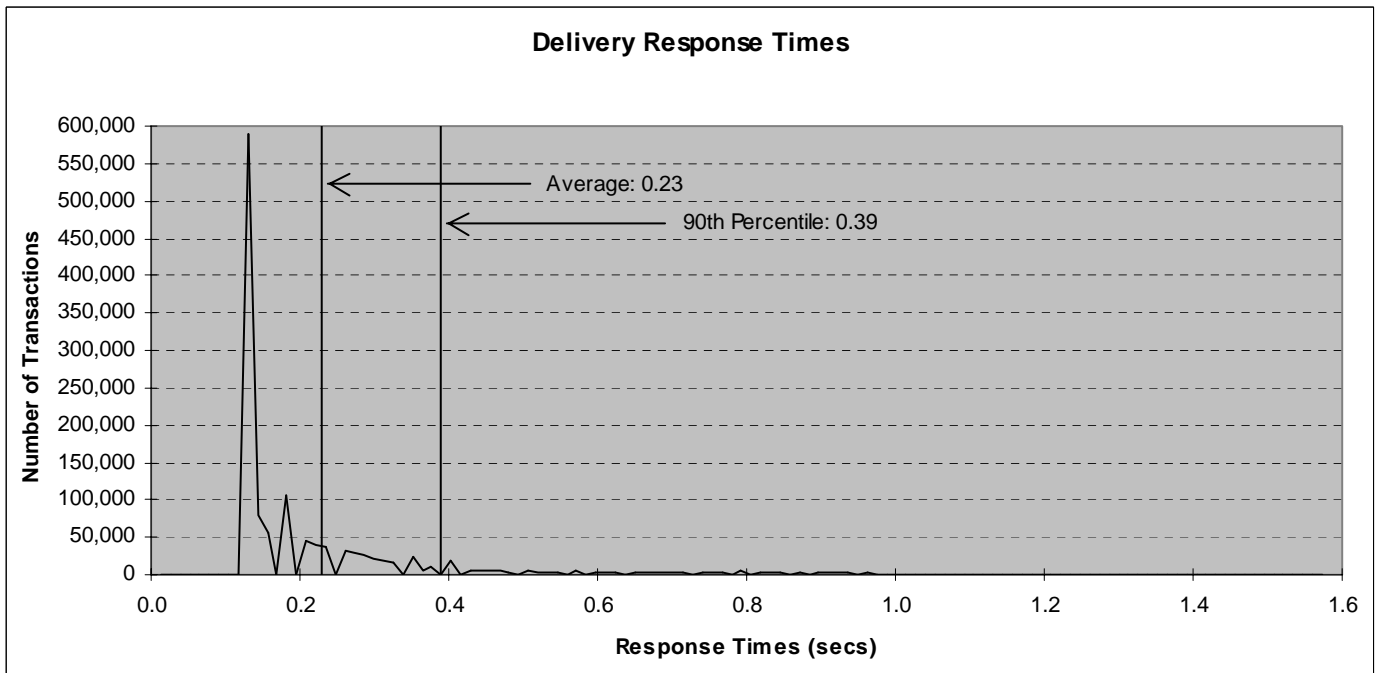
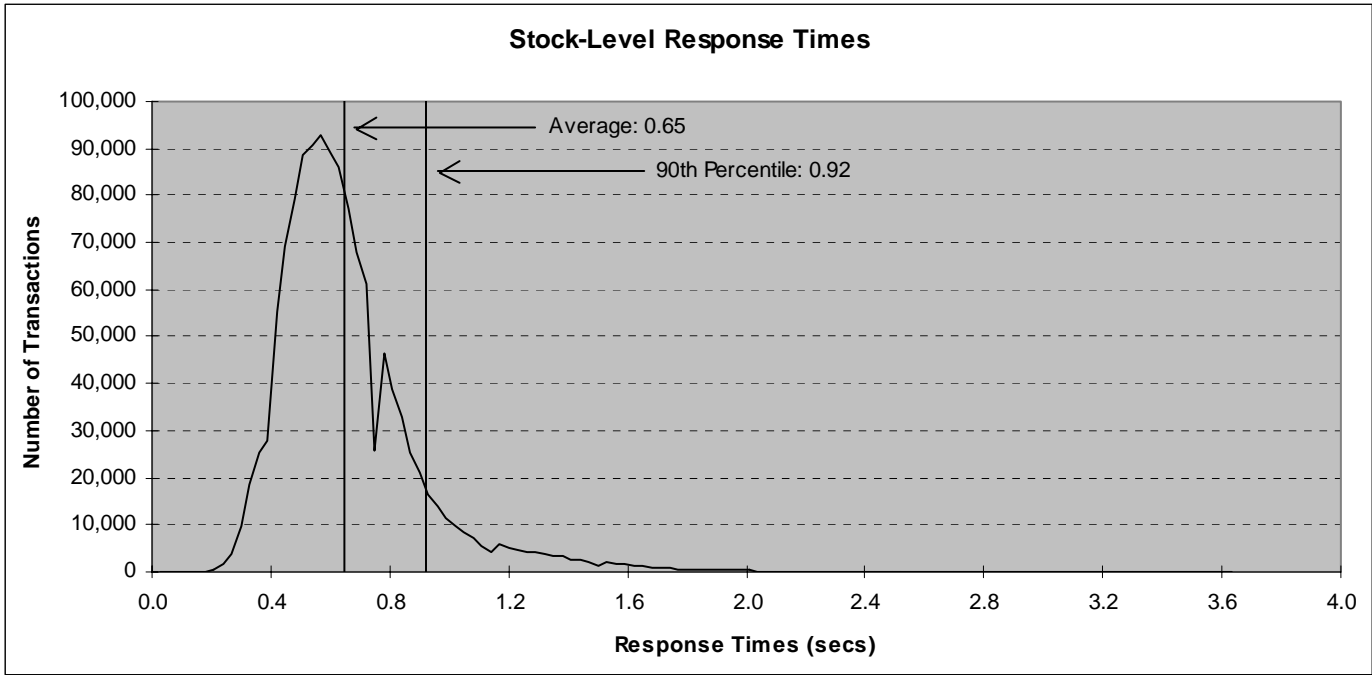


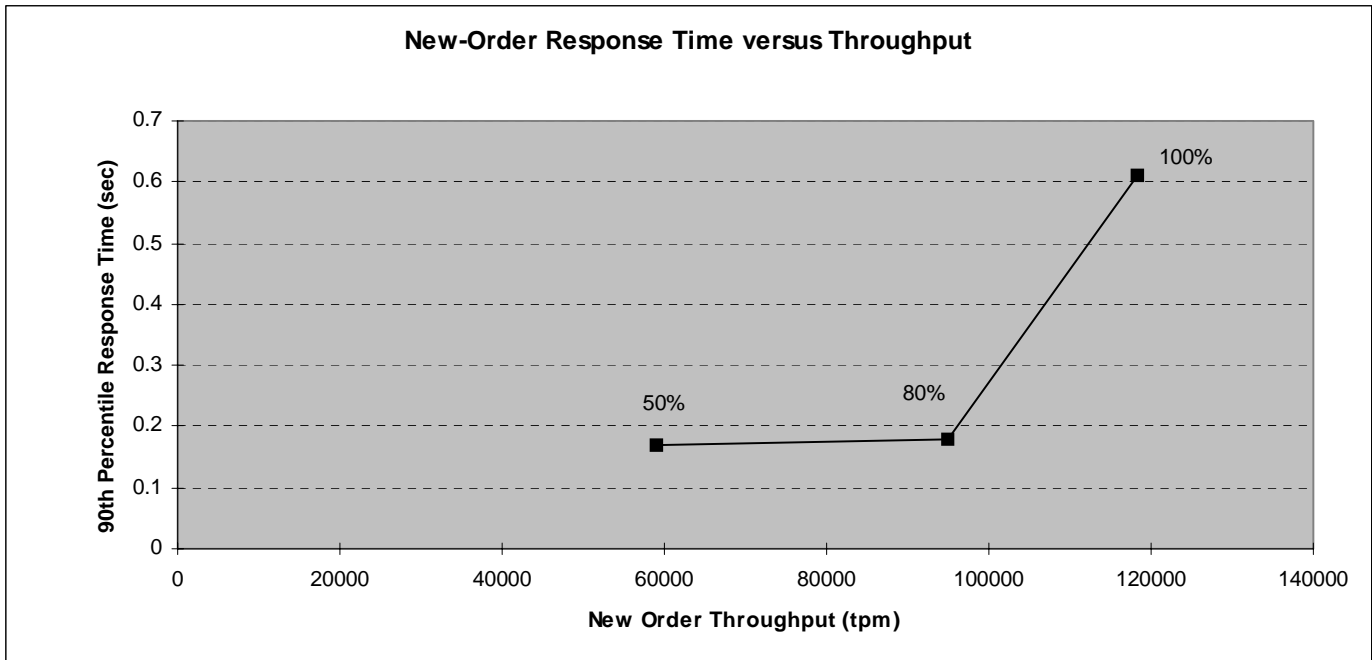
Figure 5.5: Stock Level Response Time Distribution



### 5.5. Response Time versus Throughput Performance Curve

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

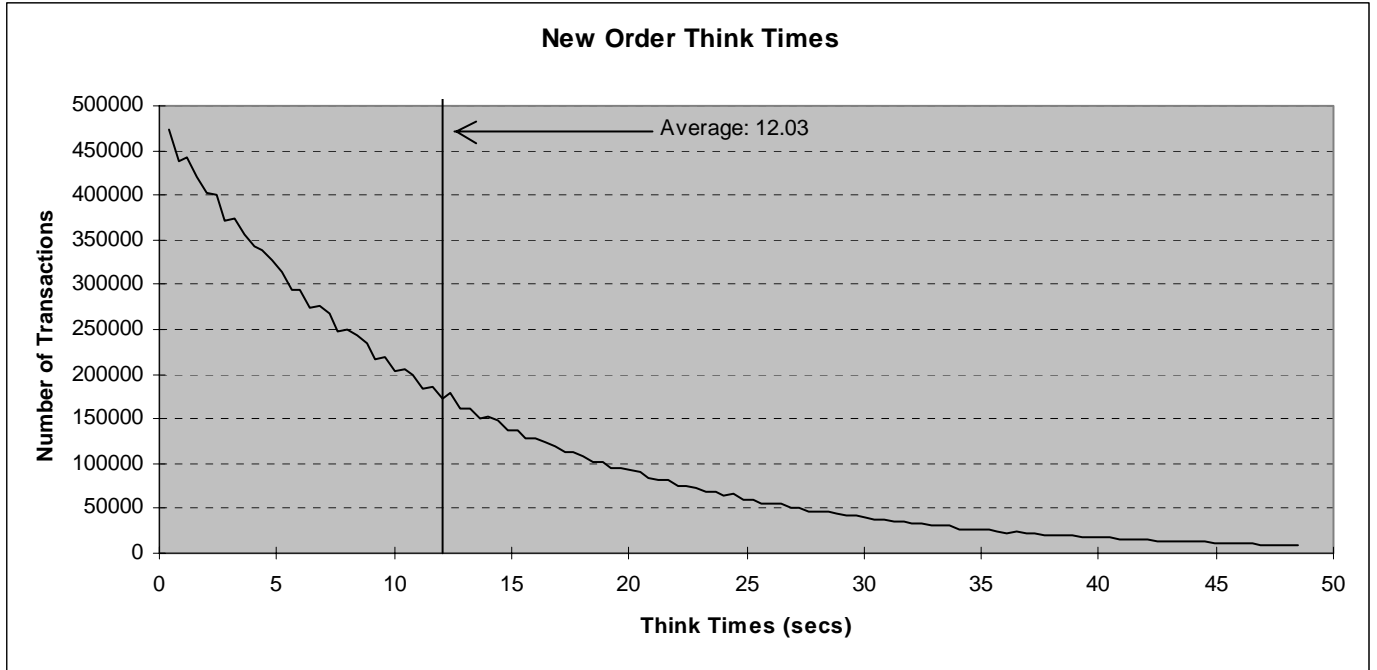
Figure 5.6: New Order Response Time versus Throughput



## 5.6. New Order Think Time Frequency Distribution Curve

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

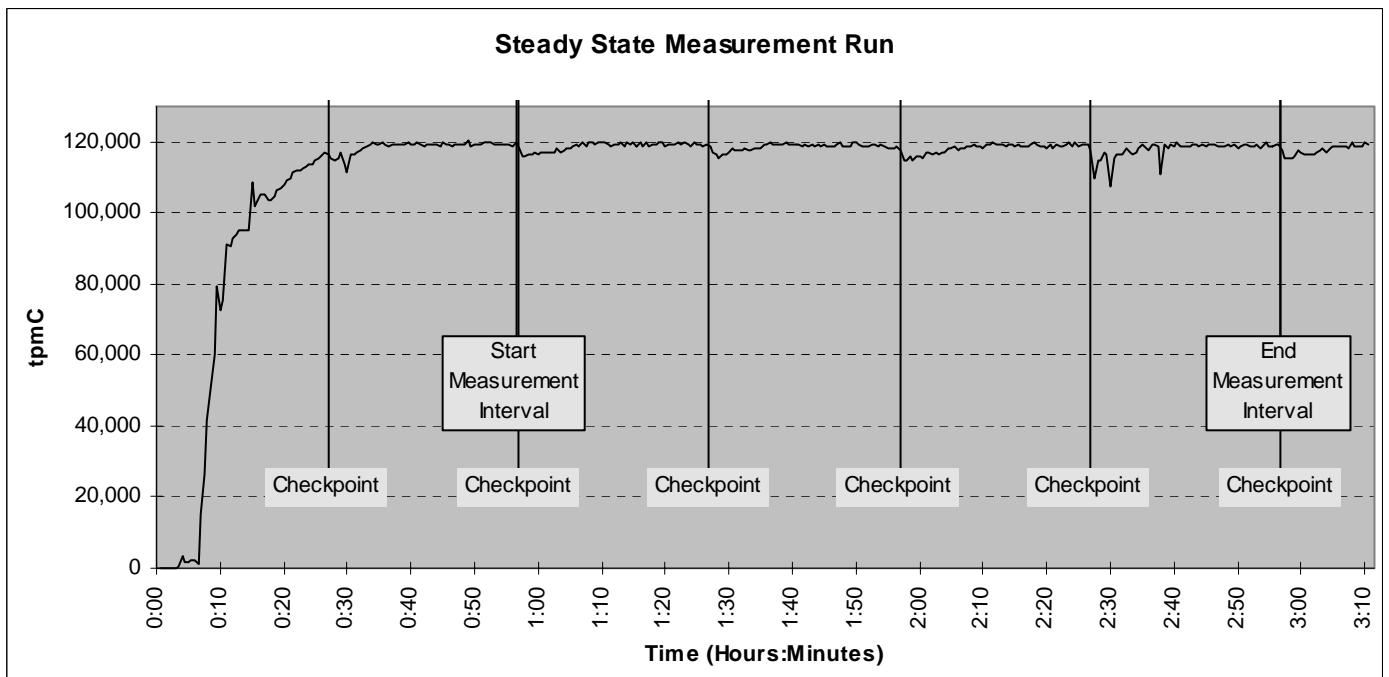
Figure 5.7: New Order Think Time Distribution



## 5.7. New-Order Throughput vs. Time

A graph of throughput versus elapsed time (Clause 5.6.4) must be reported for the New-Order transaction. (8.1.6.8)

Figure 5.8: Throughput (tpmC) versus Time



## 5.8. Determination of “Steady State”

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

The transaction throughput rate (tpmC) and response time were relatively constant after the initial ‘ramp up’ period. The throughput and response time behavior were determined by examining data reported for each 30-second interval over the duration of the benchmark. Ramp-up and steady state are discernible in the graph presented in Figure 5.8.

## 5.9. Work Performed During Steady State

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

The RTE selects a transaction type from the menu and prepares to request the appropriate blank form. A timestamp is taken before the form request is sent and after the response is returned. The difference between the two is saved off as the menu response time. The RTE then generates input data for the transaction to create a completed form and waits the appropriate key time. A timestamp is taken before the completed form is sent and after the response is returned. The difference between these two is saved off as the transaction response time. Both response times are padded with a 0.1 second delay per spec to account for the web browser delay. The appropriate transaction data and response times are logged and the RTE waits the required think time interval before repeating the process. Each RTE driver maintains its own log file. Log file contents are consolidated for the reports.

The RTE emulates web browsers (not terminals) in this client-server implementation. The RTE sends and receives HTML formatted data using HTTP through Ethernet LANs to a client application running on the client machine. The client application processes the request, sends the transaction to a COM+ component, waits for the transaction response, and returns an appropriately formatted HTML form back to the (emulated) web browser (RTE). When activated, the COM+ component calls a stored procedure on the data base server using Microsoft SQL Server ODBC, collects the response, and returns the result to the requestor.

To perform checkpoints at specific intervals, SQL Server’s recovery interval was set to four times the desired checkpoint duration, and a utility was written to schedule checkpoints at parameter-specified intervals and record the start and end time of each checkpoint. The checkpoint script was started manually on one of the client machines after the RTE had all users logged in and sending transactions and a steady state had been achieved.

At each checkpoint, SQL Server wrote to disk all database pages in memory that had been updated but not yet physically written to the disk. Upon completion of the checkpoint, SQL Server also wrote records to the error log indicating that a checkpoint had completed.

## 5.10. Measurement Interval Duration

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

The measurement interval was 120 minutes.

## 5.11. 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. (8.1.6.13)*

The RTE was given a weighed random distribution which could not be adjusted during the run.

## 5.12. Transaction Statistics

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

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

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

*The percentage of remote order-lines entered per New-Order transaction must be disclosed. (8.1.6.17)*

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

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

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

Table 5.4 shows this information.

**Table 5.4: Transaction Statistics**

Transaction Type	Statistic	Value
New Order	Rolledback transactions	1.00%
	Home warehouse	99.00%
	Remote warehouse	1.00%
	Average Items per Order	10.00
Payment	Home warehouse	85.01%
	Remote warehouse	14.99%
	Non-primary key access	60.01%
Order Status	Non-primary key access	59.99%
Delivery	Skipped transactions (Interactive)	0
	Skipped transaction counts (Deferred)	0
	Skipped District counts (Deferred)	0
Transaction Mix	New Order	44.92%
	Payment	43.02%
	Order-Status	4.01%
	Delivery	4.01%
	Stock-Level	4.01%

### 5.13. 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. (8.1.6.21)*

There are four checkpoints in the measurement interval. The first checkpoint starts approximately 10 seconds into the measurement interval. The checkpoint interval is 30 minutes (from the start of one to the start of the next) and a checkpoint lasts approximately 29.8 minutes.

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

**Table 5.5: Checkpoint Start Time and Duration**

<b>Item</b>	<b>Start</b>	<b>End</b>	<b>Duration</b>
Measurement Interval	0:56:43	2:56:43	7200
1st Checkpoint	0:56:53	1:26:39	1786
2nd Checkpoint	1:26:52	1:56:38	1786
3rd Checkpoint	1:56:51	2:26:37	1786
4th Checkpoint	2:26:50	2:56:36	1786

## 6. Clause 6: SUT, Driver & Communications Definition

### 6.1. Remote Terminal Emulator (RTE) Description

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

The RTE used is proprietary to Unisys. Appendix D contains the profile used as input to this RTE.

### 6.2. Loss of Terminal Connections

*The number of terminal connections lost during the Measurement Interval must be disclosed (see Clause 6.6.2). (8.1.7.2)*

No terminal connections were lost.

### 6.3. Emulated Components

*It must be demonstrated that the functionality and performance of the components being emulated in the Driver System are equivalent to that of the priced system. The results of the test described in Clause 6.6.3.4 must be disclosed. (8.1.7.3)*

There were no emulated components in the benchmark configuration other than the emulated web browsers on the users' PCs.

### 6.4. Functional Diagrams

*A complete functional diagram of both benchmark and the configuration of the proposed (target) system must be disclosed. A detailed list of all hardware and software functionality being performed on the Driver System and its interface to the SUT must be disclosed (see Clause 6.6.3.6). (8.1.7.4)*

Section 0.7 describes and shows functional diagrams of the benchmarked and priced systems.

### 6.5. Network Configuration

*The network configuration of both the tested and proposed (target) services which are being represented and a thorough explanation of exactly which parts are being replaced with the Driver System must be disclosed (see Clause 6.6.4). (8.1.7.5)*

Figures 0.1 and 0.2 in Section 0.7 also diagram the network configurations of the benchmark and configured systems and represent the RTEs connected via LAN replacing the user PCs that are directly connected via LAN.

## 6.6. Network Bandwidth

*The bandwidth of the network(s) used in the tested/priced configuration must be disclosed. (8.1.7.6)*

Local area networks (LANs) are used in the priced and tested configurations. The database server contains four cLAN 1.25 gigabit-per-second LAN adapters. Each was direct-connected to a cLAN adapter in the four clients. These LAN segments run at 1.25 gigabit-per-second in the priced and tested configurations. Each client also contains two 10/100/1000 megabit-per-second inbuilt LAN controllers of which one was used in the tested configuration. A 10/100/1000 megabit-per-second switch was used to connect the clients to RTE driver systems emulating web browsers in the tested configuration. The 10/100/1000 LAN connections between the clients and switches run at 1000 megabits-per-second in the priced and tested configurations.

## 6.7. Operator Intervention

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

No operator intervention was required to sustain eight hours of operation at the reported throughput.



## **7.1. 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) must also be reported. (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. (8.1.8.2)*

*System pricing should include subtotals for the following components: Server Hardware, Server Software, Client Hardware, Client Software, and Network Components used for terminal connection (see Clause 7.2.2.3). Clause 6.1 describes the Server and Client components. (8.1.8.7)*

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

A detailed list of hardware and software components along with their part numbers and prices are given in the Executive Summary near the beginning of this document. Microsoft SQL Server 2000 Enterprise Edition software has been supplemented by Service Pack 3 and Microsoft Knowledge Base # Q332004 AWE fix.

### **7.1.1. System Pricing**

Each priced configuration consists of an integrated system package, additional options, and components. Prices for all products are US list prices.

### **7.1.2. Maintenance Pricing**

Three-year support pricing for Unisys Corporation products is based on standard new product warranty, upgraded to provide 24 hours/day, 7 days/week support with four hour maximum response for hardware spare parts.

Microsoft support pricing is based on 3 years of annual support costs.

Server disks are covered by Comark's 3 year, return-to-factory warranty with seven day maximum replenishment, and appropriate spares are included in the priced configuration.

### **7.1.3. Discounts**

Unisys provides a standard pre-pay discount for maintenance service of the client, server and storage components of the priced configuration.

Comark provides a standard large volume cash discount for the client, server and storage components of the priced configuration.

## 7.2. Availability

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

The hardware, software and support/maintenance products priced in this benchmark are detailed on page vi.

All components will be available by the date shown on page v.

## 7.3. Measured tpmC, Pricing, Price/Performance, and Availability Date

*A statement of the measured tpmC as well as the respective calculations for the 3-year pricing, price/performance (price/tpmC), and the availability date must be included. (8.1.8.4)*

The measured tpmC, plus pricing calculations, price/performance, and availability are shown on pages v and vi.

## 7.4. Country-Specific Pricing

*Additional Clause 7 related items may be included in the Full Disclosure Report for each country specific priced configuration. Country specific pricing is subject to Clause 7.1.7. (8.1.8.5)*

None.

## 7.5. Usage Pricing

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

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

The component pricing based on usage is shown below:

- One (1) Microsoft Windows Server 2003, Datacenter Edition license, 8 processor
- One (1) Microsoft SQL Server 2000 Enterprise Edition license, 8 processor
- Four (4) Microsoft Windows 2000 Server licenses
- One (1) Microsoft Visual C++ Standard license

## 8.

## ***Clause 8 : Full Disclosure Availability***

---

### **8.1. Availability**

*The Full Disclosure Report must be readily available to the public at a reasonable charge, similar to charges for similar documents by that test sponsor. (8.2)*

Copies of this Full Disclosure Report may be downloaded from the Transaction Processing Performance Council web site at [www.tpc.org](http://www.tpc.org) or obtained by contacting:

TPC Benchmark Administrator  
Systems Analysis, Modeling & Measurement Group  
Unisys Corporation, M/S 237  
25725 Jeronimo Road  
Mission Viejo, CA 92691  
USA



**9.1. Auditor's Report**

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

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

This implementation of the TPC Benchmark C on the Unisys ES7000 Aries 520 Enterprise Server was audited by Lorna Livingtree, a TPC certified auditor of:

Performance Metrics, Inc.  
137 Yankton St. Suite 101  
Folsom, CA 95630

Phone: (916) 985-1131  
Fax: (916) 985-1185  
email: Lorna@PerfMetrics.com

The attestation letter is shown on the next 2 pages.



**PERFORMANCE METRICS INC.**  
**TPC Certified Auditors**

April 2, 2003

Jerrold Buggert  
Director of Modeling and Measurement  
Unisys Corporation  
25725 Jeronimo Road  
Mission Viejo, CA 92691

I have verified the TPC Benchmark™ C client/server for the following configuration:

Platform: Unisys ES7000 Aries 520 Enterprise Server  
Database Manager: Microsoft SQL Server 2000 Enterprise Edition  
Operating System: Microsoft Windows Server 2003, Datacenter Edition  
Transaction Manager: Microsoft COM+ (included in Windows 2000)

Server: Unisys ES7000 Aries 520 Enterprise Server				
CPU's	Memory	Disks	90% Response	TpmC
8 Intel Xeon MP @ 2.0 GHz	Main: 64 GB Cache: 2MB each	224 @ 18GB 10 @ 73GB 1 @ 30GB	<b>0.61 sec</b>	<b>118,381.38</b>
4 Clients: Unisys ES3020L Server				
2 Intel Xeon @ 2.4 GHz	Main: 1 GB Cache: 512KB	1 @ 18GB	Na	Na

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

- The transactions were correctly implemented.
- The database was properly sized and populated.
- The database was properly scaled with 9,500 warehouses of which all were active during the Measured Interval.

**PERFORMANCE METRICS INC.**  
**TPC Certified Auditors**

---

- The ACID properties were successfully demonstrated.
- The durability data loss and log loss tests were performed on the fully scaled database with 12,000 users and 1,200 active warehouses.
- Input data was generated according to the specified percentages.
- Eight hours of mirrored log space was configured on the measured system.
- Eight hours of dynamic table growth space was configured on the measured system.
- The 60-day space calculation was verified. The measured configuration has sufficient storage to satisfy this requirement.
- Measurement cycle times included a 0.1 second menu and a 0.1 second response time delay for an emulated Web browser.
- There were 95,000 user contexts present on the system.
- Each emulated user started with a different random number seed.
- The NURand constants used for database load and at run time were 123 and 208 respectively.
- The steady state portion of the test was 2 hours (7200 seconds).
- One checkpoint was taken before the measured interval and after steady state was reached.
- Four checkpoints were taken during the measured interval.
- The system pricing was checked for major components and maintenance.

Auditor Notes:

None

Sincerely,



Lorna Livingtree  
Auditor





# Appendix A - Client Source

## tpcc.def

```
EXPORTS
  GetExtensionVersion
  HttpExtensionProc
```

## tpcc.h

```
// tpcc.h
//
// Copyright Unisys, 2000

#include <time.h>

#define VERSIONINFO "----1.2.8 ----"

// TPCCHandler return codes
#define TPCCSEND 1
#define TPCCSENDEND 2
#define TPCCENDNOW 3

// TPCC Service return codes
#define SVC_BADITEMID 1
#define SVC_NOERROR 0
#define SVCERR_DEADLOCK -1
#define SVCERR_NOCUSTOMER -2
#define SVCERR_NOORDERS -3
#define SVCERR_DBLIB -4
#define SVCERR_EXCEPTION -5
#define SVCERR_DQFULL -6
#define SVCERR_DQSTART -7
#define SVCERR_ODBC -8

// Min/Max transaction data definitions
#define MIN_Did 1
#define MAX_Did 10
#define MIN_OL 5
#define MAX_OL 15
#define MIN_QUANTITY 1
#define MAX_QUANTITY 10
#define MIN_ITEM_ID 1
#define MAX_ITEM_ID 100000
#define MIN_CUST_ID 1
#define MAX_CUST_ID 3000
#define MIN_CARRIER 1
#define MAX_CARRIER 10
#define MIN_THRESHOLD 10
#define MAX_THRESHOLD 20

// pTPCC->iStatusId codes
#define INVALID_IID 1
#define STATUS_OK 0
```

```
#define ERR_CMD_UNKNOWN -10
#define ERRRTXT_CMD_UNKNOWN "Unrecognized Command"
#define ERR_ALREADY_LOGGEDIN -11
#define ERRRTXT_ALREADY_LOGGEDIN "Already Logged In"
#define ERR_TERMID -12
#define ERRRTXT_TERMID "TermId or SyncId in Error"
#define ERR_FORM_UNKNOWN -13
#define ERRRTXT_FORM_UNKNOWN "Unrecognized FormId"
#define ERR_WID_INVALID -14
#define ERR_DID_INVALID -15
#define ERR_MISSING_KEY -16
#define ERR_NOT_NUMERIC -17
#define ERR_THRESHOLD_RANGE -18
#define ERR_EMBEDDED_EMPTY_OL -19
#define ERR_QUANTITY_INVALID -20
#define ERR_OL_INVALID -21
#define ERR_OL_COUNT -22
#define ERR_TM_INTERFACE -23
#define ERR_SERVICE_RSLT -24
#define ERR_INPUT_TOOLONG -25
#define ERR_IDANDNAME_EMPTY -26
#define ERR_IDANDNAME_ENTERED -27
#define ERR_AMOUNT_BADFORM -28
#define ERR_AMOUNT_INVALID -29
#define ERR_CARRIER_INVALID -30
#define ERR_TERM_ALLOC -31

#define STATUS_LEN 30
#define NAME_LEN 16
#define ADDR_LEN 20
#define STATE_LEN 2
#define ZIP_LEN 9

#define CTEXT "Content-length: "
#define HTTPHdr "Content-type: text/html\r\nContent-length: \r\n\r\n"

typedef struct
{
  unsigned short year;
  unsigned short month;
  unsigned short day;
  unsigned short hour;
  unsigned short minute;
  unsigned short second;
} DATEDetails;

typedef struct
{
  short ol_supply_w_id;
  long ol_i_id;
  char ol_i_name[25];
  short ol_quantity;
  char ol_brand_generic[2];
  double ol_i_price;
  double ol_amount;
  short ol_stock;
```

```

} OL_NEW_ORDER_DATA;

typedef struct
{
    bool bTPRslt;
    short iTPRslt;
    short w_id;
    short d_id;
    long c_id;
    short o_ol_cnt;
    char c_last[NAME_LEN + 1];
    char c_credit[3];
    double c_discount;
    double w_tax;
    double d_tax;
    long o_id;
    short o_all_local;
    short o_commit_flag;
    DATEDETAILS o_entry_d;
    double total_amount;
    char execution_status[STATUS_LEN];
    OL_NEW_ORDER_DATA ol[MAX_OL];
} NEW_ORDER_DATA;

typedef struct
{
    bool bTPRslt;
    short iTPRslt;
    short w_id;
    short d_id;
    long c_id;
    short c_d_id;
    short c_w_id;
    double h_amount;
    DATEDETAILS h_date;
    char w_street_1[ADDR_LEN + 1];
    char w_street_2[ADDR_LEN + 1];
    char w_city[ADDR_LEN + 1];
    char w_state[STATE_LEN + 1];
    char w_zip[ZIP_LEN + 1];
    char d_street_1[ADDR_LEN + 1];
    char d_street_2[ADDR_LEN + 1];
    char d_city[ADDR_LEN + 1];
    char d_state[STATE_LEN + 1];
    char d_zip[ZIP_LEN + 1];
    char c_first[NAME_LEN + 1];
    char c_middle[3];
    char c_last[NAME_LEN + 1];
    char c_street_1[ADDR_LEN + 1];
    char c_street_2[ADDR_LEN + 1];
    char c_city[ADDR_LEN + 1];
    char c_state[STATE_LEN + 1];
    char c_zip[ZIP_LEN + 1];
    char c_phone[17];
    DATEDETAILS c_since;
    char c_credit[3];
    double c_credit_lim;
    double c_discount;
    double c_balance;
    char c_data[200+1];
    char execution_status[STATUS_LEN];

```

```

} PAYMENT_DATA;

typedef struct
{
    long ol_i_id;
    short ol_supply_w_id;
    short ol_quantity;
    double ol_amount;
    DATEDETAILS ol_delivery_d;
} OL_ORDER_STATUS_DATA;

typedef struct
{
    bool bTPRslt;
    short iTPRslt;
    short w_id;
    short d_id;
    long c_id;
    char c_first[NAME_LEN + 1];
    short o_ol_cnt;
    char c_middle[3];
    char c_last[NAME_LEN + 1];
    double c_balance;
    long o_id;
    DATEDETAILS o_entry_d;
    short o_carrier_id;
    OL_ORDER_STATUS_DATA olOrderStatusData[MAX_OL];
    char execution_status[STATUS_LEN];
} ORDER_STATUS_DATA;

typedef struct
{
    bool bTPRslt;
    short iTPRslt;
    short w_id;
    short o_carrier_id;
    long o_id[10];
    SYSTEMTIME QTime; // time delivery was queued
    SYSTEMTIME EndTime; // time delivery completed
} DELIVERY_DATA;

typedef struct
{
    bool bTPRslt;
    short iTPRslt;
    short w_id;
    short d_id;
    short thresh_hold;
    long low_stock;
    char execution_status[STATUS_LEN];
} STOCK_LEVEL_DATA;

// tpcc.cpp
//
// Copyright Unisys, 1999
//

```

**tpcc.cpp**

```

#include <windows.h>
#include <stdio.h>
#include <malloc.h>
#include <stdlib.h>
#include <string.h>
#include <winreg.h>
#include <httplib.h>

#include "..\tpccsvr\tpcc.h"
#include "tmon.h"
#include "diagio.h"
#include "term.h"
#include "delivery.h"
#include "tpcchandler.h"

#define EXTN_VERSION MAKEULONG(HSE_VERSION_MINOR,HSE_VERSION_MAJOR)
#define TLS_NULL 0xFFFFFFFF
DWORD dwTlsInx;
CHAR * pTitle = "IIS TPCC COM DLL";
CRITICAL_SECTION csDllMain;

// Diagnostic logging settings
BOOL bSetEventLog = TRUE;
BOOL bSetConsole = FALSE;
UINT uSetDiagLevel = DIAG_INFO;

// TMon Interface Settings
INT iTMMaxMsg = 0;

// Term Interface Settings
INT iMaxTerms = 3000;

// Delivery Settings
long lSetDThreads = 8;
long lSetDQSize = DEFAULTDQSIZE;
char szSetPath[200] = "\\inetpub\\wwwroot\\";

static CHAR * szTPCCError =
    HTTPHdr "<HTML>"
    "<HEAD><TITLE>Welcome To TPC-C</TITLE></HEAD><BODY>"
    "<B>TPCC Extension Error (TPCC Array Not Allocated)</B><BR>"
    "</BODY></HTML>";

static CHAR * szTMinInitError =
    HTTPHdr "<HTML>"
    "<HEAD><TITLE>Welcome To TPC-C</TITLE></HEAD><BODY>"
    "<B>TPCC Extension Error (TMinInit Failed)</B><BR>"
    "</BODY></HTML>";
INT iHHdrLen = 0;
INT iCTextLen = 0;

BOOL ThreadAttach(TPCC_STATE * pTPCC,CHAR * pDiag);
VOID ThreadDetach(TPCC_STATE * pTPCC);
VOID SendResponse(EXTENSION_CONTROL_BLOCK * pECB,CHAR * pMsg,CHAR *
pWork);
BOOL ReadRegistry(VOID);

//=====
//
// Function name: DllMain

```

```

//
//=====
BOOL WINAPI DllMain(HANDLE hInst, ULONG ul_reason_for_call,
LPVOID lpReserved)
{
    TPCC_STATE * pTPCC = NULL;
    CHAR szDiag[MAX_DIAG_SZ];
    UINT iTMMaxSz = 0;
    switch(ul_reason_for_call)
    {
        case DLL_PROCESS_ATTACH:
            // Process initialization

            InitializeCriticalSection(&csDllMain);
            ReadRegistry();
            DiagIoInit(pTitle,bSetConsole,bSetEventLog,uSetDiagLevel);
            wsprintf(szDiag,
                "(%s) EventLog = %d, Console = %d, DiagLevel = %d\n"
                "MaxTerms = %d\n",
                VERSIONINFO,bSetEventLog,bSetConsole,uSetDiagLevel,iMaxTerms);
            DiagIoWrite(szDiag,DIAG_FORCE);
            dwTlsInx = TlsAlloc();
            if (dwTlsInx == TLS_NULL)
            {
                wsprintf(szDiag,"PAttach(%ld): Tls Alloc Failed (%ld)\n",
                    GetCurrentThreadId(),GetLastError());
                DiagIoWrite(szDiag,DIAG_ERROR);
                return(FALSE);
            };
            if (TermInit(iMaxTerms))
                return(FALSE);
            iTMMaxSz = max(iTMMaxSz,sizeof(NEW_ORDER_DATA));
            iTMMaxSz = max(iTMMaxSz,sizeof(PAYMENT_DATA));
            iTMMaxSz = max(iTMMaxSz,sizeof(ORDER_STATUS_DATA));
            iTMMaxSz = max(iTMMaxSz,sizeof(DELIVERY_DATA));
            iTMMaxSz = max(iTMMaxSz,sizeof(STOCK_LEVEL_DATA));
            iTMMaxSz += 10;
            TMonInit(iTMMaxSz);
            if (DeliveryInit(lSetDThreads,lSetDQSize,szSetPath))
            {
                DeliveryTerm();
                return(FALSE);
            };
            iHHdrLen = strlen(HTTPHdr);
            iCTextLen = strlen(CTEXT);
            break;
        case DLL_THREAD_ATTACH:
            // Move ThreadAttach call to HttpExt since the DllMain call
            // for Thread Attach did not reliably come before the first
            // call to HttpExtProc.
            break;
        case DLL_THREAD_DETACH:
            ThreadDetach(pTPCC);
            break;
        case DLL_PROCESS_DETACH:
            ThreadDetach(pTPCC);
            DeleteCriticalSection(&csDllMain);
            DeliveryTerm();
            TMonTerm();
            TermTerm();
            TlsFree(dwTlsInx);
    }
}

```

```

        dwTlsInx = TLS_NULL;
        DiagIoTerm();
        break;
    };
    return TRUE;
}; // DllMain

//=====
//
// Function name: ThreadAttach
//
// Result:
// FALSE Thread state structure initialized
// TRUE Thread state structure initialization failure
//
//=====
BOOL ThreadAttach(TPCC_STATE * pTPCC, CHAR * pDiag)
{
    EnterCriticalSection(&csDllMain);
    try
    {
        pTPCC = (TPCC_STATE *) calloc(1, sizeof(TPCC_STATE));
        if (pTPCC == NULL)
        {
            wsprintf(pDiag, "ThrAtt(%ld): pTPCC Alloc Failed (%ld)\n",
                GetCurrentThreadId(), GetLastError());
            DiagIoWrite(pDiag, DIAG_ERROR);
            return(TRUE);
        };
        TlsSetValue(dwTlsInx, pTPCC);
        pTPCC->tsTMon.pszErrTxt = pTPCC->ErrTxt;
        if (TMinInit(&pTPCC->tsTMon))
        {
            wsprintf(pDiag, "ThrAtt(%ld): TMinInit %s\n",
                GetCurrentThreadId(), pTPCC->ErrTxt);
            DiagIoWrite(pDiag, DIAG_ERROR);
            return(TRUE);
        };
    }
    finally
    {
        LeaveCriticalSection(&csDllMain);
    };
    return(FALSE);
}; // ThreadAttach

//=====
//
// Function name: ThreadDetach
//
//=====
VOID ThreadDetach(TPCC_STATE * pTPCC)
{
    EnterCriticalSection(&csDllMain);
    try
    {
        pTPCC = (TPCC_STATE *) TlsGetValue(dwTlsInx);
        if (pTPCC != NULL)
        {
            TMDone(&pTPCC->tsTMon);
            free(pTPCC);
        }
    }
}

```

```

        pTPCC = NULL;
        TlsSetValue(dwTlsInx, pTPCC);
    };
}
finally
{
    LeaveCriticalSection(&csDllMain);
}; // ThreadDetach

//=====
//
// Function name: GetExtensionVersion
//
//=====
BOOL WINAPI GetExtensionVersion(HSE_VERSION_INFO *pVersion)
{
    pVersion->dwExtensionVersion = EXTN_VERSION;
    strncpy(pVersion->lpszExtensionDesc, pTitle, HSE_MAX_EXT_DLL_NAME_LEN);
    return TRUE;
}; // GetExtensionVersion

//=====
//
// Function name: HttpExtensionProc
//
// Returns:
// HSE_STATUS_SUCCESS          send msg, drop connection
// HSE_STATUS_SUCCESS_AND_KEEP_CONN  send msg, keep connection
//
//=====
DWORD WINAPI HttpExtensionProc(EXTENSION_CONTROL_BLOCK * pECB)
{
    TPCC_STATE * pTPCC;
    DWORD dwRslt = HSE_STATUS_SUCCESS;
    UINT uRslt;

    pTPCC = (TPCC_STATE *) TlsGetValue(dwTlsInx);
    if (pTPCC == NULL)
    {
        CHAR szWork[200];
        ThreadAttach(pTPCC, szWork);
        pTPCC = (TPCC_STATE *) TlsGetValue(dwTlsInx);
        if (pTPCC == NULL)
        {
            SendResponse(pECB, szTPCCError, szWork);
            goto HttpXit;
        };
    };
    if (pTPCC->tsTMon.pTxnData == NULL)
        SendResponse(pECB, szTMinInitError, pTPCC->szHeader);
    TPCCclear(pTPCC);
    pTPCC->ConnID = pECB->ConnID;
    pTPCC->RecvMsg = pECB->lpszQueryString;
    uRslt = TPCCHandler(pTPCC);
    switch (uRslt)
    {
        case TPCCSEND:
            SendResponse(pECB, pTPCC->SendMsg, pTPCC->szHeader);
            dwRslt = HSE_STATUS_SUCCESS_AND_KEEP_CONN;
    }
}

```

```

        break;
    case TPCCSESEND:
        SendResponse(pECB, pTPCC->SendMsg, pTPCC->szHeader);
        break;
    case TPCCENDNOW:
    default:
        break;
}; // switch (TPCCHandler result)

Httpxit:

    return(dwRslt);
}; // HttpExtensionProc

//=====
//
// Function name: SendResponse
//
//=====
VOID SendResponse(EXTENSION_CONTROL_BLOCK * pECB, CHAR * pMsg, CHAR * pWork)
{
    DWORD dwMsgBytes;
    DWORD dwDataBytes;
    CHAR * pCL;
    HSE_SEND_HEADER_EX_INFO HeaderExInfo;
    dwMsgBytes = strlen(pMsg);
    pCL=strstr(pMsg, CTEXT);
    dwDataBytes = dwMsgBytes - iHHdrLen;
    wsprintf(pWork, "%4ld", dwDataBytes);
    pCL += iCTextLen;
    strncpy(pCL, pWork, 4);
    HeaderExInfo.pszHeader = pMsg;
    HeaderExInfo.cchHeader = dwMsgBytes;
    HeaderExInfo.pszStatus = "200 OK";
    HeaderExInfo.cchStatus = 6;
    HeaderExInfo.fKeepConn = TRUE;
    (*pECB->ServerSupportFunction)
        (pECB->ConnID,
         HSE_REQ_SEND_RESPONSE_HEADER_EX,
         &HeaderExInfo,
         NULL,
         NULL);
}; // SendResponse

//=====
//
// Function name: ReadRegistry
//
// Sets global operational parameters from registry if they exist.
// Otherwise, compiled in defaults apply.
//
// Result:
// FALSE Registry entry found
// TRUE Registry entry does not exist
//
//=====
BOOL ReadRegistry(VOID)
{
    HKEY hkTPCC;
    DWORD dwMax;

```

```

    DWORD dwRT;
    INT i;
    CHAR szValue[100];
    if (RegOpenKeyEx(HKEY_LOCAL_MACHINE, "SOFTWARE\\Unisys\\TPCC", 0,
        KEY_READ, &hkTPCC) != ERROR_SUCCESS)
        return(TRUE);
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC, "EVENTLOG", 0, &dwRT, (BYTE *) &szValue, &dwMax)
        == ERROR_SUCCESS)
    {
        if (abs(atoi(szValue)) == 0)
            bSetEventLog = FALSE;
        else
            bSetEventLog = TRUE;
    };
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC, "CONSOLE", 0, &dwRT, (BYTE *) &szValue, &dwMax)
        == ERROR_SUCCESS)
    {
        if (abs(atoi(szValue)) == 0)
            bSetConsole = FALSE;
        else
            bSetConsole = TRUE;
    };
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC, "DIAGLEVEL", 0, &dwRT, (BYTE *)
        &szValue, &dwMax)
        == ERROR_SUCCESS)
    {
        i = atoi(szValue);
        if (i < DIAG_FORCE)
            i = DIAG_FORCE;
        else
            if (i > DIAG_INFO)
                i = DIAG_INFO;
            uSetDiagLevel = i;
    };
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC, "MAXTERMS", 0, &dwRT, (BYTE *) &szValue, &dwMax)
        == ERROR_SUCCESS)
    {
        iMaxTerms = abs(atoi(szValue));
    };
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC, "DELIVERYTHREADS", 0, &dwRT, (BYTE *)
        &szValue, &dwMax)
        == ERROR_SUCCESS)
    {
        lSetDThreads = abs(atoi(szValue));
    };
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC, "DQSIZE", 0, &dwRT, (BYTE *) &szValue, &dwMax)
        == ERROR_SUCCESS)
    {
        lSetDQSize = abs(atoi(szValue));
    };
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC, "DQPATH", 0, &dwRT, (BYTE *) &szValue, &dwMax)
        == ERROR_SUCCESS)
    {
        strcpy(szSetPath, szValue);
    };

```

```

};
RegCloseKey(hkTPCC);
return(FALSE);
}; // ReadRegistry

```

## tpcchandler.h

```

// tpcchandler.h
//
// Copyright Unisys, 1999

#define MAX_MSG_SZ 5000

typedef struct
{
    LPVOID ConnID; // Active Connection Id
    SHORT sWid; // TPCC WareHouse Id
    SHORT sDId; // TPCC District Id
    INT iSyncId; // TPCC Sync Id
    INT iTermId; // TPCC Term Id
    UINT uFormId; // TPCC Form Id
    INT iStatusId; // TPCC Status Id
    CHAR ErrTxt[500]; // Error text
    CHAR szWork[200]; // Thread work area
    CHAR szHeader[100]; // HTTP work area
    CHAR * RecvMsg; // HTML message from ECB
    CHAR SendMsg[MAX_MSG_SZ]; // HTML work area
    TMON_STATE tsTMon; // TMon Interface
} TPCC_STATE;

BOOL TPCCclear(TPCC_STATE * pTPCC);
UINT TPCCHandler(TPCC_STATE * pTPCC);

```

## tpcchandler.cpp

```

// tpcchandler.cpp
//
// Copyright Unisys, 1999
//
#include <windows.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

#include "..\tpccsvr\tpcc.h"
#include "tmon.h"
#include "diagio.h"
#include "delivery.h"
#include "tpcchandler.h"
#include "term.h"

// pTPCC->iFormId - TPCC forms enumeration.
#define FORM_NULL 0
#define FORM_LOGON 1
#define FORM_MENU 2
#define FORM_NEWORDER 3

```

```

#define FORM_PAYMENT 4
#define FORM_DELIVERY 5
#define FORM_ORDERSTATUS 6
#define FORM_STOCKLEVEL 7
#define FORM_EXIT 8
#define FORM_MAX 9

// CMD= HTML Command Enumeration and Name
#define CMD_NULL 0
#define CMD_PROCESS 1
#define CMD_NEWORDER_FORM 2
#define CMD_PAYMENT_FORM 3
#define CMD_DELIVERY_FORM 4
#define CMD_ORDERSTATUS_FORM 5
#define CMD_STOCKLEVEL_FORM 6
#define CMD_EXIT 7
#define CMD_SUBMIT 8
#define CMD_MENU_FORM 9
#define CMD_MAX 10

static CHAR * szCmds[] =
{
    "Unknown",
    "Process",
    "..NewOrder..",
    "..Payment..",
    "..Delivery..",
    "..Order-Status..",
    "..Stock-Level..",
    "..Exit..",
    "Submit",
    "Menu"
};

static CHAR * szFormLogin =
    HTTPHdr "<HTML>"
    "<HEAD><TITLE>Welcome To TPC-C</TITLE></HEAD><BODY>"
    "Please Identify your Warehouse and District for this session.<BR>"
    "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
    "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"0\">"
    "<INPUT TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"1\">"
    "<INPUT TYPE=\"hidden\" NAME=\"TERMINID\" VALUE=\"-2\">"
    "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"0\">"
    "Warehouse ID <INPUT NAME=\"w_id\" SIZE=6><BR>"
    "District ID <INPUT NAME=\"d_id\" SIZE=2><BR>"
    "<HR>"
    "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Submit\">"
    "</FORM>";

static CHAR * szMenuList =
    "<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..\">";

static CHAR * HTMLTrailer =
    "</BODY></HTML>";

static CHAR * TERMINIDTOKEN = "TERMINID=";

```

```

static CHAR * SYNCIDTOKEN = "SYNCID=";
static CHAR * FORMIDTOKEN = "FORMID=";
static CHAR * STATUSIDTOKEN = "STATUSID=";
static CHAR * CMDTOKEN = "CMD=";
static CHAR * NEWORDER_SERVICE = "NEWORDER";
static CHAR * PAYMENT_SERVICE = "PAYMENT";
static CHAR * ORDERSTATUS_SERVICE = "ORDERSTS";
static CHAR * DELIVERY_SERVICE = "DELIVERY";
static CHAR * STOCKLEVEL_SERVICE = "STOCKLVL";
static CHAR * ZIPPIC = "XXXXX-XXXX";

BOOL ProcessLogin(CHAR * pIn,CHAR * pOut,TPCC_STATE * pTPCC);
BOOL ProcessForm(CHAR * pIn,CHAR * pOut,TPCC_STATE * pTPCC);
BOOL ProcessNewOrder(CHAR * pIn,CHAR * pOut,TPCC_STATE * pTPCC);
BOOL ProcessPayment(CHAR * pIn,CHAR * pOut,TPCC_STATE * pTPCC);
BOOL ProcessDelivery(CHAR * pIn,CHAR * pOut,TPCC_STATE * pTPCC);
BOOL ProcessOrderStatus(CHAR * pIn,CHAR * pOut,TPCC_STATE * pTPCC);
BOOL ProcessStockLevel(CHAR * pIn,CHAR * pOut,TPCC_STATE * pTPCC);
VOID FormatLogin(CHAR * pMsg,CHAR * pAddText);
BOOL GetHidden(CHAR * pMsg,UINT * uFormId,INT * iSyncId,INT * iTermId);
BOOL GetCmd(CHAR * pMsg,CHAR * pWork,UINT uLen);
BOOL GetLongKey(LONG * lRslt,CHAR * pHTML,CHAR * pKey,TPCC_STATE * pTPCC);
BOOL GetIntKey(INT * iRslt,CHAR * pHTML,CHAR * pKey,TPCC_STATE * pTPCC);
BOOL GetShortKey(SHORT * sRslt,CHAR * pHTML,CHAR * pKey,TPCC_STATE *
pTPCC);
BOOL GetStringKey(CHAR * szRslt,CHAR * pHTML,CHAR * pKey,
TPCC_STATE * pTPCC,UINT uMax);
BOOL GetAmountKey(DOUBLE * dRslt,CHAR * pHTML,CHAR * pKey,
TPCC_STATE * pTPCC);
BOOL GetKeyValue(CHAR * pHTML,CHAR * pKey,CHAR * pValue,UINT uMax);
VOID FormatLogin(CHAR * pOut,CHAR * pAddText);
VOID FormatMenu(CHAR * pOut,TPCC_STATE * pTPCC);
VOID FormatNewOrder(CHAR * pOut,TPCC_STATE * pTPCC);
VOID FormatPayment(CHAR * pOut,TPCC_STATE * pTPCC);
VOID FormatDelivery(CHAR * pOut,TPCC_STATE * pTPCC);
VOID FormatOrderStatus(CHAR * pOut,TPCC_STATE * pTPCC);
VOID FormatStockLevel(CHAR * pOut,TPCC_STATE * pTPCC);
INT FormatFormHdr(CHAR * pOut,CHAR * pTitle,TPCC_STATE * pTPCC);
INT FormatRespHdr(CHAR * pOut,CHAR * pTitle,TPCC_STATE * pTPCC);
VOID FormatString(CHAR * pOut,CHAR * pPic,CHAR * pIn);
VOID UtilStrCpy(CHAR * pDest,CHAR * pSrc,INT n);
BOOL CheckNumeric(CHAR * pNum);

//=====
//
// Function name: TPCCclear
//
//=====
BOOL TPCCclear(TPCC_STATE * pTPCC)
{
    pTPCC->ConnID = 0;
    pTPCC->sWId = 0;
    pTPCC->sDId = 0;
    pTPCC->iSyncId = 0;
    pTPCC->iTermId = -2;
    pTPCC->uFormId = FORM_NULL;
    pTPCC->iStatusId = 0;
    strcpy(pTPCC->ErrTxt,"");
    return(FALSE);
}; // TPCCclear

```

```

//=====
//
// Function name: TPCCHandler
//
//=====
UINT TPCCHandler(TPCC_STATE * pTPCC)
{
    INT iSyncId;
    INT iTermId;
    UINT uCmdId;
    UINT uRslt = TPCCSENDEND; // default error handling
    TERM_STATE * pTerm;

    pTPCC->iStatusId = STATUS_OK;
    if (GetHidden(pTPCC->RecvMsg,&pTPCC->uFormId,&iSyncId,&iTermId))
    {
        uRslt = TPCCSEND;
        FormatLogin(pTPCC->SendMsg,pTPCC->ErrTxt);
        goto HdlrXit;
    };
    if (iTermId > 0)
    {
        pTerm = TermGet(iTermId);
        if (pTerm == NULL)
        {
            uRslt = TPCCSEND;
            strcpy(pTPCC->ErrTxt,"Invalid Term Id");
            FormatLogin(pTPCC->SendMsg,pTPCC->ErrTxt);
            goto HdlrXit;
        };
        pTPCC->sWId = pTerm->sWId;
        pTPCC->sDId = pTerm->sDId;
        pTPCC->iSyncId = pTerm->iSyncId;
        pTPCC->iTermId = pTerm->iTermId;
    };
    uCmdId = GetCmd(pTPCC->RecvMsg,pTPCC->szWork,sizeof(pTPCC->szWork));
    // Except for Submit(log in), sWId must already be set
    if (pTPCC->sWId == 0 && uCmdId != CMD_SUBMIT)
    {
        strcpy(pTPCC->ErrTxt,"Must log in first!");
        FormatLogin(pTPCC->SendMsg,pTPCC->ErrTxt);
        uRslt = TPCCSEND;
        goto HdlrXit;
    };
    // Check for multiple log in attempts
    if (pTPCC->sWId != 0 && uCmdId == CMD_SUBMIT)
    {
        strcpy(pTPCC->ErrTxt,ERRTXT_ALREADY_LOGGEDIN);
        pTPCC->iStatusId = ERR_ALREADY_LOGGEDIN;
        FormatMenu(pTPCC->SendMsg,pTPCC);
        uRslt = TPCCSEND;
        goto HdlrXit;
    };
    // If not logging in, validate hidden fields
    if (uCmdId != CMD_SUBMIT)
    {
        if (iTermId != pTPCC->iTermId || iTermId != iSyncId)
        {
            wsprintf(pTPCC->ErrTxt,"%s: Received %ld, %ld (%ld)",
                ERRTXT_TERMID,iTermId,iSyncId,pTPCC->iTermId);
            pTPCC->iStatusId = ERR_TERMID;

```

```

        FormatMenu(pTPCC->SendMsg,pTPCC);
        goto HdlrXit;
    };
};
// Process the command
switch (uCmdId)
{
    case CMD_SUBMIT:
        ProcessLogin(pTPCC->RecvMsg,pTPCC->SendMsg,pTPCC);
        break;
    case CMD_MENU_FORM:
        FormatMenu(pTPCC->SendMsg,pTPCC);
        break;
    case CMD_PROCESS:
        ProcessForm(pTPCC->RecvMsg,pTPCC->SendMsg,pTPCC);
        break;
    case CMD_NEWORDER_FORM:
        FormatNewOrder(pTPCC->SendMsg,pTPCC);
        break;
    case CMD_PAYMENT_FORM:
        FormatPayment(pTPCC->SendMsg,pTPCC);
        break;
    case CMD_DELIVERY_FORM:
        FormatDelivery(pTPCC->SendMsg,pTPCC);
        break;
    case CMD_ORDERSTATUS_FORM:
        FormatOrderStatus(pTPCC->SendMsg,pTPCC);
        break;
    case CMD_STOCKLEVEL_FORM:
        FormatStockLevel(pTPCC->SendMsg,pTPCC);
        break;
    case CMD_EXIT:
        TermFree(pTPCC->iTermId);
        strcpy(pTPCC->ErrTxt,"Logged Off");
        FormatLogin(pTPCC->SendMsg,pTPCC->ErrTxt);
        goto HdlrXit;
    default:
        strcpy(pTPCC->ErrTxt,ERRTXT_CMD_UNKNOWN);
        pTPCC->iStatusId = ERR_CMD_UNKNOWN;
        if (pTPCC->sWid == 0)
            FormatLogin(pTPCC->SendMsg,pTPCC->ErrTxt);
        else
            FormatMenu(pTPCC->SendMsg,pTPCC);
        break;
}; // switch (uCmdId)

uRslt = TPCCSEND;

HdlrXit:

    return(uRslt);
}; // TPCCHandler

//=====
//
// Function name: ProcessLogin
//
// ProcessLogin extracts WId and DId from the incoming form. Assumes
// log in has not previously completed (sWid == 0 already verified).
//

```

```

// Result:
// FALSE - log in successful, sWId and sDId set in pTPCC,
//         pOut contains menu.
// TRUE - log in failed, pOut contains log in form with
//         error message.
//=====
BOOL ProcessLogin(CHAR * pIn,CHAR * pOut,TPCC_STATE * pTPCC)
{
    LONG sWid;
    SHORT sDId;
    TERM_STATE * pTerm;

    if (GetLongKey(&sWid,pIn,"w_id",pTPCC))
    {
        FormatLogin(pOut,pTPCC->ErrTxt);
        return(TRUE);
    };
    if (sWid < 1)
    {
        wsprintf(pTPCC->ErrTxt,"Warehouse Id (%d) Invalid",sWid);
        pTPCC->iStatusId = ERR_WID_INVALID;
        FormatLogin(pOut,pTPCC->ErrTxt);
        return(TRUE);
    };
    if (GetShortKey(&sDId,pIn,"d_id",pTPCC))
    {
        FormatLogin(pOut,pTPCC->ErrTxt);
        return(TRUE);
    };
    if (sDId < MIN_DId || sDId > MAX_DId)
    {
        wsprintf(pTPCC->ErrTxt,"DId Out of Range(%ld,%ld) - %ld",
            MIN_DId,MAX_DId,sDId);
        pTPCC->iStatusId = ERR_DID_INVALID;
        FormatLogin(pOut,pTPCC->ErrTxt);
        return(TRUE);
    };
    pTerm = TermAlloc();
    if (pTerm == NULL)
    {
        wsprintf(pTPCC->ErrTxt,"Unable to Allocate Terminal Entry");
        pTPCC->iStatusId = ERR_TERM_ALLOC;
        FormatLogin(pOut,pTPCC->ErrTxt);
        return(TRUE);
    };
    pTerm->ConnID = pTPCC->ConnID;
    pTerm->iSyncId = pTerm->iTermId;
    pTerm->sWid = abs(sWid);
    pTerm->sDId = abs(sDId);
    pTPCC->iTermId = pTerm->iTermId;
    pTPCC->iSyncId = pTerm->iSyncId;
    pTPCC->sWid = pTerm->sWid;
    pTPCC->sDId = pTerm->sDId;
    FormatMenu(pOut,pTPCC);
    return(FALSE);
}; // ProcessLogin

//=====
//

```



```

// Function name: ProcessForm
//
// ProcessForm uses pTPCC->uFormId to determine which form input is
// present and ready for processing. Actual processing is done by
// the form specific routine.
//
// Result:
// FALSE - form processed, pOut contains response.
// TRUE - error processing form input, pOut contains reason.
//
//=====
BOOL ProcessForm(CHAR * pIn,CHAR * pOut,TPCC_STATE * pTPCC)
{
    switch (pTPCC->uFormId )
    {
        case FORM_NEWORDER:
            return(ProcessNewOrder(pIn,pOut,pTPCC));
        case FORM_PAYMENT:
            return(ProcessPayment(pIn,pOut,pTPCC));
        case FORM_DELIVERY:
            return(ProcessDelivery(pIn,pOut,pTPCC));
        case FORM_ORDERSTATUS:
            return(ProcessOrderStatus(pIn,pOut,pTPCC));
        case FORM_STOCKLEVEL:
            return(ProcessStockLevel(pIn,pOut,pTPCC));
        default:
            wsprintf(pTPCC->ErrTxt,"%s (%ld)",
                ERRTXT_FORM_UNKNOWN,pTPCC->uFormId);
            pTPCC->iStatusId = ERR_FORM_UNKNOWN;
            FormatMenu(pOut,pTPCC);
            break;
    }
    return(TRUE);
}; // ProcessForm

//=====
//
// Function name: ProcessNewOrder
//
// ProcessNewOrder extracts the input data fields from pIn, processes
// the data, and returns a response in pOut.
//
// Result:
// FALSE - NewOrder processed successfully.
// TRUE - NewOrder processing failed.
//
//=====
BOOL ProcessNewOrder(CHAR * pIn,CHAR * pOut,TPCC_STATE * pTPCC)
{
    NEW_ORDER_DATA * pnod;
    TMON_STATE * pTMon;
    CHAR szKey[20];
    CHAR * ptr;
    INT iInx;
    UINT u;
    UINT uLine;
    HRESULT hr;
    int iSize;

    pTMon = &pTPCC->tsTMon;
    pnod = (NEW_ORDER_DATA *) pTMon->pTxnData;

```

```

ZeroMemory(pnod,sizeof(NEW_ORDER_DATA));
pnod->w_id = pTPCC->sWid;
if (GetShortKey(&pnod->d_id,pIn,"DID*",pTPCC)
{
    FormatMenu(pOut,pTPCC);
    return(TRUE);
});
if (pnod->d_id < MIN_DId || pnod->d_id > MAX_DId)
{
    wsprintf(pTPCC->ErrTxt,"DId Out of Range(%ld,%ld) - %ld",
        MIN_DId,MAX_DId,pnod->d_id);
    pTPCC->iStatusId = ERR_DID_INVALID;
    FormatMenu(pOut,pTPCC);
    return(TRUE);
};
if (GetLongKey(&pnod->c_id,pIn,"CID*",pTPCC)
{
    FormatMenu(pOut,pTPCC);
    return(TRUE);
};
pnod->o_ol_cnt = 0;
ptr = pIn;
for(u=0, uLine=0; u < MAX_OL; u++)
{
    wsprintf(szKey,"SP%2.2d*",u);
    ptr = strstr(ptr,szKey);
    if (GetLongKey(&pnod->Ol[uLine].ol_supply_w_id,ptr,szKey,pTPCC)
    {
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    wsprintf(szKey,"IID%2.2d*",u);
    if (GetLongKey(&pnod->Ol[uLine].ol_i_id,ptr,szKey,pTPCC)
    {
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    wsprintf(szKey,"Qty%2.2d*",u);
    if (GetShortKey(&pnod->Ol[uLine].ol_quantity,ptr,szKey,pTPCC)
    {
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    if (pnod->Ol[uLine].ol_i_id != 0)
    {
        if (pnod->Ol[uLine].ol_supply_w_id < 1)
        {
            wsprintf(pTPCC->ErrTxt,
                "Order Line %ld Contains Invalid WId %ld",
                u + 1,pnod->Ol[uLine].ol_supply_w_id);
            pTPCC->iStatusId = ERR_WID_INVALID;
            FormatMenu(pOut,pTPCC);
            return(TRUE);
        };
        if (pnod->Ol[uLine].ol_quantity < MIN_QUANTITY ||
            pnod->Ol[uLine].ol_quantity > MAX_QUANTITY)
        {
            wsprintf(pTPCC->ErrTxt,
                "Order Line %ld Contains Invalid Qty %d",
                u + 1,pnod->Ol[uLine].ol_quantity);
            pTPCC->iStatusId = ERR_QUANTITY_INVALID;

```

```

        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    uLine++;
} // if (ol_i_id !=0)
else
{
    if (pnod->Ol[uLine].ol_supply_w_id != 0)
    {
        wsprintf(pTPCC->ErrTxt,
            "Order Line %ld WId Supplied with No Item",u + 1);
        pTPCC->iStatusId = ERR_OL_INVALID;
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    if (pnod->Ol[uLine].ol_quantity != 0)
    {
        wsprintf(pTPCC->ErrTxt,
            "Order Line %ld Qty Supplied with No Item",u + 1);
        pTPCC->iStatusId = ERR_OL_INVALID;
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
}; // empty order line
}; // for (u < MAX_OL)
pnod->o_ol_cnt = uLine;
if (pnod->o_ol_cnt < MIN_OL)
{
    wsprintf(pTPCC->ErrTxt,"Too Few Order Lines %d",pnod->o_ol_cnt);
    pTPCC->iStatusId = ERR_OL_COUNT;
    FormatMenu(pOut,pTPCC);
    return(TRUE);
};
iSize = pTMon->iSize;
hr = pTMon->pIAllTxn->NewOrder(&iSize,(unsigned char**) &pTMon-
>pTxnData);
if (FAILED(hr))
{
    pTPCC->iStatusId = ERR_TM_INTERFACE;
    wsprintf(pTPCC->ErrTxt,
        "COM Interface to NewOrder Call Failed, HRESULT %x",
        hr);
    FormatMenu(pOut,pTPCC);
    return(TRUE);
};
pnod = (NEW_ORDER_DATA *) pTMon->pTxnData;
// Exclude invalid item id case
if (pnod->bTPRslt && pnod->iTPRslt < SVC_NOERROR)
{
    wsprintf(pTPCC->ErrTxt,
        "New Order Service Returned Error(%ld) : %s",
        pnod->iTPRslt,pnod->execution_status);
    pTPCC->iStatusId = ERR_SERVICE_RSLT;
    FormatMenu(pOut,pTPCC);
    return(TRUE);
};
if (pnod->iTPRslt == SVC_BADITEMID)
    pTPCC->iStatusId = INVALID_IID;

iInx = FormatRespHdr(pOut,"TPC-C New Order",pTPCC);
if (!pnod->bTPRslt)

```

```

{
    iInx += wsprintf(pOut + iInx,
        "<PRE>                               New Order<BR>"
        "Warehouse: %6.6d   District: %2.2d                               "
        "Date: %2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d <BR>"
        "Customer: %4.4d   Name: %-16s   Credit: %-2s   ",
        pnod->w_id,pnod->d_id,
        pnod->o_entry_d.day,pnod->o_entry_d.month,
        pnod->o_entry_d.year,pnod->o_entry_d.hour,
        pnod->o_entry_d.minute,pnod->o_entry_d.second,
        pnod->c_id,pnod->c_last,pnod->c_credit);
    iInx += sprintf(pOut + iInx,
        "%%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>",
        pnod->c_discount * 100,pnod->o_id,pnod->o_ol_cnt,pnod->w_tax *
100,pnod->d_tax * 100);
    for (u = 0; u < (UINT) pnod->o_ol_cnt; u++)
    {
        iInx += sprintf(pOut + iInx,
            "   %6.6d   %6.6d   %-24s   %2.2d   %3.3d   %1.1s   $%6.2f
$%7.2f <BR>",
            pnod->Ol[u].ol_supply_w_id,pnod->Ol[u].ol_i_id,
            pnod->Ol[u].ol_i_name,pnod->Ol[u].ol_quantity,pnod-
>Ol[u].ol_stock,
            pnod->Ol[u].ol_brand_generic,pnod->Ol[u].ol_i_price,
            pnod->Ol[u].ol_amount);
    };
    for(; u < MAX_OL; u++)
    {
        strcat(pOut + iInx," <BR>");
        iInx += 5;
    };
    sprintf(pOut + iInx,
        "Execution Status: %24.24s                               Total:   $%8.2f   "
        "</PRE><HR><BR>%s</FORM>%s",
        pnod->execution_status,pnod->total_amount,
        szMenuList,HTMLTrailer);
    } // !bTPRslt
    else
    {
        iInx += wsprintf(pOut + iInx,
            "<PRE>                               New Order<BR>"
            "Warehouse: %6.6d   District: %2.2d
Date:<BR>"
            "Customer: %4.4d   Name: %-16s   Credit: %-2s   "
            "%%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>",
            pnod->w_id,pnod->d_id,
            pnod->c_id,pnod->c_last,pnod->c_credit,
            pnod->o_id);
        for(u = 0; u < MAX_OL; u++)
        {
            strcat(pOut + iInx," <BR>");
            iInx += 5;
        };
    };
};

```

```

        iInx += sprintf(pOut + iInx,
            "Execution Status: %24.24s                Total:"
            "</PRE><HR><BR>%s</FORM>%s",
            pnod->execution_status,szMenuList,HTMLTrailer);
}; // bTPRslt

return(FALSE);

}; // ProcessNewOrder

//=====
//
// Function name: ProcessPayment
//
// ProcessPayment extracts the input data fields from pIn, processes
// the data, and returns a response in pOut.
//
// Result:
// FALSE - Payment processed successfully.
// TRUE - Payment processing failed.
//
//=====
BOOL ProcessPayment (CHAR * pIn,CHAR * pOut,TPCC_STATE * pTPCC)
{
    PAYMENT_DATA * ppd;
    TMON_STATE * pTMon;
    CHAR szWork1[60];
    CHAR szZip1[20];
    CHAR szZip2[20];
    CHAR szZip3[20];
    INT iInx;
    HRESULT hr;
    int iSize;

    pTMon = &pTPCC->tsTMon;
    ppd = (PAYMENT_DATA *) pTMon->pTxnData;
    ZeroMemory(ppd,sizeof(PAYMENT_DATA));
    ppd->w_id = pTPCC->sWid;
    // Get and validate DID
    if (GetShortKey(&ppd->d_id,pIn,"DID*",pTPCC))
    {
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    if (ppd->d_id < MIN_DID || ppd->d_id > MAX_DID)
    {
        sprintf(pTPCC->ErrTxt,"DID Out of Range(%ld,%ld) - %ld",
            MIN_DID,MAX_DID,ppd->d_id);
        pTPCC->iStatusId = ERR_DID_INVALID;
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    // Get and validate customer Id and name
    if (GetLongKey(&ppd->c_id,pIn,"CID*",pTPCC))
    {
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    if (GetStringKey(ppd->c_last,pIn,"CLT*",pTPCC,NAME_LEN))
    {
        FormatMenu(pOut,pTPCC);

```

```

        return(TRUE);
    };
    if (ppd->c_id == 0 && ppd->c_last[0] == 0)
    {
        strcpy(pTPCC->ErrTxt,"Error - Customer Id and Name Empty");
        pTPCC->iStatusId = ERR_IDANDNAME_EMPTY;
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    if (ppd->c_id != 0 && ppd->c_last[0] != 0)
    {
        strcpy(pTPCC->ErrTxt,
            "Error - Specify Customer Id or Name, not Both");
        pTPCC->iStatusId = ERR_IDANDNAME_ENTERED;
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    // Get and validate customer DID
    if (GetShortKey(&ppd->c_d_id,pIn,"CDI*",pTPCC))
    {
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    if (ppd->c_d_id < MIN_DID || ppd->c_d_id > MAX_DID)
    {
        sprintf(pTPCC->ErrTxt,"Cust DID Out of Range(%ld,%ld) - %ld",
            MIN_DID,MAX_DID,ppd->d_id);
        pTPCC->iStatusId = ERR_DID_INVALID;
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    // Get and validate customer WID
    if (GetLongKey(&ppd->c_w_id,pIn,"CWI*",pTPCC))
    {
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    if (ppd->c_w_id < 1)
    {
        sprintf(pTPCC->ErrTxt,
            "Payment Contains Invalid Customer WID %ld",
            ppd->c_w_id);
        pTPCC->iStatusId = ERR_WID_INVALID;
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    // Get and validate amount
    if (GetAmountKey(&ppd->h_amount,pIn,"HAM*",pTPCC))
    {
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    if (ppd->h_amount <= 0)
    {
        sprintf(pTPCC->ErrTxt,
            "Payment Amount Negative or Missing");
        pTPCC->iStatusId = ERR_AMOUNT_INVALID;
        FormatMenu(pOut,pTPCC);
        return(TRUE);
    };
    iSize = pTMon->iSize;

```

```

    hr = pTMon->pIAllTxn->Payment(&iSize, (unsigned char**) &pTMon-
    >pTxnData);
    if (FAILED(hr))
    {
        pTPCC->iStatusId = ERR_TM_INTERFACE;
        wprintf(pTPCC->ErrTxt,
            "COM Interface to Payment Call Failed, HRESULT %x",
            hr);
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    ppd = (PAYMENT_DATA *) pTMon->pTxnData;
    if (ppd->bTPRslt)
    {
        wprintf(pTPCC->ErrTxt,
            "Payment Service Returned Error(%ld): %s",
            ppd->iTPRslt, ppd->execution_status);
        pTPCC->iStatusId = ERR_SERVICE_RSLT;
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    iInx = FormatRespHdr(pOut, "TPC-C Payment", pTPCC);
    FormatString(szZip1, ZIPPIC, ppd->w_zip);
    FormatString(szZip2, ZIPPIC, ppd->d_zip);
    FormatString(szZip3, ZIPPIC, ppd->c_zip);
    FormatString(szWork1, "XXXXXX-XXX-XXX-XXXX", ppd->c_phone);
    iInx += wprintf(pOut + iInx,
        "<PRE>
        <Date: %2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d <BR><BR>"
        "Warehouse: %6.6d"
        "
        District: %2.2d<BR>"
        "%-20s %20s<BR>"
        "%-20s %20s<BR>"
        "%-20s %-2s %10.10s %20s %-2s %10.10s<BR><BR>"
        "Customer: %4.4d Cust-Warehouse: %6.6d Cust-District: %2.2d<BR>"
        "Name: %16s %-2s %-16s Since: %2.2d-%2.2d-%4.4d<BR>"
        "%-20s %20s Credit: %2s<BR>"
        "%-20s %20s",
        ppd->h_date.day, ppd->h_date.month,
        ppd->h_date.year, ppd->h_date.hour,
        ppd->h_date.minute, ppd->h_date.second,
        ppd->w_id, ppd->d_id,
        ppd->w_street_1, ppd->d_street_1,
        ppd->w_street_2, ppd->d_street_2,
        ppd->w_city, ppd->w_state, szZip1, ppd->d_city, ppd->d_state, szZip2,
        ppd->c_id, ppd->c_w_id, ppd->c_d_id,
        ppd->c_first, ppd->c_middle, ppd->c_last,
        ppd->c_since.day, ppd->c_since.month, ppd->c_since.year,
        ppd->c_street_1, ppd->c_credit, ppd->c_street_2);
    iInx += sprintf(pOut + iInx, "%Disc: %5.2f<BR>", ppd->c_discount *
    100);
    iInx += wprintf(pOut + iInx,
        "%-20s %-2s %10.10s Phone: %19.19s<BR><BR>",
        ppd->c_city, ppd->c_state, szZip3, szWork1);
    iInx += sprintf(pOut + iInx,
        "Amount Paid: %7.2f New Cust Balance: %14.2f<BR>"
        "Credit Limit: %13.2f<BR><BR>",
        ppd->h_amount, ppd->c_balance, ppd->c_credit_lim);
    if (ppd->c_credit[0] == 'B' && ppd->c_credit[1] == 'C')
    {
        wprintf(pOut + iInx,

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        "Cust-Data: %50.50s<BR> %50.50s<BR> "
        "%50.50s<BR> %50.50s<BR>"
        "</PRE><HR><BR>%s</FORM>%s",
        ppd->c_data, (ppd->c_data + 50), (ppd->c_data + 100), (ppd->c_data +
    150),
        szMenuList, HTMLTrailer);
    }
    else
    {
        wprintf(pOut + iInx,
            "Cust-Data: <BR><BR><BR><BR>"
            "</PRE><HR><BR>%s</FORM>%s",
            szMenuList, HTMLTrailer);
    };
    return(FALSE);
}; // ProcessPayment
//=====
//
// Function name: ProcessDelivery
//
// ProcessDelivery extracts the input data fields from pIn, processes
// the data, and returns a response in pOut.
//
// Result:
// FALSE - Delivery processed successfully.
// TRUE - Delivery processing failed.
//=====
BOOL ProcessDelivery(CHAR * pIn, CHAR * pOut, TPCC_STATE * pTPCC)
{
    DELIVERY_DATA * pdd;
    TMON_STATE * pTMon;
    INT iInx;

    pTMon = &pTPCC->tsTMon;
    pdd = (DELIVERY_DATA *) pTMon->pTxnData;
    ZeroMemory(pdd, sizeof(DELIVERY_DATA));
    pdd->w_id = pTPCC->swid;
    // Get and validate carrier id
    if (GetShortKey(&pdd->o_carrier_id, pIn, "OCD*", pTPCC))
    {
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    if (pdd->o_carrier_id < MIN_CARRIER ||
        pdd->o_carrier_id > MAX_CARRIER)
    {
        wprintf(pTPCC->ErrTxt, "Carrier Id Out of Range(%ld,%ld) - %ld",
            MIN_CARRIER, MAX_CARRIER, pdd->o_carrier_id);
        pTPCC->iStatusId = ERR_CARRIER_INVALID;
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    GetLocalTime(&pdd->QTime);
    DeliveryPost(pdd);
    if (pdd->bTPRslt)
    {
        wprintf(pTPCC->ErrTxt,

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```

        "Delivery Post Returned Error(%ld): Queue Request Failed",
        pdd->iTPRslt);
    pTPCC->iStatusId = ERR_SERVICE_RSLT;
    FormatMenu(pOut, pTPCC);
    return(TRUE);
};
iInx = FormatRespHdr(pOut, "TPC-C Delivery", pTPCC);
iInx += sprintf(pOut + iInx,
    "<PRE>
    Warehouse: %6.6d<BR><BR>"
    "Carrier Number: %2.2d<BR><BR>"
    "Execution Status: %25.25s<BR>"
    "</PRE><HR><BR>%s</FORM>%s",
    pdd->w_id, pdd->o_carrier_id, "Delivery has been queued.",
    szMenuList, HTMLTrailer);

return(FALSE);
}; // ProcessDelivery

//=====
//
// Function name: ProcessOrderStatus
//
// ProcessOrderStatus extracts the input data fields from pIn,
// processes the data, and returns a response in pOut.
//
// Result:
// FALSE - OrderStatus processed successfully.
// TRUE - OrderStatus processing failed.
//
//=====
BOOL ProcessOrderStatus(CHAR * pIn, CHAR * pOut, TPCC_STATE * pTPCC)
{
    ORDER_STATUS_DATA * posd;
    TMON_STATE * pTMon;
    INT i;
    INT iInx;
    HRESULT hr;
    int iSize;

    pTMon = &pTPCC->tsTMon;
    posd = (ORDER_STATUS_DATA *) pTMon->pTxnData;
    ZeroMemory(posd, sizeof(ORDER_STATUS_DATA));
    posd->w_id = pTPCC->sWId;
    if (GetShortKey(&posd->d_id, pIn, "DID*", pTPCC))
    {
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    if (posd->d_id < MIN_DId || posd->d_id > MAX_DId)
    {
        sprintf(pTPCC->ErrTxt, "DId Out of Range(%ld,%ld) - %ld",
            MIN_DId, MAX_DId, posd->d_id);
        pTPCC->iStatusId = ERR_DID_INVALID;
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    if (GetLongKey(&posd->c_id, pIn, "CID*", pTPCC))
    {
        FormatMenu(pOut, pTPCC);

```

```

        return(TRUE);
    };
    if (GetStringKey(posd->c_last, pIn, "CLT*", pTPCC, NAME_LEN))
    {
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    if (posd->c_id == 0 && posd->c_last[0] == 0)
    {
        strcpy(pTPCC->ErrTxt, "Error - Customer Id and Name Empty");
        pTPCC->iStatusId = ERR_IDANDNAME_EMPTY;
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    if (posd->c_id != 0 && posd->c_last[0] != 0)
    {
        strcpy(pTPCC->ErrTxt,
            "Error - Specify Customer Id or Name, not Both");
        pTPCC->iStatusId = ERR_IDANDNAME_ENTERED;
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    iSize = pTMon->iSize;
    hr = pTMon->pIAllTxn->OrderStatus(&iSize, (unsigned char**) &pTMon-
    >pTxnData);
    if (FAILED(hr))
    {
        pTPCC->iStatusId = ERR_TM_INTERFACE;
        sprintf(pTPCC->ErrTxt,
            "COM Interface to OrderStatus Call Failed, HRESULT %x",
            hr);
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    posd = (ORDER_STATUS_DATA *) pTMon->pTxnData;
    if (posd->bTPRslt)
    {
        sprintf(pTPCC->ErrTxt,
            "Order Status Service Returned Error(%ld): %s",
            posd->iTPRslt, posd->execution_status);
        pTPCC->iStatusId = ERR_SERVICE_RSLT;
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    iInx = FormatRespHdr(pOut, "TPC-C Order-Status", pTPCC);
    iInx += sprintf(pOut + iInx,
        "<PRE>
        Order-Status<BR>"
        "Warehouse: %6.6d District: %2.2d<BR>"
        "Customer: %4.4d Name: %-16s %-2s %-16s<BR>",
        posd->w_id, posd->d_id,
        posd->c_id, posd->c_first, posd->c_middle, posd->c_last);
    iInx += sprintf(pOut + iInx, "Cust-Balance: $%9.2f<BR><BR>", posd-
    >c_balance);
    iInx += sprintf(pOut + iInx,
        "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>",
        posd->o_id, posd->o_entry_d.day, posd->o_entry_d.month,
        posd->o_entry_d.year, posd->o_entry_d.hour,
        posd->o_entry_d.minute, posd->o_entry_d.second,
        posd->o_carrier_id);

```

```

for(i = 0; i < posd->o_ol_cnt; i++)
{
    iInx += sprintf(pOut + iInx,
        " %6.6d %6.6d %2.2d %8.2f %2.2d-%2.2d-
%4.4d<BR>",
        posd->OlOrderStatusData[i].ol_supply_w_id,
        posd->OlOrderStatusData[i].ol_i_id,
        posd->OlOrderStatusData[i].ol_quantity,
        posd->OlOrderStatusData[i].ol_amount,
        posd->OlOrderStatusData[i].ol_delivery_d.day,
        posd->OlOrderStatusData[i].ol_delivery_d.month,
        posd->OlOrderStatusData[i].ol_delivery_d.year);
};
wsprintf(pOut + iInx,
    "<BR></PRE><HR><BR>%s</FORM>%s", szMenuList, HTMLTrailer);

return(FALSE);
}; // ProcessOrderStatus

//=====
//
// Function name: ProcessStockLevel
//
// ProcessStockLevel extracts the input data fields from pIn,
// processes the data, and returns a response in pOut.
//
// Result:
// FALSE - StockLevel processed successfully.
// TRUE - StockLevel processing failed.
//
//=====
BOOL ProcessStockLevel(CHAR * pIn, CHAR * pOut, TPCC_STATE * pTPCC)
{
    STOCK_LEVEL_DATA * psld;
    TMON_STATE * pTMon;
    HRESULT hr;
    INT iInx;
    int iSize;

    pTMon = &pTPCC->tsTMon;
    psld = (STOCK_LEVEL_DATA *) pTMon->pTxnData;
    ZeroMemory(psld, sizeof(STOCK_LEVEL_DATA));
    psld->w_id = pTPCC->sWId;
    psld->d_id = pTPCC->sDId;
    psld->low_stock = 0;
    psld->execution_status[0] = 0;
    if (GetShortKey(&psld->thresh_hold, pIn, "TT*", pTPCC))
    {
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
    if (psld->thresh_hold < MIN_THRESHOLD ||
        psld->thresh_hold > MAX_THRESHOLD)
    {
        wsprintf(pTPCC->ErrTxt, "Threshold Out of Range(%ld,%ld) - %ld",
            MIN_THRESHOLD, MAX_THRESHOLD, psld->thresh_hold);
        pTPCC->iStatusId = ERR_THRESHOLD_RANGE;
        FormatMenu(pOut, pTPCC);
        return(TRUE);
    };
};

```

```

iSize = pTMon->iSize;
hr = pTMon->pIAllTxn->StockLevel(&iSize, (unsigned char**) &pTMon-
>pTxnData);
if (FAILED(hr))
{
    pTPCC->iStatusId = ERR_TM_INTERFACE;
    wsprintf(pTPCC->ErrTxt,
        "COM Interface to StockLevel Call Failed, HRESULT %x",
        hr);
    FormatMenu(pOut, pTPCC);
    return(TRUE);
};
psld = (STOCK_LEVEL_DATA *) pTMon->pTxnData;
if (psld->bTPRslt)
{
    wsprintf(pTPCC->ErrTxt,
        "Stock Level Service Returned Error(%ld): %s",
        psld->iTPRslt, psld->execution_status);
    pTPCC->iStatusId = ERR_SERVICE_RSLT;
    FormatMenu(pOut, pTPCC);
    return(TRUE);
};
iInx = FormatRespHdr(pOut, "TPC-C Stock Level", pTPCC);
wsprintf(pOut + iInx,
    "<PRE>
    Stock-Level<BR>"
    "Warehouse: %6.6d District: %2.2d<BR><BR>"
    "Stock Level Threshold: %2.2d<BR><BR>"
    "low stock: %3.3ld</PRE><BR><HR>"
    "%s</FORM>%s",
    pTPCC->sWId, pTPCC->sDId, psld->thresh_hold, psld->low_stock,
    szMenuList, HTMLTrailer);

return(FALSE);
}; // ProcessStockLevel

//=====
//
// Function name: GetHidden
//
//=====
BOOL GetHidden(CHAR * pMsg, UINT * uFormId, INT * iSyncId, INT * iTermId)
{
    CHAR * pPtr;
    BOOL bRslt = TRUE;

    // Extract TERMID
    pPtr = strstr(pMsg, TERMIDTOKEN);
    if (pPtr == NULL)
        goto xit;
    pPtr += strlen(TERMIDTOKEN);
    *iTermId = atoi(pPtr);

    // Extract SYNCID
    pPtr = strstr(pMsg, SYNCIDTOKEN);
    if (pPtr == NULL)
        goto xit;
    pPtr += strlen(SYNCIDTOKEN);
    *iSyncId = atoi(pPtr);

    // Extract FORMID

```

```

pPtr = strstr(pMsg,FORMIDTOKEN);
if (pPtr == NULL)
    goto xit;
pPtr += strlen(FORMIDTOKEN);
*uFormId = abs(atoi(pPtr));

bRslt = FALSE;

xit:

    return(bRslt);
}; // GetHidden

//=====
//
// Function name: GetCmd
//
//=====
BOOL GetCmd(CHAR * pMsg,CHAR * pWork,UINT uLen)
{
    UINT u;
    CHAR * ptr;
    CHAR * pUpd;

    // Check for CMD key
    if (!ptr = strstr(pMsg,CMDTOKEN))
        return(CMD_NULL);
    ptr += sizeof(CMDTOKEN);
    pUpd = pWork;
    while (*ptr && *ptr != '&')
        *pUpd++ = *ptr++;
    *pUpd = 0;

    // Convert command name into command index
    for(u=0; u < CMD_MAX; u++)
    {
        if (!strcmp(szCmds[u],pWork))
            return(u);
    };

    // Command string not found
    return(CMD_NULL);
}; // GetCmd

//=====
//
// Function name: GetLongKey
//
//=====
BOOL GetLongKey(LONG * lRslt,CHAR * pHTML,CHAR * pKey,TPCC_STATE * pTPCC)
{
    if (GetKeyValue(pHTML,pKey,pTPCC->szWork,sizeof(pTPCC->szWork)))
    {
        wsprintf(pTPCC->ErrTxt,"Error - Missing %s Key",pKey);
        pTPCC->iStatusId = ERR_MISSING_KEY;
        return(TRUE);
    };
    if (pTPCC->szWork[0] != 0 )
    {

```

```

        if (CheckNumeric(pTPCC->szWork))
        {
            wsprintf(pTPCC->ErrTxt,"Error - %s Value Not Numeric",pKey);
            pTPCC->iStatusId = ERR_NOT_NUMERIC;
            return(TRUE);
        };
    };
    *lRslt = atol(pTPCC->szWork);
    return(FALSE);
}; // GetLongKey

//=====
//
// Function name: GetIntKey
//
//=====
BOOL GetIntKey(INT * iRslt,CHAR * pHTML,CHAR * pKey,TPCC_STATE * pTPCC)
{
    if (GetKeyValue(pHTML,pKey,pTPCC->szWork,sizeof(pTPCC->szWork)))
    {
        wsprintf(pTPCC->ErrTxt,"Error - Missing %s Key",pKey);
        pTPCC->iStatusId = ERR_MISSING_KEY;
        return(TRUE);
    };
    if (pTPCC->szWork[0] != 0 )
    {
        if (CheckNumeric(pTPCC->szWork))
        {
            wsprintf(pTPCC->ErrTxt,"Error - %s Value Not Numeric",pKey);
            pTPCC->iStatusId = ERR_NOT_NUMERIC;
            return(TRUE);
        };
    };
    *iRslt = atoi(pTPCC->szWork);
    return(FALSE);
}; // GetIntKey

//=====
//
// Function name: GetShortKey
//
//=====
BOOL GetShortKey(SHORT * sRslt,CHAR * pHTML,CHAR * pKey,TPCC_STATE *
pTPCC)
{
    if (GetKeyValue(pHTML,pKey,pTPCC->szWork,sizeof(pTPCC->szWork)))
    {
        wsprintf(pTPCC->ErrTxt,"Error - Missing %s Key",pKey);
        pTPCC->iStatusId = ERR_MISSING_KEY;
        return(TRUE);
    };
    if (pTPCC->szWork[0] != 0 )
    {
        if (CheckNumeric(pTPCC->szWork))
        {
            wsprintf(pTPCC->ErrTxt,"Error - %s Value Not Numeric",pKey);
            pTPCC->iStatusId = ERR_NOT_NUMERIC;
            return(TRUE);
        };
    };
    *sRslt = (SHORT) atoi(pTPCC->szWork);

```

```

    return(FALSE);
}; // GetShortKey

//=====
//
// Function name: GetStringKey
//
//=====
BOOL GetStringKey(CHAR * szRslt,CHAR * pHTML,CHAR * pKey,
                 TPCC_STATE * pTPCC,UINT uMax)
{
    UINT uLen;
    if (GetKeyValue(pHTML,pKey,pTPCC->szWork,sizeof(pTPCC->szWork))
    {
        wsprintf(pTPCC->ErrTxt,"Error - Missing %s Key",pKey);
        pTPCC->iStatusId = ERR_MISSING_KEY;
        return(TRUE);
    };
    uLen = strlen(pTPCC->szWork);
    if (uLen > uMax)
    {
        wsprintf(pTPCC->ErrTxt,
            "Error - %s Key Input (%ld) Too Long (%ld)"
            ,pKey,uLen,uMax);
        pTPCC->iStatusId = ERR_INPUT_TOOLONG;
        return(TRUE);
    };
    _strupr(pTPCC->szWork);
    strcpy(szRslt,pTPCC->szWork);
    return(FALSE);
}; // GetStringKey

//=====
//
// Function name: GetAmountKey
//
//=====
BOOL GetAmountKey(DOUBLE * dRslt,CHAR * pHTML,CHAR * pKey,
                 TPCC_STATE * pTPCC)
{
    CHAR * ptr;
    BOOL bInvalid = FALSE;

    if (GetKeyValue(pHTML,pKey,pTPCC->szWork,sizeof(pTPCC->szWork))
    {
        wsprintf(pTPCC->ErrTxt,"Error - Missing %s Key",pKey);
        pTPCC->iStatusId = ERR_MISSING_KEY;
        return(TRUE);
    };
    ptr = pTPCC->szWork;
    while(*ptr)
    {
        if (*ptr == '.')
        {
            ptr++;
            if (!*ptr)
                break;
            if (*ptr < '0' || *ptr > '9')
            {
                bInvalid = TRUE;
                break;
            }
        }
    }
}

```

```

};
ptr++;
if (!*ptr)
    break;
if (*ptr < '0' || *ptr > '9')
{
    bInvalid = TRUE;
    break;
};
ptr++;
if (*ptr)
{
    bInvalid = TRUE;
    break;
};
break;
}
else
if (*ptr < '0' || *ptr > '9')
{
    bInvalid = TRUE;
    break;
};
ptr++;
}; // while(!*ptr)

if (!bInvalid)
*dRslt = atof(pTPCC->szWork);
else
{
    wsprintf(pTPCC->ErrTxt,
        "Error - Invalid Amount Format (%s)",pTPCC->szWork);
    pTPCC->iStatusId = ERR_AMOUNT_BADFORM;
};

return(bInvalid);
}; // GetAmountKey

//=====
//
// Function name: GetKeyValue
//
// This function parses an HTTP formatted string for specific key
// values. HTTP keys terminate with '='. HTTP values terminate
// with an '&' or '\0'.
//
// Result:
// FALSE - Key found, string value return in pValue
// TRUE - Key not found
//
//=====
BOOL GetKeyValue(CHAR * pHTML,CHAR * pKey,CHAR * pValue,UINT uMax)
{
    CHAR * ptr;
    if (!(ptr=strstr(pHTML,pKey)))
        return(TRUE);
    if (!(ptr=strchr(ptr,'=')))
        return(TRUE);
    ptr++;
    uMax--;
    while (*ptr && *ptr != '&' && uMax)
}

```



```

    {
        *pValue++ = *ptr++;
        uMax--;
    };
    *pValue = 0;
    return(FALSE);
}; // GetKeyValue

//=====
//
// Function name: FormatLogin
//
//=====
VOID FormatLogin(CHAR * pOut,CHAR * pAddText)
{
    wsprintf(pOut, "%s<BR>%s<BR>%s",szFormLogin,pAddText,HTMLTrailer);
}; // FormatLogin

//=====
//
// Function name: FormatMenu
//
//=====
VOID FormatMenu(CHAR * pOut,TPCC_STATE * pTPCC)
{
    wsprintf(pOut,
        "%s<HTML><HEAD><TITLE>TPC-C MainMenu</TITLE></HEAD><BODY>"
        "Select Desired Transaction.<BR><HR>"
        "<FORM ACTION=\"tpcc.dll\"METHOD=\"GET\">"
        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"TERMID\" VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"%d\">"
        "%s</FORM><BR>%s<BR>%s",
        HTTPHdr,pTPCC->iStatusId,pTPCC->iTermId,pTPCC->iSyncId,FORM_MENU,
        szMenuList,pTPCC->ErrTxt,HTMLTrailer);
}; // FormatMenu

//=====
//
// Function name: FormatNewOrder
//
//=====
VOID FormatNewOrder(CHAR * pOut,TPCC_STATE * pTPCC)
{
    INT iInx;
    pTPCC->uFormId = FORM_NEWORDER;
    iInx = FormatFormHdr(pOut,"TPC-C New Order",pTPCC);
    iInx += wsprintf(pOut + iInx,
        "<PRE>
        New Order<BR>"
        "Warehouse: %6.6d District: <INPUT NAME=\"DID*\" SIZE=1>"
Date:<BR>",
        pTPCC->sWId);
        strcpy(pOut + iInx,
        "Customer: <INPUT NAME=\"CID*\" SIZE=4> Name:
        %Disc:<BR>"
        "Order Number:          Number of Lines:          W_tax:
D_tax:<BR><BR>"
        " Supp_W Item_Id Item Name
Amount<BR>"

```

```

        " <INPUT NAME=\"SP00*\" SIZE=6> <INPUT NAME=\"IID00*\" SIZE=6>
<INPUT NAME=\"Qty00*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP01*\" SIZE=6> <INPUT NAME=\"IID01*\" SIZE=6>
<INPUT NAME=\"Qty01*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP02*\" SIZE=6> <INPUT NAME=\"IID02*\" SIZE=6>
<INPUT NAME=\"Qty02*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP03*\" SIZE=6> <INPUT NAME=\"IID03*\" SIZE=6>
<INPUT NAME=\"Qty03*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP04*\" SIZE=6> <INPUT NAME=\"IID04*\" SIZE=6>
<INPUT NAME=\"Qty04*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP05*\" SIZE=6> <INPUT NAME=\"IID05*\" SIZE=6>
<INPUT NAME=\"Qty05*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP06*\" SIZE=6> <INPUT NAME=\"IID06*\" SIZE=6>
<INPUT NAME=\"Qty06*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP07*\" SIZE=6> <INPUT NAME=\"IID07*\" SIZE=6>
<INPUT NAME=\"Qty07*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP08*\" SIZE=6> <INPUT NAME=\"IID08*\" SIZE=6>
<INPUT NAME=\"Qty08*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP09*\" SIZE=6> <INPUT NAME=\"IID09*\" SIZE=6>
<INPUT NAME=\"Qty09*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP10*\" SIZE=6> <INPUT NAME=\"IID10*\" SIZE=6>
<INPUT NAME=\"Qty10*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP11*\" SIZE=6> <INPUT NAME=\"IID11*\" SIZE=6>
<INPUT NAME=\"Qty11*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP12*\" SIZE=6> <INPUT NAME=\"IID12*\" SIZE=6>
<INPUT NAME=\"Qty12*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP13*\" SIZE=6> <INPUT NAME=\"IID13*\" SIZE=6>
<INPUT NAME=\"Qty13*\" SIZE=1><BR>"
        " <INPUT NAME=\"SP14*\" SIZE=6> <INPUT NAME=\"IID14*\" SIZE=6>
<INPUT NAME=\"Qty14*\" SIZE=1><BR>"
        "Execution Status:
Total:<BR><HR>"
        "<INPUT TYPE=\"submit\"NAME=\"CMD\" VALUE=\"Process\">"
        "<INPUT TYPE=\"submit\"NAME=\"CMD\" VALUE=\"Menu\">"
        "</FORM></BODY></HTML>");
}; // FormatNewOrder

//=====
//
// Function name: FormatPayment
//
//=====
VOID FormatPayment(CHAR * pOut,TPCC_STATE * pTPCC)
{
    INT iInx;
    pTPCC->uFormId = FORM_PAYMENT;
    iInx = FormatFormHdr(pOut,"TPC-C Payment",pTPCC);
    iInx += wsprintf(pOut + iInx,
        "<PRE>
        Payment<BR>"
        "Date:<BR><BR>"
        "Warehouse: %6.6d",
        pTPCC->sWId);
        strcpy(pOut + iInx,
        "District: <INPUT NAME=\"DID*\"
SIZE=1><BR><BR><BR><BR><BR>"
        "Customer: <INPUT NAME=\"CID*\" SIZE=4>"
        "Cust-Warehouse: <INPUT NAME=\"CWI*\" SIZE=6> "
        "Cust-District: <INPUT NAME=\"CDI*\" SIZE=1><BR>"
        "Name:
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></PRE><HR>"
"<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Process\">"
"<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Menu\">"
"</FORM></BODY></HTML>");
}; // FormatPayment

//=====
//
// Function name: FormatDelivery
//
//=====
VOID FormatDelivery(CHAR * pOut,TPCC_STATE * pTPCC)
{
    INT iInx;
    pTPCC->uFormId = FORM_DELIVERY;
    iInx = FormatFormHdr(pOut,"TPC-C Delivery",pTPCC);
    wsprintf(pOut + iInx,
        "<PRE>
        Warehouse: %6.6d<BR><BR>"
        "Carrier Number: <INPUT NAME=\"OCD*\" SIZE=1><BR><BR>"
        "Execution Status:<BR></PRE><HR>"
        "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Process\">"
        "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Menu\">"
        "</FORM></BODY></HTML>",
        pTPCC->sWId);
}; // FormatDelivery

//=====
//
// Function name: FormatOrderStatus
//
//=====
VOID FormatOrderStatus(CHAR * pOut,TPCC_STATE * pTPCC)
{
    INT iInx;
    pTPCC->uFormId = FORM_ORDERSTATUS;
    iInx = FormatFormHdr(pOut,"TPC-C Order-Status",pTPCC);
    wsprintf(pOut + iInx,
        "<PRE>
        Order-Status<BR>"
        Warehouse: %6.6d "
        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></PRE><HR>"
        "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Process\">"
        "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Menu\">"
        "</FORM></BODY></HTML>",
        pTPCC->sWId);
}; // FormatOrderStatus

//=====
//
// Function name: FormatStockLevel

```

```

//
//=====
VOID FormatStockLevel(CHAR * pOut,TPCC_STATE * pTPCC)
{
    INT iInx;
    pTPCC->uFormId = FORM_STOCKLEVEL;
    iInx = FormatFormHdr(pOut,"TPC-C Stock Level",pTPCC);
    wsprintf(pOut + iInx,
        "<PRE>
        Stock-Level<BR>"
        Warehouse: %6.6d District: %2.2d<BR><BR>"
        Stock Level Threshold: <INPUT NAME=\"TT*\" SIZE=2><BR><BR>"
        low stock: <BR><HR>"
        "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Process\">"
        "<INPUT TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Menu\">"
        "</FORM></BODY></HTML>",
        pTPCC->sWId,pTPCC->sDId);
}; // FormatStockLevel

//=====
//
// Function name: FormatFormHdr
//
//=====
INT FormatFormHdr(CHAR * pOut,CHAR * pTitle,TPCC_STATE * pTPCC)
{
    return(wsprintf(pOut,
        "%s<HTML><HEAD><TITLE>%s</TITLE></HEAD>"
        "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
        "<INPUT TYPE=\"hidden\" NAME=\"PI*\" VALUE=\"\">"
        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"0\">"
        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"TERMIN\" VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"%d\">",
        HTTPHdr,pTitle,pTPCC->uFormId,pTPCC->iTermId,pTPCC->iSyncId
    ));
}; // FormatFormHdr

//=====
//
// Function name: FormatRespHdr
//
//=====
INT FormatRespHdr(CHAR * pOut,CHAR * pTitle,TPCC_STATE * pTPCC)
{
    return(wsprintf(pOut,
        "%s<HTML><HEAD><TITLE>%s</TITLE></HEAD>"
        "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"
        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\" VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\" VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"TERMIN\" VALUE=\"%d\">"
        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\" VALUE=\"%d\">",
        HTTPHdr,pTitle,pTPCC->iStatusId,pTPCC->uFormId,
        pTPCC->iTermId,pTPCC->iSyncId
    ));
}; // FormatRespHdr

//=====
//
// Function name: FormatString
//
// Encodes formatted string for HTML transmission.

```

```

//
//=====
VOID FormatString(CHAR * pOut,CHAR * pPic,CHAR * pIn)
{
    while(*pPic)
    {
        if (*pPic == 'X' )
        {
            if (*pIn)
                *pOut++ = *pIn++;
            else
                *pOut++ = ' ';
        }
        else
            *pOut++ = *pPic;
        pPic++;
    };
    *pOut = 0;
}; // FormatString

//=====
// FUNCTION: UtilStrCpy
//
// Copies n characters from string pSrc to pDst and places a null
// null character at the end of the destination string. Unlike
// strncpy this function ensures that the result string is always
// null terminated.
//
//=====
VOID UtilStrCpy(CHAR * pDest,CHAR * pSrc,INT n)
{
    strncpy(pDest,pSrc,n);
    pDest[n] = '\0';
    return;
}; // UtilStrCpy

//=====
//
// Function name: CheckNumeric
//
// Result
// FALSE - string is all numeric
// TRUE - sting contains non-numeric characters
//
//=====
BOOL CheckNumeric(CHAR * pNum)
{
    if (*pNum == 0 )
        return(TRUE);
    while (*pNum && isdigit(*pNum))
        pNum++;
    return(*pNum);
}; // CheckNumeric

```

## delivery.h

```

// delivery.h
//

```

```

// Copyright Unisys, 1999
#define DEFAULTDQSIZE 2000

bool DeliveryInit(long lSetThreads,long lSetQSize,char * pszPath);
void DeliveryTerm(void);
bool DeliveryPost(DELIVERY_DATA * pdd);

```

## delivery.cpp

```

// delivery.cpp
//
// Copyright Unisys, 1999

#include <windows.h>
#include <stdio.h>
#include <time.h>
#include <sys\timeb.h>
#include <process.h>

#include "..\tpccsvr\tpcc.h"
#include "tmon.h"
#include "diagio.h"
#include "delivery.h"

CRITICAL_SECTION csDQRead;
CRITICAL_SECTION csDQWrite;
HANDLE hDQRead;
HANDLE hDQStart;
bool bDQStarted = FALSE;
bool bDQQuit = FALSE;
long lDeliveryThreads;
long lDQSize;
char szPath[200];
long lDeliveryActive = 0;
typedef struct
{
    bool bInUse;
    DELIVERY_DATA ddEntry;
} DELIVERY_QUEUE;
DELIVERY_QUEUE * pDQ;
long lDQNextWrite = 0;
long lDQNextRead = 0;

bool DoDQStart(void);
UINT WINAPI DoDelivery(void * Unused);
void CalculateElapsed(int * pElapsed,LPSYSTEMTIME lpBegin,
                    LPSYSTEMTIME lpEnd);

//=====
//
// Function name: DeliveryInit
//
//=====
bool DeliveryInit(long lSetThreads,long lSetQSize,char * pszPath)
{
    char szDiag[MAX_DIAG_SZ];

    lDeliveryThreads = lSetThreads;

```

```

lDQSize = lSetQSize;
if (lDQSize <= 0)
    lDQSize = DEFAULTTDQSIZE;
strcpy(szPath,pszPath);
InitializeCriticalSection(&csDQRead);
InitializeCriticalSection(&csDQWrite);
hDQRead = CreateEvent(NULL,TRUE,FALSE,NULL);
if (!hDQRead)
{
    wsprintf(szDiag,"DeliveryInit: Create DQRead Event Failure (%ld)\n",
        GetLastError());
    DiagIoWrite(szDiag,DIAG_ERROR);
    return(TRUE);
};
pDQ = (DELIVERY_QUEUE *) calloc(lDQSize,sizeof(DELIVERY_QUEUE));
if (pDQ == NULL)
{
    DiagIoWrite("DeliveryInit: Allocate Delivery Queue
Failure\n",DIAG_ERROR);
    return(TRUE);
};
wsprintf(szDiag,
    "DeliveryInit: Threads = %ld, DQSize(entries) = %ld\n",
    lDeliveryThreads,lDQSize);
DiagIoWrite(szDiag,DIAG_FORCE);
return(FALSE);
}; // DeliveryInit

//=====
//
// Function name: DoDQStart
//
//=====
bool DoDQStart(void)
{
    UINT uThread;
    ULONG hThread;
    DWORD dwRslt;
    char szDiag[MAX_DIAG_SZ];
    void * Unused = NULL;
    int i;

    bDQStarted = TRUE;
    hDQStart = CreateEvent(NULL,TRUE,FALSE,NULL);
    if (!hDQStart)
    {
        wsprintf(szDiag,"DoDQStart: Create Event Failure (%ld)\n",
            GetLastError());
        DiagIoWrite(szDiag,DIAG_ERROR);
        return(TRUE);
    };
    for (i = 0; i < lDeliveryThreads; i++)
    {
        hThread =
            _beginthreadex(NULL,
                0,
                DoDelivery,
                Unused,
                0,
                &uThread);
        if (hThread == 0)

```

```

{
    wsprintf(szDiag,
        "DoDQStart: Begin Delivery Thread(%d) Failed(%ld)\n",
        i + 1,errno);
    DiagIoWrite(szDiag,DIAG_ERROR);
    return(TRUE);
};
dwRslt = WaitForSingleObject(hDQStart,60000);
if (dwRslt == WAIT_TIMEOUT)
{
    DiagIoWrite("DoDQStart: Wait Delivery Start Timed
Out\n",DIAG_ERROR);
    return(TRUE);
};
if (lDeliveryActive != (i + 1))
{
    wsprintf(szDiag,
        "DoDQStart: Delivery Thread Initialization Failed(%ld)\n",
        i + 1);
    DiagIoWrite(szDiag,DIAG_ERROR);
    return(TRUE);
};
ResetEvent(hDQStart);
}; // for (lDeliveryThreads)
CloseHandle(hDQStart);
return(FALSE);
}; // DoDQStart

//=====
//
// Function name: DeliveryTerm
//
//=====
void DeliveryTerm(void)
{
    int i = 0;
    bDQQuit = TRUE;
    while (i < 12 && lDeliveryActive > 0)
    {
        SetEvent(hDQRead);
        Sleep(5000);
        i++;
    };
    if (lDeliveryActive != 0)
    {
        CHAR szDiag[MAX_DIAG_SZ];
        wsprintf(szDiag,
            "DeliveryTerm: %ld DeliveryThreads still active\n",
            lDeliveryThreads);
        DiagIoWrite(szDiag,DIAG_ERROR);
    };
    free(pDQ);
    CloseHandle(hDQRead);
    DeleteCriticalSection(&csDQWrite);
    DeleteCriticalSection(&csDQRead);
    return;
}; // DeliveryTerm

//=====
//
// Function name: DeliveryPost

```

```

//
//=====
bool DeliveryPost (DELIVERY_DATA * pPost)
{
    DELIVERY_QUEUE * pDQSlot;
    DELIVERY_DATA * pddEntry;
    if (!bDQStarted)
    {
        if (DoDQStart())
        {
            pPost->bTPRslt = TRUE;
            pPost->iTPRslt = SVCERR_DQSTART;
            return(TRUE);
        }
    };
};
try
{
    EnterCriticalSection(&csDQWrite);
    pDQSlot = &pDQ[LDQNextWrite];
    if (pDQSlot->bInUse)
    {
        char szDiag[MAX_DIAG_SZ];
        pPost->bTPRslt = TRUE;
        pPost->iTPRslt = SVCERR_DQFULL;
        wsprintf(szDiag,
            "Delivery Post: Queue Limit (%d) Exceeded\n",
            LDQSize);
        DiagIoWrite(szDiag,DIAG_ERROR);
        return(TRUE);
    };
    pddEntry = &pDQSlot->ddEntry;
    memcpy(pddEntry,pPost,sizeof(DELIVERY_DATA));
    pDQSlot->bInUse = TRUE;
    if (LDQNextWrite == LDQNextRead)
        SetEvent(hDQRead);
    LDQNextWrite++;
    if (LDQNextWrite == LDQSize)
        LDQNextWrite = 0;
}
finally
{
    LeaveCriticalSection(&csDQWrite);
};
pPost->bTPRslt = FALSE;
pPost->iTPRslt = SVC_NOERROR;
return(FALSE);
}; // DeliveryPost

//=====
//
// Function name: DoDelivery
//
//=====
UINT WINAPI DoDelivery(void * Unused)
{
    FILE *fpLog;
    char szLogTitle[300];
    bool bFlush = FALSE;
    DELIVERY_QUEUE * pDQSlot;
    DELIVERY_DATA * pddEntry;
    DELIVERY_DATA * pdd;

```

```

TMON_STATE tsState;
TMON_STATE * pTMon;
HRESULT hr;
int iSize;
long lMyId;
char szTMErrTxt[500];
char szDiag[MAX_DIAG_SZ];
int iElapsed;
int iInx;
long LDQReport = 0;
bool bDQReport = FALSE;

lMyId = InterlockedIncrement(&lDeliveryActive);
pTMon = &tsState;
pTMon->pIAllTxn = NULL;
pTMon->pTxnData = NULL;
pTMon->pszErrTxt = szTMErrTxt;
if (TMInit(pTMon))
{
    wsprintf(szDiag,"DoDelivery(%ld): TMInit %s\n",lMyId,szTMErrTxt);
    DiagIoWrite(szDiag,DIAG_ERROR);
    InterlockedDecrement(&lDeliveryActive);
    SetEvent(hDQStart);
    return(1);
};
wsprintf(szLogTitle,"%sdelilog%ld",szPath,lMyId);
fpLog = fopen(szLogTitle,"ab");
if (!fpLog)
{
    wsprintf(szDiag,
        "DoDelivery(%ld): LogFile %s Open Failed (%ld)\n",
        lMyId,szLogTitle,GetLastError());
    DiagIoWrite(szDiag,DIAG_ERROR);
    InterlockedDecrement(&lDeliveryActive);
    SetEvent(hDQStart);
    return(1);
};
wsprintf(szDiag,"DoDelivery(%ld): Initialized\n",lMyId);
DiagIoWrite(szDiag,DIAG_FORCE);
SetEvent(hDQStart);

while (!bDQQuit)
{
    EnterCriticalSection(&csDQRead);
    WaitForSingleObject(hDQRead,INFINITE);
    if (bDQQuit)
    {
        LeaveCriticalSection(&csDQRead);
        break;
    };
    pDQSlot = &pDQ[LDQNextRead];
    if (!pDQSlot->bInUse)
    {
        wsprintf(szDiag,
            "DoDelivery(%ld): QSlot for Read Not InUse (%ld)\n",
            lMyId);
        DiagIoWrite(szDiag,DIAG_ERROR);
        LeaveCriticalSection(&csDQRead);
        break;
    };
};

```

```

pddEntry = &pDQSlot->ddEntry;
pdd = (DELIVERY_DATA *) pTMon->pTxnData;
memcpy(pdd,pddEntry,sizeof(DELIVERY_DATA));
EnterCriticalSection(&csDQWrite);
pDQSlot->bInUse = FALSE;
LDQNextRead++;
if (LDQNextRead == LDQSize)
{
    LDQNextRead = 0;
    bDQReport = TRUE;
    LDQReport = LDQNextWrite;
};
if (LDQNextRead == LDQNextWrite)
    ResetEvent(hDQRead);
LeaveCriticalSection(&csDQWrite);
LeaveCriticalSection(&csDQRead);
// Process delivery transaction
iSize = pTMon->iSize;
hr = pTMon->pIAllTxn->Delivery(&iSize,(unsigned char**) &pTMon-
>pTxnData);
if (FAILED(hr))
{
    wsprintf(szDiag,
        "DoDelivery(%ld): COM Interface Call Failed HRESULT %x\n",
        lMyId,hr);
    DiagIoWrite(szDiag,DIAG_ERROR);
    break;
};
pdd = (DELIVERY_DATA *) pTMon->pTxnData;
GetLocalTime(&pdd->EndTime);
iElapsed = 9999999;
if (!pdd->bTPRslt)
    CalculateElapsed(&iElapsed,&pdd->QTime,&pdd->EndTime);
iInx = wsprintf(szDiag,
"%4.4d/%2.2d/%2.2d,%2.2d:%2.2d:%2.2d:%3.3d,%2.2d:%2.2d:%2.2d:%3.3d,"
"%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d\r\n",
pdd->EndTime.wYear,pdd->EndTime.wMonth,pdd->EndTime.wDay,
pdd->QTime.wHour,pdd->QTime.wMinute,
pdd->QTime.wSecond,pdd->QTime.wMilliseconds,
pdd->EndTime.wHour,pdd->EndTime.wMinute,
pdd->EndTime.wSecond,pdd->EndTime.wMilliseconds,
iElapsed,pdd->w_id,pdd->o_carrier_id,
pdd->o_id[0],pdd->o_id[1],pdd->o_id[2],pdd->o_id[3],pdd->o_id[4],
pdd->o_id[5],pdd->o_id[6],pdd->o_id[7],pdd->o_id[8],pdd->o_id[9]
);
fwrite(szDiag,iInx,1,fpLog);
if (bDQReport)
{
    wsprintf(szDiag,"DoDelivery(%ld): DQDepth
%ld\n",lMyId,LDQReport);
    DiagIoWrite(szDiag,DIAG_FORCE);
    bDQReport = FALSE;
};
}; // while !bDQQuit

if (fpLog)
    fclose(fpLog);
TMDone(pTMon);
InterlockedDecrement(&lDeliveryActive);
wsprintf(szDiag,"DoDelivery(%ld): Shutdown\n",lMyId);

```

```

DiagIoWrite(szDiag,DIAG_FORCE);
return(0);
}; // DoDelivery

//=====
//
// Function name: CalculateElapsed (milliseconds)
//
//=====
void CalculateElapsed(int * pElapsed,LPSYSTEMTIME lpBegin,
                    LPSYSTEMTIME lpEnd)
{
    int tmBegin;
    int tmEnd;
    tmBegin = (lpBegin->wHour * 3600000) + (lpBegin->wMinute * 60000) +
        (lpBegin->wSecond * 1000) + lpBegin->wMilliseconds;
    tmEnd = (lpEnd->wHour * 3600000) + (lpEnd->wMinute * 60000) +
        (lpEnd->wSecond * 1000) + lpEnd->wMilliseconds;
    *pElapsed = tmEnd - tmBegin;
    // Check for day boundry, this will function for 24 hour period but
    // will fail over a 48 hours period.
    if (*pElapsed < 0)
        *pElapsed = *pElapsed + (24 * 60 * 60 * 1000);
    return;
}; // CalculateElapsed

```

## term.h

```

// term.h
//
// Copyright Unisys, 1999

#include <sys\timeb.h>

#define TMILLI_TIMEOUT 3600000 // One hour

typedef struct
{
    BOOL bInUse; // In use flag
    INT iTermId; // TermId
    LPVOID ConnID; // Connection Id
    INT iSyncId; // Sync Id
    SHORT sWID; // TPCC Warehouse Id
    SHORT sDID; // TPCC District Id
    struct timeb tbLastAccess; // Last activity timestamp
} TERM_STATE;

BOOL TermInit(INT iSetMaxTerm);
VOID TermTerm(VOID);
TERM_STATE * TermAlloc(VOID);
TERM_STATE * TermGet(INT iTermId);
BOOL TermFree(INT iTermId);

```

## term.cpp

```

// term.cpp
//

```

```

// Copyright Unisys, 1999
//
#include <windows.h>
#include <stdio.h>
#include "diagio.h"
#include "timesupp.h"
#include "term.h"

TERM_STATE * pTArray;
INT iNextTerm = 0;
INT iMaxTerm = 0;
CRITICAL_SECTION csTerm;

VOID TermMaint (VOID);

//=====
//
// Function name: TermInit
// Creates and initializes the first TERMINITIAL TArray entries.
// Initializes critical section to control access to TArray. Assumes
// access to function is single threaded, no other threads will start
// until this function completes and that function is called once
// (DLL_PROCESS_ATTACH).
//
// Returns:
// FALSE TArray allocated and initialized
// TRUE TArray allocation failure
//=====
BOOL TermInit (INT iSetMaxTerm)
{
    INT iTermId;
    CHAR szDiag[MAX_DIAG_SZ];
    if (pTArray != NULL)
    {
        wsprintf(szDiag, "TermInit(%ld): TArray Already Initialized\n",
            GetCurrentThreadId());
        DiagIoWrite(szDiag, DIAG_ERROR);
        return(TRUE);
    };
    InitializeCriticalSection(&csTerm);
    iMaxTerm = iSetMaxTerm;
    pTArray = (TERM_STATE *) malloc(sizeof(TERM_STATE) * (iMaxTerm + 1));
    if (pTArray == NULL)
    {
        wsprintf(szDiag, "TermInit(%ld): malloc failed (%ld)\n",
            GetCurrentThreadId(), GetLastError());
        DiagIoWrite(szDiag, DIAG_ERROR);
        return(TRUE);
    }
    for (iTermId = 1; iTermId <= iMaxTerm; iTermId++)
        TermFree(iTermId);
    iNextTerm = 1;
    return(FALSE);
}; // TermInit

//=====
//
// Function name: TermTerm
// Frees TArray and deletes csTerm critical section. Assumes access
// to function is single threaded and no other threads are actively

```

```

// accessing TArray entries (DLL_PROCESS_DETACH).
//
//=====
VOID TermTerm(VOID)
{
    DeleteCriticalSection(&csTerm);
    if (pTArray != NULL)
        free(pTArray);
    iNextTerm = 0;
    iMaxTerm = 0;
}; // TermTerm

//=====
//
// Function name: TermAlloc
// Allocates empty TArray. Uses iNextTerm to start search.
//
// Returns:
// > 0 TArray entry index (iTermId)
// < 0 Empty TArray entry not available
//=====
TERM_STATE * TermAlloc (VOID)
{
    INT iTermId = -1;
    if (pTArray == NULL)
    {
        CHAR szDiag[MAX_DIAG_SZ];
        wsprintf(szDiag, "TermAlloc(%ld): Term Array Not Allocated\n",
            GetCurrentThreadId());
        DiagIoWrite(szDiag, DIAG_ERROR);
        return (NULL);
    };
    EnterCriticalSection(&csTerm);
    _try
    {
        while(iNextTerm <= iMaxTerm)
        {
            if (!pTArray[iNextTerm].bInUse)
            {
                pTArray[iNextTerm].bInUse = TRUE;
                _ftime(&pTArray[iNextTerm].tbLastAccess);
                iTermId = iNextTerm;
                iNextTerm++;
                break;
            };
            iNextTerm++;
        }; // while(iNextTerm <= iMaxTerm) (1st Try)
        if (iTermId <= 0)
        {
            // No entry found. Perform maint and try again
            TermMaint();
            iNextTerm = 1;
            while(iNextTerm <= iMaxTerm)
            {
                if (!pTArray[iNextTerm].bInUse)
                {
                    pTArray[iNextTerm].bInUse = TRUE;
                    _ftime(&pTArray[iNextTerm].tbLastAccess);
                    iTermId = iNextTerm;
                    iNextTerm++;
                }
            }
        }
    } _except
    {
        // Exception handling
    }
    return iTermId;
}

```

```

        break;
    };
    iNextTerm++;
}; // while(iNextTerm <= iMaxTerm) (2nd Try)
}; // if (iTermId <= 0)
if (iTermId <= 0)
    iNextTerm = 1;
}
finally
{
    LeaveCriticalSection(&csTerm);
};

if (iTermId > 0)
    return(&TArray[iTermId]);
else
    return(NULL);

}; // TermAlloc

//=====
//
// Function name: TermMaint
// Clears entries whose last access time exceeds TMILLI_TIMEOUT.
// Assumes caller has entered csTerm.
//
//=====
VOID TermMaint(VOID)
{
    INT iTermId;
    TMILLI tmElapsed;
    // Free entries that have timed out
    for (iTermId = 1; iTermId <= iMaxTerm; iTermId++)
    {
        if (pTArray[iTermId].bInUse)
        {
            tmElapsed = TimebElapsed(&pTArray[iTermId].tbLastAccess);
            if (tmElapsed > TMILLI_TIMEOUT)
                TermFree(iTermId);
        }
    };
}; // TermMaint

//=====
//
// Function name: TermGet
// Returns pointer to TArray slot at iTermId.
//
// Returns:
// FALSE TArray entry made available
// TRUE iTermId invalid.
//
//=====
TERM_STATE * TermGet(INT iTermId)
{
    TERM_STATE * pTerm;
    TMILLI tmElapsed;
    if (iTermId <= 0 || iTermId > iMaxTerm)
    {
        CHAR szDiag[MAX_DIAG_SZ];

```

```

        wsprintf(szDiag, "TermGet(%ld): Invalid TermId (%ld)\n",
            GetCurrentThreadId(), iTermId);
        DiagIoWrite(szDiag, DIAG_ERROR);
        return(NULL);
    };
    pTerm = &pTArray[iTermId];
    if (!pTerm->bInUse)
        return(NULL);
    tmElapsed = TimebElapsed(&pTerm->tbLastAccess);
    if (tmElapsed > TMILLI_TIMEOUT)
        return(NULL); // Entry destined to be freed by maint
    _ftime(&pTArray[iTermId].tbLastAccess);
    return(&pTArray[iTermId]);
}; // TermGet

//=====
//
// Function name: TermFree
// Initializes contents of TArray slot at iTermId.
//
// Returns:
// FALSE TArray entry made available
// TRUE iTermId invalid.
//
//=====
BOOL TermFree(INT iTermId)
{
    TERM_STATE * pTerm;
    if (iTermId <= 0 || iTermId > iMaxTerm)
    {
        CHAR szDiag[MAX_DIAG_SZ];
        wsprintf(szDiag, "TermFree(%ld): Invalid TermId (%ld)\n",
            GetCurrentThreadId(), iTermId);
        DiagIoWrite(szDiag, DIAG_ERROR);
        return(TRUE);
    };
    pTerm = &pTArray[iTermId];
    pTerm->ConnID = 0;
    pTerm->sWId = 0;
    pTerm->sDId = 0;
    pTerm->iSyncId = 0;
    pTerm->iTermId = iTermId;
    TimebClear(&pTerm->tbLastAccess);
    pTerm->bInUse = FALSE;
    return(FALSE);
}; // TermFree

tmon.h

// tmon.h
//
// Copyright Unisys, 1999

#include "..\tpccproxy\tpccproxy.h"

typedef struct
{
    CHAR * pszErrTxt; // Error text
    INT iSize;

```



```

ITPCC * pIAllTxn;
CHAR * pTxnData;           // TM buffer area
} TMON_STATE;

```

```

VOID TMonInit(INT iSetMaxMsg);
VOID TMonTerm(VOID);
BOOL TMinInit(TMON_STATE * pTMon);
VOID TMDone(TMON_STATE * pTMon);

```

## tmon.cpp

```

// tmon.cpp
//
// Copyright Unisys, 1999
//
// needed for CoInitializeEx
#define _WIN32_WINNT 0x0400
#include <windows.h>
#include <stdio.h>
#include "..\tpccproxy\tpccproxy_i.c"
#include "..\tpccsvr\tpccsvr_i.c"
#include "tmon.h"
INT iTMMaxSz;
//=====
//
// Function name: TMonInit
//
//=====
VOID TMonInit(INT iSetMaxMsg)
{
    iTMMaxSz = iSetMaxMsg;
}; // TMonInit
//=====
//
// Function name: TMonTerm
//
//=====
VOID TMonTerm(VOID)
{
}; // TMonTerm
//=====
//
// Function name: TMinInit
//
// Result:
// FALSE Initialization completed successfully
// TRUE Initialization failed
//
//=====
BOOL TMinInit(TMON_STATE * pTMon)

```

```

{
    HRESULT hr = NULL;
    long lRet = 0;
    pTMon->pIAllTxn = NULL;
    pTMon->pTxnData = NULL;
    pTMon->iSize = 0;
    // Must have ErrTxt message area set before init
    if (pTMon->pszErrTxt == NULL)
        return(TRUE);
    hr = CoInitializeEx(NULL, COINIT_MULTITHREADED);
    if (FAILED(hr))
    {
        wsprintf(pTMon->pszErrTxt, "COM Initialize Failed, HRESULT %x\n", hr);
        return(TRUE);
    };
    hr = CoCreateInstance(CLSID_TPCC, NULL, CLSCTX_SERVER, IID_ITPCC,
        (void **)&pTMon->pIAllTxn);
    if (FAILED(hr))
    {
        wsprintf(pTMon->pszErrTxt, "COM Create Instance Failed, HRESULT
%x\n", hr);
        return(TRUE);
    };
    hr = (pTMon->pIAllTxn)->CallSetComplete();
    if (FAILED(hr))
    {
        wsprintf(pTMon->pszErrTxt, "COM Call SetComplete Failed, HRESULT
%x\n", hr);
        return(TRUE);
    };
    pTMon->pTxnData = (char *) CoTaskMemAlloc(iTMMaxSz);
    if (!(pTMon->pTxnData))
    {
        wsprintf(pTMon->pszErrTxt, "COM Allocate TxnData Failed\n");
        return(TRUE);
    };
    pTMon->iSize = iTMMaxSz;
    return(FALSE);
}; // TMinInit
//=====
//
// Function name: TMDone
//
//=====
VOID TMDone(TMON_STATE * pTMon)
{
    CoTaskMemFree(pTMon->pTxnData);
    pTMon->pIAllTxn->Release();
    pTMon->pIAllTxn = NULL;
    CoUninitialize();
}; // TMDone

```

## timesupp.h

```
// timesupp.h
```

```

//
// Copyright Unisys, 1999

#include <windows.h>
#include <time.h>
#include <sys\timeb.h>

#define TIMEBSEED_MOD 10000
#define TIMEBSEED_SHIFT 1000
#define TIMEB_STRING_SZ 23
#define TIMEB_STRING_DATESZ 10
#define TIMEB_STRING_TIMEOFFSET 11
#define TIMEB_STRING_TIMESZ 12

typedef ULONG TMILLI;

TMILLI TimebDiff(struct _timeb * p_tb1, struct _timeb * p_tb2);
VOID TimebCopy(struct _timeb * p_tbDest, struct _timeb * p_tbSource);
TMILLI TimebElapsed(struct _timeb * p_tb1);
VOID TimebClear(struct _timeb * p_tb1);
CHAR * TimebToString(struct _timeb * p_tb1, CHAR * psz, BOOL bMillis);
BOOL TimebFromString(struct _timeb * p_tb1, CHAR * psz);
VOID TimebAddSecs(struct _timeb * p_tb1, INT iSeconds);
ULONG TimebSeed(VOID);

```

## timesupp.cpp

```

// timesupp.c
//
// Copyright Unisys, 1997 1998 1999 2000
//

#include <stdio.h>
#include "timesupp.h"

//=====
//
// Function name: TimebCopy
// Structure contents copy of _timeb source to _timeb dest.
//
//=====
VOID TimebCopy(struct _timeb * p_tbDest, struct _timeb * p_tbSource)
{
    p_tbDest->time = p_tbSource->time;
    p_tbDest->millitm = p_tbSource->millitm;
    p_tbDest->dstflag = p_tbSource->dstflag;
    p_tbDest->timezone = p_tbSource->timezone;
}; // TimebCopy

//=====
//
// Function name: TimebDiff
// Time difference in milliseconds between _timeb_t1 and _timeb_t2.
//
//=====
TMILLI TimebDiff(struct _timeb * p_tb1, struct _timeb * p_tb2)
{
    LONG lRslt;

```

```

    lRslt = ((p_tb2->time - p_tb1->time) * 1000) +
            (p_tb2->millitm - p_tb1->millitm);
    if (lRslt < 0)
        return(0);
    else
        return((TMILLI) lRslt);
}; // TimebDiff

//=====
//
// Function name: TimebElapsed
//
//=====
TMILLI TimebElapsed(struct _timeb * p_tb1)
{
    struct _timeb _tb2;
    _ftime(&_tb2);
    return (TimebDiff(p_tb1, &_tb2));
}; // TimebElapsed

//=====
//
// Function name: TimebClear
//
//=====
VOID TimebClear(struct _timeb * p_tb1)
{
    p_tb1->time = 0;
    p_tb1->millitm = 0;
}; // TimebClear

//=====
//
// Function name: TimebToString
// Converts timeb to yyyy:mm:dd,hh:mm:ss.sss format
//
//=====
CHAR * TimebToString(struct _timeb * p_tb1, CHAR * psz, BOOL bMillis)
{
    struct tm * ptm;
    int iInx;
    ptm = localtime(&p_tb1->time);
    iInx = wsprintf(psz, "%4.4d/%2.2d/%2.2d:%2.2d:%2.2d",
        ptm->tm_year + 1900, ptm->tm_mon + 1, ptm->tm_mday,
        ptm->tm_hour, ptm->tm_min, ptm->tm_sec);
    if (bMillis)
        wsprintf(psz + iInx, ".%3.3d", p_tb1->millitm);
    return(psz);
}; // TimebToString

//=====
//
// Function name: TimebFromString
// Converts yyyy:mm:dd,hh:mm:ss.sss (TimebToString) format to timeb
//
//=====
BOOL TimebFromString(struct _timeb * p_tb1, CHAR * psz)
{

```

```

struct tm tmTime;
struct tm * ptm;
UINT uLen;

ptm = &tmTime;
uLen = strlen(psz);
if (uLen < (TIMEB_STRING_SZ - 4)) // millis are optional
{
    p_tbl->time = 0;
    p_tbl->millitm = 0;
    return (TRUE);
};
// Clear fields that won't be set
ptm->tm_wday = 0;
ptm->tm_yday = 0;
ptm->tm_isdst = -1;
// Set tm struct fields from string
ptm->tm_year = (atoi(psz)) - 1900;
psz += 5;
ptm->tm_mon = (atoi(psz)) - 1;
psz += 3;
ptm->tm_mday = atoi(psz);
psz += 3;
ptm->tm_hour = atoi(psz);
psz += 3;
ptm->tm_min = atoi(psz);
psz += 3;
ptm->tm_sec = atoi(psz);
if (uLen >= TIMEB_STRING_SZ) // Millis present
{
    psz += 3;
    p_tbl->millitm = atoi(psz);
}
else
    p_tbl->millitm = 0;
p_tbl->time = mktime(ptm);
return (FALSE);
}; // TimebFromString

//=====
//
// Function name: TimebAddSecs
//
//=====
VOID TimebAddSecs(struct _timeb * p_tbl,INT iSeconds)
{
    p_tbl->time += iSeconds;
}; // TimebAddSecs

//=====
//
// Function name: TimebSeed
//
//=====
ULONG TimebSeed(VOID)
{
    ULONG ulSeed;
    struct _timeb tb_1;
    _ftime(&tb_1);
    ulSeed = ((tb_1.time % TIMEBSEED_MOD) * TIMEBSEED_SHIFT) +
tb_1.millitm;

```

```

return(ulSeed);
}; // TimebSeed

```

## diagio.h

```

// diagio.h
//
// Copyright Unisys, 1999

// Environment variable defaults
#define DEFAULTDIAGLEVEL DIAG_INFO
#define DEFAULTTEVENTLOG 0

#define DIAGNOSTICS TRUE
#define MAX_DIAG_SZ 2000

// Severity level of diagnostic report
#define DIAG_FORCE 1
#define DIAG_ERROR 2
#define DIAG_STATE 3
#define DIAG_INFO 4

VOID DiagIoInit (CHAR * pDiagId,BOOL bConsole,BOOL bEvent,UINT uLevel);
VOID DiagIoTerm(VOID);
VOID DiagIoWrite(CHAR * pDiagBuffer, UINT uSeverity);

```

## diagio.cpp

```

// diagio.cpp
//
// Copyright Unisys, 1999
//
#include <windows.h>
#include <stdio.h>
#include "diagio.h"

CRITICAL_SECTION csDiagIo;
HANDLE hEventLog = NULL;
UINT uDiagLevel;
BOOL bEventLog;
BOOL bConsoleLog;
CHAR * pDiagHdr;
CHAR * pEventHost;
CHAR * pErrHdr =
    {"*** ERROR *** ERROR *** ERROR *** ERROR *** ERROR ***"};

INT WriteEventLog(CHAR * pDMsgs[],UINT uMsgCnt,UINT uSeverity);

//=====
//
// Function name: DiagIoInit
//
//=====
VOID DiagIoInit (CHAR * pDiagId,BOOL bConsole,BOOL bEvent,UINT uLevel)
{
    if (DIAGNOSTICS)
    {
        InitializeCriticalSection(&csDiagIo);
    }

```

```

uDiagLevel = uLevel;
bEventLog = bEvent;
bConsoleLog = bConsole;
pEventHost = (CHAR *) malloc(10);
strcpy(pEventHost, ""); // local host
pDiagHdr = (CHAR *) malloc(strlen(pDiagId) + 1);
strcpy(pDiagHdr, pDiagId);
if (bEventLog)
{
    hEventLog = RegisterEventSource(pEventHost, pDiagId);
    if (hEventLog == NULL)
    {
        bEventLog = FALSE;
        if (bConsoleLog)
            fprintf(stdout,
                "%s: Event Log Register Failed (%ld)\n"
                "Event Log Will NOT be Used\n",
                pDiagHdr, GetLastError());
    }
    else
    {
        if (bConsoleLog)
            fprintf(stdout, "%s: Event Logging to LocalHost as %s\n",
                pDiagHdr, pDiagHdr);
    }
}; // if bEventLog
}; // if Diagnostics
}; // DiagIoInit

```

```

//=====
//
// Function name: DiagIoTerm
//
//=====

```

```

VOID DiagIoTerm(VOID)
{
    if (DIAGNOSTICS)
    {
        DeleteCriticalSection(&csDiagIo);
        if (hEventLog != NULL)
            DeregisterEventSource(hEventLog);
        free(pDiagHdr);
        free(pEventHost);
    }
}; // DiagIoTerm

```

```

//=====
//
// Function name: DiagIoWrite
//
//=====

```

```

VOID DiagIoWrite(CHAR * pDiagBuffer, UINT uSeverity)
{
    CHAR * pDMsgs[3];
    UINT uMsgCnt = 0;
    INT iERslt = 0;
    if (DIAGNOSTICS)
    {
        if (uDiagLevel >= uSeverity)

```

```

{
    EnterCriticalSection(&csDiagIo);
    _try
    {
        if (uSeverity == DIAG_ERROR)
        {
            pDMsgs[0] = pDiagHdr;
            pDMsgs[1] = pErrHdr;
            pDMsgs[2] = pDiagBuffer;
            uMsgCnt = 3;
        }
        else
        {
            pDMsgs[0] = pDiagHdr;
            pDMsgs[1] = pDiagBuffer;
            uMsgCnt = 2;
        }
    };
    if (bEventLog)
        iERslt = WriteEventLog(pDMsgs, uMsgCnt, uSeverity);
    if (bConsoleLog)
    {
        if (uMsgCnt == 3)
            fprintf(stdout, "\n%s:
%s\n%s", pDMsgs[0], pDMsgs[1], pDMsgs[2]);
        else
            fprintf(stdout, "\n%s: %s", pDMsgs[0], pDMsgs[1]);
        if (iERslt != 0)
            fprintf(stdout,
                "EventLog Write Failed (%ld), No Longer in Use\n",
                iERslt);
    }
};
    _finally
    {
        LeaveCriticalSection(&csDiagIo);
    }
}; // if uDiagLevel >= uSeverity
}; // if Diagnostics
}; // DiagIoWrite

```

```

INT WriteEventLog(CHAR * pDMsgs[], UINT uMsgCnt, UINT uSeverity)
{
    WORD wType;
    WORD wCount;
    wCount = uMsgCnt;
    switch (uSeverity)
    {
        case DIAG_ERROR:
            wType = EVENTLOG_ERROR_TYPE;
            break;
        default:
            wType = EVENTLOG_INFORMATION_TYPE;
            break;
    };
    if (wType != 0)
    {
        if (!ReportEvent(hEventLog, // event log handle
            wType, // event type
            0, // category zero
            uSeverity, // no event identifier
            NULL, // no user security identifier

```

```

        wCount,          // # of substitution strings
        0,              // no binary data
        (LPCTSTR *) pDMsgs, // address of string array
        NULL))         // address of binary
    {
        DeregisterEventSource(hEventLog);
        hEventLog = NULL;
        bEventLog = FALSE;
        return(GetLastError());
    }; // ReportEvent failed
}; // if wType != 0
return(0);
}; // WriteEventLog

```

## tpccproxy.def

```

LIBRARY      "tpcc_com_ps"

DESCRIPTION  'Proxy/Stub DLL'

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

```

## tpccproxy.idl

```

// tpccproxy.idl
//
// Copyright Unisys, 1999
// Copyright Microsoft, 1999

// Forward declare all types defined
// Interface ITPCC;
import "oidl.idl";
import "ocidl.idl";

[
  object,
  uuid(FEEE6AA2-84B1-11d2-BA47-00C04FBFE08B),
  helpstring("ITPCC Interface"),
  pointer_default(unique)
]
interface ITPCC : IUnknown
{
    HRESULT STDMETHODCALLTYPE NewOrder
    (
        [in, out] int * iSize,
        [in, out, size_is(*iSize)] char ** pData
    );

    HRESULT STDMETHODCALLTYPE Payment
    (
        [in, out] int * iSize,

```

```

        [in, out, size_is(*iSize)] char ** pData
    );
};

HRESULT STDMETHODCALLTYPE Delivery
(
    [in] int * iSize,
    [in, out, size_is(*iSize)] char ** pData
);

HRESULT STDMETHODCALLTYPE StockLevel
(
    [in, out] int* iSize,
    [in, out, size_is(*iSize)] char ** pData
);

HRESULT STDMETHODCALLTYPE OrderStatus
(
    [in, out] int* iSize,
    [in, out, size_is(*iSize)] char ** pData
);

HRESULT STDMETHODCALLTYPE CallSetComplete
(
);
}; // interface ITPCC

```

## tpccsvr.def

; tpccsvr.def : Declares the module parameters.

```

LIBRARY      "tpcc_com_all.dll"

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

```

## tpccsvr.idl

```

// tpccsvr.idl
//
// Copyright Unisys, 1999
// Copyright Microsoft, 1999

interface TPCC;

import "oidl.idl";
import "ocidl.idl";
import "..\tpccproxy\tpccproxy.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;
    };
};

```

### tpccsvr.h

```

// tpccsvr.h
//
// Copyright Unisys, 1999

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 ** pTData);
    HRESULT __stdcall Payment(int * iSize, UCHAR ** pTData);
    HRESULT __stdcall Delivery(int * iSize, UCHAR ** pTData);
    HRESULT __stdcall StockLevel( int* iSize, UCHAR ** pTData);
    HRESULT __stdcall OrderStatus(int* iSize, UCHAR ** pTData);
    HRESULT __stdcall CallSetComplete();

// IObjectControl
    STDMETHODCALLTYPE CanBePooled() {return m_bCanBePooled;}
    STDMETHODCALLTYPE Activate() {return S_OK;} // no transactions enlistment
    STDMETHODCALLTYPE Deactivate() { }

// IObjectConstruct
    STDMETHODCALLTYPE Construct(IDispatch * pUnk);

    // state
private:
    bool m_bCanBePooled;

```

```

long m_lRefId;
int m_iMaxRetry;
int m_iTryCount;
bool m_bTPRslt;
int m_iTPRslt;
union
{
    NEW_ORDER_DATA NOData;
    PAYMENT_DATA PYData;
    DELIVERY_DATA DLData;
    ORDER_STATUS_DATA OSDData;
    STOCK_LEVEL_DATA SLData;
} m_TData;
SQLHDBC m_hdbc;
SQLHSTMT m_hstmt;
SQLHSTMT m_hstmtNewOrder;
SQLHSTMT m_hstmtPayment;
SQLHSTMT m_hstmtDelivery;
SQLHSTMT m_hstmtOrderStatus;
SQLHSTMT m_hstmtStockLevel;
SQLHDESC m_descNewOrderCols1;
SQLHDESC m_descNewOrderCols2;
SQLHDESC m_descOrderStatusCols1;
SQLHDESC m_descOrderStatusCols2;
SQLUIINTEGER m_BindOffset;
SQLUIINTEGER m_RowsFetched;
int m_no_commit_flag;

bool InitNOParams(void);
bool InitPYParams(void);
bool InitDLParams(void);
bool InitOSParams(void);
bool InitSLParams(void);
bool CheckDBError(char * pSource);

```

```

}; // Class CTPCC_Common

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()
}; // Class CTPCC

```

### tpccsvr.cpp

```

// tpccsvr.cpp
//
// Copyright Unisys, 1999
// Copyright Microsoft, 1999

#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>

#define DBNTWIN32
#include <sqltypes.h>
#include <sql.h>
#include <sqlext.h>
#include <odbcss.h>

#include "tpccproxy.h"
#include "tpcc.h"

#include "resource.h"
#include "tpccsvr_i.h"
#include "tpccsvr_i.c"
#include "tpccsvr.h"
#include "..\tpccproxy\tpccproxy_i.c"

CComModule _Module;

BEGIN_OBJECT_MAP(ObjectMap)
    OBJECT_ENTRY(CLSID_TPCC, CTPCC)
END_OBJECT_MAP()

char pProgId[100];
char * pPName = "TPCC Server";
int iInstance = 1;
char szServer[100] = "hostname";
char szMyHost[MAX_COMPUTERNAME_LENGTH + 1];
char szUser[100] = "sa";
char szPassword[100] = "";
char szDatabase[100] = "tpcc";
int iDeadlockRetry = 5;

static SQLHENV henv = SQL_NULL_HENV; // ODBC environment handle
long lCount = 0;
long lActive = 0;

bool ReadRegistry(VOID);
void WriteEventLog(char * pMsg,bool bError);

////////////////////////////////////
///
/// DLL Entry Point

extern "C"
BOOL WINAPI DllMain(HINSTANCE hInst,ULONG ul_reason_for_call,LPVOID
lpReserved)

```

```

{
    char szDiag[300];
    DWORD dwCNSize = MAX_COMPUTERNAME_LENGTH;
    try
    {
        switch(ul_reason_for_call)
        {
            case DLL_PROCESS_ATTACH:
                _Module.Init(ObjectMap,hInst);
                DisableThreadLibraryCalls(hInst);
                wsprintf(pProgId,"%s%d",pPName,iInstance);
                if (ReadRegistry())
                {
                    WriteEventLog("DllMain: Registry Key Not Present\n",TRUE);
                    return (FALSE);
                };
                wsprintf(pProgId,"%s%d(%s)",pPName,iInstance,szServer);
                GetComputerName(szMyHost,&dwCNSize);
                szMyHost[dwCNSize] = 0;
                if (SQLAllocHandleStd(SQL_HANDLE_ENV,SQL_NULL_HANDLE,&henv) !=
SQL_SUCCESS)
                {
                    wsprintf(szDiag,"DllMain(%s): Allocate Environment
Failed\n"
                        "ServerName=%s,DB=%s,User=%s,PW=%s,Retries=%d\n",
VERSIONINFO,szServer,szDatabase,szUser,szPassword,iDeadlockRetry);
                    WriteEventLog(szDiag,FALSE);
                    return FALSE;
                };
                wsprintf(szDiag,"DllMain(%s): Initialization Complete\n"
                        "ServerName=%s,DB=%s,User=%s,PW=%s,Retries=%d\n",
VERSIONINFO,szServer,szDatabase,szUser,szPassword,iDeadlockRetry);
                WriteEventLog(szDiag,FALSE);
                break;

            case DLL_PROCESS_DETACH:
                WriteEventLog("DllMain: Closing down for Process
Detach\n",FALSE);
                if (henv != NULL)
                    SQLFreeEnv(henv);
                _Module.Term();
                break;
        }; // switch ul_reason_for_call
    }
    catch (...)
    {
        wsprintf(szDiag,"DllMain: Unhandled exception during %s call\n",
            ul_reason_for_call == DLL_PROCESS_ATTACH ? "ATTACH" : "DETACH");
        WriteEventLog(szDiag,TRUE);
        return FALSE;
    };
};

return TRUE;
}; // DllMain

STDAPI DllCanUnloadNow(void)
{
    return (_Module.GetLockCount()==0) ? S_OK : S_FALSE;
}

```

```

};

STDAPI DllGetClassObject(REFCLSID rclsid, REFIID riid, LPVOID* ppv)
{
    return _Module.GetClassObject(rclsid, riid, ppv);
};

STDAPI DllRegisterServer(void)
{
    // registers object, typelib and all interfaces in typelib
    return _Module.RegisterServer(TRUE);
};

STDAPI DllUnregisterServer(void)
{
    _Module.UnregisterServer();
    return S_OK;
};

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

CTPCC_Common::CTPCC_Common()
{
    char szDiag[300];
    Sleep(100);
    m_bCanBePooled = TRUE;
    m_iMaxRetry = iDeadlockRetry;
    m_lRefId = InterlockedIncrement(&lCount);
    InterlockedIncrement(&lActive);
    m_hdbc = SQL_NULL_HDBC;
    m_hstmt = SQL_NULL_HSTMT;
    m_hstmtNewOrder = SQL_NULL_HSTMT;
    m_hstmtPayment = SQL_NULL_HSTMT;
    m_hstmtDelivery = SQL_NULL_HSTMT;
    m_hstmtOrderStatus = SQL_NULL_HSTMT;
    m_hstmtStockLevel = SQL_NULL_HSTMT;
    m_descNewOrderCols1 = SQL_NULL_HDESC;
    m_descNewOrderCols2 = SQL_NULL_HDESC;
    m_descOrderStatusCols1 = SQL_NULL_HDESC;
    m_descOrderStatusCols2 = SQL_NULL_HDESC;
    wsprintf(szDiag, "CTPCC_Common: Initialized %ld\n", m_lRefId);
    WriteEventLog(szDiag, FALSE);
};

CTPCC_Common::~CTPCC_Common()
{
    char szDiag[300];
    SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtNewOrder);
    SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtPayment);
    SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtDelivery);
    SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtOrderStatus);
    SQLFreeHandle(SQL_HANDLE_STMT, m_hstmtStockLevel);
    SQLDisconnect(m_hdbc);
    SQLFreeHandle(SQL_HANDLE_DBC, m_hdbc);
};

```

```

InterlockedDecrement(&lActive);
wsprintf(szDiag, "~CTPCC_Common(%ld): Database closed\n", m_lRefId);
WriteEventLog(szDiag, FALSE);
};

HRESULT CTPCC_Common::CallSetComplete()
{
    IObjectContext * pObjectContext = NULL;
    HRESULT hr = CoGetObjectContext( IID_IObjectContext, (void
**) &pObjectContext );
    pObjectContext->SetComplete();
    ReleaseInterface(pObjectContext);
    return hr;
};

bool CTPCC_Common::CheckDBError(char * pSource)
{
    RETCODE rc;
    SDWORD lNativeError;
    char szState[6];
    char szMsg[SQL_MAX_MESSAGE_LENGTH];
    char szTmp[7 * (SQL_MAX_MESSAGE_LENGTH + 2)];
    int iInx;
    int iMsgs = 0;
    bool bRslt = FALSE;
    iInx = wsprintf(szTmp, "%s", pSource);
    while (iMsgs < 6)
    {
        rc = SQLError(henv, m_hdbc, m_hstmt, (BYTE *) &szState, &lNativeError,
        (BYTE *) &szMsg, sizeof(szMsg), NULL);
        if (rc == SQL_NO_DATA)
            break;
        iMsgs++;
        // check for deadlock
        if (lNativeError == 1205)
        {
            iInx += wsprintf(szTmp + iInx, "Deadlock retry
(%d)\n", m_iTryCount);
            Sleep(10 * m_iTryCount);
            continue;
        };
        bRslt = TRUE;
        iInx += wsprintf(szTmp + iInx, "(%ld)%s\n", lNativeError, szMsg);
    }; // while iMsgs
    SQLFreeStmt(m_hstmt, SQL_CLOSE);
    WriteEventLog(szTmp, TRUE);
    return (bRslt);
}; // CheckDBError

STDMETHODIMP CTPCC_Common::Construct(IDispatch * pUnk)
{
    char szDiag[300];
    char szConnectStr[256];
    char szOutStr[1024];
    SQLSMALLINT iOutStrLen;
    char buffer[128];
    RETCODE rc;

    try
    {
        if (SQLAllocHandle(SQL_HANDLE_DBC, henv, &m_hdbc) != SQL_SUCCESS)

```



```

    {
        wsprintf(szDiag,"Construct(%ld): Allocate DBC Handle
failed\n",m_lRefId);
        CheckDBError(szDiag);
        return(E_FAIL);
    };
    if (SQLSetConnectOption(m_hdbc,SQL_PACKET_SIZE,4096) != SQL_SUCCESS)
    {
        wsprintf(szDiag,
            "Construct(%ld): Set Connection Packet Size failed\n",
            m_lRefId);
        CheckDBError(szDiag);
        return(E_FAIL);
    };
    wsprintf(szConnectStr,
        "DRIVER=SQL Server;SERVER=%s;UID=%s;PWD=%s;DATABASE=%s;WSID=%s-
%ld",
        szServer,szUser,szPassword,szDatabase,szMyHost,m_lRefId);
    rc = SQLDriverConnect(m_hdbc,NULL,(SQLCHAR *) szConnectStr,
        sizeof(szConnectStr),(SQLCHAR *) szOutStr, sizeof(szOutStr),
        &iOutStrLen,SQL_DRIVER_NOPROMPT);
    if (rc != SQL_SUCCESS && rc != SQL_SUCCESS_WITH_INFO)
    {
        wsprintf(szDiag,"Construct(%ld): Connect failed\n",m_lRefId);
        CheckDBError(szDiag);
        return(E_FAIL);
    };
    if (SQLAllocHandle(SQL_HANDLE_STMT,m_hdbc,&m_hstmt) != SQL_SUCCESS)
    {
        wsprintf(szDiag,"Construct(%ld): Allocate STMT Handle
failed\n",m_lRefId);
        CheckDBError(szDiag);
        return(E_FAIL);
    };

    strcpy(buffer,"set nocount on set XACT_ABORT ON");
    rc = SQLExecDirect(m_hstmt,(unsigned char *)buffer,SQL_NTS);
    if (rc != SQL_SUCCESS && rc != SQL_SUCCESS_WITH_INFO)
    {
        wsprintf(szDiag,"Construct(%ld): Set DB Options
failed\n",m_lRefId);
        CheckDBError(szDiag);
        return(E_FAIL);
    };
    SQLFreeHandle(SQL_HANDLE_STMT,m_hstmt);

    if (InitNOPParams())
        return(E_FAIL);
    if (InitPYParams())
        return(E_FAIL);
    if (InitDLParams())
        return(E_FAIL);
    if (InitOSParams())
        return(E_FAIL);
    if (InitSLParams())
        return(E_FAIL);
    }
    catch (...)
    {
        wsprintf(szDiag,"Construct(%ld): Unhandled exception\n",m_lRefId);
        WriteEventLog(szDiag,TRUE);
    }

```

```

    };
    return(E_FAIL);
};

wsprintf(szDiag,"Construct(%ld): Db connection
initialized\n",m_lRefId);
WriteEventLog(szDiag,FALSE);
return(S_OK);
}; // Construct

//=====
// FUNCTION: UtilStrCpy
//
// Copies n characters from string pSrc to pDst and places a null
// null character at the end of the destination string. Unlike
// strncpy this function ensures that the result string is always
// null terminated.
//
//=====
inline static void UtilStrCpy(char * pDest, const unsigned char * pSrc,
int n)
{
    strncpy(pDest,(char *)pSrc,n);
    pDest[n] = '\0';
    return;
}; // UtilStrCpy

bool CTPCC_Common::InitNOPParams(void)
{
    char szDiag[300];
    int i;
    int j;
    if (SQLAllocHandle(SQL_HANDLE_STMT,m_hdbc,&m_hstmtNewOrder) !=
SQL_SUCCESS
        || SQLAllocHandle(SQL_HANDLE_DESC,m_hdbc,&m_descNewOrderCols1) !=
SQL_SUCCESS
        || SQLAllocHandle(SQL_HANDLE_DESC,m_hdbc,&m_descNewOrderCols2) !=
SQL_SUCCESS
        )
    {
        wsprintf(szDiag,"InitNOPParams(%ld): Allocate Stmt Handles
failed\n",m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };

    m_hstmt = m_hstmtNewOrder;

    if (SQLSetStmtAttrW(m_hstmt,SQL_ATTR_APP_ROW_DESC,
        m_descNewOrderCols1,SQL_IS_POINTER ) != SQL_SUCCESS)
    {
        wsprintf(szDiag,"InitNOPParams(%ld): SetStmtAttr NOCols1
failed\n",m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };

    i = 0;
    if
(SQLBindParameter(m_hstmt,++i,SQL_PARAM_INPUT,SQL_C_SSHORT,SQL_SMALLINT,
        0,0,&m_TData.NOData.w_id,0,NULL) != SQL_SUCCESS

```

```

    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT,
    0, 0, &m_TData.NOData.d_id, 0, NULL) != SQL_SUCCESS
    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER,
    0, 0, &m_TData.NOData.c_id, 0, NULL) != SQL_SUCCESS
    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT,
    0, 0, &m_TData.NOData.o_ol_cnt, 0, NULL) != SQL_SUCCESS
    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT,
    0, 0, &m_TData.NOData.o_all_local, 0, NULL) != SQL_SUCCESS
    )
    {
        wsprintf(szDiag, "InitNOParams(%ld): Bind Param failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };

    for (j=0; j < MAX_OL; j++)
    {
        if
        (SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER,
            0, 0, &m_TData.NOData.OL[j].ol_i_id, 0, NULL) != SQL_SUCCESS
            ||
            SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT,
                0, 0, &m_TData.NOData.OL[j].ol_supply_w_id, 0, NULL) !=
                SQL_SUCCESS
            ||
            SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT,
                0, 0, &m_TData.NOData.OL[j].ol_quantity, 0, NULL) !=
                SQL_SUCCESS
            )
        {
            wsprintf(szDiag, "InitNOParams(%ld): Bind Param(%d)
failed\n", m_lRefId, j);
            CheckDBError(szDiag);
            return(TRUE);
        };

        // set the bind offset pointer
        if (SQLSetStmtAttrW(m_hstmt, SQL_ATTR_ROW_BIND_OFFSET_PTR,
            &m_BindOffset, SQL_IS_POINTER) != SQL_SUCCESS)
        {
            wsprintf(szDiag, "InitNOParams(%ld): SetStmtAttr BindOffset
failed\n", m_lRefId);
            CheckDBError(szDiag);
            return(TRUE);
        };

        i = 0;
        if (SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.NOData.OL[0].ol_i_name,
            sizeof(m_TData.NOData.OL[0].ol_i_name), NULL) != SQL_SUCCESS
            ||
            SQLBindCol(m_hstmt, ++i, SQL_C_SSHORT, &m_TData.NOData.OL[0].ol_stock,
                0, NULL) != SQL_SUCCESS
            ||
            SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.NOData.OL[0].ol_brand_generic,
                sizeof(m_TData.NOData.OL[0].ol_brand_generic), NULL) !=
                SQL_SUCCESS

```

```

    ||
SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE, &m_TData.NOData.OL[0].ol_i_price,
    0, NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE, &m_TData.NOData.OL[0].ol_amount,
    0, NULL) != SQL_SUCCESS
    )
    {
        wsprintf(szDiag, "InitNOParams(%ld): Bind Col OL
failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };

    // associate the column bindings for the second result set
    if (SQLSetStmtAttrW(m_hstmt, SQL_ATTR_APP_ROW_DESC,
        m_descNewOrderCols2, SQL_IS_POINTER) != SQL_SUCCESS)
    {
        wsprintf(szDiag, "InitNOParams(%ld): SetStmtAttr NOCols2
failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };

    i = 0;
    if (SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE, &m_TData.NOData.w_tax,
        0, NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE, &m_TData.NOData.d_tax,
            0, NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_SLONG, &m_TData.NOData.o_id,
            0, NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.NOData.c_last,
            sizeof(m_TData.NOData.c_last), NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_DOUBLE, &m_TData.NOData.c_discount,
            0, NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.NOData.c_credit,
            sizeof(m_TData.NOData.c_credit), NULL) != SQL_SUCCESS
        ||
        SQLBindCol(m_hstmt, ++i, SQL_C_TYPE_TIMESTAMP, &m_TData.NOData.o_entry_d,
            0, NULL) != SQL_SUCCESS
        || SQLBindCol(m_hstmt, ++i, SQL_C_SLONG, &m_no_commit_flag,
            0, NULL) != SQL_SUCCESS
        )
    {
        wsprintf(szDiag, "InitNOParams(%ld): Bind Col failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };

    return(FALSE);
}; // InitNOParams

HRESULT CTPCC_Common::NewOrder(int * isize, UCHAR ** pTData)
{
    NEW_ORDER_DATA * pnod;
    RETCODE rc;
    bool bRetry;

    // 0 1 2
    // 012345678901234567890123456789
    wchar_t szSqlTemplate[] = L"{call tpcc_neworder(?,?,?,?,?, "
        L"?,?,?,?,?, ?, ?, ?, ?, ?, ?, ?, ?, ?, "
        L"?,?,?,?,?, ?, ?, ?, ?, ?, ?, ?, ?, ?,"

```



```

    }
    else
        m_iTPRslt = SVC_BADITEMID;
    break;
}; // for m_iMaxRetry
memcpy(pnod, &m_TData.NOData, sizeof(NEW_ORDER_DATA));
pnod->bTPRslt = m_bTPRslt;
pnod->iTPRslt = m_iTPRslt;
if (!m_bTPRslt)
{
    strcpy(pnod->execution_status, "Transaction committed.");
    return(S_OK);
};
if (m_iTPRslt == SVC_BADITEMID)
{
    strcpy(pnod->execution_status, "Item number is not valid.");
    return(S_OK);
};
if (m_iTPRslt == SVCERR_DEADLOCK)
    sprintf(pnod->execution_status, "Hit retry
max(%d).", m_iMaxRetry);
else
    strcpy(pnod->execution_status, "DBTranAbort, Check Input Data");
return(S_OK);
}
catch (...)
{
    char szDiag[300];
    sprintf(szDiag, "NewOrder(%ld): Unhandled exception\n", m_lRefId);
    WriteEventLog(szDiag, TRUE);
    m_bCanBePooled = FALSE;
    pnod->bTPRslt = TRUE;
    pnod->iTPRslt = SVCERR_EXCEPTION;
    strcpy(pnod->execution_status, "Error, Unhandled exception");
    return(S_OK);
};
}; // NewOrder

bool CTPCC_Common::InitPYParams(void)
{
    int i;
    char szDiag[300];
    if (SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc, &m_hstmtPayment) !=
SQL_SUCCESS)
    {
        sprintf(szDiag, "InitPYParams(%ld): Allocate Stmt Handle
failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };
    m_hstmt = m_hstmtPayment;
    i = 0;
    if
(SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT,
0, 0, &m_TData.PYData.w_id, 0, NULL) != SQL_SUCCESS
    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT,
0, 0, &m_TData.PYData.c_w_id, 0, NULL) != SQL_SUCCESS
    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_DOUBLE, SQL_NUMERIC,
6, 2, &m_TData.PYData.h_amount, 0, NULL) != SQL_SUCCESS

```

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    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT,
0, 0, &m_TData.PYData.d_id, 0, NULL) != SQL_SUCCESS
    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT,
0, 0, &m_TData.PYData.c_d_id, 0, NULL) != SQL_SUCCESS
    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER,
0, 0, &m_TData.PYData.c_id, 0, NULL) != SQL_SUCCESS
    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_CHAR, SQL_CHAR,
sizeof(m_TData.PYData.c_last), 0, &m_TData.PYData.c_last,
sizeof(m_TData.PYData.c_last), NULL) != SQL_SUCCESS
    }
    {
        sprintf(szDiag, "InitPYParams(%ld): Bind Param
failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };
    i = 0;
    if (SQLBindCol(m_hstmt, ++i, SQL_C_SLONG, &m_TData.PYData.
c_id, 0, NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.c_last,
sizeof(m_TData.PYData.c_last), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_TYPE_TIMESTAMP, &m_TData.PYData.h_date,
0, NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.w_street_1,
sizeof(m_TData.PYData.w_street_1), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.w_street_2,
sizeof(m_TData.PYData.w_street_2), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.w_city,
sizeof(m_TData.PYData.w_city), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.w_state,
sizeof(m_TData.PYData.w_state), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.w_zip,
sizeof(m_TData.PYData.w_zip), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.d_street_1,
sizeof(m_TData.PYData.d_street_1), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.d_street_2,
sizeof(m_TData.PYData.d_street_2), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.d_city,
sizeof(m_TData.PYData.d_city), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.d_state,
sizeof(m_TData.PYData.d_state), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.d_zip,
sizeof(m_TData.PYData.d_zip), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.c_first,
sizeof(m_TData.PYData.c_first), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.c_middle,
sizeof(m_TData.PYData.c_middle), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.c_street_1,
sizeof(m_TData.PYData.c_street_1), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.c_street_2,
sizeof(m_TData.PYData.c_street_2), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.c_city,
sizeof(m_TData.PYData.c_city), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.c_state,
sizeof(m_TData.PYData.c_state), NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt, ++i, SQL_C_CHAR, &m_TData.PYData.c_zip,
sizeof(m_TData.PYData.c_zip), NULL) != SQL_SUCCESS

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    || SQLBindCol(m_hstmt,++i,SQL_C_CHAR,&m_TData.PYData.c_phone,
        sizeof(m_TData.PYData.c_phone),NULL) != SQL_SUCCESS
    ||
SQLBindCol(m_hstmt,++i,SQL_C_TYPE_TIMESTAMP,&m_TData.PYData.c_since,
    0,NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_CHAR,&m_TData.PYData.c_credit,
        sizeof(m_TData.PYData.c_credit),NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_DOUBLE,&m_TData.PYData.c_credit_lim,
        0,NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_DOUBLE,&m_TData.PYData.c_discount,
        0,NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_DOUBLE,&m_TData.PYData.c_balance,
        0,NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_CHAR,&m_TData.PYData.c_data,
        sizeof(m_TData.PYData.c_data),NULL) != SQL_SUCCESS
    )
    {
        wsprintf(szDiag,"InitPYParams(%ld): Bind Col failed\n",m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };
return(FALSE);
}; // InitPYParams

HRESULT CTPCC_Common::Payment(int * iSize,UCHAR ** pTData)
{
    PAYMENT_DATA * ppd;
    RETCODE rc;
    ppd = (PAYMENT_DATA *) *pTData;
    try
    {
        m_hstmt = m_hstmtPayment;
        m_bTPRslt = TRUE;
        m_iTPRslt = SVCERR_DEADLOCK;
        if (ppd->c_id != 0)
            ppd->c_last[0] = 0;
        memcpy(&m_TData.PYData,ppd,sizeof(PAYMENT_DATA));
        for (m_iTryCount = 1; m_iTryCount <= m_iMaxRetry; m_iTryCount++)
        {
            rc = SQLExecDirectW(m_hstmt,(SQLWCHAR *)L"call
tpcc_payment(?,?,?,?,,?)",SQL_NTS);
            if (rc != SQL_SUCCESS && rc != SQL_SUCCESS_WITH_INFO)
            {
                char szDiag[100];
                wsprintf(szDiag,"Payment(%ld): Execute Direct\n",m_lRefId);
                if (CheckDBError(szDiag))
                {
                    m_iTPRslt = SVCERR_ODBC;
                    break;
                };
                continue;
            };
            if (SQLFetch(m_hstmt) == SQL_ERROR)
            {
                char szDiag[100];
                wsprintf(szDiag,"Payment(%ld): Fetch\n",m_lRefId);
                if (CheckDBError(szDiag))
                {
                    m_iTPRslt = SVCERR_ODBC;
                    break;
                };
            };
        };
    };
};

```

```

        continue;
    };
    SQLFreeStmt(m_hstmt,SQL_CLOSE);
    if (m_TData.PYData.c_id == 0)
        m_iTPRslt = SVCERR_NOCUSTOMER;
    else
    {
        m_bTPRslt = FALSE;
        m_iTPRslt = SVC_NOERROR;
    }
    break;
}; // for m_iMaxRetry
memcpy(ppd,&m_TData.PYData,sizeof(PAYMENT_DATA));
ppd->bTPRslt = m_bTPRslt;
ppd->iTPRslt = m_iTPRslt;
if (!m_bTPRslt)
{
    strcpy(ppd->execution_status,"Transaction committed.");
    return(S_OK);
};
if (m_iTPRslt == SVCERR_NOCUSTOMER)
{
    strcpy(ppd->execution_status,"Invalid Customer id,name.");
    return(S_OK);
};
if (m_iTPRslt == SVCERR_DEADLOCK)
    wsprintf(ppd->execution_status,"Hit retry max(%d).",m_iMaxRetry);
else
    strcpy(ppd->execution_status,"DBTranAbort, Check Input Data");
return(S_OK);
}

catch (...)
{
    char szDiag[300];
    wsprintf(szDiag,"Payment(%ld): Unhandled exception\n",m_lRefId);
    WriteEventLog(szDiag,TRUE);
    m_bCanBePooled = FALSE;
    ppd->bTPRslt = TRUE;
    ppd->iTPRslt = SVCERR_EXCEPTION;
    strcpy(ppd->execution_status,"Error, Unhandled exception");
    return(S_OK);
}; // Payment

bool CTPCC_Common::InitDLParams(void)
{
    int i;
    char szDiag[300];
    if (SQLAllocHandle(SQL_HANDLE_STMT,m_hdbc,&m_hstmtDelivery) !=
SQL_SUCCESS)
    {
        wsprintf(szDiag,"InitDLParams(%ld): Allocate Stmt Handle
failed\n",m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };
    m_hstmt = m_hstmtDelivery;
    i = 0;
    if
(SQLBindParameter(m_hstmt,++i,SQL_PARAM_INPUT,SQL_C_SSHORT,SQL_SMALLINT,
0,0,&m_TData.DLData.w_id, 0, NULL) != SQL_SUCCESS

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```

    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT,
    0, 0, &m_TData.DLData.o_carrier_id, 0, NULL) != SQL_SUCCESS
    }
    {
        wsprintf(szDiag, "InitDLParams(%ld): Bind Param
failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };
    for (i = 0; i < 10; i++)
    {
        if
(SQLBindCol(m_hstmt, (UWORD)(i+1), SQL_C_SLONG, &m_TData.DLData.o_id[i],
    0, NULL) != SQL_SUCCESS)
        {
            wsprintf(szDiag, "InitPYParams(%ld): Bind Col (%d)
failed\n", m_lRefId, (i+1));
            CheckDBError(szDiag);
            return(TRUE);
        };
    };
    return(FALSE);
}; // InitDLParams

HRESULT CTPCC_Common::Delivery(int * iSize, UCHAR ** pTData)
{
    DELIVERY_DATA * pdd;
    RETCODE rc;
    pdd = (DELIVERY_DATA *) *pTData;
    try
    {
        m_hstmt = m_hstmtDelivery;
        m_bTPRslt = TRUE;
        m_iTPRslt = SVCERR_DEADLOCK;
        memcpy(&m_TData.DLData, pdd, sizeof(DELIVERY_DATA));
        for (m_iTryCount = 1; m_iTryCount <= m_iMaxRetry; m_iTryCount++)
        {
            rc = SQLExecDirectW(m_hstmt, (SQLWCHAR *)L"call
tpcc_delivery(?,?)", SQL_NTS);
            if (rc != SQL_SUCCESS && rc != SQL_SUCCESS_WITH_INFO)
            {
                char szDiag[100];
                wsprintf(szDiag, "Delivery(%ld): Execute Direct\n", m_lRefId);
                if (CheckDBError(szDiag))
                {
                    m_iTPRslt = SVCERR_ODBC;
                    break;
                };
                continue;
            };
            if (SQLFetch(m_hstmt) == SQL_ERROR)
            {
                char szDiag[100];
                wsprintf(szDiag, "Delivery(%ld): Fetch\n", m_lRefId);
                if (CheckDBError(szDiag))
                {
                    m_iTPRslt = SVCERR_ODBC;
                    break;
                };
                continue;
            };
        };
    };
}

```

```

    };
    SQLFreeStmt(m_hstmt, SQL_CLOSE);
    m_bTPRslt = FALSE;
    m_iTPRslt = SVC_NOERROR;
    break;
}; // for m_iMaxRetry
memcpy(pdd, &m_TData.DLData, sizeof(DELIVERY_DATA));
pdd->bTPRslt = m_bTPRslt;
pdd->iTPRslt = m_iTPRslt;
return(S_OK);
}

catch (...)
{
    char szDiag[300];
    wsprintf(szDiag, "Delivery(%ld): Unhandled exception\n", m_lRefId);
    WriteEventLog(szDiag, TRUE);
    m_bCanBePooled = FALSE;
    pdd->bTPRslt = TRUE;
    pdd->iTPRslt = SVCERR_EXCEPTION;
    return(S_OK);
}; // Delivery

bool CTPCC_Common::InitOSParams(void)
{
    char szDiag[300];
    int i;
    if (SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc, &m_hstmtOrderStatus) !=
SQL_SUCCESS
    || SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc, &m_descOrderStatusCols1) !=
SQL_SUCCESS
    || SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc, &m_descOrderStatusCols2) !=
SQL_SUCCESS
    )
    {
        wsprintf(szDiag, "InitOSParams(%ld): Allocate Stmt Handles
failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };

    m_hstmt = m_hstmtOrderStatus;

    if (SQLSetStmtAttrW(m_hstmt, SQL_ATTR_APP_ROW_DESC,
        m_descOrderStatusCols1, SQL_IS_POINTER) != SQL_SUCCESS)
    {
        wsprintf(szDiag, "InitOSParams(%ld): SetStmtAttr OSCols1
failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };

    i = 0;
    if
(SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT,
    0, 0, &m_TData.OSData.w_id, 0, NULL) != SQL_SUCCESS
    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT,
    0, 0, &m_TData.OSData.d_id, 0, NULL) != SQL_SUCCESS
    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER,

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        0,0,&m_TData.OSData.c_id,0,NULL) != SQL_SUCCESS
    || SQLBindParameter(m_hstmt,++i,SQL_PARAM_INPUT,SQL_C_CHAR,SQL_CHAR,
        sizeof(m_TData.OSData.c_last),0,&m_TData.OSData.c_last,
        sizeof(m_TData.OSData.c_last),NULL) != SQL_SUCCESS
    )
}
wsprintf(szDiag,"InitOSParams(%ld): Bind Param failed\n",m_lRefId);
CheckDBError(szDiag);
return(TRUE);
};

// configure block cursor
if (SQLSetStmtAttrW(m_hstmt,SQL_ATTR_ROW_BIND_TYPE,
    (SQLPOINTER)sizeof(m_TData.OSData.OlOrderStatusData[0]),0) !=
SQL_SUCCESS
    || SQLSetStmtAttrW(m_hstmt,SQL_ATTR_ROWS_FETCHED_PTR,
        &m_RowsFetched,0) != SQL_SUCCESS
    )
{
    wsprintf(szDiag,"InitOSParams(%ld): SetStmtAttr RowsFetched
failed\n",m_lRefId);
    CheckDBError(szDiag);
    return(TRUE);
};

i = 0;
if (SQLBindCol(m_hstmt,++i,SQL_C_SSHORT,
    &m_TData.OSData.OlOrderStatusData[0].ol_supply_w_id, 0, NULL)
!= SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_SLONG,
        &m_TData.OSData.OlOrderStatusData[0].ol_i_id, 0, NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_SSHORT,
        &m_TData.OSData.OlOrderStatusData[0].ol_quantity, 0, NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_DOUBLE,
        &m_TData.OSData.OlOrderStatusData[0].ol_amount, 0, NULL) !=
SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_TYPE_TIMESTAMP,
        &m_TData.OSData.OlOrderStatusData[0].ol_delivery_d, 0, NULL)
!= SQL_SUCCESS
    )
{
    wsprintf(szDiag,"InitOSParams(%ld): Bind Col Ol
failed\n",m_lRefId);
    CheckDBError(szDiag);
    return(TRUE);
};

if (SQLSetStmtAttrW(m_hstmt,SQL_ATTR_APP_ROW_DESC,
    m_descOrderStatusCols2,SQL_IS_POINTER) != SQL_SUCCESS)
{
    wsprintf(szDiag,"InitOSParams(%ld): SetStmtAttr OSCols2
failed\n",m_lRefId);
    CheckDBError(szDiag);
    return(TRUE);
};

i = 0;
if (SQLBindCol(m_hstmt,++i,SQL_C_SLONG,&m_TData.OSData.c_id,
    0,NULL) != SQL_SUCCESS

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```

    || SQLBindCol(m_hstmt,++i,SQL_C_CHAR,&m_TData.OSData.c_last,
        sizeof(m_TData.OSData.c_last),NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_CHAR,&m_TData.OSData.c_first,
        sizeof(m_TData.OSData.c_first),NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_CHAR,&m_TData.OSData.c_middle,
        sizeof(m_TData.OSData.c_middle), NULL) != SQL_SUCCESS
    )
SQLBindCol(m_hstmt,++i,SQL_C_TYPE_TIMESTAMP,&m_TData.OSData.o_entry_d,
    0,NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_SSHORT,&m_TData.OSData.o_carrier_id,
        0,NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_DOUBLE,&m_TData.OSData.c_balance,
        0,NULL) != SQL_SUCCESS
    || SQLBindCol(m_hstmt,++i,SQL_C_SLONG,&m_TData.OSData.o_id,
        0,NULL) != SQL_SUCCESS
    )
{
    wsprintf(szDiag,"InitOSParams(%ld): Bind Col failed\n",m_lRefId);
    CheckDBError(szDiag);
    return(TRUE);
};
return(FALSE);
}; // InitOSParams

HRESULT CTPCC_Common::OrderStatus(int * iSize,UCHAR ** pTData)
{
    ORDER_STATUS_DATA * posd;
    RETCODE rc;

    posd = (ORDER_STATUS_DATA *) *pTData;
    try
    {
        m_hstmt = m_hstmtOrderStatus;
        m_bTPRslt = TRUE;
        m_iTPRslt = SVCERR_DEADLOCK;
        if (SQLSetStmtAttrW(m_hstmt,SQL_ATTR_APP_ROW_DESC,
            m_descOrderStatusCols1,SQL_IS_POINTER) != SQL_SUCCESS)
        {
            char szDiag[100];
            wsprintf(szDiag,"OrderStatus(%ld): SetStmtAttr
OSCols1\n",m_lRefId);
            CheckDBError(szDiag);
            posd->bTPRslt = TRUE;
            posd->iTPRslt = SVCERR_ODBC;
            strcpy(posd->execution_status,"Error, SetStmt OSCols1");
            return(S_OK);
        };
        if (posd->c_id != 0)
            posd->c_last[0] = 0;
        memcpy(&m_TData.OSData,posd,sizeof(ORDER_STATUS_DATA));
        for (m_iTryCount = 1; m_iTryCount <= m_iMaxRetry; m_iTryCount++)
        {
            // configure block cursor
            if
            (SQLSetStmtAttrW(m_hstmt,SQL_ATTR_ROW_ARRAY_SIZE,(SQLPOINTER)1,0) !=
SQL_SUCCESS)
            {
                char szDiag[100];
                wsprintf(szDiag,"OrderStatus(%ld): SetStmtAttr
RowArraySize\n",m_lRefId);
                if (CheckDBError(szDiag))

```

```

        {
            m_iTPRslt = SVCERR_ODBC;
            break;
        };
        continue;
    };
    rc = SQLExecDirectW(m_hstmt, (SQLWCHAR*)L"{call
tpcc_orderstatus(?,?,?,?)}",SQL_NTS);
    if ( ((rc == SQL_SUCCESS_WITH_INFO) && (m_RowsFetched != 0)) ||
(rc == SQL_ERROR) )
    {
        char szDiag[100];
        wsprintf(szDiag,"OrderStatus(%ld): Execute
Direct\n",m_lRefId);
        if (CheckDBError(szDiag))
        {
            m_iTPRslt = SVCERR_ODBC;
            break;
        };
        continue;
    };
    // configure block cursor
    if (SQLSetStmtAttrW(m_hstmt,SQL_ATTR_ROW_ARRAY_SIZE,
(SQLPOINTER)MAX_OL, 0) != SQL_SUCCESS)
    {
        char szDiag[100];
        wsprintf(szDiag,"OrderStatus(%ld): SetStmtAttr RowArraySize
MAX_OL\n",m_lRefId);
        if (CheckDBError(szDiag))
        {
            m_iTPRslt = SVCERR_ODBC;
            break;
        };
        continue;
    };
    rc = SQLFetchScroll(m_hstmt,SQL_FETCH_NEXT,0);
    if ( ((rc == SQL_SUCCESS_WITH_INFO) && (m_RowsFetched != 0)) ||
(rc == SQL_ERROR) )
    {
        char szDiag[100];
        wsprintf(szDiag,"OrderStatus(%ld): FetchScroll\n",m_lRefId);
        if (CheckDBError(szDiag))
        {
            m_iTPRslt = SVCERR_ODBC;
            break;
        };
        continue;
    };
    m_TData.OSData.o_ol_cnt = (short)m_RowsFetched;

    if (m_TData.OSData.o_ol_cnt != 0)
    {
        if
(SQLSetStmtAttrW(m_hstmt,SQL_ATTR_APP_ROW_DESC,m_descOrderStatusCols2,
SQL_IS_POINTER) != SQL_SUCCESS)
        {
            char szDiag[100];
            wsprintf(szDiag,"OrderStatus(%ld): SetStmtAttr
OSCols2\n",m_lRefId);
            if (CheckDBError(szDiag))
            {

```

```

                m_iTPRslt = SVCERR_ODBC;
                break;
            };
            continue;
        };
        if (SQLMoreResults(m_hstmt) == SQL_ERROR)
        {
            char szDiag[100];
            wsprintf(szDiag,"OrderStatus(%ld):
MoreResults\n",m_lRefId);
            if (CheckDBError(szDiag))
            {
                m_iTPRslt = SVCERR_ODBC;
                break;
            };
            continue;
        };
        if (SQLFetch(m_hstmt) == SQL_ERROR)
        {
            char szDiag[100];
            wsprintf(szDiag,"OrderStatus(%ld): Fetch\n",m_lRefId);
            CheckDBError(szDiag);
            if (SQLSetStmtAttrW(m_hstmt,SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols1,SQL_IS_POINTER) != SQL_SUCCESS)
            {
                char szDiag[100];
                wsprintf(szDiag,"OrderStatus(%ld): SetStmtAttr (Fetch)
OSCols1\n",m_lRefId);
                CheckDBError(szDiag);
                posd->bTPRslt = TRUE;
                posd->iTPRslt = SVCERR_ODBC;
                strcpy(posd->execution_status,"Error, SetStmt Cols1
Fetch");
                return(S_OK);
            };
            memcpy(&m_TData.OSData,posd,sizeof(ORDER_STATUS_DATA));
            Sleep(20);
            continue;
        };
    }; // order lines exist
    SQLFreeStmt(m_hstmt,SQL_CLOSE);
    if (m_TData.OSData.o_ol_cnt == 0)
        m_iTPRslt = SVCERR_NOORDERS;
    else
        if (m_TData.OSData.c_id == 0 && m_TData.OSData.c_last[0] == 0)
            m_iTPRslt = SVCERR_NOCUSTOMER;
        else
        {
            m_bTPRslt = FALSE;
            m_iTPRslt = SVC_NOERROR;
        };
        break;
    }; // for m_iMaxRetry
    memcpy(posd,&m_TData.OSData,sizeof(ORDER_STATUS_DATA));
    posd->bTPRslt = m_bTPRslt;
    posd->iTPRslt = m_iTPRslt;
    if (!m_bTPRslt)
    {
        strcpy(posd->execution_status,"Transaction committed.");
        return(S_OK);
    };
};

```



```

    if (m_iTPRslt == SVCERR_NOCUSTOMER)
    {
        strcpy(posd->execution_status, "Invalid Customer id,name.");
        return(S_OK);
    };
    if (m_iTPRslt == SVCERR_NOORDERS)
    {
        strcpy(posd->execution_status, "Customer has no orders.");
        return(S_OK);
    };
    if (m_iTPRslt == SVCERR_DEADLOCK)
        sprintf(posd->execution_status, "Hit retry
max(%d).", m_iMaxRetry);
    else
        strcpy(posd->execution_status, "DBTranAbort, Check Input Data");
        return(S_OK);
}
catch (...)
{
    char szDiag[300];
    sprintf(szDiag, "OrderStatus(%ld): Unhandled exception\n", m_lRefId);
    WriteEventLog(szDiag, TRUE);
    m_bCanBePooled = FALSE;
    posd->bTPRslt = TRUE;
    posd->iTPRslt = SVCERR_EXCEPTION;
    strcpy(posd->execution_status, "Error, Unhandled exception");
    return(S_OK);
};
}; // Orderstatus

bool CTPCC_Common::InitSLParams(void)
{
    char szDiag[300];
    int i = 0;
    if (SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc, &m_hstmtStockLevel) !=
SQL_SUCCESS )
    {
        sprintf(szDiag, "InitSLParams(%ld): Allocate Stmt Handle
failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };
    m_hstmt = m_hstmtStockLevel;
    if
(SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT,
0, 0, &m_TData.SLData.w_id, 0, NULL) != SQL_SUCCESS
||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT,
0, 0, &m_TData.SLData.d_id, 0, NULL) != SQL_SUCCESS
||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT,
0, 0, &m_TData.SLData.thresh_hold, 0, NULL) != SQL_SUCCESS
)
    {
        sprintf(szDiag, "InitSLParams(%ld): Bind Param failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };
    if (SQLBindCol(m_hstmt, 1, SQL_C_SLONG,
&m_TData.SLData.low_stock, 0, NULL) != SQL_SUCCESS)
    {

```

```

        sprintf(szDiag, "InitSLParams(%ld): Bind Column failed\n", m_lRefId);
        CheckDBError(szDiag);
        return(TRUE);
    };
    return(FALSE);
}; // InitSLParams

HRESULT CTPCC_Common::StockLevel(int * iSize, UCHAR ** pTData)
{
    STOCK_LEVEL_DATA * psld;
    RETCODE rc;
    psld = (STOCK_LEVEL_DATA *) *pTData;
    try
    {
        m_hstmt = m_hstmtStockLevel;
        m_bTPRslt = TRUE;
        m_iTPRslt = SVCERR_DEADLOCK;
        memcpy(&m_TData.SLData, psld, sizeof(STOCK_LEVEL_DATA));
        for (m_iTryCount = 1; m_iTryCount <= m_iMaxRetry; m_iTryCount++)
        {
            rc = SQLExecDirectW(m_hstmt,
(SQLWCHAR*)L"{call tpcc_stocklevel(?, ?, ?)}", SQL_NTS);
            if (rc != SQL_SUCCESS && rc != SQL_SUCCESS_WITH_INFO)
            {
                char szDiag[100];
                sprintf(szDiag, "StockLevel(%ld): Execute Direct\n", m_lRefId);
                if (CheckDBError(szDiag))
                {
                    m_iTPRslt = SVCERR_ODBC;
                    break;
                };
                continue;
            };
            if (SQLFetch(m_hstmt) == SQL_ERROR)
            {
                char szDiag[100];
                sprintf(szDiag, "StockLevel(%ld): Fetch\n", m_lRefId);
                if (CheckDBError(szDiag))
                {
                    m_iTPRslt = SVCERR_ODBC;
                    break;
                };
                continue;
            };
            SQLFreeStmt(m_hstmt, SQL_CLOSE);
            m_bTPRslt = FALSE;
            m_iTPRslt = SVC_NOERROR;
            break;
        }; // for m_iMaxRetry
        memcpy(psld, &m_TData.SLData, sizeof(STOCK_LEVEL_DATA));
        psld->bTPRslt = m_bTPRslt;
        psld->iTPRslt = m_iTPRslt;
        if (!m_bTPRslt)
        {
            strcpy(psld->execution_status, "Transaction committed.");
            return(S_OK);
        };
        if (m_iTPRslt == SVCERR_DEADLOCK)
            sprintf(psld->execution_status, "Hit retry
max(%d).", m_iMaxRetry);
        else

```

```

        strcpy(psld->execution_status,"DBTranAbort, Check Input Data");
return(S_OK);
}
    catch (...)
    {
char szDiag[300];
wsprintf(szDiag,"StockLevel(%ld): Unhandled exception\n",m_lRefId);
        WriteEventLog(szDiag,TRUE);
        m_bCanBePooled = FALSE;
psld->bTPRslt = TRUE;
psld->iTPRslt = SVCERR_EXCEPTION;
        strcpy(psld->execution_status,"Error, Unhandled exception");
        return(S_OK);
    };
}; // Stocklevel

//=====
//
// Function name: ReadRegistry
//
// Sets global operational parameters from registry if they exist.
// Otherwise, compiled in defaults apply.
//
// Result:
// FALSE Registry entry found
// TRUE Registry entry does not exist
//
//=====
bool ReadRegistry(VOID)
{
    HKEY hkTPCC;
    DWORD dwMax;
    DWORD dwRT;
    CHAR * pszEnvData;
    char szValue[100];
    if (RegOpenKeyEx(HKEY_LOCAL_MACHINE,"SOFTWARE\\Unisys\\TPCC",0,
        KEY_READ, &hkTPCC) != ERROR_SUCCESS )
        return(TRUE);
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC,"SERVERNAME",0,&dwRT,(BYTE *)
&szValue,&dwMax)
        == ERROR_SUCCESS)
        strcpy(szServer,szValue);
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC,"DATABASE",0,&dwRT,(BYTE *) &szValue,&dwMax)
        == ERROR_SUCCESS)
        strcpy(szDatabase,szValue);
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC,"USER",0,&dwRT,(BYTE *) &szValue,&dwMax)
        == ERROR_SUCCESS)
        strcpy(szUser,szValue);
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC,"PASSWORD",0,&dwRT,(BYTE *) &szValue,&dwMax)
        == ERROR_SUCCESS)
        strcpy(szPassword,szValue);
    dwMax = sizeof(szValue);
    if (RegQueryValueEx(hkTPCC,"MAXRETRY",0,&dwRT,(BYTE *) &szValue,&dwMax)
        == ERROR_SUCCESS )
        iDeadlockRetry = abs(atoi(szValue));
    RegCloseKey(hkTPCC);
    if ((pszEnvData = getenv("WEBINSTANCE")) != NULL)

```

```

        strcpy(szServer,pszEnvData);
    if ((pszEnvData = getenv("WEBDATABASE")) != NULL)
        strcpy(szDatabase,pszEnvData);
    if ((pszEnvData = getenv("WEBDRIVERNO")) != NULL)
        iInstance = abs(atoi(pszEnvData));

    return(FALSE);
}; // ReadRegistry

//=====
//
// Function name: WriteEventLog
//
//=====
void WriteEventLog(char * pMsg,bool bError)
{
    WORD wType;
    char szHeader[100];
    char * pDMsgs[2];
    HANDLE hEventLog = NULL;
    if (bError)
        wType = EVENTLOG_ERROR_TYPE;
    else
        wType = EVENTLOG_INFORMATION_TYPE;
    hEventLog = RegisterEventSource(NULL,pProgId);
    wsprintf(szHeader,"%s (%ld)\n",pProgId,GetCurrentThreadId());
    pDMsgs[0] = szHeader;
    pDMsgs[1] = pMsg;
    if (hEventLog != NULL)
    {
        ReportEvent(hEventLog, // event log handle
            wType, // event type
            0, // category zero
            0, // no event identifier
            NULL, // no user security identifier
            2, // # of substitution strings
            0, // no binary data
            (LPCTSTR *) pDMsgs, // address of string array
            NULL); // address of binary data
        DeregisterEventSource(hEventLog);
    };
    return;
}; // WriteEventLog

```

# Appendix B - Database Design

## Build Scripts

### BACKUP.SQL

```
-- File:      BACKUP.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- Purpose:   Creates backup of tpcc database

DBCC TRACEON (3111)
GO

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select 'Start date:', convert(varchar(30),@startdate,9)

backup database tpcc to tpccbackA14, tpccbackB14, tpccbackC14,
tpccbackD14,
                    tpccbackA13, tpccbackB13, tpccbackC13,
                    tpccbackA7, tpccbackB7, tpccbackC7, tpccbackD7,
                    tpccbackA6, tpccbackB6, tpccbackC6, tpccbackD6
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
```

### BACKUPDEVB.SQL

```
-- File:      BACKUPDEVB.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- Purpose:   Creates tpcc database Backup Devices

use master
go

-- create backup devices

exec sp_addumpdevice
'disk','tpccbackA14','C:\Bigdb\dbBackups\BackupA14\backupA14.dmp'
exec sp_addumpdevice
'disk','tpccbackB14','C:\Bigdb\dbBackups\BackupB14\backupB14.dmp'
```

```
exec sp_addumpdevice
'disk','tpccbackC14','C:\Bigdb\dbBackups\BackupC14\backupC14.dmp'
exec sp_addumpdevice
'disk','tpccbackD14','C:\Bigdb\dbBackups\BackupD14\backupD14.dmp'
exec sp_addumpdevice
'disk','tpccbackA13','C:\Bigdb\dbBackups\BackupA13\backupA13.dmp'
exec sp_addumpdevice
'disk','tpccbackB13','C:\Bigdb\dbBackups\BackupB13\backupB13.dmp'
exec sp_addumpdevice
'disk','tpccbackC13','C:\Bigdb\dbBackups\BackupC13\backupC13.dmp'
exec sp_addumpdevice
'disk','tpccbackD13','C:\Bigdb\dbBackups\BackupD13\backupD13.dmp'
exec sp_addumpdevice
'disk','tpccbackA7','C:\Bigdb\dbBackups\BackupA7\backupA7.dmp'
exec sp_addumpdevice
'disk','tpccbackB7','C:\Bigdb\dbBackups\BackupB7\backupB7.dmp'
exec sp_addumpdevice
'disk','tpccbackC7','C:\Bigdb\dbBackups\BackupC7\backupC7.dmp'
exec sp_addumpdevice
'disk','tpccbackD7','C:\Bigdb\dbBackups\BackupD7\backupD7.dmp'
exec sp_addumpdevice
'disk','tpccbackA6','C:\Bigdb\dbBackups\BackupA6\backupA6.dmp'
exec sp_addumpdevice
'disk','tpccbackB6','C:\Bigdb\dbBackups\BackupB6\backupB6.dmp'
exec sp_addumpdevice
'disk','tpccbackC6','C:\Bigdb\dbBackups\BackupC6\backupC6.dmp'
exec sp_addumpdevice
'disk','tpccbackD6','C:\Bigdb\dbBackups\BackupD6\backupD6.dmp'

go
```

### CREATEDB.SQL

```
use master
go
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

update tpcc_timer
set start_date = (select convert(char(30), getdate(),9))
go
CREATE DATABASE tpcc
```

```

ON PRIMARY
(
  NAME = MSSQL_tpcc_root,
  FILENAME = "C:\Bigdb\dbRoots\tpcc_root.mdf",
  SIZE = 10MB, FILEGROWTH = 0),
FILEGROUP MSSQL_misc_fg
(
  NAME = MSSQL_miscA1,
  FILENAME = "C:\Bigdb\cabA\misc1\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA2,
  FILENAME = "C:\Bigdb\cabA\misc2\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA3,
  FILENAME = "C:\Bigdb\cabA\misc3\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA4,
  FILENAME = "C:\Bigdb\cabA\misc4\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA5,
  FILENAME = "C:\Bigdb\cabA\misc5\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA6,
  FILENAME = "C:\Bigdb\cabA\misc6\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA7,
  FILENAME = "C:\Bigdb\cabA\misc7\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA8,
  FILENAME = "C:\Bigdb\cabA\misc8\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA9,
  FILENAME = "C:\Bigdb\cabA\misc9\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA10,
  FILENAME = "C:\Bigdb\cabA\misc10\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA11,
  FILENAME = "C:\Bigdb\cabA\misc11\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA12,
  FILENAME = "C:\Bigdb\cabA\misc12\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA13,
  FILENAME = "C:\Bigdb\cabA\misc13\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscA14,
  FILENAME = "C:\Bigdb\cabA\misc14\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB1,
  FILENAME = "C:\Bigdb\cabB\misc1\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB2,
  FILENAME = "C:\Bigdb\cabB\misc2\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB3,
  FILENAME = "C:\Bigdb\cabB\misc3\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB4,
  FILENAME = "C:\Bigdb\cabB\misc4\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB5,
  FILENAME = "C:\Bigdb\cabB\misc5\",

```

```

  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB6,
  FILENAME = "C:\Bigdb\cabB\misc6\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB7,
  FILENAME = "C:\Bigdb\cabB\misc7\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB8,
  FILENAME = "C:\Bigdb\cabB\misc8\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB9,
  FILENAME = "C:\Bigdb\cabB\misc9\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB10,
  FILENAME = "C:\Bigdb\cabB\misc10\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB11,
  FILENAME = "C:\Bigdb\cabB\misc11\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB12,
  FILENAME = "C:\Bigdb\cabB\misc12\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB13,
  FILENAME = "C:\Bigdb\cabB\misc13\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscB14,
  FILENAME = "C:\Bigdb\cabB\misc14\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscC1,
  FILENAME = "C:\Bigdb\cabC\misc1\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscC2,
  FILENAME = "C:\Bigdb\cabC\misc2\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscC3,
  FILENAME = "C:\Bigdb\cabC\misc3\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscC4,
  FILENAME = "C:\Bigdb\cabC\misc4\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscC5,
  FILENAME = "C:\Bigdb\cabC\misc5\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscC6,
  FILENAME = "C:\Bigdb\cabC\misc6\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscC7,
  FILENAME = "C:\Bigdb\cabC\misc7\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscC8,
  FILENAME = "C:\Bigdb\cabC\misc8\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscC9,
  FILENAME = "C:\Bigdb\cabC\misc9\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscC10,
  FILENAME = "C:\Bigdb\cabC\misc10\",
  SIZE = 3600MB, FILEGROWTH = 0),
(
  NAME = MSSQL_miscC11,
  FILENAME = "C:\Bigdb\cabC\misc11\",
  SIZE = 3600MB, FILEGROWTH = 0),

```

```

( NAME = MSSQL_miscC12,
  FILENAME = "C:\Bigdb\cabC\misc12\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscC13,
  FILENAME = "C:\Bigdb\cabC\misc13\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscC14,
  FILENAME = "C:\Bigdb\cabC\misc14\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD1,
  FILENAME = "C:\Bigdb\cabD\misc1\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD2,
  FILENAME = "C:\Bigdb\cabD\misc2\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD3,
  FILENAME = "C:\Bigdb\cabD\misc3\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD4,
  FILENAME = "C:\Bigdb\cabD\misc4\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD5,
  FILENAME = "C:\Bigdb\cabD\misc5\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD6,
  FILENAME = "C:\Bigdb\cabD\misc6\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD7,
  FILENAME = "C:\Bigdb\cabD\misc7\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD8,
  FILENAME = "C:\Bigdb\cabD\misc8\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD9,
  FILENAME = "C:\Bigdb\cabD\misc9\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD10,
  FILENAME = "C:\Bigdb\cabD\misc10\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD11,
  FILENAME = "C:\Bigdb\cabD\misc11\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD12,
  FILENAME = "C:\Bigdb\cabD\misc12\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD13,
  FILENAME = "C:\Bigdb\cabD\misc13\",
  SIZE = 3600MB, FILEGROWTH = 0),
( NAME = MSSQL_miscD14,
  FILENAME = "C:\Bigdb\cabD\misc14\",
  SIZE = 3600MB, FILEGROWTH = 0),
FILEGROUP MSSQL_cs_fg
( NAME = MSSQL_csA1,
  FILENAME = "C:\Bigdb\cabA\cs1\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csA2,
  FILENAME = "C:\Bigdb\cabA\cs2\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csA3,
  FILENAME = "C:\Bigdb\cabA\cs3\",
  SIZE = 6750MB, FILEGROWTH = 0),

```

```

( NAME = MSSQL_csA4,
  FILENAME = "C:\Bigdb\cabA\cs4\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csA5,
  FILENAME = "C:\Bigdb\cabA\cs5\",
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( NAME = MSSQL_csA7,
  FILENAME = "C:\Bigdb\cabA\cs7\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csA8,
  FILENAME = "C:\Bigdb\cabA\cs8\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csA9,
  FILENAME = "C:\Bigdb\cabA\cs9\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csA10,
  FILENAME = "C:\Bigdb\cabA\cs10\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csA11,
  FILENAME = "C:\Bigdb\cabA\cs11\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csA12,
  FILENAME = "C:\Bigdb\cabA\cs12\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csA13,
  FILENAME = "C:\Bigdb\cabA\cs13\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csA14,
  FILENAME = "C:\Bigdb\cabA\cs14\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB1,
  FILENAME = "C:\Bigdb\cabB\cs1\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB2,
  FILENAME = "C:\Bigdb\cabB\cs2\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB3,
  FILENAME = "C:\Bigdb\cabB\cs3\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB4,
  FILENAME = "C:\Bigdb\cabB\cs4\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB5,
  FILENAME = "C:\Bigdb\cabB\cs5\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB6,
  FILENAME = "C:\Bigdb\cabB\cs6\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB7,
  FILENAME = "C:\Bigdb\cabB\cs7\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB8,
  FILENAME = "C:\Bigdb\cabB\cs8\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB9,
  FILENAME = "C:\Bigdb\cabB\cs9\",
  SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB10,

```

```

FILENAME = "C:\Bigdb\cabB\cs10\",
SIZE = 6750MB, FILEGROWTH = 0),
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FILENAME = "C:\Bigdb\cabB\cs11\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB12,
FILENAME = "C:\Bigdb\cabB\cs12\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB13,
FILENAME = "C:\Bigdb\cabB\cs13\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csB14,
FILENAME = "C:\Bigdb\cabB\cs14\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csC1,
FILENAME = "C:\Bigdb\cabC\cs1\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csC2,
FILENAME = "C:\Bigdb\cabC\cs2\",
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FILENAME = "C:\Bigdb\cabC\cs3\",
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FILENAME = "C:\Bigdb\cabC\cs4\",
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( NAME = MSSQL_csC5,
FILENAME = "C:\Bigdb\cabC\cs5\",
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FILENAME = "C:\Bigdb\cabC\cs6\",
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( NAME = MSSQL_csC7,
FILENAME = "C:\Bigdb\cabC\cs7\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csC8,
FILENAME = "C:\Bigdb\cabC\cs8\",
SIZE = 6750MB, FILEGROWTH = 0),
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FILENAME = "C:\Bigdb\cabC\cs9\",
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FILENAME = "C:\Bigdb\cabC\cs10\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csC11,
FILENAME = "C:\Bigdb\cabC\cs11\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csC12,
FILENAME = "C:\Bigdb\cabC\cs12\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csC13,
FILENAME = "C:\Bigdb\cabC\cs13\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csC14,
FILENAME = "C:\Bigdb\cabC\cs14\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD1,
FILENAME = "C:\Bigdb\cabD\cs1\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD2,
FILENAME = "C:\Bigdb\cabD\cs2\",

```

```

SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD3,
FILENAME = "C:\Bigdb\cabD\cs3\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD4,
FILENAME = "C:\Bigdb\cabD\cs4\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD5,
FILENAME = "C:\Bigdb\cabD\cs5\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD6,
FILENAME = "C:\Bigdb\cabD\cs6\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD7,
FILENAME = "C:\Bigdb\cabD\cs7\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD8,
FILENAME = "C:\Bigdb\cabD\cs8\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD9,
FILENAME = "C:\Bigdb\cabD\cs9\",
SIZE = 6750MB, FILEGROWTH = 0),
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FILENAME = "C:\Bigdb\cabD\cs10\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD11,
FILENAME = "C:\Bigdb\cabD\cs11\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD12,
FILENAME = "C:\Bigdb\cabD\cs12\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD13,
FILENAME = "C:\Bigdb\cabD\cs13\",
SIZE = 6750MB, FILEGROWTH = 0),
( NAME = MSSQL_csD14,
FILENAME = "C:\Bigdb\cabD\cs14\",
SIZE = 6750MB, FILEGROWTH = 0),
FILEGROUP MSSQL_ord_fg
( NAME = MSSQL_ordA1,
FILENAME = "C:\Bigdb\cabA\ord1\",
SIZE = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordA2,
FILENAME = "C:\Bigdb\cabA\ord2\",
SIZE = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordA3,
FILENAME = "C:\Bigdb\cabA\ord3\",
SIZE = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordA4,
FILENAME = "C:\Bigdb\cabA\ord4\",
SIZE = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordA5,
FILENAME = "C:\Bigdb\cabA\ord5\",
SIZE = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordA6,
FILENAME = "C:\Bigdb\cabA\ord6\",
SIZE = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordA7,
FILENAME = "C:\Bigdb\cabA\ord7\",
SIZE = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordA8,
FILENAME = "C:\Bigdb\cabA\ord8\",

```



```

FILENAME = "C:\Bigdb\cabD\ord7\",
SIZE     = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordD8,
FILENAME = "C:\Bigdb\cabD\ord8\",
SIZE     = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordD9,
FILENAME = "C:\Bigdb\cabD\ord9\",
SIZE     = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordD10,
FILENAME = "C:\Bigdb\cabD\ord10\",
SIZE     = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordD11,
FILENAME = "C:\Bigdb\cabD\ord11\",
SIZE     = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordD12,
FILENAME = "C:\Bigdb\cabD\ord12\",
SIZE     = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordD13,
FILENAME = "C:\Bigdb\cabD\ord13\",
SIZE     = 4250MB, FILEGROWTH = 0),
( NAME = MSSQL_ordD14,
FILENAME = "C:\Bigdb\cabD\ord14\",
SIZE     = 4250MB, FILEGROWTH = 0)
LOG ON
( NAME = MSSQL_tpcc_log,
FILENAME = "C:\Bigdb\dblogs\tpcclog\",
SIZE = 272383MB, FILEGROWTH = 0)
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))
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
exec sp_dboption tpcc,'torn page detection',false

go

use tpcc
go

checkpoint
go

```

## DBOPT2.SQL

```

-- File:          DBOPT2.SQL
--               Microsoft TPC-C Benchmark Kit Ver. 4.21
--               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)

--
-- Set option values for user-defined indexes --
--

SET @msg = ' '
PRINT @msg
SET @msg = 'Setting SQL Server 2000 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

Print ' '
Print '*****'
Print 'Pre-specified Locking Hierarchy:'
Print '  Lockflag = 0 ==> No pre-specified hierarchy'
Print '  Lockflag = 1 ==> Lock at Page-level then Table-level'
Print '  Lockflag = 2 ==> Lock at Row-level then Table-level'
Print '  Lockflag = 3 ==> Lock at Table-level'
Print ' '

SELECT name,lockflags
FROM sysindexes
WHERE object_id('warehouse') = id OR

```



```

object_id('district') = id OR
object_id('customer') = id OR
object_id('stock') = id OR
object_id('orders') = id OR
object_id('order_line') = id OR
object_id('history') = id OR
object_id('new_order') = id OR
object_id('item') = id
ORDER BY lockflags asc
GO

sp_configure 'allow updates',0
GO

RECONFIGURE WITH OVERRIDE
GO

EXEC sp_dboption tpcc, 'auto update statistics', FALSE
EXEC sp_dboption tpcc, 'auto create statistics', FALSE
GO

EXEC sp_tableoption 'district', 'pintable',true
EXEC sp_tableoption 'warehouse', 'pintable',true
EXEC sp_tableoption 'new_order', 'pintable',true
EXEC sp_tableoption 'item', 'pintable',true
GO

```

## REMOVEDB.SQL

```

-- File: REMOVEDB.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.21
-- Copyright Microsoft, 1999, 2000
-- 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 'tpccbackA14'
exec sp_dropdevice 'tpccbackB14'
exec sp_dropdevice 'tpccbackC14'
exec sp_dropdevice 'tpccbackD14'

```

```

exec sp_dropdevice 'tpccbackA13'
exec sp_dropdevice 'tpccbackB13'
exec sp_dropdevice 'tpccbackC13'
exec sp_dropdevice 'tpccbackD13'

```

```

exec sp_dropdevice 'tpccbackA7'
exec sp_dropdevice 'tpccbackB7'
exec sp_dropdevice 'tpccbackC7'
exec sp_dropdevice 'tpccbackD7'

```

```

exec sp_dropdevice 'tpccbackA6'

```

```

exec sp_dropdevice 'tpccbackB6'
exec sp_dropdevice 'tpccbackC6'
exec sp_dropdevice 'tpccbackD6'

```

```
go
```

## RESTORE.SQL

```

-- File: RESTORE.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.21
-- Copyright Microsoft, 1999, 2000
-- Purpose: Loads database backup from backup files

```

```

DBCC TRACEON (3111)
GO

```

```

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select 'Start date:', convert(varchar(30),@startdate,9)

```

```

restore database tpcc from tpccbackA14, tpccbackB14, tpccbackC14,
tpccbackD14,

```

```

tpccbackA13, tpccbackB13, tpccbackC13,

```

```

tpccbackD13,

```

```

tpccbackA7, tpccbackB7, tpccbackC7, tpccbackD7,
tpccbackA6, tpccbackB6, tpccbackC6, tpccbackD6
with replace, stats = 1,blocksize=65536

```

```

select @enddate = getdate()
select 'End date: ', convert(varchar(30),@enddate,9)
select 'Elapsed time (in seconds): ', datediff(second, @startdate,
@enddate)

```

```

go
dbcc traceoff (3111)

```

## SETUP.CMD

```
::@ECHO OFF
```

```
@ECHO
```

```
*****
```

```
@ECHO *
```

```
*
```

```
@ECHO * Microsoft TPC-C V3 Benchmark Kit Ver. 4.21
```

```
*
```

```
@ECHO *
```

```
*
```

```
@ECHO
```

```
*****
```

```
@if '%1'==' ' goto usage
```

```
@if '%2'==' ' goto usage
```

```
@if '%3'==' ' goto usage
```

```
@if not '%4'==' ' if not '%4' == 'normal' if not '%4' == 'scale_down' goto
```

```
usage
```

```

:: Cleanup any old .err files
@@if exist logs\*.err del logs\*.err
>nul

@if '%3'=='full' goto start
@if '%3'=='bulddb' goto bulddb
@if '%3'=='objects' goto objects
@if '%3'=='bulkload' goto bulkload
@if '%3'=='objectsfull' goto objects
@if '%3'=='bulkloadfull' goto bulkload
@if '%3'=='backup' goto backup
@if '%3'=='backupfull' goto backup
@if '%3'=='verifyload' goto verifyload
goto usage

:start
:: Cleanup the logs directory...
@if exist logs\version.log del logs\version.log
>nul
@if exist logs\db.log del logs\db.log
>nul
@if exist logs\objects.log del logs\objects.log
>nul
@if exist logs\objects.log del logs\objects.log
>nul
@if exist logs\bulkload.log del logs\bulkload.log
>nul
@if exist logs\backup.log del logs\backup.log
>nul

@isql -Usa -P -S%1 -Q"select @@version"
> logs\version.log
@isql -Usa -P -S%1 -Q"select getdate()"
>> logs\version.log

:Verify Installation
@isql -Usa -P -S%1 -b -iscripts\utility\verify_msg.sql
>nul
@isql -Usa -P -S%1 -b -iscripts\utility\verify_sort.sql
>nul
@isql -Usa -P -S%1 -b -Q"ms_verify_sort"
>nul
@if errorlevel 1 goto BAD_SORT

:bulddb
@@if exist logs\db.log del logs\db.log
>nul
@ECHO Removing any existing TPCC database and backup devices...
@isql -Usa -P -S%1 -e < scripts\%2.war\database\removedb.sql
> logs\db.log
@ECHO Creating Backup Device(s)...
@isql -Usa -P -S%1 -e < scripts\%2.war\database\backupdev.sql
>> logs\db.log
@if errorlevel 1 goto CREATE_ERROR
@ECHO Building database files and database...
@isql -Usa -P -S%1 -b -e < scripts\%2.war\database\createdb.sql
>> logs\db.log
@if errorlevel 1 goto CREATE_ERROR
@ECHO Database build complete.
@if '%3'=='full' goto objects
goto end

:objects
@if exist logs\objects.log del logs\objects.log
>nul
@ECHO Creating TPC-C database tables...
@isql -Usa -P -S%1 -b -e < scripts\%2.war\ddl\tables.sql
> logs\objects.log
@if errorlevel 1 goto TABLES_ERROR
@ECHO Creating database objects...
@isql -Usa -P -S%1 -b -e < scripts\dml\neword.sql
>> logs\objects.log
@if errorlevel 1 goto NEWORDER_ERROR
@isql -Usa -P -S%1 -b -e < scripts\dml\payment.sql
>> logs\objects.log
@if errorlevel 1 goto PAYMENT_ERROR
@isql -Usa -P -S%1 -b -e < scripts\dml\ordstat.sql
>> logs\objects.log
@if errorlevel 1 goto ORDERSTATUS_ERROR
@isql -Usa -P -S%1 -b -e < scripts\dml\delivery.sql
>> logs\objects.log
@if errorlevel 1 goto DELIVERY_ERROR
@isql -Usa -P -S%1 -b -e < scripts\dml\stocklev.sql
>> logs\objects.log
@if errorlevel 1 goto STOCKLEVEL_ERROR
@isql -Usa -P -S%1 -e < scripts\dml\version.sql
>> logs\objects.log
@ECHO Database object creation complete.
@if '%3'=='full' goto bulkload
@if '%3'=='objectsfull' goto bulkload
goto end

:bulkload
@if exist logs\bulkload.log del logs\bulkload.log
>nul
@ECHO Setting database options before load...
@isql -Usa -P -S%1 -b -e < scripts\utility\dbopt1.sql
>> logs\bulkload.log
@if errorlevel 1 goto DBOPT1_ERROR
@ECHO Beginning data load and index creation...
rem @isql -Usa -P -S%1 -b -e < scripts\%2.war\ddl\idxhiscl.sql
> logs\idxhiscl.log
@if '%4'==' ' loader\bin\tpccldr -S%1 -W%2 -flogs\bulkload.log -
dscripts\%2.war\ddl -c0
@if errorlevel 1 goto END
@if '%4'=='normal' loader\bin\tpccldr -S%1 -W%2 -flogs\bulkload.log -
dscripts\%2.war\ddl -c0
@if errorlevel 1 goto END
@if '%4'=='scale_down' loader\bin\tpccldr -S%1 -W%2 -flogs\bulkload.log -
dscripts\%2.war\ddl -c1
@if errorlevel 1 goto END
goto bulkloaddone
:bulkloaddone
@ECHO Setting database options after load...
@isql -Usa -P -S%1 -b -e < scripts\utility\dbopt2.sql
>> logs\bulkload.log
@if errorlevel 1 goto DBOPT2_ERROR
@ECHO Data load and index creation complete.

@ECHO.
@ECHO Calculating initial database space usage...
@cd..\acid\space
@call space.cmd %1
@cd..\..\setup

```

```

@if '%3'=='full' goto backup
@if '%3'=='objectsfull' goto backup
@if '%3'=='bulkloadfull' goto backup
goto end

:backup
@if exist logs\backup.log del logs\backup.log
>nul
@ECHO Backing up database...
@isql -Usa -P -S%1 -b -e < scripts\%2.war\database\backup.sql
> logs\backup.log
@if errorlevel 1 goto BACKUP_ERROR
@ECHO Database backup complete.
@if '%3'=='full' goto verifyload
@if '%3'=='objectsfull' goto verifyload
@if '%3'=='bulkloadfull' goto verifyload
@if '%3'=='backupfull' goto verifyload
goto complete

:verifyload
@if exist logs\verifyload.log del logs\verifyload.log
>nul
@Echo Verifying TPC-C database load...
@isql -Usa -P -S%1 -b -e < scripts\utility\verifytpccload.sql >
logs\verifyload.log
@if errorlevel 1 goto VERIFY_ERROR
@ECHO Check logs\verifyload.log to verify database load.

@ECHO.
@ECHO Checking database build
@cd ..\acid
@call doall.cmd %1
@cd ..\setup

:complete
@ECHO
*****
**
@ECHO *
*
@ECHO * Full TPC-C V3 build complete. Check logs directory for setup
errors. *
@ECHO *
*
@ECHO
*****
**

goto end

:usage
@ECHO
*****
@ECHO *
*
@ECHO * The TPC-C setup command file requires the following parameters:
*
@ECHO *
*
@ECHO * setup SERVER NUMWAR BLDOPT VERSION DBTYPE
*

```

```

@ECHO *
*
@ECHO * SERVER = machine name of server (use "" for local server)
*
@ECHO * NUMWAR = number of warehouses
*
@ECHO * BLDOPT = full, builddb, objects, objectsfull, bulkload,
*
@ECHO * bulkloadfull, backup, or backupfull
*
@ECHO * DBTYPE = normal or scale_down
*
@ECHO *
*
@ECHO * Note #1: the BLDOPT and VERSION parameters are case sensitive.
*
@ECHO *
*
@ECHO * Note #2: the DBTYPE is optional. If no DBTYPE is specified,
SETUP *
@ECHO * will default to NORMAL.
*
@ECHO *
*
@ECHO * Example:
*
@ECHO *
*
@ECHO * The following command would be used to build a complete 200
*
@ECHO * warehouse database on SQL Server 7.0 running on server
\\myserver. *
@ECHO *
*
@ECHO * SETUP myserver 200 full
*
@ECHO *
*
@ECHO * NOTE 1: This command file does a backup of the database by
default *
@ECHO * after the database build process is complete. If you do not wish
*
@ECHO * to make a backup (strongly discouraged), you must edit this file
*
@ECHO * and comment that section out. Also, if you need to run the
dbcheck *
@ECHO * and the dbtables scripts on the fresh database load for an audit,
*
@ECHO * you must either run them manually or edit this file to include
them. *
@ECHO *
*
@ECHO * NOTE 2: The TPC-C setup program supports both Intel and Alpha
*
@ECHO * systems. It queries the %PROCESSOR_ARCHITECTURE% environment
*
@ECHO * variable and runs the appropriate executables.
*
@ECHO *
*

```

```

@ECHO
*****
@goto end

:CREATE_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the database/backup device creation.
@echo.
@echo Check your CREATEDB.SQL, BACKUPDEV.SQL, LOGS\DB.LOG, and the
@echo SQL Server errorlog (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

:TABLES_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the table creation.
@echo.
@echo Verify that the FileGroup names specified in CREATEDB.SQL
@echo match those specified in SCRIPTS\DDL\TABLES.SQL.
@echo.
@goto END

:NEWORDER_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the creation of the New Order stored
procedure.
@echo.
@echo Check your LOGS\OBJECTS.LOG, SCRIPTS\DML\NEWWORD.SQL and the
@echo SQL Server errorlog (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

:PAYMENT_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the creation of the Payment stored procedure.
@echo.
@echo Check your LOGS\OBJECTS.LOG, SCRIPTS\DML\PAYMENT.SQL and the
@echo SQL Server errorlog (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

:ORDERSTATUS_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the creation of the Order Status stored
procedure.
@echo.
@echo Check your LOGS\OBJECTS.LOG, SCRIPTS\DML\ORDSTAT.SQL and the
@echo SQL Server errorlog (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

```

```

:DELIVERY_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the creation of the Delivery stored procedure.
@echo.
@echo Check your LOGS\OBJECTS.LOG, SCRIPTS\DML\DELIVERY.SQL and the
@echo SQL Server errorlog (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

:STOCKLEVEL_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error in the creation of the Stock Level stored
procedure.
@echo.
@echo Check your LOGS\OBJECTS.LOG, SCRIPTS\DML\STOCKLEV.SQL and the
@echo SQL Server errorlog (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

:DBOPT1_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error setting the database options before load.
@echo.
@echo Check your LOGS\OBJECTS.LOG and the SQL Server errorlog
@echo (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

:DBOPT2_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error setting the database options after load.
@echo.
@echo Check your LOGS\OBJECTS.LOG and the SQL Server errorlog
@echo (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

:BACKUP_ERROR
@echo.
@echo BUILD ABORTED!
@echo.
@echo There was an error backing up the database after load.
@echo.
@echo Check your LOGS\BACKUP.LOG and the SQL Server errorlog
@echo (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

:VERIFY_ERROR
@echo.
@echo BUILD ABORTED!
@echo.

```

```

@echo There was an error performing TPC-C database verification.
@echo.
@echo Check your LOGS\VERIFYLOAD.LOG and the SQL Server errorlog
@echo (MSSQL7\LOG\ERRORLOG) for details.
@echo.
@goto END

:BAD_SORT
@echo.
@echo BUILD ABORTED!
@echo.
@echo Incorrect SQL Server Sort Order. For performance and compatibility
@echo issues, you must run SQL Server with the Binary Sort Order.
@echo.
@echo For SQL Server 7.0, please re-install and specify the Binary Sort
Order.
@echo.
@echo For SQL Server 8.0, please re-install and specify Latin1_General
with the Binary Option.
@echo.
@goto END
:end

echo on

```

### VERIFY\_MSG.SQL

```

exec sp_dropmessage 50003
exec sp_addmessage 50003, 1,"Incorrect Sort Order - Please re-install SQL
Server with the Binary Sort Order"

```

### VERIFY\_SORT.SQL

```

-- File:      VERIFY_SORT.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- Purpose:   Verifies the Sort Order

if exists (select name from sysobjects where name = "ms_verify_sort" )
    drop procedure ms_verify_sort
go

create proc ms_verify_sort
as

declare @sort_order    int

-- get the sort order
select @sort_order    = (select value from sysconfigures where config =
'1123')

if (select @sort_order) <> 50
    RAISERROR (50003,11,1)
Go

```

### VERIFYTPCCLOAD

```

-- 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 rowcnt
from sysindexes
where id = object_id("warehouse")
go

print 'DISTRICT TABLE = (10 * No of warehouses)'

select rowcnt
from sysindexes
where id =object_id("district")
go

print 'ITEM TABLE = 100,000'

select rowcnt
from sysindexes
where id =object_id("item")
go

print 'CUSTOMER TABLE = (30,000 * No of warehouses)'

select rowcnt
from sysindexes
where id =object_id("customer")
go

print 'ORDERS TABLE = (30,000 * No of warehouses)'

select rowcnt
from sysindexes
where id =object_id("orders")
go

print 'HISTORY TABLE = (30,000 * No of warehouses)'

select rowcnt
from sysindexes

```

```

where id      =object_id("history")
go

print 'STOCK TABLE = (100,000 * No of warehouses) '

select rowcnt
from sysindexes
where id      =object_id("stock")
go

print 'ORDER_LINE TABLE = (300,000 * No of warehouses some change) '

select rowcnt
from sysindexes
where id      =object_id("order_line")
go

print 'NEW_ORDER TABLE = (9000 * No of warehouses) '

select rowcnt
from sysindexes
where id      =object_id("new_order")
go

-- *****
-- Check indices
-- *****

print '*****Index Check*****'

use tpcc
go

sp_helpindex customer
go

sp_helpindex stock
go

sp_helpindex district
go

sp_helpindex item
go

sp_helpindex new_order
go

sp_helpindex orders
go

sp_helpindex order_line
go

sp_helpindex warehouse
go

```

## Tables

### IDXCUSCL.SQL

```

-- File:      IDXCUSCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- 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_id,
c_d_id)
    on MSSQL_cs_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate,
@enddate)

go

```

### IDXCUSNC.SQL

```

-- File:      IDXCUSNC.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- 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)
    with SORT_IN_TEMPDB
    on MSSQL_cs_fg

```

```

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate,
@enddate)

```

go

## IDXDISCL.SQL

```

-- File:      IDXDISCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- Purpose:   Creates clustered index on district table

```

```

use tpcc
go

```

```

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

```

```

if exists ( select name from sysindexes where name = 'district_c1' )
    drop index district.district_c1

```

```

create unique clustered index district_c1 on district(d_w_id, d_id)
with fillfactor=100 on MSSQL_misc_fg

```

```

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate,
@enddate)

```

go

## IDXHISCL.SQL

```

-- File:      IDXHISCL.SQL
-- Purpose:   Creates clustered index on history 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 = 'history_c1' )
    drop index history.history_c1

```

```

create unique clustered index history_c1 on history(h_c_w_id, h_date,
h_c_id, h_c_d_id, h_amount)
on MSSQL_misc_fg

```

```

select @enddate = getdate()
select 'End date: ', convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate,
@enddate)

```

go

```

waitfor delay '00:00:30'
go

```

## IDXITMCL.SQL

```

-- File:      IDXITMCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- Purpose:   Creates clustered index on item table

```

```

use tpcc
go

```

```

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

```

```

if exists ( select name from sysindexes where name = 'item_c1' )
    drop index item.item_c1

```

```

create unique clustered index item_c1 on item(i_id)
on MSSQL_misc_fg

```

```

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate,
@enddate)

```

go

## IDXNODCL.SQL

```

-- File:      IDXNODCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- 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)
with pad_index, fillfactor=90
on MSSQL_ord_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. 4.21
--           Copyright Microsoft, 1999, 2000
-- 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 MSSQL_ord_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate,
@enddate)

go

waitfor delay '00:00:30'
go

```

### IDXORDCL.SQL

```

-- File:      IDXORDCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- Purpose:   Creates clustered index on orders table

```

```

use tpcc
go

```

```

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where name = 'orders_c1' )
drop index orders.orders_c1

create unique clustered index orders_c1 on orders(o_w_id, o_d_id, o_id)
on MSSQL_ord_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. 4.21
--           Copyright Microsoft, 1999, 2000
-- Purpose:   Creates clustered index on stock table

```

```

use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where name = 'stock_c1' )
drop index stock.stock_c1

create unique clustered index stock_c1 on stock(s_i_id, s_w_id)
on MSSQL_cs_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate,
@enddate)

go

waitfor delay '00:00:25'
go

```

### IDXWARCL.SQL

```

-- File:      IDXWARCL.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- Purpose:   Creates clustered index on warehouse table

```



```

use tpcc
go

declare @startdate datetime
declare @enddate datetime
select @startdate = getdate()
select "Start date:", convert(varchar(30),@startdate,9)

if exists ( select name from sysindexes where name = 'warehouse_c1' )
    drop index warehouse.warehouse_c1

create unique clustered index warehouse_c1 on warehouse(w_id)
    with fillfactor=100 on MSSQL_misc_fg

select @enddate = getdate()
select "End date: ", convert(varchar(30),@enddate,9)
select "Elapsed time (in seconds): ", datediff(second, @startdate,
@enddate)

go

```

## TABLES.SQL

```

-- File:      TABLES.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- 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 MSSQL_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 MSSQL_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             text
) on MSSQL_cs_fg
    textimage_on MSSQL_misc_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 MSSQL_misc_fg
go

create table new_order
(
    no_o_id               int,
    no_d_id               tinyint,
    no_w_id               smallint
) on MSSQL_ord_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 MSSQL_ord_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 MSSQL_ord_fg
go

create table item
(
    i_id                  int,
    i_im_id               int,
    i_name                 char(24),

```

```

        i_price            numeric(5,2),
        i_data             varchar(50)
) on MSSQL_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                varchar(50)
) on MSSQL_cs_fg
go

```

## Stored Procedures

### 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 uplock)
        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

-- accumulate lineitem amounts for this order into customer

            update customer
            set c_balance = c_balance + @total,
                c_delivery_cnt = c_delivery_cnt + 1

            where c_w_id = @w_id and
                  c_d_id = @d_id and

```

```

               c_id = @c_id

        end

        select @oid1 = case @d_id when 1 then @o_id else @oid1 end,
               @oid2 = case @d_id when 2 then @o_id else @oid2 end,
               @oid3 = case @d_id when 3 then @o_id else @oid3 end,
               @oid4 = case @d_id when 4 then @o_id else @oid4 end,
               @oid5 = case @d_id when 5 then @o_id else @oid5 end,
               @oid6 = case @d_id when 6 then @o_id else @oid6 end,
               @oid7 = case @d_id when 7 then @o_id else @oid7 end,
               @oid8 = case @d_id when 8 then @o_id else @oid8 end,
               @oid9 = case @d_id when 9 then @o_id else @oid9 end,
               @oid10 = case @d_id when 10 then @o_id else @oid10 end

    end

commit tran d

-- return delivery data to client

select @oid1,
       @oid2,
       @oid3,
       @oid4,
       @oid5,
       @oid6,
       @oid7,
       @oid8,
       @oid9,
       @oid10

go

NEWORD.SQL

-- File: NEWORD.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.21.000
-- 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,

```

```

= 0, @ol_qty2  smallint = 0,
= 0, @ol_qty3  smallint = 0,
= 0, @ol_qty4  smallint = 0,
= 0, @ol_qty5  smallint = 0,
= 0, @ol_qty6  smallint = 0,
= 0, @ol_qty7  smallint = 0,
= 0, @ol_qty8  smallint = 0,
= 0, @ol_qty9  smallint = 0,
= 0, @ol_qty10 smallint = 0,
= 0, @ol_qty11 smallint = 0,
= 0, @ol_qty12 smallint = 0,
= 0, @ol_qty13 smallint = 0,
= 0, @ol_qty14 smallint = 0,
= 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 available order id and update
-- plus initialize local variables
        update district

```

```

@i_id2  int = 0, @s_w_id2  smallint
@i_id3  int = 0, @s_w_id3  smallint
@i_id4  int = 0, @s_w_id4  smallint
@i_id5  int = 0, @s_w_id5  smallint
@i_id6  int = 0, @s_w_id6  smallint
@i_id7  int = 0, @s_w_id7  smallint
@i_id8  int = 0, @s_w_id8  smallint
@i_id9  int = 0, @s_w_id9  smallint
@i_id10 int = 0, @s_w_id10 smallint
@i_id11 int = 0, @s_w_id11 smallint
@i_id12 int = 0, @s_w_id12 smallint
@i_id13 int = 0, @s_w_id13 smallint
@i_id14 int = 0, @s_w_id14 smallint
@i_id15 int = 0, @s_w_id15 smallint

```

```

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 - @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

-- 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 top 1 @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 desc

-- 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),
@c_data     char(42),
@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)
where  c_last = @c_last and
       c_w_id = @c_w_id and
       c_d_id = @c_d_id

select @val = (@cnt + 1) / 2
set    rowcount @val

select @c_id = c_id
from   customer (repeatableread)
where  c_last = @c_last and

```

```

        c_w_id = @c_w_id and
        c_d_id = @c_d_id
    order by c_last, c_first

    set rowcount 0
end

-- get customer info and update balances

update customer
set @c_balance = c_balance - @h_amount,
    c_payment_cnt = c_payment_cnt + 1,
    c_ytd_payment = c_ytd_payment + @h_amount,
    @c_first = c_first,
    @c_middle = c_middle,
    @c_last = c_last,
    @c_street_1 = c_street_1,
    @c_street_2 = c_street_2,
    @c_city = c_city,
    @c_state = c_state,
    @c_zip = c_zip,
    @c_phone = c_phone,
    @c_credit = c_credit,
    @c_credit_lim = c_credit_lim,
    @c_discount = c_discount,
    @c_since = c_since,
    @c_id_local = c_id
where c_id = @c_id and
      c_w_id = @c_w_id and
      c_d_id = @c_d_id

-- if customer has bad credit get some more info

if (@c_credit = 'BC')
begin

-- compute new info

    select @c_data = convert(char(5),@c_id) +
                convert(char(4),@c_d_id) +
                convert(char(5),@c_w_id) +
                convert(char(4),@d_id) +
                convert(char(5),@w_id) +
                convert(char(19),@h_amount)

-- update customer info

    update customer
    set c_data = @c_data + substring(c_data, 1, 458),
        @screen_data = @c_data + substring(c_data, 1, 158)

    where c_id = @c_id and
          c_w_id = @c_w_id and
          c_d_id = @c_d_id

-- end

    select @screen_data = substring (@c_data, 1, 200)

-- end

-- get district data and update year-to-date

update district

```

```

    set d_ytd = d_ytd + @h_amount,
        @d_street_1 = d_street_1,
        @d_street_2 = d_street_2,
        @d_city = d_city,
        @d_state = d_state,
        @d_zip = d_zip,
        @d_name = d_name,
        @d_id_local = d_id
    where d_w_id = @w_id and
          d_id = @d_id

-- get warehouse data and update year-to-date

update warehouse
set w_ytd = w_ytd + @h_amount,
    @w_street_1 = w_street_1,
    @w_street_2 = w_street_2,
    @w_city = w_city,
    @w_state = w_state,
    @w_zip = w_zip,
    @w_name = w_name,
    @w_id_local = w_id
where w_id = @w_id

-- create history record

insert into history values ( @c_id local,
                            @c_d_id,
                            @c_w_id,
                            @d_id local,
                            @w_id local,
                            @datetime,
                            @h_amount,
                            @w_name + ' ' + @d_name)

commit tran p

-- return data to client

select @c_id,
       @c_last,
       @datetime,
       @w_street_1,
       @w_street_2,
       @w_city,
       @w_state,
       @w_zip,
       @d_street_1,
       @d_street_2,
       @d_city,
       @d_state,
       @d_zip,
       @c_first,
       @c_middle,
       @c_street_1,
       @c_street_2,
       @c_city,
       @c_state,
       @c_zip,
       @c_phone,
       @c_since,
       @c_credit,

```



```
@c_credit_lim,  
@c_discount,  
@c_balance,  
@screen_data
```

```
go
```

## STOCKLEV.SQL

```
-- File:      STOCKLEV.SQL  
--           Microsoft TPC-C Benchmark Kit Ver. 4.21.000  
--           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,  
                               @threshold    smallint  
as
```

```
declare @o_id_low int,  
        @o_id_high int
```

```
select @o_id_low = (d_next_o_id - 20),  
       @o_id_high = (d_next_o_id - 1)  
from   district  
where  d_w_id   = @w_id and  
       d_id    = @d_id
```

```
select count(distinct(s_i_id))  
from   stock, order_line  
where  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 < @threshold
```

```
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
```

## Loader Source

### GETARGS.C

```
// File:      GETARGS.C  
//           Microsoft TPC-C Kit Ver. 4.21  
//           Copyright Microsoft, 1996, 1997, 1998, 1999,  
2000  
// Purpose:   Source file for command line processing
```

```
// Includes  
#include "tpcc.h"
```

```
//=====
```

```
// Function name: GetArgsLoader
```

```
//
```

```
//=====
```

```
void GetArgsLoader(int argc, char **argv, TPCC_LDR_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       = DEF_LDPACKSIZE;
  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. 4.21
// Copyright Microsoft, 1996, 1997, 1998, 1999,
2000
// 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
//Original 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. 4.21
// Copyright Microsoft, 1996, 1997, 1998, 1999,
2000

```

```

// 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[] =
"0123456789ABCDEFGHIJKLMNPOQRSTUVWXYZabcdefghijklmnopqrstuvwxyz";
    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[z] = 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 percentage 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. 4.21
//               Copyright Microsoft, 1996, 1997, 1998, 1999,
2000
// 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. 4.21
//               Copyright Microsoft, 1996, 1997, 1998, 1999,
2000
// Purpose:       Header file for TPC-C database loader

```

```

// Build number of TPC Benchmark Kit
#define TPCKIT_VER    "4.21"

```

```

// 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. 4.21
//               Copyright Microsoft, 1996, 1997, 1998, 1999,
2000
// 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

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

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 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,
(LPPTHREAD_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,
(LPPTHREAD_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,
(LPPTHREAD_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 != SUCCEEDED)
    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 != SUCCEEDED)
        HandleErrorDBC(i_hdbc1);
}

rc = bcp_bind(i_hdbc1, (BYTE *) &i_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 1);
if (rc != SUCCEEDED)
    HandleErrorDBC(i_hdbc1);

rc = bcp_bind(i_hdbc1, (BYTE *) &i_im_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT4, 2);
if (rc != SUCCEEDED)
    HandleErrorDBC(i_hdbc1);

rc = bcp_bind(i_hdbc1, (BYTE *) i_name, 0, I_NAME_LEN, NULL, 0, 0,
3);
if (rc != SUCCEEDED)
    HandleErrorDBC(i_hdbc1);

rc = bcp_bind(i_hdbc1, (BYTE *) &i_price, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 4);
if (rc != SUCCEEDED)
    HandleErrorDBC(i_hdbc1);

rc = bcp_bind(i_hdbc1, (BYTE *) i_data, 0, I_DATA_LEN, NULL, 0, 0,
5);
if (rc != SUCCEEDED)
    HandleErrorDBC(i_hdbc1);

time_start = (TimeNow() / MILLI);

item_rows_loaded = 0;

for (i_id = 1; i_id <= max_items; i_id++)
{
    i_im_id = RandomNumber(1L, 10000L);

    MakeAlphaString(14, 24, I_NAME_LEN, i_name);

    i_price = ((float) RandomNumber(100L, 10000L))/100.0;

    MakeOriginalAlphaString(26, 50, I_DATA_LEN, i_data, 10);

    rc = bcp_sendrow(i_hdbc1);

```

```

if (rc != SUCCEEDED)
    HandleErrorDBC(i_hdbc1);

item_rows_loaded++;
CheckForCommit(i_hdbc1, i_hstmt1, item_rows_loaded, "item",
&time_start);
}

rcint = bcp_done(i_hdbc1);
if (rcint < 0)
    HandleErrorDBC(i_hdbc1);

printf("Finished loading item table.\n");

SQLFreeStmt(i_hstmt1, SQL_DROP);
SQLDisconnect(i_hdbc1);
SQLFreeConnect(i_hdbc1);

// if build index after load
if ((aptr->build_index == 1) && (aptr->index_order == 0))
    BuildIndex("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 != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

if ((aptr->build_index == 1) && (aptr->index_order == 1))
{
    sprintf(bcphint, "tablock, order (w_id), ROWS_PER_BATCH =
%d", aptr->num_warehouses);
    rc = bcp_control(w_hdbc1, BCPHINTS, (void*) bcphint);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
}

rc = bcp_bind(w_hdbc1, (BYTE *) &w_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT2, 1);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) w_name, 0, W_NAME_LEN, NULL, 0, 0,
2);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) w_street_1, 0, ADDRESS_LEN, NULL,
0, 0, 3);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) w_street_2, 0, ADDRESS_LEN, NULL,
0, 0, 4);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) w_city, 0, ADDRESS_LEN, NULL, 0,
0, 5);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) w_state, 0, STATE_LEN, NULL, 0, 0,
6);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) w_zip, 0, ZIP_LEN, NULL, 0, 0, 7);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) &w_tax, 0, SQL_VARLEN_DATA, NULL,
0, SQLFLT8, 8);
if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

rc = bcp_bind(w_hdbc1, (BYTE *) &w_ytd, 0, SQL_VARLEN_DATA, NULL,
0, SQLFLT8, 9);

```

```

if (rc != SUCCEEDED)
    HandleErrorDBC(w_hdbc1);

time_start = (TimeNow() / MILLI);

warehouse_rows_loaded = 0;

for (w_id = (short)aptr->starting_warehouse; w_id <= aptr-
>num_warehouses; w_id++)
{
    MakeAlphaString(6,10, W_NAME_LEN, w_name);

    MakeAddress(w_street_1, w_street_2, w_city, w_state,
w_zip);

    w_tax = ((float) RandomNumber(0L,2000L))/10000.00;

    w_ytd = 300000.00;

    rc = bcp_sendrow(w_hdbc1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    warehouse_rows_loaded++;
    CheckForCommit(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;
    DBINT rcint;
    char      bcphint[128];

    // Seed with unique number
    seed(3);

    // if build index before load...
    if ((aptr->build_index == 1) && (aptr->index_order == 1))
        BuildIndex("idxstkcl");

    sprintf(name, "%s..%s", aptr->database, "stock");

    rc = bcp_init(w_hdbc1, name, NULL, "logs\\stock.err", DB_IN);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {

```

```

        sprintf(bcphint, "tablock, order (s_i_id, s_w_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 100000));
        rc = bcp_control(w_hdbc1, BCPHINTS, (void*) bcphint);
        if (rc != SUCCEEDED)
            HandleErrorDBC(w_hdbc1);
    }

    rc = bcp_bind(w_hdbc1, (BYTE *) &s_i_id, 0, SQL_VARLEN_DATA, NULL,
0, SQLINT4, 1);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    bcp_bind(w_hdbc1, (BYTE *) &s_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) &s_quantity, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_01, 0, S_DIST_LEN, NULL, 0,
0, 4);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_02, 0, S_DIST_LEN, NULL, 0,
0, 5);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_03, 0, S_DIST_LEN, NULL, 0,
0, 6);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_04, 0, S_DIST_LEN, NULL, 0,
0, 7);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_05, 0, S_DIST_LEN, NULL, 0,
0, 8);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_06, 0, S_DIST_LEN, NULL, 0,
0, 9);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_07, 0, S_DIST_LEN, NULL, 0,
0, 10);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_08, 0, S_DIST_LEN, NULL, 0,
0, 11);
    if (rc != SUCCEEDED)
        HandleErrorDBC(w_hdbc1);
}

```



```

    rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_09, 0, S_DIST_LEN, NULL, 0,
0, 12);
    if (rc != 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);

17);
    rc = bcp_bind(w_hdbc1, (BYTE *) s_data, 0, S_DATA_LEN, NULL, 0, 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("idxstk1");

    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("idxcus1");

```

```

        BuildIndex("idxhiscl"); // added history clustered index
                                // 9/10/2001
RBS
    }

    // Initialize bulk copy
    sprintf(name, "%s.%s", aptr->database, "customer");

    rc = bcp_init(c_hdbc1, name, NULL, "logs\\customer.err", DB_IN);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    if ((aptr->build_index == 1) && (aptr->index_order == 1))
    {
        sprintf(bcphint, "tablock, order (c_w_id, c_d_id, c_id),
ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
        rc = bcp_control(c_hdbc1, BCPHINTS, (void*) bcphint);
        if (rc != SUCCEEDED)
            HandleErrorDBC(c_hdbc1);
    }

    sprintf(name, "%s.%s", aptr->database, "history");

    rc = bcp_init(c_hdbc2, name, NULL, "logs\\history.err", DB_IN);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    //   sprintf(bcphint, "tablock");
    //   sprintf(bcphint, "tablock, order (h_c_w_id, h_date, h_c_d_id,
h_c_id, h_amount), ROWS_PER_BATCH = %u", (aptr->num_warehouses * 30000));
    //   Add hint to help history index creation
    //   9/10/2001 RBS
    rc = bcp_control(c_hdbc2, BCPHINTS, (void*) bcphint);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    customer_rows_loaded = 0;
    history_rows_loaded = 0;

    CustomerBufInit();

    customer_time_start.time_start = (TimeNow() / MILLI);
    history_time_start.time_start = (TimeNow() / MILLI);

    for (w_id = (short)aptr->starting_warehouse; w_id <= aptr-
>num_warehouses; w_id++)
    {
        for (d_id = 1; d_id <= DISTRICT_PER_WAREHOUSE; d_id++)
        {

            CustomerBufLoad(d_id, w_id);

            // Start parallel loading threads here...

            // Start customer table thread

            printf("...Loading customer table for: d_id = %d,
w_id = %d\n", d_id, w_id);

            hThread[0] = CreateThread(NULL,

```

```

                                0,
(LPTHREAD_START_ROUTINE) LoadCustomerTable,
&customer_time_start,
                                0,
&dwThreadID[0]);

        if (hThread[0] == NULL)
        {
            printf("Error, failed in creating creating
thread = 0.\n");
            exit(-1);
        }

        // Start History table thread

        printf("...Loading history table for: d_id = %d,
w_id = %d\n", d_id, w_id);

        hThread[1] = CreateThread(NULL,
                                0,
(LPTHREAD_START_ROUTINE) LoadHistoryTable,
&history_time_start,
                                0,
&dwThreadID[1]);

        if (hThread[1] == NULL)
        {
            printf("Error, failed in creating creating
thread = 1.\n");
            exit(-1);
        }

        WaitForSingleObject( hThread[0], INFINITE );
        WaitForSingleObject( hThread[1], INFINITE );

        if (CloseHandle(hThread[0]) == FALSE)
        {
            printf("Error, failed in closing customer
thread handle with errno: %d\n", GetLastError());
        }

        if (CloseHandle(hThread[1]) == FALSE)
        {
            printf("Error, failed in closing history
thread handle with errno: %d\n", GetLastError());
        }

    }

    // flush the bulk connection
    rcint = bcp_done(c_hdbc1);
    if (rcint < 0)

```

```

        HandleErrorDBC(c_hdbc1);

rcint = bcp_done(c_hdbc2);
if (rcint < 0)
    HandleErrorDBC(c_hdbc2);

printf("Finished loading customer table.\n");

// if build index after load...
if ((aptr->build_index == 1) && (aptr->index_order == 0))
    BuildIndex("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 != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_street_1, 0, ADDRESS_LEN, NULL, 0,
0, 7);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_street_2, 0, ADDRESS_LEN, NULL,0,0,
8);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_city, 0, ADDRESS_LEN, NULL, 0, 0,
9);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_state, 0, STATE_LEN, NULL, 0, 0,
10);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_zip, 0, ZIP_LEN, NULL, 0, 0, 11);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_phone, 0, PHONE_LEN, NULL, 0, 0,
12);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_since, 0, C_SINCE_LEN, NULL, 0,
SQLCHARACTER, 13);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_credit, 0, CREDIT_LEN, NULL, 0, 0,
14);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_credit_lim, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 15);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_discount, 0, SQL_VARLEN_DATA, NULL,
0, SQLFLT8, 16);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    // fix to avoid ODBC float to numeric conversion problem.

    // rc = bcp_bind(c_hdbc1, (BYTE *) &c_balance, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 17);
    // if (rc != SUCCEEDED)
    //     HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_balance, 0, 5, NULL, 0,
SQLCHARACTER, 17);

```

```

    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_ytd_payment, 0, SQL_VARLEN_DATA,
NULL, 0, SQLFLT8, 18);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_payment_cnt, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 19);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) &c_delivery_cnt,0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 20);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_data, 0, 500, NULL, 0, 0, 21);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc1);

    for (i = 0; i < customers_per_district; i++)
    {
        c_id = customer_buf[i].c_id;
        c_d_id = customer_buf[i].c_d_id;
        c_w_id = customer_buf[i].c_w_id;

        strcpy(c_first, customer_buf[i].c_first);
        strcpy(c_middle, customer_buf[i].c_middle);
        strcpy(c_last, customer_buf[i].c_last);
        strcpy(c_street_1, customer_buf[i].c_street_1);
        strcpy(c_street_2, customer_buf[i].c_street_2);
        strcpy(c_city, customer_buf[i].c_city);
        strcpy(c_state, customer_buf[i].c_state);
        strcpy(c_zip, customer_buf[i].c_zip);
        strcpy(c_phone, customer_buf[i].c_phone);
        strcpy(c_credit, customer_buf[i].c_credit);

        FormatDate(&c_since);

        c_credit_lim = customer_buf[i].c_credit_lim;
        c_discount = customer_buf[i].c_discount;

        // fix to avoid ODBC float to numeric conversion 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 != SUCCEEDED)
            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 != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 4);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 5);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &h_date, 0, H_DATE_LEN, NULL, 0,
SQLCHARACTER, 6);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) &h_amount, 0, SQL_VARLEN_DATA, NULL,
0, SQLFLT8, 7);
    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    rc = bcp_bind(c_hdbc2, (BYTE *) h_data, 0, H_DATA_LEN, NULL, 0, 0, 8);

```

```

    if (rc != SUCCEEDED)
        HandleErrorDBC(c_hdbc2);

    for (i = 0; i < customers_per_district; i++)
    {
        c_id = customer_buf[i].c_id;
        c_d_id = customer_buf[i].c_d_id;
        c_w_id = customer_buf[i].c_w_id;
        h_amount = customer_buf[i].h_amount;
        strcpy(h_data, customer_buf[i].h_data);

        FormatDate(&h_date);

        // send to server
        rc = bcp_sendrow(c_hdbc2);
        if (rc != SUCCEEDED)
            HandleErrorDBC(c_hdbc2);

        history_rows_loaded++;
        CheckForCommit(c_hdbc2, c_hstmt2, history_rows_loaded,
"history", &history_time_start->time_start);
    }
}

//=====
//
// Function   : LoadOrders
//
//=====

void LoadOrders()
{
    LOADER_TIME_STRUCT  orders_time_start;
    LOADER_TIME_STRUCT  new_order_time_start;
    LOADER_TIME_STRUCT  order_line_time_start;
    short               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("idxordc1");
        BuildIndex("idxnodc1");
        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");
// No Non Clustered index on orders
}

//=====
//
// 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 != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_d_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 2);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &o_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT2, 3);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 4);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_i_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, 5);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_supply_w_id, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 6);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_delivery_d, 0,
OL_DELIVERY_D_LEN, NULL, 0, SQLCHARACTER, 7);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_quantity, 0, SQL_VARLEN_DATA,
NULL, 0, SQLINT2, 8);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) &ol_amount, 0, SQL_VARLEN_DATA, NULL,
0, SQLFLT8, 9);
    if (rc != SUCCEEDED)
        HandleErrorDBC(o_hdbc3);

    rc = bcp_bind(o_hdbc3, (BYTE *) ol_dist_info, 0, DIST_INFO_LEN, NULL,
0, 0, 10);
    if (rc != SUCCEEDED)
        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 != SUCCEEDED)
                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
(%0.2f 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,
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 : 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");
    }
}

```

```

errors.\n");
    printf("\nCheck LOGS\\ directory for database creation

// 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;

// iterate 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

### Microsoft SQL Server Startup Parameters

```
sqlservr -c -x -g250 -T3502 -T3428
```

Where:

- -c Start SQL Server independently of the Service Control Manager
- -x Disables the keeping of CPU time and cache hit ratio statistics
- -g250 Specifies the amount of virtual address space, in MB, SQL Server will leave available for memory allocations, excluding the buffer pool and thread stacks, such as dynamically-loaded DLLs, extended procedure calls, etc. If this option is not specified, SQL Server will use a value that is suitable for a wide range of runtime environments. Use of this option may be appropriate in 2GB (3GB Enterprise Edition) configurations in which the memory usage requirements of SQL Server are atypical and the virtual address space of the SQL Server process is totally in use. Incorrect use of this option can lead to conditions under which SQL Server may not start or may encounter runtime errors.
- -T3502 Writes a message to the SQL Server Errorlog showing the beginning and ending time of each checkpoint
- T3428 Use half of the memory available on the system during the recovery process to keep a hash table which enables recovery to proceed smoothly.

### BOOT.INI

```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(0)partition(1)\WINDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Windows Server 2003, Datacenter"
/fastdetect /hb=0 /pae
```

The /pae switch was added to the boot.ini file to cause the OS to support more than 4GB of physical memory.

### User Rights Assignment

The Group Policy Editor of the OS was used to modify an entry under User Rights Assignment. Specifically, the right to "Lock pages in memory" was given to the Administrators group so that SQL Server 2000 could use large amounts of physical memory.

### Microsoft SQL Server Configuration Parameters

```
1> 2> 3> 4> 5> 6> 7> 8> 9> 10> 11>
-- File:      VERSION.SQL
--           Microsoft TPC-C Benchmark Kit Ver. 4.21
--           Copyright Microsoft, 1999, 2000
-- Purpose:   Returns SQL Server version string
```

```
print " "
select convert(char(30), getdate(), 9)
print " "
```

```
-----
Mar 27 2003 11:22:04:107AM
```

```
(1 row affected)
```

```
1> 2> 3>
select @@version
```

```
-----
Microsoft SQL Server 2000 - 8.00.761 (Intel X86)
Feb 27 2003 12:09:37
Copyright (c) 1988-2003 Microsoft Corporation
Enterprise Edition on Windows NT 5.2 (Build 3788: )
```

```
(1 row affected)
1> 2>
1> 2> 3> 4> 5> 6> 7> 8> 9> 10>
-- File: CONFIG.SQL
-- Microsoft TPC-C Benchmark Kit Ver. 4.21
-- Copyright Microsoft, 1999, 2000
-- Purpose: Collects SQL Server configuration parameters
```

```
print " "
select convert(char(30), getdate(),9)
print " "
```

```
-----
Mar 27 2003 11:22:04:903AM
```

```
(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	65535	65535	
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	63500	63500
max text repl size (B)	0	2147483647	65536	65536
max worker threads	32	32767	280	280
media retention	0	365	0	0
min memory per query (KB)	512	2147483647	512	512
min server memory (MB)	0	2147483647	0	0
nested triggers	0	1	0	0
network packet size (B)	512	65536	4096	4096
open objects	0	2147483647	0	0
priority boost	0	1	1	1
query governor cost limit	0	2147483647	0	0
query wait (s)	-1	2147483647	-1	-1
recovery interval (min)	0	32767	119	119
remote access	0	1	0	0
remote login timeout (s)	0	2147483647	20	20
remote proc trans	0	1	0	0
remote query timeout (s)	0	2147483647	600	600
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

## Hyperthreading Information

Hyper-Threading Technology is available.  
Logical Processors Per Package: 2  
OS Affinity ID: 0x00000001, APIC ID: 0 PHY ID: 0, LOG ID: 0  
OS Affinity ID: 0x00000002, APIC ID: 2 PHY ID: 1, LOG ID: 0  
OS Affinity ID: 0x00000004, APIC ID: 4 PHY ID: 2, LOG ID: 0  
OS Affinity ID: 0x00000008, APIC ID: 6 PHY ID: 3, LOG ID: 0

OS Affinity ID: 0x00000010, APIC ID: 8 PHY ID: 4, LOG ID: 0  
 OS Affinity ID: 0x00000020, APIC ID: 10 PHY ID: 5, LOG ID: 0  
 OS Affinity ID: 0x00000040, APIC ID: 12 PHY ID: 6, LOG ID: 0  
 OS Affinity ID: 0x00000080, APIC ID: 14 PHY ID: 7, LOG ID: 0  
 OS Affinity ID: 0x00010000, APIC ID: 1 PHY ID: 0, LOG ID: 1  
 OS Affinity ID: 0x00020000, APIC ID: 3 PHY ID: 1, LOG ID: 1  
 OS Affinity ID: 0x00040000, APIC ID: 5 PHY ID: 2, LOG ID: 1  
 OS Affinity ID: 0x00080000, APIC ID: 7 PHY ID: 3, LOG ID: 1  
 OS Affinity ID: 0x00100000, APIC ID: 9 PHY ID: 4, LOG ID: 1  
 OS Affinity ID: 0x00200000, APIC ID: 11 PHY ID: 5, LOG ID: 1  
 OS Affinity ID: 0x00400000, APIC ID: 13 PHY ID: 6, LOG ID: 1  
 OS Affinity ID: 0x00800000, APIC ID: 15 PHY ID: 7, LOG ID: 1  
 Processors with Hyper-Threading Technology enabled was detected.

## Storage Configuration Information

### Log DPE-Cache Configuration

SP Read Cache State Disabled  
 SP Write Cache State Enabled  
 Cache Page size: 8  
 Write Cache Mirrored: YES  
 Low Watermark: 15  
 High Watermark: 85  
 SPA Cache pages: 25349  
 SPB Cache pages: 0  
 Unassigned Cache Pages: 0  
 Read Hit Ratio: 0  
 Write Hit Ratio: 0  
 Prct Dirty Cache Pages = 0  
 Prct Cache Pages Owned = 0  
 SPA Read Cache State Disabled  
 SPB Read Cache State Disabled  
 SPA Write Cache State Enabled  
 SPB Write Cache State Enabled  
 System Buffer (spA): 275 MB  
 System Buffer (spB): 275 MB  
 SPS Test Day: Saturday  
 SPS Test Time: 17:00  
 SPA Physical Memory Size = 512  
 SPB Physical Memory Size = 512  
 Physical memory size of Front-End = Switch not supported  
 Physical memory size of Back-End = Switch not supported  
 SPA Free Memory Size = 0  
 SPB Free Memory Size = 0  
 Free Memory Size of Front-End = Switch not supported  
 Free Memory Size of Back-End = Switch not supported  
 SPA Read Cache Size = 0  
 SPB Read Cache Size = 0  
 SPA Write Cache Size = 237  
 SPB Write Cache Size = 237  
 SPA Optimized Raid 3 Memory Size = 0  
 SPB Optimized Raid 3 Memory Size = 0

### Log DPE LUN Configurations

Statistics logging is disabled.  
 Certain fields are not printed if statistics logging is not enabled.  
 Prefetch size (blocks) = 0  
 Prefetch multiplier = 4  
 Segment size (blocks) = 0  
 Segment multiplier = 4  
 Maximum prefetch (blocks) = 4096  
 Prefetch Disable Size (blocks) = 4097  
 Prefetch idle count = 40

Variable length prefetching YES  
 Prefetched data retained YES

Read cache configured according to specified parameters.

Total Hard Errors: 0  
 Total Soft Errors: 0  
 Total Queue Length: 0  
 Name LUN 0x00  
 Minimum latency reads N/A

RAID Type: RAID1/0  
 RAIDGroup ID: 0  
 State: Bound  
 Stripe Crossing: 0  
 Element Size: 256  
 Current owner: SP A  
 Offset: 0  
 Auto-trespass: DISABLED  
 Auto-assign: DISABLED  
 Write cache: ENABLED  
 Read cache: DISABLED  
 Idle Threshold: 0  
 Idle Delay Time: 20  
 Write Aside Size: 1023  
 Default Owner: SP A  
 Rebuild Priority: ASAP  
 Verify Priority: ASAP  
 Prct Reads Forced Flushed: 0  
 Prct Writes Forced Flushed: 0  
 Prct Rebuilt: 100  
 Prct Bound: 100  
 LUN Capacity (Megabytes): 309210  
 LUN Capacity (Blocks): 633262080

UID: 60:06:01:79:65:0A:00:00:78:BC:E4:A8:5A:5C:D7:11

Bus 0 Enclosure 0 Disk 0 Queue Length: 0  
 Bus 0 Enclosure 0 Disk 2 Queue Length: 0  
 Bus 0 Enclosure 0 Disk 4 Queue Length: 0  
 Bus 0 Enclosure 0 Disk 6 Queue Length: 0  
 Bus 0 Enclosure 0 Disk 8 Queue Length: 0  
 Bus 0 Enclosure 0 Disk 1 Queue Length: 0

```

Bus 0 Enclosure 0 Disk 3 Queue Length: 0
Bus 0 Enclosure 0 Disk 5 Queue Length: 0
Bus 0 Enclosure 0 Disk 7 Queue Length: 0
Bus 0 Enclosure 0 Disk 9 Queue Length: 0
Bus 0 Enclosure 0 Disk 0 Hard Read Errors: 0
Bus 0 Enclosure 0 Disk 2 Hard Read Errors: 0
Bus 0 Enclosure 0 Disk 4 Hard Read Errors: 0
Bus 0 Enclosure 0 Disk 6 Hard Read Errors: 0
Bus 0 Enclosure 0 Disk 8 Hard Read Errors: 0
Bus 0 Enclosure 0 Disk 1 Hard Read Errors: 0
Bus 0 Enclosure 0 Disk 3 Hard Read Errors: 0
Bus 0 Enclosure 0 Disk 5 Hard Read Errors: 0
Bus 0 Enclosure 0 Disk 7 Hard Read Errors: 0
Bus 0 Enclosure 0 Disk 9 Hard Read Errors: 0
Bus 0 Enclosure 0 Disk 0 Hard Write Errors: 0
Bus 0 Enclosure 0 Disk 2 Hard Write Errors: 0
Bus 0 Enclosure 0 Disk 4 Hard Write Errors: 0
Bus 0 Enclosure 0 Disk 6 Hard Write Errors: 0
Bus 0 Enclosure 0 Disk 8 Hard Write Errors: 0
Bus 0 Enclosure 0 Disk 1 Hard Write Errors: 0
Bus 0 Enclosure 0 Disk 3 Hard Write Errors: 0
Bus 0 Enclosure 0 Disk 5 Hard Write Errors: 0
Bus 0 Enclosure 0 Disk 7 Hard Write Errors: 0
Bus 0 Enclosure 0 Disk 9 Hard Write Errors: 0
Bus 0 Enclosure 0 Disk 0 Soft Read Errors: 0
Bus 0 Enclosure 0 Disk 2 Soft Read Errors: 0
Bus 0 Enclosure 0 Disk 4 Soft Read Errors: 0
Bus 0 Enclosure 0 Disk 6 Soft Read Errors: 0
Bus 0 Enclosure 0 Disk 8 Soft Read Errors: 0
Bus 0 Enclosure 0 Disk 1 Soft Read Errors: 0
Bus 0 Enclosure 0 Disk 3 Soft Read Errors: 0
Bus 0 Enclosure 0 Disk 5 Soft Read Errors: 0
Bus 0 Enclosure 0 Disk 7 Soft Read Errors: 0
Bus 0 Enclosure 0 Disk 9 Soft Read Errors: 0
Bus 0 Enclosure 0 Disk 0 Soft Write Errors: 0
Bus 0 Enclosure 0 Disk 2 Soft Write Errors: 0
Bus 0 Enclosure 0 Disk 4 Soft Write Errors: 0
Bus 0 Enclosure 0 Disk 6 Soft Write Errors: 0
Bus 0 Enclosure 0 Disk 8 Soft Write Errors: 0
Bus 0 Enclosure 0 Disk 1 Soft Write Errors: 0
Bus 0 Enclosure 0 Disk 3 Soft Write Errors: 0
Bus 0 Enclosure 0 Disk 5 Soft Write Errors: 0
Bus 0 Enclosure 0 Disk 7 Soft Write Errors: 0
Bus 0 Enclosure 0 Disk 9 Soft Write Errors: 0

Bus 0 Enclosure 0 Disk 0 Enabled
Bus 0 Enclosure 0 Disk 2 Enabled
Bus 0 Enclosure 0 Disk 4 Enabled
Bus 0 Enclosure 0 Disk 6 Enabled
Bus 0 Enclosure 0 Disk 8 Enabled
Bus 0 Enclosure 0 Disk 1 Enabled
Bus 0 Enclosure 0 Disk 3 Enabled

```

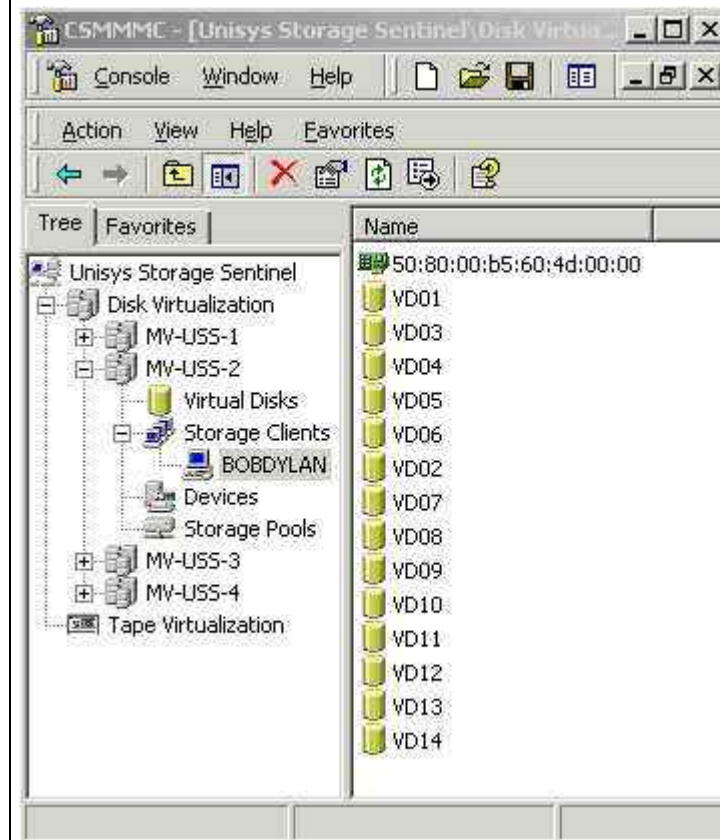
```

Bus 0 Enclosure 0 Disk 5 Enabled
Bus 0 Enclosure 0 Disk 7 Enabled

Bus 0 Enclosure 0 Disk 9 Enabled
Is Private: NO
Snapshots List: None
MirrorView Name if any: Not Mirrored

```

### Database USS Configuration Info (common to all 4 USSs)



## Windows Datacenter Server Configuration Information

System Information report written at: 03/27/03 14:21:50

System Name: MV-BOBDYLAN

[System Summary]

Item Value

OS Name Microsoft(R) Windows(R) Server 2003, Datacenter Edition  
Version 5.2.3788 Build 3788

OS Manufacturer Microsoft Corporation  
Activation Status Activation Pending (25 days remaining)

System Name MV-BOBDYLAN  
System Manufacturer UNISYS

System Model Horizon

System Type X86-based PC

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

Processor x86 Family 15 Model 2 Stepping 2 GenuineIntel ~1999 Mhz

BIOS Version/Date Phoenix Technologies LTD BIOS Release 000146 Build

000173, 2/14/2003

SMBIOS Version 2.31

Windows Directory C:\WINDOWS

System Directory C:\WINDOWS\system32

Boot Device \Device\HarddiskVolume1

Locale United States

Hardware Abstraction Layer Version = "5.2.3763.308 built by: WinDDK"

User Name MV-BOBDYLAN\Administrator

Time Zone Pacific Standard Time

Total Physical Memory 65,536.00 MB  
Available Physical Memory 62.89 GB  
Total Virtual Memory 128.61 GB  
Available Virtual Memory 127.80 GB  
Page File Space 65.02 GB  
Page File C:\pagefile.sys

[Hardware Resources]

[Conflicts/Sharing]

Resource	Device
Memory Address 0xF7800000-0xF7FFFFFF	PCI standard PCI-to-PCI bridge
Memory Address 0xF7800000-0xF7FFFFFF	Unisys Intelligent Fibre Channel Fabric Bus Adapter
I/O Port 0x00000000-0x00002FFF	PCI bus
I/O Port 0x00000000-0x00002FFF	Direct memory access controller
Memory Address 0xF0000000-0xF1FFFFFF	PCI bus
Memory Address 0xF0000000-0xF1FFFFFF	PCI standard PCI-to-PCI bridge
Memory Address 0xF0000000-0xF1FFFFFF	Unisys Intelligent Fibre Channel Fabric Bus Adapter
Memory Address 0xEF800000-0xEFFFFFFF	PCI standard PCI-to-PCI bridge
Memory Address 0xEF800000-0xEFFFFFFF	Unisys Intelligent Fibre Channel Fabric Bus Adapter
Memory Address 0xF4000000-0xF6FFFFFF	PCI bus
Memory Address 0xF4000000-0xF6FFFFFF	cLAN Host Adapter #2
I/O Port 0x000003C0-0x000003DF	DEC 21152 PCI to PCI bridge
I/O Port 0x000003C0-0x000003DF	Console Manager Video Driver
IRQ 10	Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI
IRQ 10	Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI
IRQ 10	Intel(R) 825xER PCI Adapter
I/O Port 0x00002000-0x00002FFF	DEC 21152 PCI to PCI bridge
I/O Port 0x00002000-0x00002FFF	Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI
I/O Port 0x000003F6-0x000003F6	System speaker
I/O Port 0x000003F6-0x000003F6	Primary IDE Channel
Memory Address 0xF2000000-0xF3FFFFFF	PCI bus
Memory Address 0xF2000000-0xF3FFFFFF	PCI standard PCI-to-PCI bridge
Memory Address 0xF2000000-0xF3FFFFFF	Unisys Intelligent Fibre Channel Fabric Bus Adapter
Memory Address 0xEC000000-0xEDFFFFFF	DEC 21152 PCI to PCI bridge

```

Memory Address 0xEC000000-0xEDFFFFFF Console Manager control device

Memory Address 0xF7400000-0xF7FFFFFF PCI bus
Memory Address 0xF7400000-0xF7FFFFFF PCI standard PCI-to-PCI bridge

Memory Address 0xF7400000-0xF7FFFFFF Unisys Intelligent Fibre Channel
Fabric Bus Adapter

Memory Address 0xFA500000-0xFCFFFFFF PCI bus
Memory Address 0xFA500000-0xFCFFFFFF cLAN Host Adapter #3

Memory Address 0xA0000-0xBFFFF PCI bus
Memory Address 0xA0000-0xBFFFF DEC 21152 PCI to PCI bridge
Memory Address 0xA0000-0xBFFFF Console Manager Video Driver

Memory Address 0xF1800000-0xF1FFFFFF PCI standard PCI-to-PCI bridge

Memory Address 0xF1800000-0xF1FFFFFF Unisys Intelligent Fibre Channel
Fabric Bus Adapter

Memory Address 0xF9800000-0xF9FFFFFF PCI standard PCI-to-PCI bridge

Memory Address 0xF9800000-0xF9FFFFFF Unisys Intelligent Fibre Channel
Fabric Bus Adapter

Memory Address 0xF8000000-0xF9FFFFFF PCI bus
Memory Address 0xF8000000-0xF9FFFFFF PCI standard PCI-to-PCI bridge

Memory Address 0xF8000000-0xF9FFFFFF Unisys Intelligent Fibre Channel
Fabric Bus Adapter

Memory Address 0xF3800000-0xF3FFFFFF PCI standard PCI-to-PCI bridge

Memory Address 0xF3800000-0xF3FFFFFF Unisys Intelligent Fibre Channel
Fabric Bus Adapter

I/O Port 0x000003B0-0x000003BB DEC 21152 PCI to PCI bridge
I/O Port 0x000003B0-0x000003BB Console Manager Video Driver

IRQ 1 Unisys Intelligent Fibre Channel Fabric Bus Adapter
IRQ 1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard

Memory Address 0xE6100000-0xE9FFFFFF DEC 21152 PCI to PCI bridge
Memory Address 0xE6100000-0xE9FFFFFF Console Manager Video Driver

Memory Address 0xEE000000-0xEFFFFFFF PCI bus
Memory Address 0xEE000000-0xEFFFFFFF PCI standard PCI-to-PCI bridge

Memory Address 0xEE000000-0xEFFFFFFF Unisys Intelligent Fibre Channel
Fabric Bus Adapter

```

[DMA]

```

Resource Device Status
Channel 4 Direct memory access controller OK
Channel 1 ECP Printer Port (LPT1) OK
Channel 2 Standard floppy disk controller OK

```

[Forced Hardware]

Device PNP Device ID

[I/O]

```

Resource Device Status
0x00003000-0x0000300F PCI bus OK
0x00003010-0x000033FF PCI bus OK
0x00000000-0x00002FFF PCI bus OK
0x00000000-0x00002FFF Direct memory access controller OK
0x00000A79-0x00000A79 ISAPNP Read Data Port OK
0x00000279-0x00000279 ISAPNP Read Data Port OK
0x00000274-0x00000277 ISAPNP Read Data Port OK
0x00000081-0x0000008F 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
0x00000061-0x00000061 System speaker OK
0x00000101-0x0000016F System speaker OK
0x00000178-0x000001CD System speaker OK
0x000001D0-0x000001EF System speaker OK
0x000001F8-0x00000273 System speaker OK
0x00000280-0x000002E7 System speaker OK
0x000002F0-0x000002F7 System speaker OK
0x00000300-0x00000377 System speaker OK
0x00000380-0x000003AF System speaker OK
0x000003BC-0x000003BF System speaker OK
0x000003E0-0x000003E7 System speaker OK
0x000003F6-0x000003F6 System speaker OK
0x000003F6-0x000003F6 Primary IDE Channel OK
0x00000501-0x0000056F System speaker OK
0x00000578-0x000005CD System speaker OK
0x000005D0-0x000005EF System speaker OK
0x000005F8-0x00000677 System speaker OK
0x00000680-0x000006E7 System speaker OK
0x000006F0-0x000006F7 System speaker OK
0x00000700-0x00000777 System speaker OK
0x00000780-0x000007AF System speaker OK
0x000007BC-0x000007BF System speaker OK
0x000007E0-0x000007E7 System speaker OK
0x000007F6-0x000007F6 System speaker OK
0x00000901-0x0000096F System speaker OK
0x00000978-0x000009CD System speaker OK
0x000009D0-0x000009EF System speaker OK
0x000009F8-0x00000A77 System speaker OK
0x00000A80-0x00000AE7 System speaker OK
0x00000AF0-0x00000AF7 System speaker OK
0x00000B00-0x00000B77 System speaker OK
0x00000B80-0x00000BAF System speaker OK
0x00000BBC-0x00000BBF System speaker OK
0x00000BE0-0x00000BE7 System speaker OK
0x00000BF6-0x00000BF6 System speaker OK
0x00000D01-0x00000D6F System speaker OK
0x00000D78-0x00000DCD System speaker OK
0x00000DD0-0x00000DEF System speaker OK

```



0x00000DF8-0x00000E77	System speaker	OK
0x00000E80-0x00000EE7	System speaker	OK
0x00000EF0-0x00000EF7	System speaker	OK
0x00000F00-0x00000F77	System speaker	OK
0x00000F80-0x00000FAF	System speaker	OK
0x00000FBC-0x00000FBF	System speaker	OK
0x00000FE0-0x00000FE7	System speaker	OK
0x00000FF6-0x00000FF6	System speaker	OK
0x00001101-0x0000116F	System speaker	OK
0x00001178-0x000011CD	System speaker	OK
0x000011D0-0x000011EF	System speaker	OK
0x000011F8-0x00001277	System speaker	OK
0x00001280-0x000012E7	System speaker	OK
0x000012F0-0x000012F7	System speaker	OK
0x00001300-0x00001377	System speaker	OK
0x00001380-0x000013AF	System speaker	OK
0x000013BC-0x000013BF	System speaker	OK
0x000013E0-0x000013E7	System speaker	OK
0x000013F6-0x000013F6	System speaker	OK
0x00001501-0x0000156F	System speaker	OK
0x00001578-0x000015CD	System speaker	OK
0x000015D0-0x000015EF	System speaker	OK
0x000015F8-0x00001677	System speaker	OK
0x00001680-0x000016E7	System speaker	OK
0x000016F0-0x000016F7	System speaker	OK
0x00001700-0x00001777	System speaker	OK
0x00001780-0x000017AF	System speaker	OK
0x000017BC-0x000017BF	System speaker	OK
0x000017E0-0x000017E7	System speaker	OK
0x000017F6-0x000017F6	System speaker	OK
0x00001901-0x0000196F	System speaker	OK
0x00001978-0x000019CD	System speaker	OK
0x000019D0-0x000019EF	System speaker	OK
0x000019F8-0x00001A77	System speaker	OK
0x00001A80-0x00001AE7	System speaker	OK
0x00001AF0-0x00001AF7	System speaker	OK
0x00001B00-0x00001B77	System speaker	OK
0x00001B80-0x00001BAF	System speaker	OK
0x00001BBC-0x00001BBF	System speaker	OK
0x00001BE0-0x00001BE7	System speaker	OK
0x00001BF6-0x00001BF6	System speaker	OK
0x00001D01-0x00001D6F	System speaker	OK
0x00001D78-0x00001DCD	System speaker	OK
0x00001DD0-0x00001DEF	System speaker	OK
0x00001DF8-0x00001E77	System speaker	OK
0x00001E80-0x00001EE7	System speaker	OK
0x00001EF0-0x00001EF7	System speaker	OK
0x00001F00-0x00001F77	System speaker	OK
0x00001F80-0x00001FAF	System speaker	OK
0x00001FBC-0x00001FBF	System speaker	OK
0x00001FE0-0x00001FE7	System speaker	OK
0x00001FF6-0x00001FF6	System speaker	OK
0x00000378-0x0000037F	ECP Printer Port (LPT1)	OK
0x00000778-0x0000077F	ECP Printer Port (LPT1)	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
0x00001060-0x0000106F	Intel(r) 82371AB/EB PCI Bus Master IDE Controller	OK
0x000001F0-0x000001F7	Primary IDE Channel	OK
0x00000170-0x00000177	Secondary IDE Channel	OK
0x00000376-0x00000376	Secondary IDE Channel	OK
0x00001040-0x0000105F	Intel(r) 82371AB/EB PCI to USB Universal Host Controller	OK
0x00002000-0x00002FFF	DEC 21152 PCI to PCI bridge	OK
0x00002000-0x00002FFF	Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI	OK
0x000003B0-0x000003BB	DEC 21152 PCI to PCI bridge	OK
0x000003B0-0x000003BB	Console Manager Video Driver	OK
0x000003C0-0x000003DF	DEC 21152 PCI to PCI bridge	OK
0x000003C0-0x000003DF	Console Manager Video Driver	OK
0x00002400-0x000024FF	Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI	OK
0x00001000-0x0000103F	Intel(R) 8255xER PCI Adapter	OK
0x00003400-0x0000340F	PCI bus	OK
0x00003410-0x0000341F	PCI bus	OK
0x00003420-0x000037FF	PCI bus	OK
0x00003800-0x0000380F	PCI bus	OK
0x00003810-0x0000381F	PCI bus	OK
0x00003820-0x00003BFF	PCI bus	OK
0x00003C00-0x00003C0F	PCI bus	OK
0x00003C10-0x00003C1F	PCI bus	OK
0x00003C20-0x0000FFFF	PCI bus	OK
[IRQs]		
Resource	Device	Status
IRQ 23	Microsoft ACPI-Compliant System	OK
IRQ 1	Unisys Intelligent Fibre Channel Fabric Bus Adapter	OK
IRQ 1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	OK
IRQ 5	Unisys Intelligent Fibre Channel Fabric Bus Adapter	OK
IRQ 8	System CMOS/real time clock	OK
IRQ 0	System timer	OK
IRQ 12	PS/2 Compatible Mouse	OK
IRQ 6	Standard floppy disk controller	OK
IRQ 14	Intel(R) 8255xER PCI Adapter	OK
IRQ 13	Secondary IDE Channel	OK
IRQ 11	Intel(r) 82371AB/EB PCI to USB Universal Host Controller	OK
IRQ 9	Console Manager control device	OK
IRQ 10	Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI	OK
IRQ 10	Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI	OK
IRQ 10	Intel(R) 8255xER PCI Adapter	OK
IRQ 25	Unisys Intelligent Fibre Channel Fabric Bus Adapter	OK
IRQ 28	cLAN Host Adapter #2	OK
IRQ 29	cLAN Host Adapter	OK
IRQ 48	Unisys Intelligent Fibre Channel Fabric Bus Adapter	OK
IRQ 52	Unisys Intelligent Fibre Channel Fabric Bus Adapter	OK
IRQ 76	cLAN Host Adapter #3	OK
IRQ 77	cLAN Host Adapter #4	OK
[Memory]		
Resource	Device	Status

```

0xEE000000-0xEFFFFFFF PCI bus OK
0xEE000000-0xEFFFFFFF PCI standard PCI-to-PCI bridge OK
0xEE000000-0xEFFFFFFF Unisys Intelligent Fibre Channel Fabric Bus Adapter
OK
0xEF800000-0xEFFFFFFF PCI standard PCI-to-PCI bridge OK
0xEF800000-0xEFFFFFFF Unisys Intelligent Fibre Channel Fabric Bus Adapter
OK
0xF0000000-0xF1FFFFFF PCI bus OK
0xF0000000-0xF1FFFFFF PCI standard PCI-to-PCI bridge OK
0xF0000000-0xF1FFFFFF Unisys Intelligent Fibre Channel Fabric Bus Adapter
OK
0xF1800000-0xF1FFFFFF PCI standard PCI-to-PCI bridge OK
0xF1800000-0xF1FFFFFF Unisys Intelligent Fibre Channel Fabric Bus Adapter
OK
0xA0000-0xBFFFF PCI bus OK
0xA0000-0xBFFFF DEC 21152 PCI to PCI bridge OK
0xA0000-0xBFFFF Console Manager Video Driver OK
0xC0000-0xDFFFF PCI bus OK
0xE0000-0xFFFF PCI bus OK
0xE6000000-0xEDFFFFFF PCI bus OK
0xE6100000-0xE9FFFFFF DEC 21152 PCI to PCI bridge OK
0xE6100000-0xE9FFFFFF Console Manager Video Driver OK
0xEC000000-0xEDFFFFFF DEC 21152 PCI to PCI bridge OK
0xEC000000-0xEDFFFFFF Console Manager control device OK
0xE6110000-0xE6110FFF Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI OK

0xE6111000-0xE6111FFF Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI OK

0xE8000000-0xE9FFFFFF Console Manager Video Driver OK
0xE6001000-0xE6001FFF Intel(R) 8255xER PCI Adapter OK
0xE6020000-0xE603FFFF Intel(R) 8255xER PCI Adapter OK
0xF2000000-0xF3FFFFFF PCI bus OK
0xF2000000-0xF3FFFFFF PCI standard PCI-to-PCI bridge OK
0xF2000000-0xF3FFFFFF Unisys Intelligent Fibre Channel Fabric Bus Adapter
OK
0xF3800000-0xF3FFFFFF PCI standard PCI-to-PCI bridge OK
0xF3800000-0xF3FFFFFF Unisys Intelligent Fibre Channel Fabric Bus Adapter
OK
0xF4000000-0xF6FFFFFF PCI bus OK
0xF4000000-0xF6FFFFFF cLAN Host Adapter #2 OK
0xF4020000-0xF403FFFF cLAN Host Adapter #2 OK
0xF4200000-0xF43FFFFF cLAN Host Adapter #2 OK
0xF5000000-0xF5FFFFFF cLAN Host Adapter #2 OK
0xF4040000-0xF405FFFF cLAN Host Adapter OK
0xF4400000-0xF45FFFFF cLAN Host Adapter OK
0xF6000000-0xF6FFFFFF cLAN Host Adapter OK
0xF4010000-0xF401FFFF cLAN Host Adapter OK
0xF7000000-0xF73FFFFF PCI bus OK
0xF7400000-0xF7FFFFFF PCI bus OK
0xF7400000-0xF7FFFFFF PCI standard PCI-to-PCI bridge OK
0xF7400000-0xF7FFFFFF Unisys Intelligent Fibre Channel Fabric Bus Adapter
OK
0xF7800000-0xF7FFFFFF PCI standard PCI-to-PCI bridge OK
0xF7800000-0xF7FFFFFF Unisys Intelligent Fibre Channel Fabric Bus Adapter
OK
0xF8000000-0xF9FFFFFF PCI bus OK
0xF8000000-0xF9FFFFFF PCI standard PCI-to-PCI bridge OK
0xF8000000-0xF9FFFFFF Unisys Intelligent Fibre Channel Fabric Bus Adapter
OK

```

```

0xF9800000-0xF9FFFFFF PCI standard PCI-to-PCI bridge OK
0xF9800000-0xF9FFFFFF Unisys Intelligent Fibre Channel Fabric Bus Adapter
OK
0xFA000000-0xFA3FFFFF PCI bus OK
0xFA400000-0xFA4FFFFF PCI bus OK
0xFA500000-0xFCFFFFFF PCI bus OK
0xFA500000-0xFCFFFFFF cLAN Host Adapter #3 OK
0xFA520000-0xFA53FFFF cLAN Host Adapter #3 OK
0xFA600000-0xFA7FFFFF cLAN Host Adapter #3 OK
0xFB000000-0xFBFFFFFF cLAN Host Adapter #3 OK
0xFA540000-0xFA55FFFF cLAN Host Adapter #4 OK
0xFA800000-0xFA9FFFFF cLAN Host Adapter #4 OK
0xFC000000-0xFCFFFFFF cLAN Host Adapter #4 OK
0xFA510000-0xFA51FFFF cLAN Host Adapter #4 OK
0xFD000000-0xFDFFFFFF PCI bus 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)		3/18/2003 4:00 AM		
		c:\windows\system32\msadp32.acm		Microsoft Corporation		OK
		C:\WINDOWS\system32\MSADP32.ACM		5.2.3788.0 (srv03_rtm.030317-		
2234)		14.50 KB (14,848 bytes)		3/18/2003 4:00 AM		
		c:\windows\system32\msg711.acm		Microsoft Corporation		OK
		C:\WINDOWS\system32\MSG711.ACM		5.2.3788.0 (srv03_rtm.030317-		
2234)		10.00 KB (10,240 bytes)		3/18/2003 4:00 AM		
		c:\windows\system32\msgsm32.acm		Microsoft Corporation		OK
		C:\WINDOWS\system32\MSGSM32.ACM		5.2.3788.0 (srv03_rtm.030317-		
2234)		20.50 KB (20,992 bytes)		3/18/2003 4:00 AM		
		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)		3/18/2003 4:00 AM		
		c:\windows\system32\msg723.acm		Microsoft Corporation		OK
		C:\WINDOWS\system32\MSG723.ACM		4.4.4000		116.00 KB
		(118,784 bytes)		3/21/2003 2:58 PM		
		c:\windows\system32\imaadp32.acm		Microsoft Corporation		OK
		C:\WINDOWS\system32\IMAADP32.ACM		5.2.3788.0 (srv03_rtm.030317-		
2234)		15.50 KB (15,872 bytes)		3/18/2003 4:00 AM		
		c:\windows\system32\tsssoft32.acm		DSP GROUP, INC.		OK
		C:\WINDOWS\system32\TSSOFT32.ACM		1.01		9.50 KB (9,728 bytes)
		3/18/2003 4:00 AM				

[Video Codecs]

CODEC	Manufacturer	Description	Status	File	Version	Size
		Creation Date				

```

c:\windows\system32\tshyuv.dll      Microsoft Corporation      OK
C:\WINDOWS\system32\TSBYUV.DLL      5.2.3788.0 (srv03_rtm.030317-
2234) 8.00 KB (8,192 bytes) 3/18/2003 9:00 AM
c:\windows\system32\msh261.drv      Microsoft Corporation      OK
C:\WINDOWS\system32\MSH261.DRV      4.4.4000      180.00 KB
(184,320 bytes)      3/21/2003 2:58 PM
c:\windows\system32\msrle32.dll      Microsoft Corporation      OK
C:\WINDOWS\system32\MSRLE32.DLL      5.2.3788.0 (srv03_rtm.030317-
2234) 10.50 KB (10,752 bytes) 3/18/2003 4:00 AM
c:\windows\system32\msvidc32.dll     Microsoft Corporation      OK
C:\WINDOWS\system32\MSVIDC32.DLL     5.2.3788.0 (srv03_rtm.030317-
2234) 26.50 KB (27,136 bytes) 3/18/2003 4:00 AM
c:\windows\system32\iyuv_32.dll     Microsoft Corporation      OK
C:\WINDOWS\system32\IYUV_32.DLL      5.2.3788.0 (srv03_rtm.030317-
2234) 45.00 KB (46,080 bytes) 3/18/2003 8:59 AM
c:\windows\system32\msh263.drv      Microsoft Corporation      OK
C:\WINDOWS\system32\MSH263.DRV      4.4.4000      284.00 KB
(290,816 bytes)      3/18/2003 8:57 AM
c:\windows\system32\msyuv.dll       Microsoft Corporation      OK
C:\WINDOWS\system32\MSYUV.DLL        5.2.3788.0 (srv03_rtm.030317-2234)
16.50 KB (16,896 bytes) 3/18/2003 8:59 AM

```

[CD-ROM]

```

Item      Value
Drive D:
Description  CD-ROM Drive
Media Loaded No
Media Type  CD-ROM
Name        TEAC CD-224E
Manufacturer (Standard CD-ROM drives)
Status OK
Transfer Rate Not Available
SCSI Target ID 0
PNP Device ID IDE\CDROMTEAC_CD-
224E_____1.9A_____\5&1B78D9&0&0.0.0

```

[Sound Device]

```
Item      Value
```

[Display]

```

Item      Value
Name      Console Manager Video Driver
PNP Device ID
          PCI\VEN_1013&DEV_00D6&SUBSYS_80D61018&REV_03\4&32BB70A2&0&1008
Adapter Type  Cirrus Logic 5465, Unisys Corporation compatible
Adapter Description  Console Manager Video Driver
Adapter RAM   2.00 MB (2,097,152 bytes)
Installed Drivers  unesconf.dll
Driver Version 6.0.3.29
INF File      oem2.inf (unescons section)
Color Planes  1
Color Table Entries  256
Resolution   800 x 600 x 72 hertz
Bits/Pixel   8
Memory Address 0xE8000000-0xE9FFFFFF

```

```

Memory Address 0xE6100000-0xE9FFFFFF
I/O Port      0x000003B0-0x000003BB
I/O Port      0x000003C0-0x000003DF
Memory Address 0xA0000-0xBFFFFF

```

[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\D
Number of Function Keys  12
I/O Port    0x00000060-0x00000060
I/O Port    0x00000064-0x00000064
IRQ Channel  IRQ 1

```

[Pointing Device]

```

Item      Value
Hardware Type  PS/2 Compatible Mouse
Number of Buttons  3
Status OK
PNP Device ID  ACPI\PNP0F13\D
Power Management Supported  No
Double Click Threshold 6
Handedness    Right Handed Operation
IRQ Channel    IRQ 12

```

[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   3/27/2003 2:10 PM
Index        1
Service Name AsyncMac
IP Address   Not Available
IP Subnet    Not Available

```

Default IP Gateway Not Available  
DHCP Enabled No  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address Not Available

Name [00000002] WAN Miniport (L2TP)  
Adapter Type Not Available  
Product Type WAN Miniport (L2TP)  
Installed Yes  
PNP Device ID ROOT\MS\_L2TPMINIPORT\0000  
Last Reset 3/27/2003 2:10 PM  
Index 2  
Service Name Rasl2tp  
IP Address Not Available  
IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled No  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address Not Available

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 3/27/2003 2:10 PM  
Index 3  
Service Name PptpMiniport  
IP Address Not Available  
IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled No  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address 50:50:54:50:30:30

Name [00000004] WAN Miniport (PPPOE)  
Adapter Type Wide Area Network (WAN)  
Product Type WAN Miniport (PPPOE)  
Installed Yes  
PNP Device ID ROOT\MS\_PPPOEMINIPORT\0000  
Last Reset 3/27/2003 2:10 PM  
Index 4  
Service Name RasPppoe  
IP Address Not Available  
IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled No  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address 33:50:6F:45:30:30

Name [00000005] Direct Parallel

Adapter Type Not Available  
Product Type Direct Parallel  
Installed Yes  
PNP Device ID ROOT\MS\_PTMINIPORT\0000  
Last Reset 3/27/2003 2:10 PM  
Index 5  
Service Name Raspti  
IP Address Not Available  
IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled No  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address Not Available

Name [00000006] WAN Miniport (IP)  
Adapter Type Not Available  
Product Type WAN Miniport (IP)  
Installed Yes  
PNP Device ID ROOT\MS\_NDISWANIP\0000  
Last Reset 3/27/2003 2:10 PM  
Index 6  
Service Name NdisWan  
IP Address Not Available  
IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled No  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address Not Available

Name [00000007] Intel(R) 825xER PCI Adapter  
Adapter Type Ethernet 802.3  
Product Type Intel(R) 825xER PCI Adapter  
Installed Yes  
PNP Device ID  
PCI\VEN\_8086&DEV\_1209&SUBSYS\_10180D88&REV\_09\3&172E68DD&0&10

Last Reset 3/27/2003 2:10 PM  
Index 7  
Service Name E100E  
IP Address 192.59.13.213  
IP Subnet 255.255.255.0  
Default IP Gateway 192.59.13.250  
DHCP Enabled No  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address 08:00:0B:26:01:04  
Memory Address 0xE6001000-0xE6001FFF  
I/O Port 0x00001000-0x0000103F  
Memory Address 0xE6020000-0xE603FFFF  
IRQ Channel IRQ 10

Name [00000008] cLAN Host Adapter  
Adapter Type Ethernet 802.3  
Product Type cLAN Host Adapter

```

Installed      Yes
PNP Device ID  PCI\VEN_135B&DEV_0001&SUBSYS_00000000&REV_00\3&E44F86D&0&00

Last Reset    3/27/2003 2:10 PM
Index        8
Service Name  GNINDIS
IP Address    Not Available
IP Subnet     Not Available
Default IP Gateway Not Available
DHCP Enabled  Yes
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   00:90:FA:00:14:BC
Memory Address 0xF4020000-0xF403FFFF
Memory Address 0xF4200000-0xF43FFFFF
Memory Address 0xF5000000-0xF5FFFFFF
Memory Address 0xF4000000-0xF6FFFFFF
IRQ Channel   IRQ 28

Name [00000009] cLAN Host Adapter
Adapter Type Ethernet 802.3
Product Type cLAN Host Adapter
Installed     Yes
PNP Device ID PCI\VEN_135B&DEV_0001&SUBSYS_00000000&REV_00\3&E44F86D&0&08

Last Reset    3/27/2003 2:10 PM
Index        9
Service Name  GNINDIS
IP Address    Not Available
IP Subnet     Not Available
Default IP Gateway Not Available
DHCP Enabled  Yes
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   00:90:FA:00:15:9A
Memory Address 0xF4040000-0xF405FFFF
Memory Address 0xF4400000-0xF45FFFFF
Memory Address 0xF6000000-0xF6FFFFFF
Memory Address 0xF4010000-0xF401FFFF
IRQ Channel   IRQ 29

Name [00000010] cLAN Host Adapter
Adapter Type Ethernet 802.3
Product Type cLAN Host Adapter
Installed     Yes
PNP Device ID PCI\VEN_135B&DEV_0001&SUBSYS_00000000&REV_00\3&1B2F0CE&0&00

Last Reset    3/27/2003 2:10 PM
Index        10
Service Name  GNINDIS
IP Address    Not Available
IP Subnet     Not Available
Default IP Gateway Not Available
DHCP Enabled  Yes
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available

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MAC Address    00:90:FA:00:1C:8C
Memory Address 0xFA520000-0xFA53FFFF
Memory Address 0xFA600000-0xFA7FFFFF
Memory Address 0xFB000000-0xFBFFFFFF
Memory Address 0xFA500000-0xFCFFFFFF
IRQ Channel    IRQ 76

Name [00000011] cLAN Host Adapter
Adapter Type   Ethernet 802.3
Product Type   cLAN Host Adapter
Installed      Yes
PNP Device ID  PCI\VEN_135B&DEV_0001&SUBSYS_00000000&REV_00\3&1B2F0CE&0&08

Last Reset    3/27/2003 2:10 PM
Index        11
Service Name  GNINDIS
IP Address    Not Available
IP Subnet     Not Available
Default IP Gateway Not Available
DHCP Enabled  Yes
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   00:90:FA:00:1C:15
Memory Address 0xFA540000-0xFA55FFFF
Memory Address 0xFA800000-0xFA9FFFFF
Memory Address 0xFC000000-0xFCFFFFFF
Memory Address 0xFA510000-0xFA51FFFF
IRQ Channel   IRQ 77

[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

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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\_{2BAE7DE7-8C00-41F7-B62D-86F56649CA5C}] 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\_{2BAE7DE7-8C00-41F7-B62D-86F56649CA5C}] 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\_{714BB0E3-7714-4B8B-901E-727276B5E731}] SEQPACKET 6  
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\_{714BB0E3-7714-4B8B-901E-727276B5E731}] DATAGRAM 6  
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\_{0B8AFFC2-5EEF-4F77-A611-A4448635C733}] SEQUENCE 5  
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\_{0B8AFFC2-5EEF-4F77-A611-A4448635C733}] DATAGRAM 5  
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\_{F2963324-82E7-4E81-A26D-98B6EE49E440}] SEQUENCE 4  
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\_{F2963324-82E7-4E81-A26D-98B6EE49E440}] DATAGRAM 4  
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\_{ED2A7177-F870-420D-A28A-1003D1AB1C54}] SEQUENCE 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\_{ED2A7177-F870-420D-A28A-1003D1AB1C54}] 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\_{6C2BC63B-0DDB-4960-947B-96803A8E8171}] 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\_{6C2BC63B-0DDB-4960-947B-96803A8E8171}] 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\_{64FA1790-4B4E-45C2-93EE-21970463F516}] 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\_{64FA1790-4B4E-45C2-93EE-21970463F516}] 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	5.2.3788.0 (srv03_rtm.030317-2234)

[Ports]

[Serial]

Item	Value
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[Parallel]

Item	Value
Name	LPT1
PNP Device ID	ACPI\PNP0401\D
I/O Port	0x00000378-0x0000037F
I/O Port	0x00000778-0x0000077F
DMA Channel	Channel 1

[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 27.94 GB (29,997,559,808 bytes)  
Free Space 23.20 GB (24,914,477,056 bytes)  
Volume Name  
Volume Serial Number 00227212

Drive D:  
Description CD-ROM Disc

Drive Z:  
Description Network Connection  
Provider Name \\192.59.13.16\nas4

[Disks]

Item Value  
Description Disk drive  
Manufacturer (Standard disk drives)  
Model FUJITSU MHS2030AT  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 1  
SCSI Bus 0  
SCSI Logical Unit 0  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 63  
Size 27.95 GB (30,005,821,440 bytes)  
Total Cylinders 3,648  
Total Sectors 58,605,120  
Total Tracks 930,240  
Tracks/Cylinder 255  
Partition Disk #0, Partition #0  
Partition Size 27.94 GB (29,997,563,904 bytes)  
Partition Starting Offset 32,256 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model DGC RAID 10 0099  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 1  
SCSI Bus 246  
SCSI Logical Unit 0  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 301.96 GB (324,230,184,960 bytes)  
Total Cylinders 309,210  
Total Sectors 633,262,080  
Total Tracks 9,894,720  
Tracks/Cylinder 32  
Partition Disk #1, Partition #0  
Partition Size 301.96 GB (324,229,103,616 bytes)  
Partition Starting Offset 32,768 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation

Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 5  
SCSI Logical Unit 1  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #2, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #2, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #2, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #2, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 5  
SCSI Logical Unit 2  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #3, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #3, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #3, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #3, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver

Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 5  
SCSI Logical Unit 3  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #4, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #4, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #4, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #4, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 5  
SCSI Logical Unit 4  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #5, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #5, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #5, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #5, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 5  
SCSI Logical Unit 5  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #6, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #6, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #6, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #6, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 5  
SCSI Logical Unit 6  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #7, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #7, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #7, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #7, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 5  
 SCSI Logical Unit 7  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #8, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #8, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #8, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #8, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 5  
 SCSI Logical Unit 8  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #9, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #9, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #9, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #9, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)

Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 5  
 SCSI Logical Unit 9  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #10, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #10, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #10, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #10, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 5  
 SCSI Logical Unit 10  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #11, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #11, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #11, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #11, Partition #3

Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 5  
SCSI Logical Unit 11  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #12, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #12, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #12, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #12, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 5  
SCSI Logical Unit 12  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #13, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #13, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #13, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes

Partition Disk #13, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 5  
SCSI Logical Unit 13  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #14, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #14, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #14, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #14, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 5  
SCSI Logical Unit 14  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #15, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #15, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #15, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)

Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #15, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 1  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #16, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #16, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #16, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #16, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 2  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #17, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #17, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #17, Partition #2

Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #17, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 3  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #18, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #18, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #18, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #18, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 4  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #19, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #19, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes

Partition Disk #19, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #19, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 5  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #20, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #20, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #20, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #20, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 6  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #21, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #21, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)

Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #21, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #21, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 7  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #22, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #22, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #22, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #22, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 8  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #23, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #23, Partition #1

Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #23, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #23, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 9  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #24, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #24, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #24, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #24, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 10  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #25, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes

Partition Disk #25, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #25, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #25, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 11  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #26, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #26, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #26, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #26, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 12  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #27, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)

Partition Starting Offset 32,768 bytes  
Partition Disk #27, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #27, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #27, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 13  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #28, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #28, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #28, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #28, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 9  
SCSI Logical Unit 14  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #29, Partition #0

Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #29, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #29, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #29, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 1  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #30, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #30, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #30, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #30, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 2  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32



Partition Disk #31, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #31, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #31, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #31, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 3  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #32, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #32, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #32, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #32, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 4  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000

Tracks/Cylinder 32  
Partition Disk #33, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #33, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #33, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #33, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 5  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #34, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #34, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #34, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #34, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 6  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000

Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #35, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #35, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #35, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #35, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 7  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #36, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #36, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #36, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #36, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 8  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000

Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #37, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #37, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #37, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #37, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 9  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #38, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #38, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #38, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #38, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 10  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)

Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #39, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #39, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #39, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #39, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 11  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64

Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #40, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #40, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #40, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #40, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 12  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64

Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #41, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #41, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #41, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #41, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 13  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64

Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #42, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #42, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #42, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #42, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 12  
SCSI Logical Unit 14  
SCSI Port 0  
SCSI Target ID 0

Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #43, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #43, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #43, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #43, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 249

SCSI Logical Unit 1  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32

Partition Disk #44, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #44, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #44, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #44, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 249  
 SCSI Logical Unit 2  
 SCSI Port 0

SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #45, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #45, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #45, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #45, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 249

SCSI Logical Unit 3  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32

Partition Disk #46, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #46, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #46, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #46, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 249  
 SCSI Logical Unit 4

SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #47, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #47, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #47, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #47, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 249  
SCSI Logical Unit 5  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #48, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #48, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #48, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #48, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 249

SCSI Logical Unit 6  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #49, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #49, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #49, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #49, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4  
SCSI Bus 249  
SCSI Logical Unit 7  
SCSI Port 0  
SCSI Target ID 0  
Sectors/Track 64  
Size 68.36 GB (73,400,320,000 bytes)  
Total Cylinders 70,000  
Total Sectors 143,360,000  
Total Tracks 2,240,000  
Tracks/Cylinder 32  
Partition Disk #50, Partition #0  
Partition Size 4.16 GB (4,467,949,568 bytes)  
Partition Starting Offset 32,768 bytes  
Partition Disk #50, Partition #1  
Partition Size 6.60 GB (7,088,373,760 bytes)  
Partition Starting Offset 4,467,982,336 bytes  
Partition Disk #50, Partition #2  
Partition Size 3.53 GB (3,785,359,360 bytes)  
Partition Starting Offset 11,556,356,096 bytes  
Partition Disk #50, Partition #3  
Partition Size 54.07 GB (58,057,555,968 bytes)  
Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
Manufacturer Unisys Corporation  
Model UNISYS VirtualStorage 01.0  
Bytes/Sector 512  
Media Loaded Yes  
Media Type Fixed hard disk  
Partitions 4

SCSI Bus 249  
 SCSI Logical Unit 8  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #51, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #51, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #51, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #51, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 249  
 SCSI Logical Unit 9  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #52, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #52, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #52, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #52, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk

Partitions 4  
 SCSI Bus 249  
 SCSI Logical Unit 10  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #53, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #53, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #53, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #53, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 249  
 SCSI Logical Unit 11  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #54, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #54, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #54, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #54, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes

Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 249  
 SCSI Logical Unit 12  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #55, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #55, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #55, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #55, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512  
 Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 249  
 SCSI Logical Unit 13  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #56, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #56, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #56, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #56, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

Description Unisys Intelligent Fibre Channel Fabric Disk Driver  
 Manufacturer Unisys Corporation  
 Model UNISYS VirtualStorage 01.0  
 Bytes/Sector 512

Media Loaded Yes  
 Media Type Fixed hard disk  
 Partitions 4  
 SCSI Bus 249  
 SCSI Logical Unit 14  
 SCSI Port 0  
 SCSI Target ID 0  
 Sectors/Track 64  
 Size 68.36 GB (73,400,320,000 bytes)  
 Total Cylinders 70,000  
 Total Sectors 143,360,000  
 Total Tracks 2,240,000  
 Tracks/Cylinder 32  
 Partition Disk #57, Partition #0  
 Partition Size 4.16 GB (4,467,949,568 bytes)  
 Partition Starting Offset 32,768 bytes  
 Partition Disk #57, Partition #1  
 Partition Size 6.60 GB (7,088,373,760 bytes)  
 Partition Starting Offset 4,467,982,336 bytes  
 Partition Disk #57, Partition #2  
 Partition Size 3.53 GB (3,785,359,360 bytes)  
 Partition Starting Offset 11,556,356,096 bytes  
 Partition Disk #57, Partition #3  
 Partition Size 54.07 GB (58,057,555,968 bytes)  
 Partition Starting Offset 15,341,715,456 bytes

[SCSI]

Item Value  
 Name Unisys Intelligent Fibre Channel Fabric Bus Adapter  
 Manufacturer Unisys Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_11AB&DEV\_4620&SUBSYS\_C0FC1018&REV\_12\4&34487C5B&0&0008

Memory Address 0xEF800000-0xEFFFFFFF  
 Memory Address 0xEE000000-0xEFFFFFFF  
 IRQ Channel IRQ 1

Name Unisys Intelligent Fibre Channel Fabric Bus Adapter  
 Manufacturer Unisys Corporation  
 Status OK  
 PNP Device ID  
 PCI\VEN\_11AB&DEV\_4620&SUBSYS\_C0FC1018&REV\_12\4&1A0B7E4&0&0008

Memory Address 0xF1800000-0xF1FFFFFF  
 Memory Address 0xF0000000-0xF1FFFFFF  
 IRQ Channel IRQ 5

Name Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI  
 Manufacturer Adaptec  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_005F&SUBSYS\_080F9005&REV\_00\4&32BB70A2&0&0808

I/O Port 0x00002000-0x00002FFF  
 Memory Address 0xE6110000-0xE6110FFF  
 IRQ Channel IRQ 10

Name Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI  
Manufacturer Adaptec  
Status OK  
PNP Device ID  
PCI\VEN\_9005&DEV\_005F&SUBSYS\_080F9005&REV\_00\4&32BB70A2&0&0908

I/O Port 0x00002400-0x000024FF  
Memory Address 0xE6111000-0xE6111FFF  
IRQ Channel IRQ 10

Name Unisys Intelligent Fibre Channel Fabric Bus Adapter  
Manufacturer Unisys Corporation  
Status OK  
PNP Device ID  
PCI\VEN\_11AB&DEV\_4620&SUBSYS\_C0FC1018&REV\_12\4&2421D46D&0&0008

Memory Address 0xF3800000-0xF3FFFFFF  
Memory Address 0xF2000000-0xF3FFFFFF  
IRQ Channel IRQ 25

Name Unisys Intelligent Fibre Channel Fabric Bus Adapter  
Manufacturer Unisys Corporation  
Status OK  
PNP Device ID  
PCI\VEN\_11AB&DEV\_4620&SUBSYS\_C0FC1018&REV\_12\4&1B316B8F&0&0000

Memory Address 0xF7800000-0xF7FFFFFF  
Memory Address 0xF7400000-0xF7FFFFFF  
IRQ Channel IRQ 48

Name Unisys Intelligent Fibre Channel Fabric Bus Adapter  
Manufacturer Unisys Corporation  
Status OK  
PNP Device ID  
PCI\VEN\_11AB&DEV\_4620&SUBSYS\_C0FC1018&REV\_12\4&101F93C3&0&0000

Memory Address 0xF9800000-0xF9FFFFFF  
Memory Address 0xF8000000-0xF9FFFFFF  
IRQ Channel IRQ 52

[IDE]

Item Value  
Name Intel(r) 82371AB/EB PCI Bus Master IDE Controller  
Manufacturer Intel  
Status OK  
PNP Device ID  
PCI\VEN\_8086&DEV\_7111&SUBSYS\_00000000&REV\_01\3&172E68DD&0&01

I/O Port 0x00001060-0x0000106F

Name Primary IDE Channel  
Manufacturer (Standard IDE ATA/ATAPI controllers)  
Status OK  
PNP Device ID PCIIDE\IDECHANNEL\4&100E6A2D&0&0  
I/O Port 0x000001F0-0x000001F7  
I/O Port 0x000003F6-0x000003F6  
IRQ Channel IRQ 14

Name Secondary IDE Channel  
Manufacturer (Standard IDE ATA/ATAPI controllers)  
Status OK  
PNP Device ID PCIIDE\IDECHANNEL\4&100E6A2D&0&1  
I/O Port 0x00000170-0x00000177  
I/O Port 0x00000376-0x00000376  
IRQ Channel IRQ 13

[Printing]

Name Driver Port Name Server Name

[Problem Devices]

Device PNP Device ID Error Code  
Not Available ACPI\UNO4501\0 The drivers for this device are not installed.

[USB]

Device PNP Device ID  
Intel(r) 82371AB/EB PCI to USB Universal Host Controller  
PCI\VEN\_8086&DEV\_7112&SUBSYS\_00000000&REV\_01\3&172E68DD&0&02

USB Root Hub USB\ROOT\_HUB\4&27B1EF4B&0

[Software Environment]

[System Drivers]

Name	Description	File	Type	Started	Start Mode	State	Status	
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	c:\windows\system32\drivers\aic78u2.sys	Kernel Driver	Yes	Boot Running OK	Normal No	Yes	
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				



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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\ataapi.sys Kernel Driver Yes Boot
Running OK Normal No Yes
atdisk Atdisk Not Available Kernel Driver No Disabled
Stopped OK Ignore No No
atmarpc ATM ARP Client Protocol
c:\windows\system32\drivers\atmarpc.sys Kernel Driver No
Manual Stopped OK Normal No No
audstub Audio Stub Driver c:\windows\system32\drivers\audstub.sys
Kernel Driver Yes Manual Running OK Normal No Yes
beep Beep c:\windows\system32\drivers\beep.sys Kernel Driver Yes
System Running OK Normal No Yes
cbidf2k cbidf2k c:\windows\system32\drivers\cbidf2k.sys Kernel Driver
No Disabled Stopped OK Normal No No
cdfs Cdfs c:\windows\system32\drivers\cdfs.sys File System Driver
Yes Disabled Running OK Normal No Yes
cdrom CD-ROM Driver 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
cpqarray2 cpqarray2 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
dasd_231 IntelliFibre Fabric Disk Driver (dasd)
c:\windows\system32\drivers\dasd.sys 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

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dpti2o dpti2o Not Available Kernel Driver No Disabled
Stopped OK Normal No No
e100e E100E c:\windows\system32\drivers\e100ent.sys Kernel Driver
Yes Manual Running OK Normal No Yes
escon Console Manager Control Device
c:\windows\system32\drivers\escon.sys Kernel Driver Yes Boot
Running OK Normal No Yes
esvuart Console Manager Network Connection
c:\windows\system32\drivers\esvuart.sys Kernel Driver No
Auto Stopped OK Normal No No
fastfat Fastfat c:\windows\system32\drivers\fastfat.sys File System
Driver No Disabled Stopped OK Normal No No
fdc Floppy Disk Controller Driver c:\windows\system32\drivers\fdc.sys
Kernel Driver Yes Manual Running OK Normal No Yes
fips Fips c:\windows\system32\drivers\fips.sys Kernel Driver Yes
System Running OK Normal No Yes
flpydisk Floppy Disk Driver
c:\windows\system32\drivers\flpydisk.sys Kernel Driver Yes
Manual Running OK Normal No Yes
ftdisk Volume Manager Driver c:\windows\system32\drivers\ftdisk.sys
Kernel Driver Yes Boot Running OK Normal No Yes
gnindis cLAN NDIS Driver c:\windows\system32\drivers\gnindis.sys
Kernel Driver Yes Auto Running OK Normal No Yes
gnivia cLAN VIA Driver c:\windows\system32\drivers\gnivia.sys
Kernel Driver Yes Auto 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
ifba Unisys Intelligent Fibre Channel Adapter SCSI Processor
c:\windows\system32\drivers\ifba.sys Kernel Driver Yes Manual
Running OK Normal No Yes
ifdisk Unisys Intelligent Fibre Channel Fabric Disk Driver
c:\windows\system32\drivers\ifdisk.sys Kernel Driver Yes
Boot Running OK Normal No Yes
ifip Unisys Intelligent Fibre Channel Fabric Bus Enumerator
c:\windows\system32\drivers\ifip.sys Kernel Driver Yes Boot
Running OK Normal No Yes
ifxp Unisys Intelligent Fibre Channel Fabric Bus Adapter
c:\windows\system32\drivers\ifxp.sys Kernel Driver Yes Boot
Running OK Normal No Yes
iirsp iirsp Not Available Kernel Driver No Disabled
Stopped OK Normal No No

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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	
	Kernel Driver	Yes	Manual Running OK	Normal	No
				Yes	
rasppoe	Remote Access PPPOE Driver				
	c:\windows\system32\drivers\rasppoe.sys		Kernel Driver	Yes	
	Manual Running OK	Normal	No	Yes	
raspti	Direct Parallel				
	c:\windows\system32\drivers\raspti.sys		Kernel Driver	Yes	
	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	RDPCCDD				
	c:\windows\system32\drivers\rdpcdd.sys		Kernel Driver		
	Yes	System Running OK	Ignore	No	Yes
rdpdr	Terminal Server Device Redirector Driver				
	c:\windows\system32\drivers\rdpdr.sys		Kernel Driver	Yes	Manual
	Running OK	Normal	No	Yes	
rdpwd	RDPWD				
	c:\windows\system32\drivers\rdpwd.sys		Kernel Driver	Yes	
	Manual Running OK	Ignore	No	Yes	
redbook	Digital CD Audio Playback Filter Driver				
	c:\windows\system32\drivers\redbook.sys		Kernel Driver	Yes	
	System Running OK	Normal	No	Yes	
secdrv	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	
	Kernel Driver	No	Manual Stopped OK	Normal	No
				No	
serial	Serial port driver				
	c:\windows\system32\drivers\serial.sys		Kernel Driver	No	
	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	
	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	
tcpip	TCP/IP Protocol Driver				
	c:\windows\system32\drivers\tcpip.sys		Kernel Driver		
	Yes	System Running OK	Normal	No	Yes
tdpipe	TDPIPE				
	c:\windows\system32\drivers\tdpipe.sys		Kernel Driver		
	No	Manual Stopped OK	Ignore	No	No
tdtcp	TDTCP				
	c:\windows\system32\drivers\tdtcp.sys		Kernel Driver	Yes	
	Manual Running OK	Ignore	No	Yes	
termdd	Terminal Device Driver				
	c:\windows\system32\drivers\termdd.sys		Kernel Driver	Yes	
	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	No
unescons	Console Manager Video Driver				
	c:\windows\system32\drivers\unescons.sys		Kernel Driver	Yes	
	Manual Running OK	Ignore	No	Yes	
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	Yes	
	Kernel Driver	Yes	Manual Running OK	Normal	No
				Yes	
usbuhci	Microsoft USB Universal Host Controller Miniport Driver				
	c:\windows\system32\drivers\usbuhci.sys		Kernel Driver	Yes	
	Manual Running OK	Normal	No	Yes	
vga	vga				
	c:\windows\system32\drivers\vgapnp.sys		Kernel Driver		
	No	Manual Stopped OK	Ignore	No	No
vgasave	VGA Display Controller				
	c:\windows\system32\drivers\vgasave.sys		Kernel Driver	Yes	
	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	
	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
				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	Not Available	Not Available	HTREE\ROOT\0	
CMP (ACPI) Server	No	COMPUTER	5.3763.8.308	2/10/2003	
Unisys oem0.inf	Not Available	ROOT\ACPI_HAL\0000			
Microsoft ACPI-Compliant System	No	SYSTEM	5.2.3788.0		
10/1/2002	Microsoft	acpi.inf	Not Available		
ACPI_HAL\PNP0C08\0					
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	ACPI\UNO4501\0	

PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\2  
PCI standard PCI-to-PCI bridge No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available  
PCI\VEN\_8086&DEV\_0309&SUBSYS\_00000000&REV\_01\3&1070020&0&08

Unisys Intelligent Fibre Channel Fabric Bus Adapter No SCSIADAPTER  
2.36.0.16 2/19/2003 Unisys Corporation oem4.inf  
Not Available  
PCI\VEN\_11AB&DEV\_4620&SUBSYS\_C0FC1018&REV\_12\4&34487C5B&0&0008

Unisys Intelligent Fibre Channel Adapter SCSI Processor No SYSTEM  
2.36.0.5 2/25/2003 Unisys Corporation oem5.inf  
Not Available  
SCSI\PROCESSORUNISYS\_IFBA8888\_\_\_\_\_V2\_\5&350A6B20&0&F004560B00  
080010

Unisys Intelligent Fibre Channel Adapter SCSI Processor No SYSTEM  
2.36.0.5 2/25/2003 Unisys Corporation oem5.inf  
Not Available  
SCSI\PROCESSORUNISYS\_IFBA8888\_\_\_\_\_V2\_\5&350A6B20&0&F104560B00  
080010

PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\3  
PCI standard PCI-to-PCI bridge No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available  
PCI\VEN\_8086&DEV\_0309&SUBSYS\_00000000&REV\_01\3&29E81982&0&08

Unisys Intelligent Fibre Channel Fabric Bus Adapter No SCSIADAPTER  
2.36.0.16 2/19/2003 Unisys Corporation oem4.inf  
Not Available  
PCI\VEN\_11AB&DEV\_4620&SUBSYS\_C0FC1018&REV\_12\4&1A0B7E4&0&0008

Unisys Intelligent Fibre Channel Adapter SCSI Processor No SYSTEM  
2.36.0.5 2/25/2003 Unisys Corporation oem5.inf  
Not Available  
SCSI\PROCESSORUNISYS\_IFBA8888\_\_\_\_\_V2\_\5&19FCCE84&0&A104560B00  
080010

Unisys Intelligent Fibre Channel Adapter SCSI Processor No SYSTEM  
2.36.0.5 2/25/2003 Unisys Corporation oem5.inf  
Not Available  
SCSI\PROCESSORUNISYS\_IFBA8888\_\_\_\_\_V2\_\5&19FCCE84&0&A004560B00  
080010

PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\4  
Intel 82371AB/EB PCI to ISA bridge (ISA mode) No SYSTEM 5.2.3788.0 10/1/2002 Intel machine.inf Not Available  
PCI\VEN\_8086&DEV\_7110&SUBSYS\_00000000&REV\_01\3&172E68DD&0&00

ISAPNP Read Data Port No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available  
ISAPNP\READDATAPORT\0

Direct memory access controller No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available  
ACPI\PNP0200\D

Programmable interrupt controller No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available  
ACPI\PNP0000\D

System CMOS/real time clock No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available  
ACPI\PNP0B00\D

System timer No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0100\D

System speaker No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0800\D

Generic Bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A05\D

ECP Printer Port No PORTS 5.2.3788.0 10/1/2002 (Standard port types) msports.inf Not Available ACPI\PNP0401\D

Printer Port Logical Interface No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available  
LPTENUM\MICROSOFTRAWPORT\6&2DCCF168&0&LPT1

PS/2 Compatible Mouse No MOUSE 5.2.3788.0 10/1/2002 Microsoft msmouse.inf Not Available ACPI\PNP0F13\D

Standard 101/102-Key or Microsoft Natural PS/2 Keyboard No KEYBOARD 5.2.3788.0 10/1/2002 (Standard keyboards) keyboard.inf Not Available ACPI\PNP0303\D

Standard floppy disk controller No FDC 5.2.3788.0 10/1/2002 (Standard floppy disk controllers) fdc.inf Not Available  
ACPI\PNP0700\D

Floppy disk drive No FLOPPYDISK 5.2.3788.0 10/1/2002 (Standard floppy disk drives) flypdisk.inf Not Available  
FDC\GENERIC\_FLOPPY\_DRIVE\6&1E621CEF&0&0

Intel(r) 82371AB/EB PCI Bus Master IDE Controller No HDC 5.2.3788.0 10/1/2002 Intel mshdc.inf Not Available  
PCI\VEN\_8086&DEV\_7111&SUBSYS\_00000000&REV\_01\3&172E68DD&0&01

Primary IDE Channel No HDC 5.2.3788.0 10/1/2002 (Standard IDE ATA/ATAPI controllers) mshdc.inf Not Available  
PCIIDE\IDECHANNEL\4&100E6A2D&0&0

Disk drive No DISKDRIVE 5.2.3788.0 10/1/2002 (Standard disk drives) disk.inf Not Available  
IDE\DISKFUJITSU\_MHS2030AT\_\_\_\_\_8004\_\5&28FC923B&0&0.0

Secondary IDE Channel No HDC 5.2.3788.0 10/1/2002 (Standard IDE ATA/ATAPI controllers) mshdc.inf Not Available  
PCIIDE\IDECHANNEL\4&100E6A2D&0&1

CD-ROM Drive No CDROM 5.2.3788.0 10/1/2002 (Standard CD-ROM drives) cdrom.inf Not Available IDE\CDROMTEAC\_CD-224E\_\_\_\_\_1.9A\_\5&1B78D9&0&0.0

Intel(r) 82371AB/EB PCI to USB Universal Host Controller No USB 5.2.3788.0 10/1/2002 Intel usbport.inf Not Available  
PCI\VEN\_8086&DEV\_7112&SUBSYS\_00000000&REV\_01\3&172E68DD&0&02

USB Root Hub No USB 5.2.3788.0 10/1/2002 (Standard USB Host Controller) usbport.inf Not Available  
USB\ROOT\_HUB\4&27B1EF4B&0

DEC 21152 PCI to PCI bridge No SYSTEM 5.2.3788.0 10/1/2002 DEC machine.inf Not Available  
PCI\VEN\_1011&DEV\_0024&SUBSYS\_00000000&REV\_03\3&172E68DD&0&08

PCI standard PCI-to-PCI bridge No SYSTEM 5.2.3788.0 10/1/2002 (Standard system devices) machine.inf Not Available  
PCI\VEN\_8086&DEV\_0960&SUBSYS\_00000000&REV\_05\4&32BB70A2&0&0008

Console Manager control device No SYSTEM 6.0.3.29  
9/19/2002 Unisys Corporation oem1.inf Not Available  
PCI\VEN\_8086&DEV\_1960&SUBSYS\_C2001018&REV\_05\4&32BB70A2&0&0108

Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI No SCSIADAPTER  
5.2.3788.0 10/1/2002 Adaptec pnp SCSI.inf Not Available  
PCI\VEN\_9005&DEV\_005F&SUBSYS\_080F9005&REV\_00\4&32BB70A2&0&0808

Adaptec AIC-7896/AIC-7897 - Ultra2 SCSI No SCSIADAPTER  
5.2.3788.0 10/1/2002 Adaptec pnp SCSI.inf Not Available  
PCI\VEN\_9005&DEV\_005F&SUBSYS\_080F9005&REV\_00\4&32BB70A2&0&0908

Console Manager Video Driver No DISPLAY 6.0.3.29 9/19/2002  
Unisys Corporation oem2.inf Not Available  
PCI\VEN\_1013&DEV\_00D6&SUBSYS\_80D61018&REV\_03\4&32BB70A2&0&1008

Default Monitor No MONITOR 5.1.2001.0 6/6/2001  
(Standard monitor types) monitor.inf Not Available  
DISPLAY\DEFAULT MONITOR\5&10CA584C&0&11223344&02&02

Intel(R) 825xER PCI Adapter No NET 1.0.0.1 4/3/2001 Intel  
oem3.inf Not Available  
PCI\VEN\_8086&DEV\_1209&SUBSYS\_10180D88&REV\_09\3&172E68DD&0&10

PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system  
devices) machine.inf Not Available ACPI\PNP0A03\5  
PCI standard PCI-to-PCI bridge No SYSTEM 5.2.3788.0  
10/1/2002 (Standard system devices) machine.inf Not  
Available PCI\VEN\_8086&DEV\_0309&SUBSYS\_00000000&REV\_01\3&474B838&0&08

Unisys Intelligent Fibre Channel Fabric Bus Adapter No SCSIADAPTER  
2.36.0.16 2/19/2003 Unisys Corporation oem4.inf  
Not Available  
PCI\VEN\_11AB&DEV\_4620&SUBSYS\_C0FC1018&REV\_12\4&2421D46D&0&0008

Unisys Intelligent Fibre Channel Adapter SCSI Processor No SYSTEM  
2.36.0.5 2/25/2003 Unisys Corporation oem5.inf  
Not Available  
SCSI\PROCESSORUNISYS\_IFBA8888\_V2\_\5&73C4B25&0&D004560B000  
80010

Unisys Intelligent Fibre Channel Adapter SCSI Processor No SYSTEM  
2.36.0.5 2/25/2003 Unisys Corporation oem5.inf  
Not Available  
SCSI\PROCESSORUNISYS\_IFBA8888\_V2\_\5&73C4B25&0&D104560B000  
80010

PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system  
devices) machine.inf Not Available ACPI\PNP0A03\6  
cLAN Host Adapter No NET 4.2.0.75 10/5/2000  
Giganet oem8.inf Not Available  
PCI\VEN\_135B&DEV\_0001&SUBSYS\_00000000&REV\_00\3&E44F86D&0&00

cLAN Host Adapter No NET 4.2.0.75 10/5/2000  
Giganet oem8.inf Not Available  
PCI\VEN\_135B&DEV\_0001&SUBSYS\_00000000&REV\_00\3&E44F86D&0&08

PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system  
devices) machine.inf Not Available ACPI\PNP0A03\7  
PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system  
devices) machine.inf Not Available ACPI\PNP0A03\8  
PCI standard PCI-to-PCI bridge No SYSTEM 5.2.3788.0  
10/1/2002 (Standard system devices) machine.inf Not  
Available

PCI\VEN\_8086&DEV\_0309&SUBSYS\_00000000&REV\_01\3&33B859B7&0&00

Unisys Intelligent Fibre Channel Fabric Bus Adapter No SCSIADAPTER  
2.36.0.16 2/19/2003 Unisys Corporation oem4.inf  
Not Available  
PCI\VEN\_11AB&DEV\_4620&SUBSYS\_C0FC1018&REV\_12\4&1B316B8F&0&0000

Unisys Intelligent Fibre Channel Adapter SCSI Processor No SYSTEM  
2.36.0.5 2/25/2003 Unisys Corporation oem5.inf  
Not Available  
SCSI\PROCESSORUNISYS\_IFBA8888\_V2\_\5&24C648AC&0&9D04560B00  
080010

Unisys Intelligent Fibre Channel Adapter SCSI Processor No SYSTEM  
2.36.0.5 2/25/2003 Unisys Corporation oem5.inf  
Not Available  
SCSI\PROCESSORUNISYS\_IFBA8888\_V2\_\5&24C648AC&0&9C04560B00  
080010

PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system  
devices) machine.inf Not Available ACPI\PNP0A03\9  
PCI standard PCI-to-PCI bridge No SYSTEM 5.2.3788.0  
10/1/2002 (Standard system devices) machine.inf Not  
Available PCI\VEN\_8086&DEV\_0309&SUBSYS\_00000000&REV\_01\3&AD74055&0&00

Unisys Intelligent Fibre Channel Fabric Bus Adapter No SCSIADAPTER  
2.36.0.16 2/19/2003 Unisys Corporation oem4.inf  
Not Available  
PCI\VEN\_11AB&DEV\_4620&SUBSYS\_C0FC1018&REV\_12\4&101F93C3&0&0000

Unisys Intelligent Fibre Channel Adapter SCSI Processor No SYSTEM  
2.36.0.5 2/25/2003 Unisys Corporation oem5.inf  
Not Available  
SCSI\PROCESSORUNISYS\_IFBA8888\_V2\_\5&55E65EF&0&5406560B000  
80010

Unisys Intelligent Fibre Channel Adapter SCSI Processor No SYSTEM  
2.36.0.5 2/25/2003 Unisys Corporation oem5.inf  
Not Available  
SCSI\PROCESSORUNISYS\_IFBA8888\_V2\_\5&55E65EF&0&5506560B000  
80010

PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system  
devices) machine.inf Not Available ACPI\PNP0A03\A  
PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system  
devices) machine.inf Not Available ACPI\PNP0A03\B  
PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system  
devices) machine.inf Not Available ACPI\PNP0A03\C  
cLAN Host Adapter No NET 4.2.0.75 10/5/2000  
Giganet oem8.inf Not Available  
PCI\VEN\_135B&DEV\_0001&SUBSYS\_00000000&REV\_00\3&1B2F0CE&0&00

cLAN Host Adapter No NET 4.2.0.75 10/5/2000  
Giganet oem8.inf Not Available  
PCI\VEN\_135B&DEV\_0001&SUBSYS\_00000000&REV\_00\3&1B2F0CE&0&08

PCI bus No SYSTEM 5.2.3788.0 10/1/2002 (Standard system  
devices) machine.inf Not Available ACPI\PNP0A03\D  
Logical Disk Manager No SYSTEM 5.2.3788.0 10/1/2002  
(Standard system devices) machine.inf Not Available  
ROOT\DMIO\0000

Volume Manager No SYSTEM 5.2.3788.0 10/1/2002 (Standard  
system devices) machine.inf Not Available ROOT\FTDISK\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  
 Available Not Available Not Available ROOT\LEGACY\_KSECDD\0000

mmdd Not Available LEGACYDRIVER Not Available Not Available Not Available  
 Available Not Available Not Available ROOT\LEGACY\_MMDD\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  
 Available Not Available Not Available Not Available  
 ROOT\LEGACY\_NDIS\0000

Remote Access NDIS TAPI Driver Not Available LEGACYDRIVER Not Available  
 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  
 Available Not Available Not Available ROOT\LEGACY\_NDPROXY\0000

NetBios over Tcpip Not Available LEGACYDRIVER Not Available Not Available  
 Available Not Available Not Available Not Available  
 ROOT\LEGACY\_NETBT\0000

Null Not Available LEGACYDRIVER Not Available Not Available Not Available  
 Available Not Available Not Available ROOT\LEGACY\_NULL\0000

Partition Manager Not Available LEGACYDRIVER Not Available Not Available  
 Available Not Available Not Available Not Available  
 ROOT\LEGACY\_PARTMGR\0000

Parvdm Not Available LEGACYDRIVER Not Available Not Available Not Available  
 Available Not Available Not Available ROOT\LEGACY\_PARVDM\0000

Remote Access Auto Connection Driver Not Available LEGACYDRIVER Not Available  
 Available Not Available Not Available Not Available Not Available  
 ROOT\LEGACY\_RASACD\0000

RDPcdd Not Available LEGACYDRIVER Not Available Not Available Not Available  
 Available Not Available Not Available ROOT\LEGACY\_RDPcdd\0000

RDPWD Not Available LEGACYDRIVER Not Available Not Available Not Available  
 Available Not Available Not Available ROOT\LEGACY\_RDPWD\0000

TCP/IP Protocol Driver Not Available LEGACYDRIVER Not Available Not Available  
 Available Not Available Not Available Not Available  
 ROOT\LEGACY\_TCPIP\0000

TDTCP Not Available LEGACYDRIVER Not Available Not Available Not Available  
 Available Not Available Not Available ROOT\LEGACY\_TDTCP\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  
 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 5.2.3788.0 10/1/2002 (Standard  
 system devices) wave.inf Not Available ROOT\MEDIA\MS\_MMACM

Legacy Audio Drivers No MEDIA 5.2.3788.0 10/1/2002  
 (Standard system devices) wave.inf Not Available  
 ROOT\MEDIA\MS\_MMDRV

Media Control Devices No MEDIA 5.2.3788.0 10/1/2002  
 (Standard system devices) wave.inf Not Available  
 ROOT\MEDIA\MS\_MMCI

Legacy Video Capture Devices No MEDIA 5.2.3788.0 10/1/2002  
 (Standard system devices) wave.inf Not Available  
 ROOT\MEDIA\MS\_MMVCD

Video Codecs No MEDIA 5.2.3788.0 10/1/2002 (Standard  
 system devices) wave.inf Not Available ROOT\MEDIA\MS\_MMVID

WAN Miniport (L2TP) No NET 5.2.3788.0 10/1/2002  
 Microsoft netrasa.inf Not Available  
 ROOT\MS\_L2TPMINIPORT\0000

WAN Miniport (IP) No NET 5.2.3788.0 10/1/2002  
 Microsoft netrasa.inf Not Available  
 ROOT\MS\_NDISWANIP\0000

WAN Miniport (PPPOE) No NET 5.2.3788.0 10/1/2002  
 Microsoft netrasa.inf Not Available  
 ROOT\MS\_PPPOEMINIPORT\0000

WAN Miniport (PPTP) No NET 5.2.3788.0 10/1/2002  
 Microsoft netrasa.inf Not Available  
 ROOT\MS\_PPTPMINIPORT\0000

Direct Parallel No NET 5.2.3788.0 10/1/2002  
 Microsoft netrasa.inf Not Available  
 ROOT\MS\_PTMINIPORT\0000

Terminal Server Device Redirector No SYSTEM 5.2.3788.0  
 10/1/2002 (Standard system devices) machine.inf Not  
 Available ROOT\RDPDR\0000

Terminal Server Keyboard Driver No SYSTEM 5.2.3788.0  
 10/1/2002 (Standard system devices) machine.inf Not  
 Available ROOT\RDP\_KBD\0000

Terminal Server Mouse Driver No SYSTEM 5.2.3788.0 10/1/2002  
 (Standard system devices) machine.inf Not Available  
 ROOT\RDP\_MOU\0000

Plug and Play Software Device Enumerator No SYSTEM 5.2.3788.0  
 10/1/2002 (Standard system devices) machine.inf Not  
 Available ROOT\SYSTEM\0000

Microcode Update Device No SYSTEM 5.2.3788.0 10/1/2002  
 (Standard system devices) machine.inf Not Available  
 ROOT\SYSTEM\0001

Unisys Intelligent Fibre Channel Fabric Bus Enumerator No SYSTEM  
 2.36.0.34 2/19/2003 Unisys Corporation oem7.inf  
 Not Available ROOT\SYSTEM\0002

Unisys Intelligent Fibre Channel Fabric Disk Driver No DISKDRIVE  
 2.36.0.5 2/19/2003 Unisys Corporation oem6.inf  
 Not Available  
 SCSI\DISK&VEN\_DGC\_\_\_\_\_RAID\_10\_\_\_\_\_0099\1&1A590E2C&0A200201060  
 010650000000000000000000

Unisys Intelligent Fibre Channel Fabric Disk Driver No DISKDRIVE  
 2.36.0.5 2/19/2003 Unisys Corporation oem6.inf  
 Not Available  
 SCSI\DISK&VEN\_UNISYS\_VIRTUALSTORAGE\_\_01.0\1&1A590E2C&0A53F008610  
 0000100000000000000000E000

Unisys Intelligent Fibre Channel Fabric Disk Driver No DISKDRIVE  
 2.36.0.5 2/19/2003 Unisys Corporation oem6.inf  
 Not Available







```

Not Available
0000100000000000000008000
SCSI\DISK&VEN_UNISYS__VIRTUALSTORAGE__01.0\1&1A590E2C&0&6F40008610
Unisys Intelligent Fibre Channel Fabric Disk Driver No    DISKDRIVE
2.36.0.5          2/19/2003      Unisys Corporation  oem6.inf
Not Available
0000100000000000000007000
SCSI\DISK&VEN_UNISYS__VIRTUALSTORAGE__01.0\1&1A590E2C&0&6F40008610
Unisys Intelligent Fibre Channel Fabric Disk Driver No    DISKDRIVE
2.36.0.5          2/19/2003      Unisys Corporation  oem6.inf
Not Available
0000100000000000000006000
SCSI\DISK&VEN_UNISYS__VIRTUALSTORAGE__01.0\1&1A590E2C&0&6F40008610
Unisys Intelligent Fibre Channel Fabric Disk Driver No    DISKDRIVE
2.36.0.5          2/19/2003      Unisys Corporation  oem6.inf
Not Available
0000100000000000000005000
SCSI\DISK&VEN_UNISYS__VIRTUALSTORAGE__01.0\1&1A590E2C&0&6F40008610
Unisys Intelligent Fibre Channel Fabric Disk Driver No    DISKDRIVE
2.36.0.5          2/19/2003      Unisys Corporation  oem6.inf
Not Available
0000100000000000000004000
SCSI\DISK&VEN_UNISYS__VIRTUALSTORAGE__01.0\1&1A590E2C&0&6F40008610
Unisys Intelligent Fibre Channel Fabric Disk Driver No    DISKDRIVE
2.36.0.5          2/19/2003      Unisys Corporation  oem6.inf
Not Available
0000100000000000000003000
SCSI\DISK&VEN_UNISYS__VIRTUALSTORAGE__01.0\1&1A590E2C&0&6F40008610
Unisys Intelligent Fibre Channel Fabric Disk Driver No    DISKDRIVE
2.36.0.5          2/19/2003      Unisys Corporation  oem6.inf
Not Available
0000100000000000000002000
SCSI\DISK&VEN_UNISYS__VIRTUALSTORAGE__01.0\1&1A590E2C&0&6F40008610
Unisys Intelligent Fibre Channel Fabric Disk Driver No    DISKDRIVE
2.36.0.5          2/19/2003      Unisys Corporation  oem6.inf
Not Available
0000100000000000000001000
SCSI\DISK&VEN_UNISYS__VIRTUALSTORAGE__01.0\1&1A590E2C&0&6F40008610

```

[Environment Variables]

Variable	Value	User Name
ClusterLog	C:\WINDOWS\Cluster\cluster.log	<SYSTEM>
ComSpec	%SystemRoot%\system32\cmd.exe	<SYSTEM>
NUMBER_OF_PROCESSORS	16	<SYSTEM>
OS	Windows_NT	<SYSTEM>
Path	%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;C:\Program Files\Microsoft SQL Server\80\Tools\BINN;c:\sql80\MSSQL\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 2, GenuineIntel	<SYSTEM>
PROCESSOR_LEVEL	15	<SYSTEM>
PROCESSOR_REVISION	0202	<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 MV-BOBDYLAN\Administrator
TMP %USERPROFILE%\Local Settings\Temp MV-BOBDYLAN\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
Z: \\192.59.13.16\nas4 Disk Persistent Connection MV-BOBDYLAN\Administrator

[Running Tasks]
Name Path Process ID Priority Min Working Set Max
Working Set Start Time Version Size File Date
system idle process Not Available 0 0 Not Available Not
Available Not Available Not Available Not Available Not Available
system Not Available 4 8 0 1413120 Not Available Not
Available Not Available Not Available
smss.exe Not Available 420 11 204800 1413120 3/27/2003 2:15
PM Not Available Not Available Not Available
csrss.exe Not Available 468 13 Not Available Not Available
3/27/2003 2:15 PM Not Available Not Available Not Available
winlogon.exe c:\windows\system32\winlogon.exe 492 13 204800
1413120 3/27/2003 2:15 PM 5.2.3788.0 (srv03_rtm.030317-2234)
536.50 KB (549,376 bytes) 3/18/2003 4:00 AM
services.exe c:\windows\system32\services.exe 536 9 204800
1413120 3/27/2003 2:15 PM 5.2.3788.0 (srv03_rtm.030317-2234)
102.00 KB (104,448 bytes) 3/18/2003 4:00 AM
lsass.exe c:\windows\system32\lsass.exe 548 9 204800
1413120 3/27/2003 2:15 PM 5.2.3788.0 (srv03_rtm.030317-2234)
13.00 KB (13,312 bytes) 3/18/2003 4:00 AM
svchost.exe c:\windows\system32\svchost.exe 684 8 204800
1413120 3/27/2003 2:15 PM 5.2.3788.0 (srv03_rtm.030317-2234)
13.00 KB (13,312 bytes) 3/18/2003 4:00 AM
svchost.exe c:\windows\system32\svchost.exe 760 8 204800
1413120 3/27/2003 2:15 PM 5.2.3788.0 (srv03_rtm.030317-2234)
13.00 KB (13,312 bytes) 3/18/2003 4:00 AM
gnconmgr.exe c:\windows\system32\gnconmgr.exe 912 8 204800
1413120 3/27/2003 2:15 PM 4.2.0.75 168.05 KB (172,079
bytes) 3/25/2003 9:02 AM

```

```

svchost.exe Not Available 1052 8 Not Available Not Available
3/27/2003 2:16 PM Not Available Not Available Not Available

svchost.exe c:\windows\system32\svchost.exe 1080 8 204800
1413120 3/27/2003 2:16 PM 5.2.3788.0 (srv03_rtm.030317-2234)
13.00 KB (13,312 bytes) 3/18/2003 4:00 AM
esconmgr.exe c:\windows\system32\esconmgr.exe 1136 24 204800
1413120 3/27/2003 2:16 PM 6.0.3.29 265.02 KB (271,376
bytes) 2/6/2003 6:43 PM
svchost.exe Not Available 1160 8 Not Available Not Available
3/27/2003 2:16 PM Not Available Not Available Not Available

explorer.exe c:\windows\explorer.exe 1544 8 204800
1413120 3/27/2003 2:17 PM 6.00.3788.0 (srv03_rtm.030317-2234)
1,008.50 KB (1,032,704 bytes) 3/18/2003 4:00 AM
wmiprvse.exe Not Available 1696 8 Not Available Not Available
3/27/2003 2:17 PM Not Available Not Available Not Available

helpctr.exe c:\windows\pchealth\helpctr\binaries\helpctr.exe 1792
8 204800 1413120 3/27/2003 2:18 PM 5.2.3788.0
(srv03_rtm.030317-2234) 764.00 KB (782,336 bytes) 3/21/2003 2:58
PM
wmiprvse.exe Not Available 1852 8 Not Available Not Available
3/27/2003 2:18 PM Not Available Not Available Not Available

helpsvc.exe c:\windows\pchealth\helpctr\binaries\helpsvc.exe 1876
8 204800 1413120 3/27/2003 2:18 PM 5.2.3788.0
(srv03_rtm.030317-2234) 720.00 KB (737,280 bytes) 3/21/2003 2:58
PM
regedit.exe c:\windows\regedit.exe 1984 8 204800 1413120
3/27/2003 2:18 PM 5.2.3788.0 (srv03_rtm.030317-2234) 135.50
KB (138,752 bytes) 3/18/2003 4:00 AM
wpabaln.exe c:\windows\system32\wpabaln.exe 2004 8 204800
1413120 3/27/2003 2:19 PM 5.2.3788.0 (srv03_rtm.030317-2234)
31.00 KB (31,744 bytes) 3/18/2003 4:00 AM

```

[Loaded Modules]

Name	Version	Size	File Date	Manufacturer	Path
winlogon	5.2.3788.0	(srv03_rtm.030317-2234)	536.50 KB (549,376 bytes)	Microsoft Corporation	c:\windows\system32\winlogon.exe
ntdll	5.2.3788.0	(srv03_rtm.030317-2234)	722.50 KB (739,840 bytes)	Microsoft Corporation	c:\windows\system32\ntdll.dll
kernel32	5.2.3788.0	(srv03_rtm.030317-2234)	965.00 KB (988,160 bytes)	Microsoft Corporation	c:\windows\system32\kernel32.dll
msvcrt	7.0.3788.0	(srv03_rtm.030317-2234)	319.50 KB (327,168 bytes)	Microsoft Corporation	c:\windows\system32\msvcrt.dll
advapi32	5.2.3788.0	(srv03_rtm.030317-2234)	559.50 KB (572,928 bytes)	Microsoft Corporation	c:\windows\system32\advapi32.dll
rpcrt4	5.2.3788.0	(srv03_rtm.030317-2234)	644.00 KB (659,456 bytes)	Microsoft Corporation	c:\windows\system32\rpcrt4.dll

```

user32 5.2.3788.0 (srv03_rtm.030317-2234) 562.00 KB (575,488 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\user32.dll
gdi32 5.2.3788.0 (srv03_rtm.030317-2234) 263.00 KB (269,312 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\gdi32.dll
userenv 5.2.3788.0 (srv03_rtm.030317-2234) 732.50 KB (750,080 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\userenv.dll
nddeapi 5.2.3788.0 (srv03_rtm.030317-2234) 16.00 KB (16,384 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\nddeapi.dll
crypt32 5.2.3788.0 (srv03_rtm.030317-2234) 598.00 KB (612,352 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\crypt32.dll
msasn1 5.2.3788.0 (srv03_rtm.030317-2234) 58.00 KB (59,392 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\msasn1.dll
secur32 5.2.3788.0 (srv03_rtm.030317-2234) 63.00 KB (64,512 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\secur32.dll
winsta 5.2.3788.0 (srv03_rtm.030317-2234) 51.00 KB (52,224 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\winsta.dll
netapi32 5.2.3788.0 (srv03_rtm.030317-2234) 317.00 KB (324,608
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\netapi32.dll
profmap 5.2.3788.0 (srv03_rtm.030317-2234) 22.00 KB (22,528 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\profmap.dll
regapi 5.2.3788.0 (srv03_rtm.030317-2234) 48.50 KB (49,664 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\regapi.dll
ws2_32 5.2.3788.0 (srv03_rtm.030317-2234) 87.50 KB (89,600 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\ws2_32.dll
ws2help 5.2.3788.0 (srv03_rtm.030317-2234) 19.50 KB (19,968 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\ws2help.dll
psapi 5.2.3788.0 (srv03_rtm.030317-2234) 21.50 KB (22,016 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\psapi.dll
version 5.2.3788.0 (srv03_rtm.030317-2234) 17.00 KB (17,408 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\version.dll
setupapi 5.2.3788.0 (srv03_rtm.030317-2234) 1,014.50 KB
(1,038,848 bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\setupapi.dll
msgina 5.2.3788.0 (srv03_rtm.030317-2234) 1.14 MB (1,191,936 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\msgina.dll
shsvcs 6.00.3788.0 (srv03_rtm.030317-2234) 121.50 KB (124,416 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\shsvcs.dll
shlwapi 6.00.3788.0 (srv03_rtm.030317-2234) 281.00 KB (287,744 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\shlwapi.dll

```

sfc 5.2.3788.0 (srv03\_rtm.030317-2234) 4.50 KB (4,608 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\sfc.dll

sfc\_os 5.2.3788.0 (srv03\_rtm.030317-2234) 133.00 KB (136,192 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\sfc\_os.dll

wintrust 5.131.3788.0 (srv03\_rtm.030317-2234) 161.50 KB (165,376 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\wintrust.dll

ole32 5.2.3788.0 (srv03\_rtm.030317-2234) 1.13 MB (1,187,328 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\ole32.dll

imagehlp 5.2.3788.0 (srv03\_rtm.030317-2234) 142.50 KB (145,920 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\imagehlp.dll

comctl32 6.0 (srv03\_rtm.030317-2234) 907.00 KB (928,768 bytes)  
3/21/2003 6:34 AM Microsoft Corporation  
c:\windows\winsxs\x86\_microsoft.windows.common-controls\_6595b64144ccf1df\_6.0.100.0\_x-ww\_8417450b\comctl32.dll

winscard 5.2.3788.0 (srv03\_rtm.030317-2234) 98.50 KB (100,864 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\winscard.dll

wtsapi32 5.2.3788.0 (srv03\_rtm.030317-2234) 17.50 KB (17,920 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\wtsapi32.dll

winmm 5.2.3788.0 (srv03\_rtm.030317-2234) 166.00 KB (169,984 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\winmm.dll

sxs 5.2.3788.0 (srv03\_rtm.030317-2234) 733.00 KB (750,592 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\sxs.dll

shell32 6.00.3788.0 (srv03\_rtm.030317-2234) 7.79 MB (8,166,400 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\shell32.dll

wldap32 5.2.3788.0 (srv03\_rtm.030317-2234) 158.00 KB (161,792 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\wldap32.dll

rsaenh 5.2.3788.0 (srv03\_rtm.030317-2234) 176.83 KB (181,072 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\rsaenh.dll

cscdll 5.2.3788.0 (srv03\_rtm.030317-2234) 99.00 KB (101,376 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\cscdll.dll

wlnotify 5.2.3788.0 (srv03\_rtm.030317-2234) 87.50 KB (89,600 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\wlnotify.dll

winspool 5.2.3788.0 (srv03\_rtm.030317-2234) 140.00 KB (143,360 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\winspool.drv

mpr 5.2.3788.0 (srv03\_rtm.030317-2234) 56.00 KB (57,344 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\mpr.dll

comctl32 5.82 (srv03\_rtm.030317-2234) 561.00 KB (574,464 bytes)  
3/21/2003 6:34 AM Microsoft Corporation  
c:\windows\winsxs\x86\_microsoft.windows.common-controls\_6595b64144ccf1df\_5.82.0.0\_x-ww\_8a69ba05\comctl32.dll

uxtheme 6.00.3788.0 (srv03\_rtm.030317-2234) 196.00 KB (200,704 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\uxtheme.dll

mprapi 5.2.3788.0 (srv03\_rtm.030317-2234) 81.00 KB (82,944 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\mprapi.dll

activeds 5.2.3788.0 (srv03\_rtm.030317-2234) 189.00 KB (193,536 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\activeds.dll

adslldpc 5.2.3788.0 (srv03\_rtm.030317-2234) 142.50 KB (145,920 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\adslldpc.dll

credui 5.2.3788.0 (srv03\_rtm.030317-2234) 159.00 KB (162,816 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\credui.dll

atl 3.05.2283 83.00 KB (84,992 bytes) 3/18/2003 4:00 AM  
Microsoft Corporation c:\windows\system32\atl.dll

oleaut32 5.2.3788.0 486.00 KB (497,664 bytes) 3/18/2003 4:00 AM  
Microsoft Corporation c:\windows\system32\oleaut32.dll

rtutils 5.2.3788.0 (srv03\_rtm.030317-2234) 32.00 KB (32,768 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\rtutils.dll

samlib 5.2.3788.0 (srv03\_rtm.030317-2234) 49.00 KB (50,176 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\samlib.dll

cscui 5.2.3788.0 (srv03\_rtm.030317-2234) 305.00 KB (312,320 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\cscui.dll

drprov 5.2.3788.0 (srv03\_rtm.030317-2234) 12.50 KB (12,800 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\drprov.dll

ntlanman 5.2.3788.0 (srv03\_rtm.030317-2234) 41.00 KB (41,984 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\ntlanman.dll

netui0 5.2.3788.0 (srv03\_rtm.030317-2234) 75.50 KB (77,312 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\netui0.dll

netui1 5.2.3788.0 (srv03\_rtm.030317-2234) 184.00 KB (188,416 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\netui1.dll

davclnt 5.2.3788.0 (srv03\_rtm.030317-2234) 23.50 KB (24,064 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\davclnt.dll

mprui 5.2.3788.0 (srv03\_rtm.030317-2234) 49.00 KB (50,176 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\mprui.dll

netui2 5.2.3788.0 (srv03\_rtm.030317-2234) 309.50 KB (316,928 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\netui2.dll

comdlg32 6.00.3788.0 (srv03\_rtm.030317-2234) 261.00 KB (267,264 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\comdlg32.dll

netmsg 5.2.3788.0 (srv03\_rtm.030317-2234) 178.00 KB (182,272 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\netmsg.dll

clbcatq 2001.12.4718.0 (srv03\_rtm.030317-2234) 481.00 KB (492,544 bytes)  
3/21/2003 2:53 PM Microsoft Corporation  
c:\windows\system32\clbcatq.dll

comres 2001.12.4718.0 (srv03\_rtm.030317-2234) 778.00 KB (796,672 bytes)  
3/18/2003 4:00 AM Microsoft Corporation  
c:\windows\system32\comres.dll

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ntmarta 5.2.3788.0 (srv03_rtm.030317-2234) 114.00 KB (116,736 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\ntmarta.dll
services 5.2.3788.0 (srv03_rtm.030317-2234) 102.00 KB (104,448
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\services.exe
scserv 5.2.3788.0 (srv03_rtm.030317-2234) 316.50 KB (324,096 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\scserv.dll
authz 5.2.3788.0 (srv03_rtm.030317-2234) 67.00 KB (68,608 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\authz.dll
umpnpgmr 5.2.3788.0 (srv03_rtm.030317-2234) 121.50 KB (124,416
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\umpnpgmr.dll
ncobjapi 5.2.3788.0 (srv03_rtm.030317-2234) 34.50 KB (35,328
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\ncobjapi.dll
msvc60 6.05.2144.0 388.00 KB (397,312 bytes) 3/18/2003 4:00 AM
Microsoft Corporation c:\windows\system32\msvc60.dll
eventlog 5.2.3788.0 (srv03_rtm.030317-2234) 60.50 KB (61,952
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\eventlog.dll
lsass 5.2.3788.0 (srv03_rtm.030317-2234) 13.00 KB (13,312 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\lsass.exe
lsasrv 5.2.3788.0 (srv03_rtm.030317-2234) 780.50 KB (799,232 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\lsasrv.dll
samsrv 5.2.3788.0 (srv03_rtm.030317-2234) 452.00 KB (462,848 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\samsrv.dll
cryptdll 5.2.3788.0 (srv03_rtm.030317-2234) 34.00 KB (34,816
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\cryptdll.dll
dnsapi 5.2.3788.0 (srv03_rtm.030317-2234) 147.50 KB (151,040 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\dnsapi.dll
ntdsapi 5.2.3788.0 (srv03_rtm.030317-2234) 76.00 KB (77,824 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\ntdsapi.dll
msprivs 5.2.3788.0 (srv03_rtm.030317-2234) 46.50 KB (47,616 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\msprivs.dll
kerberos 5.2.3788.0 (srv03_rtm.030317-2234) 332.50 KB (340,480
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\kerberos.dll
msv1_0 5.2.3788.0 (srv03_rtm.030317-2234) 127.00 KB (130,048 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\msv1_0.dll
netlogon 5.2.3788.0 (srv03_rtm.030317-2234) 409.00 KB (418,816
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\netlogon.dll
w32time 5.2.3788.0 (srv03_rtm.030317-2234) 216.00 KB (221,184 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\w32time.dll
iphlpapi 5.2.3788.0 (srv03_rtm.030317-2234) 82.50 KB (84,480
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\iphlpapi.dll

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schannel 5.2.3788.0 (srv03_rtm.030317-2234) 149.50 KB (153,088
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\schannel.dll
wdigest 5.2.3788.0 (srv03_rtm.030317-2234) 61.00 KB (62,464 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\wdigest.dll
rassfm 5.2.3788.0 (srv03_rtm.030317-2234) 20.50 KB (20,992 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\rassfm.dll
kdcsvc 5.2.3788.0 (srv03_rtm.030317-2234) 221.00 KB (226,304 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\kdcsvc.dll
ntdsa 5.2.3788.0 (srv03_rtm.030317-2234) 1.45 MB (1,520,640 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\ntdsa.dll
ntdsatq 5.2.3788.0 (srv03_rtm.030317-2234) 32.00 KB (32,768 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\ntdsatq.dll
mswsock 5.2.3788.0 (srv03_rtm.030317-2234) 254.00 KB (260,096 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\mswsock.dll
esent 5.2.3788.0 (srv03_rtm.030317-2234) 1.01 MB (1,056,256 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\esent.dll
scecli 5.2.3788.0 (srv03_rtm.030317-2234) 179.50 KB (183,808 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\scecli.dll
wshtcpip 5.2.3788.0 (srv03_rtm.030317-2234) 18.00 KB (18,432
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\wshtcpip.dll
pstorsvc 5.2.3788.0 (srv03_rtm.030317-2234) 24.00 KB (24,576
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\pstorsvc.dll
psbase 5.2.3788.0 (srv03_rtm.030317-2234) 81.00 KB (82,944 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\psbase.dll
dssenh 5.2.3788.0 (srv03_rtm.030317-2234) 131.33 KB (134,480 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\dssenh.dll
svchost 5.2.3788.0 (srv03_rtm.030317-2234) 13.00 KB (13,312 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\svchost.exe
rpcss 5.2.3788.0 (srv03_rtm.030317-2234) 276.50 KB (283,136 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\rpcss.dll
termsrv 5.2.3788.0 (srv03_rtm.030317-2234) 216.50 KB (221,696 bytes)
3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\termsrv.dll
icaapi 5.2.3788.0 (srv03_rtm.030317-2234) 10.50 KB (10,752 bytes)
3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\icaapi.dll
mstlsapi 5.2.3788.0 (srv03_rtm.030317-2234) 104.50 KB (107,008
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\mstlsapi.dll
rdpwsx 5.2.3788.0 (srv03_rtm.030317-2234) 80.13 KB (82,056 bytes)
3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\rdpwsx.dll
gnconmgr 4.2.0.75 168.05 KB (172,079 bytes) 3/25/2003 9:02
AM Giganet Incorporated c:\windows\system32\gnconmgr.exe

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vipl 4.2.0.75 80.00 KB (81,920 bytes) 3/25/2003 7:34 PM
Giganet Incorporated c:\windows\system32\vipl.dll
wkssvc 5.2.3788.0 (srv03_rtm.030317-2234) 125.00 KB (128,000 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\wkssvc.dll
dmserver 5.2.3788.0 (srv03_rtm.030317-2234) 24.00 KB (24,576
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\dmserver.dll
es 2001.12.4718.0 (srv03_rtm.030317-2234) 221.50 KB (226,816
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\es.dll
srvsvc 5.2.3788.0 (srv03_rtm.030317-2234) 89.00 KB (91,136 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\srvsvc.dll
seclogon 5.2.3788.0 (srv03_rtm.030317-2234) 16.50 KB (16,896
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\seclogon.dll
wmisvc 5.2.3788.0 (srv03_rtm.030317-2234) 131.00 KB (134,144 bytes)
3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\wmisvc.dll
vssapi 5.2.3788.0 (srv03_rtm.030317-2234) 528.00 KB (540,672 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\vssapi.dll
sens 5.2.3788.0 (srv03_rtm.030317-2234) 35.50 KB (36,352 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\sens.dll
winrnr 5.2.3788.0 (srv03_rtm.030317-2234) 15.00 KB (15,360 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\winrnr.dll
netman 5.2.3788.0 (srv03_rtm.030317-2234) 209.00 KB (214,016 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\netman.dll
rasapi32 5.2.3788.0 (srv03_rtm.030317-2234) 227.50 KB (232,960
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\rasapi32.dll
rasman 5.2.3788.0 (srv03_rtm.030317-2234) 56.50 KB (57,856 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\rasman.dll
tapi32 5.2.3788.0 (srv03_rtm.030317-2234) 175.00 KB (179,200 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\tapi32.dll
wzcsvc 5.2.3788.0 (srv03_rtm.030317-2234) 272.50 KB (279,040 bytes)
3/18/2003 9:00 AM Microsoft Corporation
c:\windows\system32\wzcsvc.dll
wmi 5.2.3788.0 (srv03_rtm.030317-2234) 6.50 KB (6,656 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\wmi.dll
dhcpcsvc 5.2.3788.0 (srv03_rtm.030317-2234) 101.50 KB (103,936
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\dhcpcsvc.dll
wzcsapi 5.2.3788.0 (srv03_rtm.030317-2234) 24.50 KB (25,088 bytes)
3/18/2003 9:00 AM Microsoft Corporation
c:\windows\system32\wzcsapi.dll
comsvcs 2001.12.4718.0 (srv03_rtm.030317-2234) 1.14 MB (1,199,616
bytes) 3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\comsvcs.dll
wiarp 5.2.3788.0 (srv03_rtm.030317-2234) 30.00 KB (30,720 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\wiarp.dll

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actxprxy 6.00.3788.0 (srv03_rtm.030317-2234) 95.00 KB (97,280
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\actxprxy.dll
ntlsapi 5.2.3788.0 (srv03_rtm.030317-2234) 8.00 KB (8,192 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\ntlsapi.dll
netshell 5.2.3788.0 (srv03_rtm.030317-2234) 1.67 MB (1,747,456
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\netshell.dll
clusapi 5.2.3788.0 (srv03_rtm.030317-2234) 56.00 KB (57,344 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\clusapi.dll
netcfgx 5.2.3788.0 (srv03_rtm.030317-2234) 726.00 KB (743,424 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\netcfgx.dll
winipsec 5.2.3788.0 (srv03_rtm.030317-2234) 34.50 KB (35,328
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\winipsec.dll
hnetcfg 5.2.3788.0 (srv03_rtm.030317-2234) 243.50 KB (249,344 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\hnetcfg.dll
wininet 6.00.3788.0 (srv03_rtm.030317-2234) 609.00 KB (623,616 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\wininet.dll
wbemprox 5.2.3788.0 (srv03_rtm.030317-2234) 17.50 KB (17,920
bytes) 3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\wbemprox.dll
wbemcom 5.2.3788.0 (srv03_rtm.030317-2234) 211.50 KB (216,576
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\wbem\wbemcom.dll
wbemcore 5.2.3788.0 (srv03_rtm.030317-2234) 457.00 KB (467,968
bytes) 3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\wbemcore.dll
esscli 5.2.3788.0 (srv03_rtm.030317-2234) 235.50 KB (241,152 bytes)
3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\esscli.dll
fastprox 5.2.3788.0 (srv03_rtm.030317-2234) 443.00 KB (453,632
bytes) 3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\fastprox.dll
wbemsvc 5.2.3788.0 (srv03_rtm.030317-2234) 42.50 KB (43,520 bytes)
3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\wbemsvc.dll
wmiutils 5.2.3788.0 (srv03_rtm.030317-2234) 90.50 KB (92,672
bytes) 3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\wmiutils.dll
repdrvfs 5.2.3788.0 (srv03_rtm.030317-2234) 165.00 KB (168,960
bytes) 3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd 5.2.3788.0 (srv03_rtm.030317-2234) 405.50 KB (415,232
bytes) 3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\wmiprvsd.dll
wbemess 5.2.3788.0 (srv03_rtm.030317-2234) 256.50 KB (262,656 bytes)
3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\wbemess.dll
msi 2.0.3788.0 2.06 MB (2,160,128 bytes) 3/18/2003 4:00 AM
Microsoft Corporation c:\windows\system32\msi.dll
rasdlg 5.2.3788.0 (srv03_rtm.030317-2234) 642.00 KB (657,408 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\rasdlg.dll

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ncprov 5.2.3788.0 (srv03_rtm.030317-2234) 43.00 KB (44,032 bytes)
3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\ncprov.dll
rasadhlp 5.2.3788.0 (srv03_rtm.030317-2234) 6.50 KB (6,656 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\rasadhlp.dll
wbemcons 5.2.3788.0 (srv03_rtm.030317-2234) 69.00 KB (70,656
bytes) 3/21/2003 2:53 PM Microsoft Corporation
c:\windows\system32\wbem\wbemcons.dll
pchsvc 5.2.3788.0 (srv03_rtm.030317-2234) 31.50 KB (32,256 bytes)
3/21/2003 2:58 PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\pchsvc.dll
esconmgr 6.0.3.29 265.02 KB (271,376 bytes) 2/6/2003 6:43
PM Unisys Corporation c:\windows\system32\esconmgr.exe
explorer 6.00.3788.0 (srv03_rtm.030317-2234) 1,008.50 KB
(1,032,704 bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\explorer.exe
browseui 6.00.3788.0 (srv03_rtm.030317-2234) 1.01 MB (1,057,280
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\browseui.dll
shdocvw 6.00.3788.0 (srv03_rtm.030317-2234) 1.33 MB (1,393,664 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\shdocvw.dll
apphelp 5.2.3788.0 (srv03_rtm.030317-2234) 122.00 KB (124,928 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\apphelp.dll
themeui 6.00.3788.0 (srv03_rtm.030317-2234) 360.50 KB (369,152 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\themeui.dll
msimg32 5.2.3788.0 (srv03_rtm.030317-2234) 4.50 KB (4,608 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\msimg32.dll
linkinfo 5.2.3788.0 (srv03_rtm.030317-2234) 16.50 KB (16,896
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\linkinfo.dll
ntshrui 6.00.3788.0 (srv03_rtm.030317-2234) 136.00 KB (139,264 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\ntshrui.dll
webcheck 6.00.3788.0 (srv03_rtm.030317-2234) 261.50 KB (267,776
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\webcheck.dll
wsock32 5.2.3788.0 (srv03_rtm.030317-2234) 22.00 KB (22,528 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\wsock32.dll
stobject 5.2.3788.0 (srv03_rtm.030317-2234) 117.50 KB (120,320
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\stobject.dll
batmeter 6.00.3788.0 (srv03_rtm.030317-2234) 28.50 KB (29,184
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\batmeter.dll
powerprof 6.00.3788.0 (srv03_rtm.030317-2234) 14.50 KB (14,848
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\powerprof.dll
printui 5.2.3788.0 (srv03_rtm.030317-2234) 536.50 KB (549,376 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\printui.dll
cfgmgr32 5.2.3788.0 (srv03_rtm.030317-2234) 17.50 KB (17,920
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\cfgmgr32.dll

```

```

mmcshext 5.2.3788.0 (srv03_rtm.030317-2234) 50.00 KB (51,200
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\mmcshext.dll
hhsetup 5.2.3788.0 (srv03_rtm.030317-2234) 38.00 KB (38,912 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\hhsetup.dll
urlmon 6.00.3788.0 (srv03_rtm.030317-2234) 501.50 KB (513,536 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\urlmon.dll
helpctr 5.2.3788.0 (srv03_rtm.030317-2234) 764.00 KB (782,336 bytes)
3/21/2003 2:58 PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\helpctr.exe
hcappres 5.2.3788.0 (srv03_rtm.030317-2234) 6.50 KB (6,656 bytes)
3/21/2003 2:58 PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\hcappres.dll
itss 5.2.3788.0 (srv03_rtm.030317-2234) 119.50 KB (122,368 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\itss.dll
msxml3 8.40.9419.0 1.28 MB (1,337,344 bytes) 3/18/2003 4:00 AM
Microsoft Corporation c:\windows\system32\msxml3.dll
pchshell 5.2.3788.0 (srv03_rtm.030317-2234) 100.50 KB (102,912
bytes) 3/21/2003 2:58 PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\pchshell.dll
mlang 6.00.3788.0 (srv03_rtm.030317-2234) 570.00 KB (583,680 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\mlang.dll
mshtml 6.00.3788.0 (srv03_rtm.030317-2234) 2.78 MB (2,916,352 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\mshtml.dll
msimtf 5.2.3788.0 (srv03_rtm.030317-2234) 149.00 KB (152,576 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\msimtf.dll
msctf 5.2.3788.0 (srv03_rtm.030317-2234) 287.00 KB (293,888 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\msctf.dll
shdoclc 6.00.3788.0 (srv03_rtm.030317-2234) 588.50 KB (602,624 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\shdoclc.dll
jscript 5.6.0.8515 436.00 KB (446,464 bytes) 3/18/2003 4:00 AM
Microsoft Corporation c:\windows\system32\jscript.dll
msls31 3.10.349.0 147.00 KB (150,528 bytes) 3/18/2003 4:00 AM
Microsoft Corporation c:\windows\system32\msls31.dll
imm32 5.2.3788.0 (srv03_rtm.030317-2234) 105.50 KB (108,032 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\imm32.dll
mshtmlmed 6.00.3788.0 (srv03_rtm.030317-2234) 443.50 KB (454,144
bytes) 3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\mshtmlmed.dll
vbscript 5.6.0.8515 404.00 KB (413,696 bytes) 3/18/2003 4:00
AM Microsoft Corporation c:\windows\system32\vbscript.dll
mfc42 6.05.3014.0 960.00 KB (983,040 bytes) 3/18/2003 4:00 AM
Microsoft Corporation c:\windows\system32\mfc42.dll
msinfo 5.2.3788.0 (srv03_rtm.030317-2234) 358.50 KB (367,104 bytes)
3/21/2003 2:58 PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\msinfo.dll
mfc42u 6.05.3014.0 960.00 KB (983,040 bytes) 3/18/2003 4:00 AM
Microsoft Corporation c:\windows\system32\mfc42u.dll

```

```

riched32 5.2.3788.0 (srv03_rtm.030317-2234) 3.50 KB (3,584 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\riched32.dll
riched20 5.31.23.1218 406.00 KB (415,744 bytes) 3/18/2003 4:00
AM Microsoft Corporation c:\windows\system32\riched20.dll
helpsvc 5.2.3788.0 (srv03_rtm.030317-2234) 720.00 KB (737,280 bytes)
3/21/2003 2:58 PM Microsoft Corporation
c:\windows\pchealth\helpctr\binaries\helpsvc.exe
regedit 5.2.3788.0 (srv03_rtm.030317-2234) 135.50 KB (138,752 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\regedit.exe
aclui 5.2.3788.0 (srv03_rtm.030317-2234) 111.00 KB (113,664 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\aclui.dll
ulib 5.2.3788.0 (srv03_rtm.030317-2234) 265.50 KB (271,872 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\ulib.dll
clb 5.2.3788.0 (srv03_rtm.030317-2234) 11.50 KB (11,776 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\clb.dll
wpabaln 5.2.3788.0 (srv03_rtm.030317-2234) 31.00 KB (31,744 bytes)
3/18/2003 4:00 AM Microsoft Corporation
c:\windows\system32\wpabaln.exe

```

[Services]

Display Name	Name	State	Start Mode	Service Type	Path	Error
Control Start	Name	Tag	ID			
Alerter	Alerter	Stopped	Disabled	Share Process		
	c:\windows\system32\svchost.exe	-k	localservice	Normal	NT	
AUTHORITY\LocalService	0					
Application Layer Gateway Service	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	Stopped	Manual	Own Process		
	c:\windows\system32\dlhhost.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 Manual Share Process
c:\windows\system32\svchost.exe -k networkservice Normal NT
AUTHORITY\NetworkService 0
Logical Disk Manager Administrative Service dmadmin Stopped Manual Share
Process c:\windows\system32\dmadmin.exe /com Normal LocalSystem 0
Logical Disk Manager dmserver Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem
0
DNS Client Dnscache Stopped Manual Share Process
c:\windows\system32\svchost.exe -k networkservice Normal NT
AUTHORITY\NetworkService 0
Error Reporting Service ERSvc Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k winerr Ignore LocalSystem
0
Console Manager Network Connection Co-Installer ESCOINST
Stopped Manual Own Process c:\windows\system32\escoinst.dll
Normal LocalSystem 0
Console Manager ESCONMGR Running Auto Own Process
c:\windows\system32\esconmgr.exe Normal 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
cLAN Connection Manager GniConMgr Running Auto Own Process
c:\windows\system32\gnconmgr.exe 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								
MSSQLSERVER	MSSQLSERVER	Stopped	Manual	Own	Process			
c:\sql80\mssql\bin\sqlservr.exe Normal LocalSystem 0								
MSSQLServerADHelper	MSSQLServerADHelper	Stopped	Manual	Own	Process			
c:\program files\microsoft sql server\80\tools\bin\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			
Process c:\windows\system32\sessmgr.exe Normal LocalSystem 0								

Routing and Remote Access	RemoteAccess	Stopped	Disabled	Share	Process			
Process c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem								
0								
Remote Registry	RemoteRegistry	Running	Auto	Share	Process			
c:\windows\system32\svchost.exe -k regsvc Normal NT								
AUTHORITY\LocalService	0							
Remote Procedure Call (RPC) Locator	RpcLocator	Stopped	Manual	Own	Process			
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			
Process c:\windows\system32\rsopprov.exe Normal LocalSystem 0								
Special Administration Console Helper	sacsrv	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	Stopped	Manual	Share	Process			
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem								
0								
Secondary Logon	seclogon	Running	Auto	Share	Process			
c:\windows\system32\svchost.exe -k netsvcs Ignore LocalSystem								
0								
System Event Notification	SENS	Running	Auto	Share	Process			
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem								
0								
Shell Hardware Detection	ShellHWDetection	Running	Auto	Share	Process			
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								
SQLSERVERAGENT	SQLSERVERAGENT	Stopped	Manual	Own	Process			
c:\sql80\mssql\bin\sqlagent.exe Normal LocalSystem 0								
Windows Image Acquisition (WIA)	stisvc	Stopped	Disabled	Share	Process			
Process c:\windows\system32\svchost.exe -k imgsvc Normal NT								
AUTHORITY\LocalService	0							
Microsoft Software Shadow Copy Provider	swprv	Stopped	Manual	Own	Process			
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	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

UnisysIFDiscover UnisysIFDiscover Stopped Manual Own Process
"c:\program files\unisys\intelligent fibre\unisysifdiscover.exe"
Normal LocalSystem 0
Upload Manager uploadmgr Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem
0
Uninterruptible Power Supply UPS Stopped Manual Own Process
c:\windows\system32\ups.exe Normal NT AUTHORITY\LocalService
0
Virtual Disk Service vds Stopped Manual Own Process
c:\windows\system32\vds.exe Normal LocalSystem 0
Volume Shadow Copy VSS Stopped Manual Own Process
c:\windows\system32\vssvc.exe Normal LocalSystem 0
Windows Time W32Time Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs Normal LocalSystem
0
WebClient WebClient Stopped Disabled Share Process
c:\windows\system32\svchost.exe -k localservice Normal NT
AUTHORITY\LocalService 0
WinHTTP Web Proxy Auto-Discovery Service WinHttpAutoProxySvc
Stopped Manual Share Process c:\windows\system32\svchost.exe -k
localservice Normal NT AUTHORITY\LocalService 0
Windows Management Instrumentation winmgmt Running Auto Share Process
c:\windows\system32\svchost.exe -k netsvcs Ignore LocalSystem
0
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 wuauerv 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
GigaNet All Users:GigaNet 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
Unisys Administrative Tools All Users:Unisys Administrative Tools All
Users
Unisys Administrative Tools\Intelligent Fibre Channel Adapter All
Users:Unisys Administrative Tools\Intelligent Fibre Channel Adapter 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 MV-BOBDYLAN\Administrator:Accessories MV-
BOBDYLAN\Administrator
Accessories\Accessibility MV-
BOBDYLAN\Administrator:Accessories\Accessibility MV-
BOBDYLAN\Administrator
Accessories\Entertainment MV-
BOBDYLAN\Administrator:Accessories\Entertainment MV-
BOBDYLAN\Administrator
Administrative Tools MV-BOBDYLAN\Administrator:Administrative Tools
MV-BOBDYLAN\Administrator
Startup MV-BOBDYLAN\Administrator:Startup MV-BOBDYLAN\Administrator

```

[Startup Programs]

```

Program Command User Name Location
desktop desktop.ini NT AUTHORITY\SYSTEM Startup
desktop desktop.ini MV-BOBDYLAN\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 6.0.3788.0  
 Build 63788  
 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	6.0.3788.0	95 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
advpack.dll	6.0.3788.0	94 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
asctrls.ocx	6.0.3788.0	90 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
browseui.dll	6.0.3788.0	62 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
browseui.dll	6.0.3788.0	1,033 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
cdfview.dll	6.0.3788.0	144 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
comctl32.dll	5.82.3788.0	561 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
dxtmsft.dll	6.3.3788.0	198 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
dxtmsft.dll	6.3.3788.0	344 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
iecont.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
iecontlc.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
iedkcs32.dll	16.0.3788.0	300 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation

iepeers.dll	6.0.3788.0	230 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
iesetup.dll	6.0.3788.0	59 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
ieuinit.inf	Not Available	20 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Not Available
ieexplore.exe	6.0.3788.0	90 KB	3/18/2003 4:00:00 AM	C:\Program Files\Internet Explorer	Microsoft Corporation
imgutil.dll	5.2.3788.0	35 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inetcpl.cpl	6.0.3788.0	303 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inetcplc.dll	6.0.3788.0	109 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
inseng.dll	6.0.3788.0	72 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mlang.dll	6.0.3788.0	570 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
msencode.dll	2002.10.4.0	112 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Not Available
mshta.exe	6.0.3788.0	26 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mshtml.dll	6.0.3788.0	2,848 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mshtml.tlb	6.0.3788.0	1,319 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mshtml.dll	6.0.3788.0	444 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mshtmler.dll	6.0.3788.0	55 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
msident.dll	6.0.3788.0	47 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
msident.dll	6.0.3788.0	15 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
msieftpd.dll	6.0.3788.0	230 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
msrating.dll	6.0.3788.0	132 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
mstime.dll	6.0.3788.0	491 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
occache.dll	6.0.3788.0	89 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
proctexe.ocx	6.3.3788.0	78 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Intel Corporation
sendmail.dll	6.0.3788.0	52 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
shdoclc.dll	6.0.3788.0	589 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
shdocvw.dll	6.0.3788.0	1,361 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
shfolder.dll	6.0.3788.0	23 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
shlwapi.dll	6.0.3788.0	281 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
tdc.ocx	1.3.0.3130	58 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation
url.dll	6.0.3788.0	36 KB	3/18/2003 4:00:00 AM	C:\WINDOWS\system32	Microsoft Corporation

```

urlmon.dll      6.0.3788.0      502 KB 3/18/2003 4:00:00 AM
                C:\WINDOWS\system32 Microsoft Corporation
webcheck.dll   6.0.3788.0      262 KB 3/18/2003 4:00:00 AM
                C:\WINDOWS\system32 Microsoft Corporation
wininet.dll    6.0.3788.0      609 KB 3/18/2003 4:00:00 AM
                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

```

## Windows Datacenter Server Registry Information

### Software\GigaNet

```

Key Name:      HKEY_LOCAL_MACHINE\SOFTWARE\Giganet
Class Name:    <NO CLASS>
Last Write Time: 3/27/2003 - 2:15 PM

```

```

Key Name:      HKEY_LOCAL_MACHINE\SOFTWARE\Giganet\cLAN Management
Console
Class Name:    <NO CLASS>
Last Write Time: 3/25/2003 - 2:12 PM

```

```

Key Name:      HKEY_LOCAL_MACHINE\SOFTWARE\Giganet\cLAN Management
Console\1.00.000
Class Name:    <NO CLASS>
Last Write Time: 3/25/2003 - 2:12 PM

```

```

Key Name:      HKEY_LOCAL_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2
Class Name:    <NO CLASS>
Last Write Time: 3/27/2003 - 2:15 PM

```

```

Key Name:      HKEY_LOCAL_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\0
Class Name:    <NO CLASS>
Last Write Time: 3/27/2003 - 2:15 PM

```

```

Key Name:      HKEY_LOCAL_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\0\BeginModify
Class Name:    <NO CLASS>
Last Write Time: 3/27/2003 - 2:15 PM
Value 0
Name:          <NO NAME>
Type:          REG_SZ
Data:          14:15:36

```

```

Key Name:      HKEY_LOCAL_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\0\Fabric
Class Name:    <NO CLASS>

```

Last Write Time: 3/27/2003 - 2:15 PM

Key Name:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\0\LastModified

Class Name: <NO CLASS>

Last Write Time: 3/27/2003 - 2:15 PM

Value 0

Name: <NO NAME>

Type: REG\_SZ

Data: 14:15:36

Key Name:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\0\NodeList

Class Name: <NO CLASS>

Last Write Time: 3/27/2003 - 2:15 PM

Key Name:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\0\NodeList\Node0

Class Name: <NO CLASS>

Last Write Time: 3/27/2003 - 2:15 PM

Value 0

Name: Name

Type: REG\_SZ

Data: MV-BOBDYLAN

Value 1

Name: NICName

Type: REG\_SZ

Data: gnivia0

Value 2

Name: Address

Type: REG\_SZ

Data: 0090FA0014BC

Value 3

Name: MediaType

Type: REG\_SZ

Data:

Value 4

Name: State

Type: REG\_DWORD

Data: 0x1

Value 5

Name: SwitchPort

Type: REG\_SZ

Data: n2

Value 6

Name: NodeNumber

Type: REG\_DWORD

Data: 0x1

Key Name:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\0\NodeList\Node2

Class Name: <NO CLASS>

Last Write Time: 3/27/2003 - 2:15 PM

Value 0

Name: Name

Type: REG\_SZ

Data: CLIENT1

Value 1

Name: NICName

Type: REG\_SZ

Data: nic0

Value 2

Name: Address

Type: REG\_SZ

Data: 0090FA001D12

Value 3

Name: MediaType

Type: REG\_SZ

Data:

Value 4

Name: State

Type: REG\_DWORD

Data: 0x1

Value 5

Name: SwitchPort

Type: REG\_SZ

Data: n1

Value 6

Name: NodeNumber

Type: REG\_DWORD

Data: 0x2

Key Name:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\1

Class Name: <NO CLASS>

Last Write Time: 3/27/2003 - 2:15 PM

Key Name:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\1\BeginModify

Class Name: <NO CLASS>

Last Write Time: 3/27/2003 - 2:15 PM

Value 0

Name: <NO NAME>

Type: REG\_SZ

Data: 14:15:36

Key Name:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\1\Fabric

Class Name: <NO CLASS>

Last Write Time: 3/27/2003 - 2:15 PM

Key Name:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\1\LastModified

Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM  
Value 0  
Name: <NO NAME>  
Type: REG\_SZ  
Data: 14:15:36

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\1\NodeList  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\1\NodeList\Node0  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM  
Value 0

Name: Name  
Type: REG\_SZ  
Data: MV-BOBDYLAN

Value 1  
Name: NICName  
Type: REG\_SZ  
Data: gniVial

Value 2  
Name: Address  
Type: REG\_SZ  
Data: 0090FA00159A

Value 3  
Name: MediaType  
Type: REG\_SZ  
Data:

Value 4  
Name: State  
Type: REG\_DWORD  
Data: 0x1

Value 5  
Name: SwitchPort  
Type: REG\_SZ  
Data: n2

Value 6  
Name: NodeNumber  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\1\NodeList\Node2  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM  
Value 0  
Name: Name

Type: REG\_SZ  
Data: CLIENT2

Value 1  
Name: NICName  
Type: REG\_SZ  
Data: nic0

Value 2  
Name: Address  
Type: REG\_SZ  
Data: 0090FA001D1D

Value 3  
Name: MediaType  
Type: REG\_SZ  
Data:

Value 4  
Name: State  
Type: REG\_DWORD  
Data: 0x1

Value 5  
Name: SwitchPort  
Type: REG\_SZ  
Data: n1

Value 6  
Name: NodeNumber  
Type: REG\_DWORD  
Data: 0x2

Key Name: HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\2  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\2\BeginModify  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Value 0  
Name: <NO NAME>  
Type: REG\_SZ  
Data: 14:15:36

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\2\Fabric  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\2\LastModified  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM  
Value 0  
Name: <NO NAME>

Type: REG\_SZ  
Data: 14:15:36

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\2\NodeList  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\2\NodeList\Node0  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Value 0  
Name: Name  
Type: REG\_SZ  
Data: MV-BOBDYLAN

Value 1  
Name: NICName  
Type: REG\_SZ  
Data: gnivvia2

Value 2  
Name: Address  
Type: REG\_SZ  
Data: 0090FA001C8C

Value 3  
Name: MediaType  
Type: REG\_SZ  
Data:

Value 4  
Name: State  
Type: REG\_DWORD  
Data: 0x1

Value 5  
Name: SwitchPort  
Type: REG\_SZ  
Data: n2

Value 6  
Name: NodeNumber  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\2\NodeList\Node2  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Value 0  
Name: Name  
Type: REG\_SZ  
Data: CLIENT3

Value 1

Name: NICName  
Type: REG\_SZ  
Data: nic0

Value 2  
Name: Address  
Type: REG\_SZ  
Data: 0090FA001CD7

Value 3  
Name: MediaType  
Type: REG\_SZ  
Data:

Value 4  
Name: State  
Type: REG\_DWORD  
Data: 0x1

Value 5  
Name: SwitchPort  
Type: REG\_SZ  
Data: n1

Value 6  
Name: NodeNumber  
Type: REG\_DWORD  
Data: 0x2

Key Name: HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\3  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\3\BeginModify  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Value 0  
Name: <NO NAME>  
Type: REG\_SZ  
Data: 14:15:36

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\3\Fabric  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\3>LastModified  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Value 0  
Name: <NO NAME>  
Type: REG\_SZ  
Data: 14:15:36

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\3\NodeList  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\3\NodeList\Node0  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Value 0  
Name: Name  
Type: REG\_SZ  
Data: MV-BOBDYLAN

Value 1  
Name: NICName  
Type: REG\_SZ  
Data: gnivia3

Value 2  
Name: Address  
Type: REG\_SZ  
Data: 0090FA001C15

Value 3  
Name: MediaType  
Type: REG\_SZ  
Data:

Value 4  
Name: State  
Type: REG\_DWORD  
Data: 0x1

Value 5  
Name: SwitchPort  
Type: REG\_SZ  
Data: n2

Value 6  
Name: NodeNumber  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\3\NodeList\Node2  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Value 0  
Name: Name  
Type: REG\_SZ  
Data: CLIENT4

Value 1  
Name: NICName  
Type: REG\_SZ  
Data: nic0

Value 2  
Name: Address  
Type: REG\_SZ  
Data: 0090FA001D11

Value 3  
Name: MediaType  
Type: REG\_SZ  
Data:

Value 4  
Name: State  
Type: REG\_DWORD  
Data: 0x1

Value 5  
Name: SwitchPort  
Type: REG\_SZ  
Data: n1

Value 6  
Name: NodeNumber  
Type: REG\_DWORD  
Data: 0x2

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Giganet\GniConMgrMgmt2\LastModified  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:15 PM

Value 0  
Name: <NO NAME>  
Type: REG\_SZ  
Data: 14:15:34

## Software\Microsoft\MSSQLServer

Key Name: HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM

Value 0  
Name: SharedMemoryOn  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\ConnectTo  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:53 PM  
Value 0

Name: DSQUERY  
Type: REG\_SZ  
Data: DBNETLIB

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\DB-Lib  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM  
Value 0  
Name: AutoAnsiToOem  
Type: REG\_SZ  
Data: ON

Value 1  
Name: UseIntlSettings  
Type: REG\_SZ  
Data: ON

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\SuperSocketNetLib  
Class Name: <NO CLASS>  
Last Write Time: 3/26/2003 - 1:59 PM  
Value 0  
Name: ProtocolOrder  
Type: REG\_MULTI\_SZ  
Data: np

Value 1  
Name: Encrypt  
Type: REG\_DWORD  
Data: 0

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\SuperSocketNetLib  
\LastConnect  
Class Name: <NO CLASS>  
Last Write Time: 3/26/2003 - 8:28 AM

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\SuperSocketNetLib  
\Np  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM  
Value 0  
Name: DefaultPipe  
Type: REG\_SZ  
Data: sql\query

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\SuperSocketNetLib  
\rpc  
Class Name: <NO CLASS>  
Last Write Time: 3/26/2003 - 8:52 AM  
Value 0  
Name: RPCProtocols

Type: REG\_MULTI\_SZ  
Data: nlrpc  
nacn\_np  
nacn\_ip\_tcp  
nacn\_spx

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\SuperSocketNetLib  
\Tcp  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM  
Value 0  
Name: DefaultPort  
Type: REG\_DWORD  
Data: 0x599

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\SuperSocketNetLib  
\VIA  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:57 PM  
Value 0  
Name: RecognizedVendors  
Type: REG\_SZ  
Data: Giganet,QLogic,ServerNet II

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\MSSQLServer  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 1:43 PM  
Value 0  
Name: ListenOn  
Type: REG\_MULTI\_SZ  
Data: SSMSSH70  
SSNETLIB

Value 1  
Name: ResourceMgrID  
Type: REG\_SZ  
Data: {55932B90-2F87-416D-909A-33E45AE38443}

Value 2  
Name: SetHostName  
Type: REG\_DWORD  
Data: 0

Value 3  
Name: AuditLevel  
Type: REG\_DWORD  
Data: 0

Value 4  
Name: LoginMode  
Type: REG\_DWORD  
Data: 0x2



```

Value 5
  Name: Tapeloadwaittime
  Type: REG_DWORD
  Data: 0xffffffff
Type: REG_BINARY
Data: 00000000 38 30 32 32 63 31 35 38 - 61 65 37 64 34 63 64 37
      8022c158ae7d4cd7
      00000010 35 30 64 61 30 33 34 62 - 36 30 31 34 32 39 66 61
      50da034b601429fa
      00000020 61 64 65 32 65 61 63 36 - 36 34 66 32 34 35 65 64
      ade2eac664f245ed
      00000030 66 35 66 62 33 35 65 62 - 32 30 61 35 39 61 63 62
      f5fb35eb20a59acb
      00000040 32 65 64 64 66 63 35 66 - 35 39 33 37 64 35 39 36
      2eddfc5f5937d596
      00000050 38 63 35 65 63 35 30 37 - 62 36 31 39 63 31 36 66
      8c5ec507b619c16f
      00000060 62 62 39 63 66 32 32 31 - 31 30 65 63 62 38 66 30
      bb9cf22110ecb8f0
      00000070 39 37 65 38 35 63 30 38 - 64 32 64 63 33 36 38 30
      97e85c08d2dc3680
      00000080 33 36 30 30 38 39 36 39 - 33 61 38 39 37 61 39 32
      360089693a897a92
      00000090 36 33 32 38 35 63 32 30 - 64 31 38 61 34 34 30 36
      63285c20d18a4406
      31 61 00
      1a.

Value 10
  Name: BackupDirectory
  Type: REG_SZ
  Data: c:\sql80\MSSQL\BACKUP

Value 11
  Name: DefaultDomain
  Type: REG_SZ
  Data: MV-BOBDYLAN

Value 12
  Name: DefaultCollationName
  Type: REG_SZ
  Data: Latin1_General_BIN

Value 13
  Name: uptime_pid
  Type: REG_DWORD
  Data: 0x790

Value 14
  Name: uptime_time_utc
  Type: REG_BINARY
  Data: 9a 10 12 f9 a9 f4 c2 01 - ...ù®ôÂ.

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\MSSQLServer\CurrentVersion
Class Name: <NO CLASS>
Last Write Time: 3/25/2003 - 2:04 PM
Value 0
  Name: checksum

```

```

Type: REG_BINARY
Data: 00000000 38 30 32 32 63 31 35 38 - 61 65 37 64 34 63 64 37
      8022c158ae7d4cd7
      00000010 35 30 64 61 30 33 34 62 - 36 30 31 34 32 39 66 61
      50da034b601429fa
      00000020 61 64 65 32 65 61 63 36 - 36 34 66 32 34 35 65 64
      ade2eac664f245ed
      00000030 66 35 66 62 33 35 65 62 - 32 30 61 35 39 61 63 62
      f5fb35eb20a59acb
      00000040 32 65 64 64 66 63 35 66 - 35 39 33 37 64 35 39 36
      2eddfc5f5937d596
      00000050 38 63 35 65 63 35 30 37 - 62 36 31 39 63 31 36 66
      8c5ec507b619c16f
      00000060 62 62 39 63 66 32 32 31 - 31 30 65 63 62 38 66 30
      bb9cf22110ecb8f0
      00000070 39 37 65 38 35 63 30 38 - 64 32 64 63 33 36 38 30
      97e85c08d2dc3680
      00000080 33 36 30 30 38 39 36 39 - 33 61 38 39 37 61 39 32
      360089693a897a92
      00000090 36 33 32 38 35 63 32 30 - 64 31 38 61 34 34 30 36
      63285c20d18a4406
      31 61 00
      1a.

Value 1
  Name: RegisteredOwner
  Type: REG_SZ
  Data: TRACKS

Value 2
  Name: SerialNumber
  Type: REG_DWORD
  Data: 0x81fd0040

Value 3
  Name: CurrentVersion
  Type: REG_SZ
  Data: 8.00.194

Value 4
  Name: Language
  Type: REG_DWORD
  Data: 0x409

Value 5
  Name: CSDVersionNumber
  Type: REG_DWORD
  Data: 0x300

Value 6
  Name: CSDVersion
  Type: REG_SZ
  Data: 8.00.760

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\MSSQLServer\Parameters
Class Name: <NO CLASS>
Last Write Time: 3/25/2003 - 1:53 PM

```

Value 0  
Name: SQLArg0  
Type: REG\_SZ  
Data: -dc:\sql80\MSSQL\data\master.mdf

Value 1  
Name: SQLArg1  
Type: REG\_SZ  
Data: -ec:\sql80\MSSQL\log\ERRORLOG

Value 2  
Name: SQLArg2  
Type: REG\_SZ  
Data: -lc:\sql80\MSSQL\data\mastlog.ldf

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\MSSQLServer\RPCNetLib  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:53 PM

Value 0  
Name: Security  
Type: REG\_SZ  
Data:

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\MSSQLServer\SuperSocketNetLib  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 2:11 PM

Value 0  
Name: ProtocolList  
Type: REG\_MULTI\_SZ  
Data: np  
via

Value 1  
Name: Encrypt  
Type: REG\_DWORD  
Data: 0

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\MSSQLServer\SuperSocketNetLib\Np  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:53 PM

Value 0  
Name: PipeName  
Type: REG\_SZ  
Data: \\.\pipe\sql\query

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\MSSQLServer\SuperSocketNetLib\Tcp  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:57 PM

Value 0  
Name: TcpHideFlag  
Type: REG\_DWORD  
Data: 0

Value 1  
Name: TcpPort  
Type: REG\_SZ  
Data: 1433

Value 2  
Name: TcpDynamicPorts  
Type: REG\_SZ  
Data:

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\MSSQLServer\SuperSocketNetLib\VIA  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 6:37 AM

Value 0  
Name: Vendor  
Type: REG\_SZ  
Data: Gigaset

Value 1  
Name: ListenInfo  
Type: REG\_SZ  
Data: 0:1421 [0x00000303], 1:1422 [0x00000c0c], 2:1423 [0x00003030], 3:1424 [0x0000c0c0]

Value 2  
Name: RecognizedVendors  
Type: REG\_MULTI\_SZ  
Data: Gigaset  
ServerNet II  
QLogic

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Providers  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM

Value 0  
Name: AllowInProcess  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Providers\ADSDSOObject  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM

Value 0  
Name: AllowInProcess  
Type: REG\_DWORD

Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Providers\DB2OLEDB  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM  
Value 0  
Name: AllowInProcess  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Providers\Microsoft.Jet.  
OLEDB.4.0  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM  
Value 0  
Name: AllowInProcess  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Providers\MSDAORA  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM  
Value 0  
Name: AllowInProcess  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Providers\MSDASQL  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM  
Value 0  
Name: AllowInProcess  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Providers\MSIDX5  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM  
Value 0  
Name: AllowInProcess  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Providers\MSQLImpProv  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM  
Value 0

Name: AllowInProcess  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Providers\MSSEARCHSQL  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM  
Value 0  
Name: AllowInProcess  
Type: REG\_DWORD  
Data: 0x1

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Providers\SQLOLEDB  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM  
Value 0  
Name: AllowInProcess  
Type: REG\_DWORD  
Data: 0x1

Value 1  
Name: DisallowAdhocAccess  
Type: REG\_DWORD  
Data: 0

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Setup  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 2:04 PM  
Value 0  
Name: SQLPath  
Type: REG\_SZ  
Data: c:\sql80\MSSQL

Value 1  
Name: SQLDataRoot  
Type: REG\_SZ  
Data: c:\sql80\MSSQL

Value 2  
Name: SourcePath  
Type: REG\_SZ  
Data: \\usmv-host2\shared\systems  
analysis\Microsoft\sql\_2k\_sp3\Sql2ksp3

Value 3  
Name: firststart  
Type: REG\_DWORD  
Data: 0

Value 4  
Name: Scripts  
Type: REG\_MULTI\_SZ  
Data: sp1\_serv\_uni.sql  
80sp1-tools.sql

```

sp2_serv_uni.sql
80sp2-tools.sql
sp3_serv_uni.sql
80sp3-tools.sql
replsys.sql
replcom.sql
repltran.sql
replmerg.sql
remove_old_msx_accounts.sql

```

```
sp_vupgrade_replication:@login=N'sa',@password=N'',@ver_old=194
```

```

Value 5
Name:      EnableErrorReporting
Type:      REG_DWORD
Data:      0

```

```

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\SQLServerAgent
Class Name: <NO CLASS>
Last Write Time: 3/25/2003 - 1:54 PM

```

```

Value 0
Name:      JobHistoryMaxRowsPerJob
Type:      REG_DWORD
Data:      0x64

```

```

Value 1
Name:      RestartServer
Type:      REG_DWORD
Data:      0x1

```

```

Value 2
Name:      DownloadedMaxRows
Type:      REG_DWORD
Data:      0x64

```

```

Value 3
Name:      JobHistoryMaxRows
Type:      REG_DWORD
Data:      0x3e8

```

```

Value 4
Name:      ErrorLoggingLevel
Type:      REG_DWORD
Data:      0x3

```

```

Value 5
Name:      NonAlertableErrors
Type:      REG_SZ
Data:      1204,4002

```

```

Value 6
Name:      MSXServerName
Type:      REG_SZ
Data:

```

```
Value 7
```

```

Name:      ServerHost
Type:      REG_SZ
Data:

```

```

Value 8
Name:      WorkingDirectory
Type:      REG_SZ
Data:      c:\sql80\MSSQL\JOBS

```

```

Value 9
Name:      ErrorLogFile
Type:      REG_SZ
Data:      c:\sql80\MSSQL\LOG\SQLAGENT.OUT

```

```

Value 10
Name:      SysAdminOnly
Type:      REG_DWORD
Data:      0x1

```

```

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\SQLServerAgent\Subsystems

```

```

Class Name: <NO CLASS>
Last Write Time: 3/25/2003 - 1:54 PM

```

```

Value 0
Name:      CmdExec
Type:      REG_SZ
Data:      c:\sql80\MSSQL\BINN\SQLCMDSS.DLL, NULL, CmdExecStart, CmdEvent, CmdExecStop, 10

```

```

Value 1
Name:      Snapshot
Type:      REG_SZ
Data:      c:\sql80\MSSQL\BINN\SQLREPS.DLL, C:\Program
Files\Microsoft SQL
Server\80\COM\SNAPSHOT.EXE, ReplStart, ReplEvent, ReplStop, 100

```

```

Value 2
Name:      Distribution
Type:      REG_SZ
Data:      c:\sql80\MSSQL\BINN\SQLREPS.DLL, C:\Program
Files\Microsoft SQL
Server\80\COM\DISTRIB.EXE, ReplStart, ReplEvent, ReplStop, 100

```

```

Value 3
Name:      Merge
Type:      REG_SZ
Data:      c:\sql80\MSSQL\BINN\SQLREPS.DLL, C:\Program
Files\Microsoft SQL
Server\80\COM\REPLMERG.EXE, ReplStart, ReplEvent, ReplStop, 100

```

```

Value 4
Name:      ActiveScripting
Type:      REG_SZ
Data:      c:\sql80\MSSQL\BINN\SQLATXSS.DLL, NULL, ActiveScriptStart, ActiveScriptEvent,
ActiveScriptStop, 10

```

Value 5  
Name: QueueReader  
Type: REG\_SZ  
Data: c:\sql80\MSSQL\BINN\SQLREPS.DLL,C:\Program Files\Microsoft SQL Server\80\COM\QRDRSVC.EXE,ReplStart,ReplEvent,ReplStop,100

Value 6  
Name: LogReader  
Type: REG\_SZ  
Data: c:\sql80\MSSQL\BINN\SQLREPS.DLL,C:\Program Files\Microsoft SQL Server\80\COM\LOGREAD.EXE,ReplStart,ReplEvent,ReplStop,25

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Tracking  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM

Value 0  
Name: {E07FDDA4-5A21-11d2-9DAD-00C04F79D434}  
Type: REG\_SZ  
Data:

Value 1  
Name: {E07FDDA5-5A21-11d2-9DAD-00C04F79D434}  
Type: REG\_SZ  
Data:

Value 2  
Name: {E07FDDA8-5A21-11d2-9DAD-00C04F79D434}  
Type: REG\_SZ  
Data:

Value 3  
Name: {E07FDDAA-5A21-11d2-9DAD-00C04F79D434}  
Type: REG\_SZ  
Data:

Value 4  
Name: {E07FDDAC-5A21-11d2-9DAD-00C04F79D434}  
Type: REG\_SZ  
Data:

Value 5  
Name: {E07FDDAD-5A21-11d2-9DAD-00C04F79D434}  
Type: REG\_SZ  
Data:

Value 6  
Name: {E07FDDAF-5A21-11d2-9DAD-00C04F79D434}  
Type: REG\_SZ  
Data:

Value 7  
Name: {E07FDDBE-5A21-11d2-9DAD-00C04F79D434}  
Type: REG\_SZ  
Data:

Value 8  
Name: {E07FDDC0-5A21-11d2-9DAD-00C04F79D434}  
Type: REG\_SZ  
Data:

Value 9  
Name: {E07FDDBF-5A21-11d2-9DAD-00C04F79D434}  
Type: REG\_SZ  
Data:

Key Name:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Tracking\Shortcuts  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 1:54 PM

Value 0  
Name: Enterprise Manager  
Type: REG\_SZ  
Data:

Value 1  
Name: Query Analyzer  
Type: REG\_SZ  
Data:

Value 2  
Name: Client Network Utility  
Type: REG\_SZ  
Data:

Value 3  
Name: Configure SQL XML Support in IIS  
Type: REG\_SZ  
Data:

Value 4  
Name: Import and Export Data  
Type: REG\_SZ  
Data:

Value 5  
Name: Service Manager  
Type: REG\_SZ  
Data:

Value 6  
Name: Server Network Utility  
Type: REG\_SZ  
Data:

Value 7  
Name: Books Online  
Type: REG\_SZ  
Data:

## CurrentControlSet\Control\Session Manager\I/O System

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\I/O System  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 2:05 PM  
Value 0  
Name: CountOperations  
Type: REG\_DWORD  
Data: 0

## CurrentControlSet\Control\Session Manager\Kernel

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\kernel  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 2:05 PM  
Value 0  
Name: obcaseinsensitive  
Type: REG\_DWORD  
Data: 0x1  
Value 1  
Name: ObUnsecureGlobalNames  
Type: REG\_MULTI\_SZ  
Data: netfxcustomperfcounters.1.0  
SharedPerfIPCBLOCK  
Cor\_Private\_IPCBLOCK  
Value 2  
Name: XMMIZeroingDisable  
Type: REG\_DWORD  
Data: 0x1

## CurrentControlSet\Services\GniConMgr

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\GniConMgr  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:10 PM  
Value 0  
Name: Type  
Type: REG\_DWORD  
Data: 0x10  
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\GnConMgr.exe  
Value 4  
Name: DisplayName  
Type: REG\_SZ  
Data: cLAN Connection Manager  
Value 5  
Name: Group  
Type: REG\_SZ  
Data: TDI  
Value 6  
Name: DependOnService  
Type: REG\_MULTI\_SZ  
Data: GniVIA  
Value 7  
Name: DependOnGroup  
Type: REG\_MULTI\_SZ  
Data:  
Value 8  
Name: ObjectName  
Type: REG\_SZ  
Data: LocalSystem

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\GniConMgr\Parameters  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 9:02 AM  
Value 0  
Name: NicName  
Type: REG\_SZ  
Data: GniVIA

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\GniConMgr\Security  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 9:02 AM  
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
.. \.....ÿ...
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
.....ÿ...
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\GniConMgr\Enum
Class Name: <NO CLASS>
Last Write Time: 3/27/2003 - 2:10 PM
Value 0
Name: 0
Type: REG_SZ
Data: Root\LEGACY_GNICONMGR\0000

```

```

Value 1
Name: Count
Type: REG_DWORD
Data: 0x1

```

```

Value 2
Name: NextInstance
Type: REG_DWORD
Data: 0x1

```

### CurrentControlSet\Services\GNINDIS

```

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\GNINDIS
Class Name: <NO CLASS>
Last Write Time: 3/27/2003 - 2:10 PM
Value 0
Name: Type
Type: REG_DWORD
Data: 0x1

```

```

Value 1
Name: Start
Type: REG_DWORD
Data: 0x2

```

```

Value 2
Name: ErrorControl
Type: REG_DWORD
Data: 0x1

```

```

Value 3
Name: Tag
Type: REG_DWORD
Data: 0xd

Value 4
Name: ImagePath
Type: REG_EXPAND_SZ
Data: system32\DRIVERS\gnindis.sys

Value 5
Name: DisplayName
Type: REG_SZ
Data: cLAN NDIS Driver

Value 6
Name: Group
Type: REG_SZ
Data: NDIS

```

```

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\GNINDIS\Security
Class Name: <NO CLASS>
Last Write Time: 3/25/2003 - 9:02 AM
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
.. \.....ÿ...
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
.....ÿ...
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\GNINDIS\Enum
Class Name: <NO CLASS>
Last Write Time: 3/27/2003 - 2:10 PM
Value 0
Name: 0

```

```

Type:          REG_SZ
Data:
PCI\VEN_135B&DEV_0001&SUBSYS_00000000&REV_00\3&e44f86d&0&00

Value 1
Name:          Count
Type:          REG_DWORD
Data:          0x4

Value 2
Name:          NextInstance
Type:          REG_DWORD
Data:          0x4

Value 3
Name:          1
Type:          REG_SZ
Data:
PCI\VEN_135B&DEV_0001&SUBSYS_00000000&REV_00\3&e44f86d&0&08

Value 4
Name:          2
Type:          REG_SZ
Data:
PCI\VEN_135B&DEV_0001&SUBSYS_00000000&REV_00\3&1b2f0ce&0&00

Value 5
Name:          3
Type:          REG_SZ
Data:
PCI\VEN_135B&DEV_0001&SUBSYS_00000000&REV_00\3&1b2f0ce&0&08

```

### CurrentControlSet\Services\GniVIA

```

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\GniVIA
Class Name:    <NO CLASS>
Last Write Time:  3/27/2003 - 2:10 PM

Value 0
Name:          Type
Type:          REG_DWORD
Data:          0x1

Value 1
Name:          Start
Type:          REG_DWORD
Data:          0x2

Value 2
Name:          ErrorControl
Type:          REG_DWORD
Data:          0x1

Value 3
Name:          Tag
Type:          REG_DWORD

```

```

Data:          0x8

Value 4
Name:          ImagePath
Type:          REG_EXPAND_SZ
Data:          system32\DRIVERS\GniVIA.sys

Value 5
Name:          DisplayName
Type:          REG_SZ
Data:          cLAN VIA Driver

Value 6
Name:          Group
Type:          REG_SZ
Data:          PNP_TDI

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\GniVIA\Linkage
Class Name:    <NO CLASS>
Last Write Time:  3/25/2003 - 7:34 PM

Value 0
Name:          Bind
Type:          REG_MULTI_SZ
Data:          \Device\{2BAE7DE7-8C00-41F7-B62D-86F56649CA5C}
              \Device\{714BB0E3-7714-4B8B-901E-727276B5E731}
              \Device\{0B8AFFC2-5EEF-4F77-A611-A4448635C733}
              \Device\{F2963324-82E7-4E81-A26D-98B6EE49E440}

Value 1
Name:          Route
Type:          REG_MULTI_SZ
Data:          "{2BAE7DE7-8C00-41F7-B62D-86F56649CA5C}"
              "{714BB0E3-7714-4B8B-901E-727276B5E731}"
              "{0B8AFFC2-5EEF-4F77-A611-A4448635C733}"
              "{F2963324-82E7-4E81-A26D-98B6EE49E440}"

Value 2
Name:          Export
Type:          REG_MULTI_SZ
Data:          \Device\GniVIA_{2BAE7DE7-8C00-41F7-B62D-86F56649CA5C}
              \Device\GniVIA_{714BB0E3-7714-4B8B-901E-727276B5E731}
              \Device\GniVIA_{0B8AFFC2-5EEF-4F77-A611-A4448635C733}
              \Device\GniVIA_{F2963324-82E7-4E81-A26D-98B6EE49E440}

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\GniVIA\Parameters
Class Name:    <NO CLASS>
Last Write Time:  3/25/2003 - 9:04 AM

Value 0
Name:          <NO NAME>
Type:          REG_SZ
Data:

Value 1
Name:          MaxNumberNics
Type:          REG_DWORD

```



```

Data:          0x4

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\GniVIA\Performance
Class Name:    <NO CLASS>
Last Write Time: 3/25/2003 - 9:04 AM
Value 0
  Name:        Open
  Type:        REG_SZ
  Data:        OpenNicPerformanceData

Value 1
  Name:        Close
  Type:        REG_SZ
  Data:        CloseNicPerformanceData

Value 2
  Name:        Collect
  Type:        REG_SZ
  Data:        CollectNicPerformanceData

Value 3
  Name:        Library
  Type:        REG_SZ
  Data:        gni_perf.dll

Value 4
  Name:        PerfIniFile
  Type:        REG_SZ
  Data:        gni_perf.ini

Value 5
  Name:        Last Counter
  Type:        REG_DWORD
  Data:        0x9a4

Value 6
  Name:        Last Help
  Type:        REG_DWORD
  Data:        0x9a5

Value 7
  Name:        First Counter
  Type:        REG_DWORD
  Data:        0x966

Value 8
  Name:        First Help
  Type:        REG_DWORD
  Data:        0x967

Value 9
  Name:        WbemAdapFileSignature
  Type:        REG_BINARY
  Data:        00000000 72 b9 f5 07 e0 89 b7 ad - 6b a0 4e 41 53 fb b4 ba
               r'õ.à.-k NASú'°

```

```

Value 10
  Name:        WbemAdapFileTime
  Type:        REG_BINARY
  Data:        ec 4b c6 4b ef f2 c2 01 -           ikEKiòÂ.

Value 11
  Name:        WbemAdapFileSize
  Type:        REG_DWORD
  Data:        0xc000

Value 12
  Name:        WbemAdapStatus
  Type:        REG_DWORD
  Data:        0

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\GniVIA\Security
Class Name:    <NO CLASS>
Last Write Time: 3/25/2003 - 9:02 AM
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
               ŷ.....
               00000030 02 00 60 00 04 00 00 00 - 00 00 14 00 fd 01 02 00
               ..\.....ŷ...
               00000040 01 01 00 00 00 00 00 05 - 12 00 00 00 00 00 18 00
               .....ŷ...
               00000050 ff 01 0f 00 01 02 00 00 - 00 00 00 05 20 00 00 00 ŷ.....
               ...
               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
               .....ŷ...
               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\GniVIA\Enum
Class Name:    <NO CLASS>
Last Write Time: 3/27/2003 - 2:10 PM
Value 0
  Name:        0
  Type:        REG_SZ
  Data:        Root\LEGACY_GNIVIA\0000

Value 1

```

Name: Count  
Type: REG\_DWORD  
Data: 0x1

Value 2  
Name: NextInstance  
Type: REG\_DWORD  
Data: 0x1

### CurrentControlSet\Services\ifba

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\ifba  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:13 PM

Value 0  
Name: Type  
Type: REG\_DWORD  
Data: 0x1

Value 1  
Name: Start  
Type: REG\_DWORD  
Data: 0x3

Value 2  
Name: ErrorControl  
Type: REG\_DWORD  
Data: 0x1

Value 3  
Name: Tag  
Type: REG\_DWORD  
Data: 0x4

Value 4  
Name: ImagePath  
Type: REG\_EXPAND\_SZ  
Data: system32\DRIVERS\ifba.sys

Value 5  
Name: DisplayName  
Type: REG\_SZ  
Data: Unisys Intelligent Fibre Channel Adapter SCSI Processor

Value 6  
Name: Group  
Type: REG\_SZ  
Data: SCSI Class

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\ifba\Security  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 9:07 AM

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  
..`.....ÿ...  
00000040 01 01 00 00 00 00 00 05 - 12 00 00 00 00 00 18 00  
.....ÿ.....  
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  
.....ÿ...  
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\ifba\Enum  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:13 PM

Value 0  
Name: 0  
Type: REG\_SZ  
Data: SCSI\ProcessorUNISYS\_\_IFBA8888\_\_\_\_\_v2\_\_\5&350a6b20&0&F004560B00080010

Value 1  
Name: Count  
Type: REG\_DWORD  
Data: 0xa

Value 2  
Name: NextInstance  
Type: REG\_DWORD  
Data: 0xa

Value 3  
Name: 1  
Type: REG\_SZ  
Data: SCSI\ProcessorUNISYS\_\_IFBA8888\_\_\_\_\_v2\_\_\5&350a6b20&0&F104560B00080010

Value 4  
Name: 2  
Type: REG\_SZ  
Data: SCSI\ProcessorUNISYS\_\_IFBA8888\_\_\_\_\_v2\_\_\5&19fcce84&0&A104560B00080010

Value 5

Name: 3  
 Type: REG\_SZ  
 Data: SCSI\ProcessorUNISYS\_\_IFBA8888\_\_\_\_\_v2\_\_\5&19fcce84&0&A004560B00080010

Value 6  
 Name: 4  
 Type: REG\_SZ  
 Data: SCSI\ProcessorUNISYS\_\_IFBA8888\_\_\_\_\_v2\_\_\5&73c4b25&0&D004560B00080010

Value 7  
 Name: 5  
 Type: REG\_SZ  
 Data: SCSI\ProcessorUNISYS\_\_IFBA8888\_\_\_\_\_v2\_\_\5&73c4b25&0&D104560B00080010

Value 8  
 Name: 6  
 Type: REG\_SZ  
 Data: SCSI\ProcessorUNISYS\_\_IFBA8888\_\_\_\_\_v2\_\_\5&24c648ac&0&9D04560B00080010

Value 9  
 Name: 7  
 Type: REG\_SZ  
 Data: SCSI\ProcessorUNISYS\_\_IFBA8888\_\_\_\_\_v2\_\_\5&24c648ac&0&9C04560B00080010

Value 10  
 Name: 8  
 Type: REG\_SZ  
 Data: SCSI\ProcessorUNISYS\_\_IFBA8888\_\_\_\_\_v2\_\_\5&55e65ef&0&5406560B00080010

Value 11  
 Name: 9  
 Type: REG\_SZ  
 Data: SCSI\ProcessorUNISYS\_\_IFBA8888\_\_\_\_\_v2\_\_\5&55e65ef&0&5506560B00080010

### CurrentControlSet\Services\Ifdisk

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\ifdisk  
 Class Name: <NO CLASS>  
 Last Write Time: 3/25/2003 - 5:29 PM

Value 0  
 Name: Type  
 Type: REG\_DWORD  
 Data: 0x1

Value 1  
 Name: Start

Type: REG\_DWORD  
 Data: 0

Value 2  
 Name: ErrorControl  
 Type: REG\_DWORD  
 Data: 0x1

Value 3  
 Name: ImagePath  
 Type: REG\_EXPAND\_SZ  
 Data: system32\DRIVERS\ifdisk.sys

Value 4  
 Name: DisplayName  
 Type: REG\_SZ  
 Data: Unisys Intelligent Fibre Channel Fabric Disk Driver

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\ifdisk\Enum  
 Class Name: <NO CLASS>  
 Last Write Time: 3/25/2003 - 7:17 PM

Value 0  
 Name: Count  
 Type: REG\_DWORD  
 Data: 0x3b

Value 1  
 Name: NextInstance  
 Type: REG\_DWORD  
 Data: 0x3b

Value 2  
 Name: 28  
 Type: REG\_SZ  
 Data: SCSI\Disk&Ven\_DGC\_\_\_\_\_RAID\_10\_\_\_\_\_0099\1&1a590e2c&0&A20020106001065000  
 0000000000000000

Value 3  
 Name: 27  
 Type: REG\_SZ  
 Data: SCSI\Disk&Ven\_UNISYS\_\_VirtualStorage\_\_01.0\1&1a590e2c&0&1D4000861000001000  
 0000000000001000

Value 4  
 Name: 26  
 Type: REG\_SZ  
 Data: SCSI\Disk&Ven\_UNISYS\_\_VirtualStorage\_\_01.0\1&1a590e2c&0&1D4000861000001000  
 0000000000002000

Value 5  
 Name: 25  
 Type: REG\_SZ

Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000003000	Value 14 Name: 16 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 00000000000C000
Value 6 Name: 24 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000004000	Value 15 Name: 15 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 00000000000D000
Value 7 Name: 23 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000005000	Value 16 Name: 42 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 00000000000E000
Value 8 Name: 22 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000006000	Value 17 Name: 41 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D4000861000001000 000000000001000
Value 9 Name: 21 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000007000	Value 18 Name: 40 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D4000861000001000 000000000002000
Value 10 Name: 20 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000008000	Value 19 Name: 39 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D4000861000001000 000000000003000
Value 11 Name: 19 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000009000	Value 20 Name: 38 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D4000861000001000 000000000004000
Value 12 Name: 18 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 00000000000A000	Value 21 Name: 37 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D4000861000001000 000000000005000
Value 13 Name: 17 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 00000000000B000	Value 22 Name: 36

Type:	REG_SZ	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000006000
Data:			000000000000E000
Value 23		Value 31	
Name:	35	Name:	55
Type:	REG_SZ	Type:	REG_SZ
Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000007000	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F400086100000100000000000001000
Data:	0000000000007000	Data:	0000000000001000
Value 24		Value 32	
Name:	34	Name:	54
Type:	REG_SZ	Type:	REG_SZ
Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000008000	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F400086100000100000000000002000
Data:	0000000000008000	Data:	0000000000002000
Value 25		Value 33	
Name:	33	Name:	53
Type:	REG_SZ	Type:	REG_SZ
Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000009000	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F400086100000100000000000003000
Data:	0000000000009000	Data:	0000000000003000
Value 26		Value 34	
Name:	32	Name:	52
Type:	REG_SZ	Type:	REG_SZ
Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D40008610000010000000000000A000	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F400086100000100000000000004000
Data:	000000000000A000	Data:	0000000000004000
Value 27		Value 35	
Name:	31	Name:	51
Type:	REG_SZ	Type:	REG_SZ
Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D40008610000010000000000000B000	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F400086100000100000000000005000
Data:	000000000000B000	Data:	0000000000005000
Value 28		Value 36	
Name:	30	Name:	50
Type:	REG_SZ	Type:	REG_SZ
Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D40008610000010000000000000C000	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F400086100000100000000000006000
Data:	000000000000C000	Data:	0000000000006000
Value 29		Value 37	
Name:	29	Name:	49
Type:	REG_SZ	Type:	REG_SZ
Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D40008610000010000000000000D000	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F400086100000100000000000007000
Data:	000000000000D000	Data:	0000000000007000
Value 30		Value 38	
Name:	0	Name:	48
Type:	REG_SZ	Type:	REG_SZ
Data:		Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F400086100000100000000000008000
Data:		Data:	0000000000008000

Value 39	Type: REG_SZ
Name: 47	Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000
Type: REG_SZ	000000000003000
Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000	Value 48
000000000009000	Name: 10
Value 40	Type: REG_SZ
Name: 46	Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000
Type: REG_SZ	000000000004000
Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000	Value 49
00000000000A000	Name: 9
Value 41	Type: REG_SZ
Name: 45	Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000
Type: REG_SZ	000000000005000
Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000	Value 50
00000000000B000	Name: 8
Value 42	Type: REG_SZ
Name: 44	Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000
Type: REG_SZ	000000000006000
Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000	Value 51
00000000000C000	Name: 7
Value 43	Type: REG_SZ
Name: 43	Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000
Type: REG_SZ	000000000007000
Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000	Value 52
00000000000D000	Name: 6
Value 44	Type: REG_SZ
Name: 14	Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000
Type: REG_SZ	000000000008000
Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000	Value 53
00000000000E000	Name: 5
Value 45	Type: REG_SZ
Name: 13	Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000
Type: REG_SZ	000000000009000
Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000	Value 54
000000000001000	Name: 4
Value 46	Type: REG_SZ
Name: 12	Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000
Type: REG_SZ	00000000000A000
Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000	Value 55
000000000002000	Name: 3
Value 47	Type: REG_SZ
Name: 11	

Data:  
SCSI\Disk&Ven\_UNISYS\_\_VirtualStorage\_\_01.0\1&1a590e2c&0&A53F00861000001000  
000000000000B000

Value 56

Name: 2  
Type: REG\_SZ  
Data:

SCSI\Disk&Ven\_UNISYS\_\_VirtualStorage\_\_01.0\1&1a590e2c&0&A53F00861000001000  
000000000000C000

Value 57

Name: 1  
Type: REG\_SZ  
Data:

SCSI\Disk&Ven\_UNISYS\_\_VirtualStorage\_\_01.0\1&1a590e2c&0&A53F00861000001000  
000000000000D000

Value 58

Name: 56  
Type: REG\_SZ  
Data:

SCSI\Disk&Ven\_UNISYS\_\_VirtualStorage\_\_01.0\1&1a590e2c&0&A53F00861000001000  
000000000000E000

Value 59

Name: 57  
Type: REG\_SZ  
Data:

SCSI\Disk&Ven\_DGC\_\_\_\_\_RAID\_5\_\_\_\_\_0511\1&1a590e2c&0&76DD32166000001000  
0000000000001000

Value 60

Name: 58  
Type: REG\_SZ  
Data:

SCSI\Disk&Ven\_DGC\_\_\_\_\_RAID\_5\_\_\_\_\_0511\1&1a590e2c&0&ED4A3D166000001000  
0000000000000000

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\ifdisk\Security  
Class Name: <NO CLASS>  
Last Write Time: 3/25/2003 - 5:29 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  
..`.....ÿ...  
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  
.....ÿ...  
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 - .....

### CurrentControlSet\Services\IfIp

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\IfIp  
Class Name: <NO CLASS>  
Last Write Time: 3/27/2003 - 2:10 PM

Value 0  
Name: Type  
Type: REG\_DWORD  
Data: 0x1

Value 1  
Name: Start  
Type: REG\_DWORD  
Data: 0

Value 2  
Name: ErrorControl  
Type: REG\_DWORD  
Data: 0x1

Value 3  
Name: Tag  
Type: REG\_DWORD  
Data: 0x6

Value 4  
Name: ImagePath  
Type: REG\_EXPAND\_SZ  
Data: system32\DRIVERS\IfIp.sys

Value 5  
Name: DisplayName  
Type: REG\_SZ  
Data: Unisys Intelligent Fibre Channel Fabric Bus Enumerator

Value 6  
Name: Group  
Type: REG\_SZ  
Data: Boot Bus Extender

Key Name:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\IfIp\Security

Class Name: <NO CLASS>  
 Last Write Time: 3/25/2003 - 9:10 AM  
 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  
 ..\.....Ÿ...  
 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  
 .....Ÿ...  
 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\IfIp\Enum  
 Class Name: <NO CLASS>  
 Last Write Time: 3/27/2003 - 2:10 PM  
 Value 0  
 Name: 0  
 Type: REG\_SZ  
 Data: Root\SYSTEM\0002  
 Value 1  
 Name: Count  
 Type: REG\_DWORD  
 Data: 0x1  
 Value 2  
 Name: NextInstance  
 Type: REG\_DWORD  
 Data: 0x1

### CurrentControlSet\Services\ifxp

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\ifxp  
 Class Name: <NO CLASS>  
 Last Write Time: 3/27/2003 - 2:10 PM  
 Value 0  
 Name: Type

Type: REG\_DWORD  
 Data: 0x1  
 Value 1  
 Name: Start  
 Type: REG\_DWORD  
 Data: 0  
 Value 2  
 Name: ErrorControl  
 Type: REG\_DWORD  
 Data: 0x1  
 Value 3  
 Name: Tag  
 Type: REG\_DWORD  
 Data: 0x21  
 Value 4  
 Name: ImagePath  
 Type: REG\_EXPAND\_SZ  
 Data: system32\DRIVERS\ifxp.sys  
 Value 5  
 Name: DisplayName  
 Type: REG\_SZ  
 Data: Unisys Intelligent Fibre Channel Fabric Bus Adapter  
 Value 6  
 Name: Group  
 Type: REG\_SZ  
 Data: SCSI Miniport

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\ifxp\Parameters  
 Class Name: <NO CLASS>  
 Last Write Time: 3/25/2003 - 9:01 AM  
 Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\ifxp\Parameters\PnpInterface  
 Class Name: <NO CLASS>  
 Last Write Time: 3/25/2003 - 9:01 AM  
 Value 0  
 Name: 5  
 Type: REG\_DWORD  
 Data: 0x1

Key Name:  
 HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\ifxp\Security  
 Class Name: <NO CLASS>  
 Last Write Time: 3/25/2003 - 9:01 AM  
 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
..ÿ....
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
.....ÿ...
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\ifxp\Enum
Class Name: <NO CLASS>
Last Write Time: 3/27/2003 - 2:10 PM

```

```

Value 0
Name: 0
Type: REG_SZ
Data: PCI\VEN_11AB&DEV_4620&SUBSYS_C0FC1018&REV_12\4&34487c5b&0&0008

```

```

Value 1
Name: Count
Type: REG_DWORD
Data: 0x5

```

```

Value 2
Name: NextInstance
Type: REG_DWORD
Data: 0x5

```

```

Value 3
Name: 1
Type: REG_SZ
Data: PCI\VEN_11AB&DEV_4620&SUBSYS_C0FC1018&REV_12\4&1a0b7e4&0&0008

```

```

Value 4
Name: 2
Type: REG_SZ
Data: PCI\VEN_11AB&DEV_4620&SUBSYS_C0FC1018&REV_12\4&2421d46d&0&0008

```

```

Value 5
Name: 3
Type: REG_SZ

```

```

Data:
PCI\VEN_11AB&DEV_4620&SUBSYS_C0FC1018&REV_12\4&1b316b8f&0&0000
Value 6
Name: 4
Type: REG_SZ
Data: PCI\VEN_11AB&DEV_4620&SUBSYS_C0FC1018&REV_12\4&101f93c3&0&0000

```

### CurrentControlSet\Services\MSSQLSERVER

```

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MSSQLSERVER
Class Name: <NO CLASS>
Last Write Time: 3/27/2003 - 2:10 PM

```

```

Value 0
Name:
Type: REG_DWORD
Data: 0x110

```

```

Value 1
Name: Start
Type: REG_DWORD
Data: 0x3

```

```

Value 2
Name: ErrorControl
Type: REG_DWORD
Data: 0x1

```

```

Value 3
Name: ImagePath
Type: REG_EXPAND_SZ
Data: c:\sql80\MSSQL\binn\sqlservr.exe

```

```

Value 4
Name: DisplayName
Type: REG_SZ
Data: MSSQLSERVER

```

```

Value 5
Name: ObjectName
Type: REG_SZ
Data: LocalSystem

```

```

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MSSQLSERVER\Linkage
Class Name: <NO CLASS>
Last Write Time: 3/25/2003 - 1:57 PM

```

```

Value 0
Name: Export
Type: REG_MULTI_SZ
Data: MSSQLSERVER

```

```

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MSSQLSERVER\Performan
ce
Class Name:      <NO CLASS>
Last Write Time: 3/25/2003 - 1:57 PM
Value 0
  Name:          Library
  Type:          REG_SZ
  Data:          c:\sql80\MSSQL\BINN\SQLCTR80.DLL

Value 1
  Name:          Collect
  Type:          REG_SZ
  Data:          CollectSQLPerformanceData

Value 2
  Name:          Open
  Type:          REG_SZ
  Data:          OpenSQLPerformanceData

Value 3
  Name:          Close
  Type:          REG_SZ
  Data:          CloseSQLPerformanceData

```

```

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MSSQLSERVER\Security
Class Name:      <NO CLASS>
Last Write Time: 3/25/2003 - 1:57 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
..`.....ÿ...
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
.....ÿ...
00000080  01 02 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\MSSQLSERVER\Enum

```

```

Class Name:      <NO CLASS>
Last Write Time: 3/27/2003 - 2:10 PM
Value 0
  Name:          0
  Type:          REG_SZ
  Data:          Root\LEGACY_MSSQLSERVER\0000

Value 1
  Name:          Count
  Type:          REG_DWORD
  Data:          0x1

Value 2
  Name:          NextInstance
  Type:          REG_DWORD
  Data:          0x1

```

### CurrentControlSet\Services\PartMgr

```

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\PartMgr
Class Name:      <NO CLASS>
Last Write Time: 3/27/2003 - 2:10 PM
Value 0
  Name:          DisplayName
  Type:          REG_SZ
  Data:          Partition Manager

Value 1
  Name:          ErrorControl
  Type:          REG_DWORD
  Data:          0x1

Value 2
  Name:          Group
  Type:          REG_SZ
  Data:          System Bus Extender

Value 3
  Name:          Start
  Type:          REG_DWORD
  Data:          0

Value 4
  Name:          Tag
  Type:          REG_DWORD
  Data:          0x6

Value 5
  Name:          Type
  Type:          REG_DWORD
  Data:          0x1

```

```

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\PartMgr\Enum

```

Class Name:	<NO CLASS>	Value 9	
Last Write Time:	3/27/2003 - 2:13 PM	Name:	7
Value 0		Type:	REG_SZ
Name:	0	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000000000000A000
Type:	REG_SZ		
Data:	Root\LEGACY_PARTMGR\0000	Value 10	
		Name:	8
Value 1		Type:	REG_SZ
Name:	Count	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F008610000010000000000009000
Type:	REG_DWORD		
Data:	0x3b	Value 11	
Value 2		Name:	9
Name:	NextInstance	Type:	REG_SZ
Type:	REG_DWORD	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F008610000010000000000008000
Data:	0x3b		
Value 3		Value 12	
Name:	1	Name:	10
Type:	REG_SZ	Type:	REG_SZ
Data:		Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F008610000010000000000007000
IDE\DiskFUJITSU_MHS2030AT_____8004____\5&28fc923b&0&0.0.0			
0		Value 13	
Value 4		Name:	11
Name:	2	Type:	REG_SZ
Type:	REG_SZ	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A200201060010650000000000000000
Data:			
SCSI\Disk&Ven_DGC_____RAID_10_____0099\1&1a590e2c&0&A20020106001065000		Value 14	
0000000000000000		Name:	12
Value 5		Type:	REG_SZ
Name:	3	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F008610000010000000000006000
Type:	REG_SZ		
Data:		Value 15	
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000		Name:	13
00000000000E000		Type:	REG_SZ
Value 6		Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F008610000010000000000004000
Name:	4		
Type:	REG_SZ	Value 16	
Data:		Name:	14
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000		Type:	REG_SZ
00000000000D000		Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F008610000010000000000003000
Value 7			
Name:	5	Value 17	
Type:	REG_SZ	Name:	15
Data:		Type:	REG_SZ
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000			
00000000000C000			
Value 8			
Name:	6		
Type:	REG_SZ		
Data:			
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000			
00000000000B000			

Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000 000000000002000	Value 26 Name: 24 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000007000
Value 18 Name: 16 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&A53F00861000001000 000000000001000	Value 27 Name: 25 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000006000
Value 19 Name: 17 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 00000000000E000	Value 28 Name: 26 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000005000
Value 20 Name: 18 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 00000000000D000	Value 29 Name: 27 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000004000
Value 21 Name: 19 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 00000000000C000	Value 30 Name: 28 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000003000
Value 22 Name: 20 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 00000000000B000	Value 31 Name: 29 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000002000
Value 23 Name: 21 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 00000000000A000	Value 32 Name: 30 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000001000
Value 24 Name: 22 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000009000	Value 33 Name: 31 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D4000861000001000 00000000000E000
Value 25 Name: 23 Type: REG_SZ Data: SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&1D4000861000001000 000000000008000	Value 34 Name: 32

Type:	REG_SZ	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D40008610000010000000000000D000
Data:			0000000000005000
Value 35		Value 43	
Name:	33	Name:	41
Type:	REG_SZ	Type:	REG_SZ
Data:		Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000004000
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D40008610000010000000000000C000		Value 44	
Value 36		Name:	42
Name:	34	Type:	REG_SZ
Type:	REG_SZ	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000003000
Data:		Value 45	
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D40008610000010000000000000B000		Name:	43
Value 37		Type:	REG_SZ
Name:	35	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000002000
Type:	REG_SZ	Value 46	
Data:		Name:	44
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D40008610000010000000000000A000		Type:	REG_SZ
Value 38		Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000001000
Name:	36	Value 47	
Type:	REG_SZ	Name:	45
Data:		Type:	REG_SZ
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000009000		Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F40008610000010000000000000E000
Value 39		Value 48	
Name:	37	Name:	46
Type:	REG_SZ	Type:	REG_SZ
Data:		Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F40008610000010000000000000D000
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000008000		Value 49	
Value 40		Name:	47
Name:	38	Type:	REG_SZ
Type:	REG_SZ	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F40008610000010000000000000C000
Data:		Value 50	
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000007000		Name:	48
Value 41		Type:	REG_SZ
Name:	39	Data:	SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F40008610000010000000000000B000
Type:	REG_SZ		
Data:			
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6D400086100000100000000000006000			
Value 42			
Name:	40		
Type:	REG_SZ		

```

Value 51
  Name:          49
  Type:          REG_SZ
  Data:
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000
00000000000A000

Value 52
  Name:          50
  Type:          REG_SZ
  Data:
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000
000000000009000

Value 53
  Name:          51
  Type:          REG_SZ
  Data:
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000
000000000008000

Value 54
  Name:          52
  Type:          REG_SZ
  Data:
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000
000000000007000

Value 55
  Name:          53
  Type:          REG_SZ
  Data:
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000
000000000006000

Value 56
  Name:          54
  Type:          REG_SZ
  Data:
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000
000000000005000

Value 57
  Name:          55
  Type:          REG_SZ
  Data:
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000
000000000004000

Value 58
  Name:          56
  Type:          REG_SZ
  Data:
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000
000000000003000

Value 59
  Name:          57

```

```

Type:          REG_SZ
Data:
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000
000000000002000

Value 60
  Name:          58
  Type:          REG_SZ
  Data:
SCSI\Disk&Ven_UNISYS__VirtualStorage__01.0\1&1a590e2c&0&6F4000861000001000
000000000001000

```

## Windows 2000 Server Client Configuration Information

(common to 4 clients except for System Name, IP Address & MAC Address)

System Information report written at: 03/27/2003 01:11:26 PM  
[System Information]

[ Following are sub-categories of this main category ]

[System Summary]

Item	Value
OS Name	Microsoft Windows 2000 Server
Version	5.0.2195 Service Pack 3 Build 2195
OS Manufacturer	Microsoft Corporation
System Name	CLIENT1
System Manufacturer	UNISYS Corp.
System Model	ES3020L
System Type	X86-based PC
Processor	x86 Family 15 Model 2 Stepping 4 GenuineIntel ~2392 Mhz
Processor	x86 Family 15 Model 2 Stepping 4 GenuineIntel ~2392 Mhz
BIOS Version	02/14/03
Windows Directory	C:\WINNT
System Directory	C:\WINNT\System32
Boot Device	\Device\Harddisk0\Partition1
Locale	United States
User Name	CLIENT1\Administrator
Time Zone	Pacific Standard Time
Total Physical Memory	1,048,048 KB
Available Physical Memory	895,096 KB
Total Virtual Memory	4,093,040 KB
Available Virtual Memory	3,876,684 KB
Page File Space	3,044,992 KB
Page File	C:\pagefile.sys

[Hardware Resources]

[ Following are sub-categories of this main category ]

[Conflicts/Sharing]

Resource	Device
IRQ 7	PCI Device

IRQ 7 Standard OpenHCD USB Host Controller

[DMA]

Channel Device Status

4	Direct memory access controller	OK
2	Standard floppy disk controller	OK

[Forced Hardware]

Device PNP Device ID  
No Forced Hardware

[I/O]

Address Range	Device	Status
0x0000-0x03AF	PCI bus	OK
0x0000-0x03AF	Direct memory access controller	OK
0x03B0-0x03DF	PCI bus	OK
0x03B0-0x03DF	ATI Technologies Inc. RAGE XL PCI	OK
0x03E0-0x0CF7	PCI bus	OK
0x0D00-0x0FFF	PCI bus	OK
0xE000-0xEFFF	PCI bus	OK
0xECF8-0xEFFF	PCI Device	OK
0xECE8-0xECEF	PCI Device	OK
0xEC80-0xECBF	PCI Device	OK
0xECF4-0xECF7	PCI Device	OK
0xE800-0xE8FF	ATI Technologies Inc. RAGE XL PCI	OK
0x03C0-0x03DF	ATI Technologies Inc. RAGE XL PCI	OK
0x0080-0x009F	Direct memory access controller	OK
0x00C0-0x00DF	Direct memory access controller	OK
0x040B-0x040B	Direct memory access controller	OK
0x04D6-0x04D6	Direct memory access controller	OK
0x00F0-0x00FF	Numeric data processor	OK
0x0020-0x003F	Programmable interrupt controller	OK
0x00A0-0x00BF	Programmable interrupt controller	OK
0x04D0-0x04D1	Programmable interrupt controller	OK
0x0061-0x0061	System speaker	OK
0x0040-0x005F	System timer	OK
0x03F0-0x03F5	Standard floppy disk controller	OK
0x03F7-0x03F7	Standard floppy disk controller	OK
0x0060-0x0060	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	OK
0x0064-0x0064	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	OK
0x03F8-0x03FF	Communications Port (COM1)	OK
0x02F8-0x02FF	Communications Port (COM2)	OK
0x0070-0x007F	System CMOS/real time clock	OK
0x0800-0x089F	System board	OK
0x08A0-0x08AF	System board	OK
0x0C00-0x0CD7	System board	OK
0x0F50-0x0F58	System board	OK
0x08E0-0x08E3	System board	OK
0x00E0-0x00EF	System board	OK
0x08B0-0x08BF	Standard Dual Channel PCI IDE Controller	OK
0x01F0-0x01F7	Primary IDE Channel	OK
0x03F6-0x03F6	Primary IDE Channel	OK
0x0170-0x0177	Secondary IDE Channel	OK
0x0376-0x0376	Secondary IDE Channel	OK

0x0A79-0x0A79	ISAPNP Read Data Port	OK
0x0279-0x0279	ISAPNP Read Data Port	OK
0x02F4-0x02F7	ISAPNP Read Data Port	OK
0xC000-0xCFFF	PCI bus	OK
0xC000-0xCFFF	PCI standard PCI-to-PCI bridge	OK
0xCC00-0xCFFF	Adaptec AIC-7899 Ultra160/m PCI SCSI Card	OK
0xC800-0xC8FF	Adaptec AIC-7899 Ultra160/m PCI SCSI Card	OK
0xD000-0xDFFF	PCI bus	OK

[IRQs]

IRQ Number	Device
9	Microsoft ACPI-Compliant System
11	PCI Device
10	PCI Device
7	PCI Device
7	Standard OpenHCD USB Host Controller
13	Numeric data processor
6	Standard floppy disk controller
1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
12	PS/2 Compatible Mouse
4	Communications Port (COM1)
3	Communications Port (COM2)
8	System CMOS/real time clock
14	Primary IDE Channel
30	Adaptec AIC-7899 Ultra160/m PCI SCSI Card
31	Adaptec AIC-7899 Ultra160/m PCI SCSI Card
28	Broadcom NetXtreme Gigabit Ethernet #2
29	Broadcom NetXtreme Gigabit Ethernet
16	cLAN Host Adapter

[Memory]

Range	Device	Status
0xA0000-0xBFFFF	PCI bus	OK
0xA0000-0xBFFFF	ATI Technologies Inc. RAGE XL PCI	OK
0xD0000-0xE7FFF	PCI bus	OK
0xFD000000-0xFEBFFFFFF	PCI bus	OK
0xFD000000-0xFEBFFFFFF	ATI Technologies Inc. RAGE XL PCI	OK
0xFEB80000-0xFEB80FFF	PCI Device	OK
0xFE102000-0xFE102FFF	PCI Device	OK
0xFEB00000-0xFEB7FFFF	PCI Device	OK
0xFE101000-0xFE101FFF	ATI Technologies Inc. RAGE XL PCI	OK
0x0000-0x9FFFF	System board	OK
0x100000-0x3FFFFFFF	System board	OK
0xF0000-0xFFFFF	System board	OK
0xFEC00000-0xFEC0FFFF	System board	OK
0xFEE00000-0xFEE0FFFF	System board	OK
0xFFE00000-0xFFFFFFF	System board	OK
0xFE100000-0xFE100FFF	Standard OpenHCD USB Host Controller	OK
0xF9000000-0xFADFFFFF	PCI bus	OK
0xFAC00000-0xFADFFFFF	PCI standard PCI-to-PCI bridge	OK
0xFACFF000-0xFACFFFFF	Adaptec AIC-7899 Ultra160/m PCI SCSI Card	OK
0xFACFE000-0xFACFEFFF	Adaptec AIC-7899 Ultra160/m PCI SCSI Card	OK
0xFAE00000-0xFAFFFFFF	PCI bus	OK
0xFAF10000-0xFAF1FFFF	Broadcom NetXtreme Gigabit Ethernet #2	OK
0xFAF00000-0xFAF0FFFF	Broadcom NetXtreme Gigabit Ethernet	OK
0xFB000000-0xFC3FFFFF	PCI bus	OK
0xFB000000-0xFC3FFFFF	cLAN Host Adapter	OK

```

0xFC300000-0xFC31FFFF cLAN Host Adapter OK
0xFC000000-0xFC1FFFFF cLAN Host Adapter OK
0xFC320000-0xFC32FFFF cLAN Host Adapter OK

```

[Components]

[ Following are sub-categories of this main category ]

[Multimedia]

[ Following are sub-categories of this main category ]

[Audio Codecs]

Codec	Manufacturer	Description	Status	File	Version	Size
Creation Date						
c:\winnt\system32\iac25_32.ax	Intel Corporation	Indeo® audio software	OK	C:\WINNT\System32\IAC25_32.AX	2.05.53	195.00 KB (199,680 bytes)
c:\winnt\system32\imaadp32.acm	Microsoft Corporation		OK	C:\WINNT\System32\IMAADP32.ACM	5.00.2134.1	16.27 KB (16,656 bytes)
c:\winnt\system32\msg723.acm	Microsoft Corporation		OK	C:\WINNT\System32\MSG723.ACM	4.4.3385	106.77 KB (109,328 bytes)
c:\winnt\system32\lhacm.acm	Microsoft Corporation		OK	C:\WINNT\System32\LHACM.ACM	4.4.3385	33.27 KB (34,064 bytes)
c:\winnt\system32\tssoft32.acm	DSP GROUP, INC.		OK	C:\WINNT\System32\TSSOFT32.ACM	1.01	9.27 KB (9,488 bytes)
c:\winnt\system32\msgsm32.acm	Microsoft Corporation		OK	C:\WINNT\System32\MSGSM32.ACM	5.00.2134.1	22.27 KB (22,800 bytes)
c:\winnt\system32\msg711.acm	Microsoft Corporation		OK	C:\WINNT\System32\MSG711.ACM	5.00.2134.1	10.27 KB (10,512 bytes)
c:\winnt\system32\msadp32.acm	Microsoft Corporation		OK	C:\WINNT\System32\MSADP32.ACM	5.00.2134.1	14.77 KB (15,120 bytes)

[Video Codecs]

Codec	Manufacturer	Description	Status	File	Version	Size
Creation Date						
c:\winnt\system32\ir50_32.dll	Intel Corporation	Indeo® video	OK	C:\WINNT\System32\IR50_32.DLL	R.5.10.15.2.55	737.50 KB (755,200 bytes)
c:\winnt\system32\msh263.drv	Microsoft Corporation		OK	C:\WINNT\System32\MSH263.DRV	4.4.3385	252.27 KB (258,320 bytes)
c:\winnt\system32\msh261.drv	Microsoft Corporation		OK	C:\WINNT\System32\MSH261.DRV	4.4.3385	163.77 KB (167,696 bytes)
c:\winnt\system32\msvidc32.dll	Microsoft Corporation		OK	C:\WINNT\System32\MSVIDC32.DLL	5.00.2134.1	27.27 KB (27,920 bytes)

```

c:\winnt\system32\iccvid.dll Radius Inc. OK
C:\WINNT\System32\ICCVID.DLL 1.10.0.6 108.00 KB (110,592 bytes) 12/7/1999 4:00:00 AM
c:\winnt\system32\msrle32.dll Microsoft Corporation OK
C:\WINNT\System32\MSRLE32.DLL 5.00.2134.1 10.77 KB (11,024 bytes) 12/7/1999 4:00:00 AM
c:\winnt\system32\ir32_32.dll Intel(R) Corporation OK
C:\WINNT\System32\IR32_32.DLL Not Available 194.50 KB (199,168 bytes) 12/7/1999 4:00:00 AM

```

[CD-ROM]

Item	Value
Drive D:	CD-ROM Drive
Description	CD-ROM Drive
Media Loaded	False
Media Type	CD-ROM
Name	TEAC CD-224E
Manufacturer	(Standard CD-ROM drives)
Status	OK
Transfer Rate	Not Available
SCSI Target ID	0
PNP Device ID	IDE\CDROMTEAC_CD-224E_____K.9A_____\5&3125DC91&0&0.0.0

[Sound Device]

Item	Value
No sound devices	

[Display]

Item	Value
Name	ATI Technologies Inc. RAGE XL PCI
PNP Device ID	PCI\VEN_1002&DEV_4752&SUBSYS_01211028&REV_27\3&13C0B0C5&0&70
Adapter Type	ATI RAGE XL PCI, ATI Technologies Inc. compatible
Adapter Description	ATI Technologies Inc. RAGE XL PCI
Adapter RAM	8.00 MB (8,388,608 bytes)
Installed Drivers	atidrab.dll
Driver Version	5.00.2179.1
INF File	display.inf (atirage3 section)
Color Planes	1
Color Table Entries	65536
Resolution	1024 x 768 x 60 hertz
Bits/Pixel	16

[Infrared]

Item	Value
No infrared devices	

[Input]

[ Following are sub-categories of this main category ]

[Keyboard]



Item Value  
Description Standard 101/102-Key or Microsoft Natural PS/2 Keyboard  
Name Enhanced (101- or 102-key)  
Layout 00000409  
PNP Device ID ACPI\PNP0303\4&25F73A82&0  
NumberOfFunctionKeys 12

[Pointing Device]

Item Value  
Hardware Type PS/2 Compatible Mouse  
Number of Buttons 5  
Status OK  
PNP Device ID ACPI\PNP0F13\4&25F73A82&0  
Power Management Supported False  
Double Click Threshold 6  
Handedness Right Handed Operation

[Modem]

Item Value  
No modems

[Network]

[ Following are sub-categories of this main category ]

[Adapter]

Item Value  
Name [00000000] RAS Async Adapter  
Adapter Type Not Available  
Product Name RAS Async Adapter  
Installed True  
PNP Device ID Not Available  
Last Reset 3/26/2003 6:56:55 AM  
Index 0  
Service Name AsyncMac  
IP Address Not Available  
IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled False  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address Not Available  
Service Name Not Available

Name [00000001] WAN Miniport (L2TP)  
Adapter Type Not Available  
Product Name WAN Miniport (L2TP)  
Installed True  
PNP Device ID ROOT\MS\_L2TPMINIPOINT\0000  
Last Reset 3/26/2003 6:56:55 AM  
Index 1  
Service Name Rasl2tp

IP Address Not Available  
IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled False  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address Not Available  
Service Name Rasl2tp  
Driver c:\winnt\system32\drivers\rasl2tp.sys (52112, 5.00.2195.4052)

Name [00000002] WAN Miniport (PPTP)  
Adapter Type Wide Area Network (WAN)  
Product Name WAN Miniport (PPTP)  
Installed True  
PNP Device ID ROOT\MS\_PPTPMINIPOINT\0000  
Last Reset 3/26/2003 6:56:55 AM  
Index 2  
Service Name PptpMiniport  
IP Address Not Available  
IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled False  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address 50:50:54:50:30:30  
Service Name PptpMiniport  
Driver c:\winnt\system32\drivers\raspptp.sys (47888, 5.00.2195.4080)

Name [00000003] Direct Parallel  
Adapter Type Not Available  
Product Name Direct Parallel  
Installed True  
PNP Device ID ROOT\MS\_PTMINIPOINT\0000  
Last Reset 3/26/2003 6:56:55 AM  
Index 3  
Service Name Raspti  
IP Address Not Available  
IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled False  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address Not Available  
Service Name Raspti  
Driver c:\winnt\system32\drivers\raspti.sys (16880, 5.00.2146.1)

Name [00000004] WAN Miniport (IP)  
Adapter Type Not Available  
Product Name WAN Miniport (IP)  
Installed True  
PNP Device ID ROOT\MS\_NDISWANIP\0000  
Last Reset 3/26/2003 6:56:55 AM  
Index 4  
Service Name NdisWan  
IP Address Not Available  
IP Subnet Not Available

Default IP Gateway Not Available  
DHCP Enabled False  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address Not Available  
Service Name NdisWan  
Driver c:\winnt\system32\drivers\ndiswan.sys (93104, 5.00.2195.5241)

Name [00000005] Broadcom NetXtreme Gigabit Ethernet  
Adapter Type Ethernet 802.3  
Product Name Broadcom NetXtreme Gigabit Ethernet  
Installed True  
PNP Device ID PCI\VEN\_14E4&DEV\_1645&SUBSYS\_01211028&REV\_15\3&172E68DD&0&40  
Last Reset 3/26/2003 6:56:55 AM  
Index 5  
Service Name b57w2k  
IP Address 192.1.1.1  
IP Subnet 255.255.255.0  
Default IP Gateway Not Available  
DHCP Enabled False  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address 00:06:5B:8C:9B:6F  
Service Name b57w2k  
IRQ Number 29  
Driver c:\winnt\system32\drivers\b57w2k.sys (77438, 2.67.0.0)

Name [00000006] Broadcom NetXtreme Gigabit Ethernet  
Adapter Type Ethernet 802.3  
Product Name Broadcom NetXtreme Gigabit Ethernet  
Installed True  
PNP Device ID PCI\VEN\_14E4&DEV\_1645&SUBSYS\_01211028&REV\_15\3&172E68DD&0&30  
Last Reset 3/26/2003 6:56:55 AM  
Index 6  
Service Name b57w2k  
IP Address 192.168.91.1  
IP Subnet 255.255.255.0  
Default IP Gateway Not Available  
DHCP Enabled False  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address 00:06:5B:8C:9B:6E  
Service Name b57w2k  
IRQ Number 28  
Driver c:\winnt\system32\drivers\b57w2k.sys (77438, 2.67.0.0)

Name [00000007] cLAN Host Adapter  
Adapter Type Ethernet 802.3  
Product Name cLAN Host Adapter  
Installed True  
PNP Device ID PCI\VEN\_135B&DEV\_0001&SUBSYS\_00000000&REV\_00\3&1070020&0&30  
Last Reset 3/26/2003 6:56:55 AM  
Index 7  
Service Name GNINDIS

IP Address Not Available  
IP Subnet Not Available  
Default IP Gateway Not Available  
DHCP Enabled True  
DHCP Server Not Available  
DHCP Lease Expires Not Available  
DHCP Lease Obtained Not Available  
MAC Address 00:90:FA:00:1D:12  
Service Name GNINDIS  
IRQ Number 16  
Driver c:\winnt\system32\drivers\gnindis.sys (22726, 4.2.0.75)

[Protocol]

Item Value  
Name MSAFD Tcpip [TCP/IP]  
ConnectionlessService False  
GuaranteesDelivery True  
GuaranteesSequencing True  
MaximumAddressSize 16 bytes  
MaximumMessageSize 0 bytes  
MessageOriented False  
MinimumAddressSize 16 bytes  
PseudoStreamOriented False  
SupportsBroadcasting False  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption False  
SupportsExpeditedData True  
SupportsGracefulClosing True  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

Name MSAFD Tcpip [UDP/IP]  
ConnectionlessService True  
GuaranteesDelivery False  
GuaranteesSequencing False  
MaximumAddressSize 16 bytes  
MaximumMessageSize 65467 bytes  
MessageOriented True  
MinimumAddressSize 16 bytes  
PseudoStreamOriented False  
SupportsBroadcasting True  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption False  
SupportsExpeditedData False  
SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting True

Name RSVP UDP Service Provider  
ConnectionlessService True  
GuaranteesDelivery False  
GuaranteesSequencing False  
MaximumAddressSize 16 bytes  
MaximumMessageSize 65467 bytes  
MessageOriented True

MinimumAddressSize 16 bytes  
PseudoStreamOriented False  
SupportsBroadcasting True  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption True  
SupportsExpeditedData False  
SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting True

Name RSVP TCP Service Provider  
ConnectionlessService False  
GuaranteesDelivery True  
GuaranteesSequencing True  
MaximumAddressSize 16 bytes  
MaximumMessageSize 0 bytes  
MessageOriented False  
MinimumAddressSize 16 bytes  
PseudoStreamOriented False  
SupportsBroadcasting False  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption True  
SupportsExpeditedData True  
SupportsGracefulClosing True  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT\_Tcpip\_{592704BD-A8EF-4DEB-AC45-BE32F7F359C3}] SEQPACKET 4  
ConnectionlessService False  
GuaranteesDelivery True  
GuaranteesSequencing True  
MaximumAddressSize 20 bytes  
MaximumMessageSize 64000 bytes  
MessageOriented True  
MinimumAddressSize 20 bytes  
PseudoStreamOriented False  
SupportsBroadcasting False  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption False  
SupportsExpeditedData False  
SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT\_Tcpip\_{592704BD-A8EF-4DEB-AC45-BE32F7F359C3}] DATAGRAM 4  
ConnectionlessService True  
GuaranteesDelivery False  
GuaranteesSequencing False  
MaximumAddressSize 20 bytes  
MaximumMessageSize 64000 bytes  
MessageOriented True  
MinimumAddressSize 20 bytes  
PseudoStreamOriented False  
SupportsBroadcasting True

SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption False  
SupportsExpeditedData False  
SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT\_Tcpip\_{3D55F2FD-CE2E-4072-8B10-42A97A6EA309}] SEQPACKET 3  
ConnectionlessService False  
GuaranteesDelivery True  
GuaranteesSequencing True  
MaximumAddressSize 20 bytes  
MaximumMessageSize 64000 bytes  
MessageOriented True  
MinimumAddressSize 20 bytes  
PseudoStreamOriented False  
SupportsBroadcasting False  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption False  
SupportsExpeditedData False  
SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT\_Tcpip\_{3D55F2FD-CE2E-4072-8B10-42A97A6EA309}] DATAGRAM 3  
ConnectionlessService True  
GuaranteesDelivery False  
GuaranteesSequencing False  
MaximumAddressSize 20 bytes  
MaximumMessageSize 64000 bytes  
MessageOriented True  
MinimumAddressSize 20 bytes  
PseudoStreamOriented False  
SupportsBroadcasting True  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption False  
SupportsExpeditedData False  
SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT\_Tcpip\_{9D20D885-9BA8-490D-AABB-1A03BEA0A5B9}] SEQPACKET 0  
ConnectionlessService False  
GuaranteesDelivery True  
GuaranteesSequencing True  
MaximumAddressSize 20 bytes  
MaximumMessageSize 64000 bytes  
MessageOriented True  
MinimumAddressSize 20 bytes  
PseudoStreamOriented False  
SupportsBroadcasting False  
SupportsConnectData False  
SupportsDisconnectData False

SupportsEncryption False  
SupportsExpeditedData False  
SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT\_Tcpip\_{9D20D885-9BA8-490D-AABB-1A03BEA0A5B9}] DATAGRAM 0  
ConnectionlessService True  
GuaranteesDelivery False  
GuaranteesSequencing False  
MaximumAddressSize 20 bytes  
MaximumMessageSize 64000 bytes  
MessageOriented True  
MinimumAddressSize 20 bytes  
PseudoStreamOriented False  
SupportsBroadcasting True  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption False  
SupportsExpeditedData False  
SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT\_Tcpip\_{429130B1-6084-46AD-A1DE-D9C2C11E8C8B}] SEQPACKET 1  
ConnectionlessService False  
GuaranteesDelivery True  
GuaranteesSequencing True  
MaximumAddressSize 20 bytes  
MaximumMessageSize 64000 bytes  
MessageOriented True  
MinimumAddressSize 20 bytes  
PseudoStreamOriented False  
SupportsBroadcasting False  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption False  
SupportsExpeditedData False  
SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT\_Tcpip\_{429130B1-6084-46AD-A1DE-D9C2C11E8C8B}] DATAGRAM 1  
ConnectionlessService True  
GuaranteesDelivery False  
GuaranteesSequencing False  
MaximumAddressSize 20 bytes  
MaximumMessageSize 64000 bytes  
MessageOriented True  
MinimumAddressSize 20 bytes  
PseudoStreamOriented False  
SupportsBroadcasting True  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption False  
SupportsExpeditedData False

SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT\_Tcpip\_{338997ED-371A-4B63-9093-DFA4D717C2D5}] SEQPACKET 2  
ConnectionlessService False  
GuaranteesDelivery True  
GuaranteesSequencing True  
MaximumAddressSize 20 bytes  
MaximumMessageSize 64000 bytes  
MessageOriented True  
MinimumAddressSize 20 bytes  
PseudoStreamOriented False  
SupportsBroadcasting False  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption False  
SupportsExpeditedData False  
SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

Name MSAFD NetBIOS [\Device\NetBT\_Tcpip\_{338997ED-371A-4B63-9093-DFA4D717C2D5}] DATAGRAM 2  
ConnectionlessService True  
GuaranteesDelivery False  
GuaranteesSequencing False  
MaximumAddressSize 20 bytes  
MaximumMessageSize 64000 bytes  
MessageOriented True  
MinimumAddressSize 20 bytes  
PseudoStreamOriented False  
SupportsBroadcasting True  
SupportsConnectData False  
SupportsDisconnectData False  
SupportsEncryption False  
SupportsExpeditedData False  
SupportsGracefulClosing False  
SupportsGuaranteedBandwidth False  
SupportsMulticasting False

#### [WinSock]

Item Value  
File c:\winnt\system32\winsock.dll  
Version 3.10  
Size 2.80 KB (2,864 bytes)  
  
File c:\winnt\system32\sock32.dll  
Version 5.00.2195.4874  
Size 21.27 KB (21,776 bytes)

#### [Ports]

[ Following are sub-categories of this main category ]

[Serial]

Item	Value
Name	COM1
Status	OK
PNP Device ID	ACPI\PNP0501\1
Maximum Input Buffer Size	0
Maximum Output Buffer Size	False
Settable Baud Rate	True
Settable Data Bits	True
Settable Flow Control	True
Settable Parity	True
Settable Parity Check	True
Settable Stop Bits	True
Settable RLSD	True
Supports RLSD	True
Supports 16 Bit Mode	False
Supports Special Characters	False
Baud Rate	9600
Bits/Byte	8
Stop Bits	1
Parity	None
Busy	0
Abort Read/Write on Error	0
Binary Mode Enabled	-1
Continue Xmit on XOff	0
CTS Outflow Control	0
Discard NULL Bytes	0
DSR Outflow Control	0
DSR Sensitivity	0
DTR Flow Control Type	Enable
EOF Character	0
Error Replace Character	0
Error Replacement Enabled	0
Event Character	0
Parity Check Enabled	0
RTS Flow Control Type	Enable
XOff Character	19
XOffXmit Threshold	512
XOn Character	17
XOnXmit Threshold	2048
XOnXOff InFlow Control	0
XOnXOff OutFlow Control	0
IRQ Number	4
I/O Port	0x03F8-0x03FF
Driver	c:\winnt\system32\drivers\serial.sys (62512, 5.00.2195.5080)

Name	COM2
Status	OK
PNP Device ID	ACPI\PNP0501\2
Maximum Input Buffer Size	0
Maximum Output Buffer Size	False
Settable Baud Rate	True
Settable Data Bits	True
Settable Flow Control	True
Settable Parity	True
Settable Parity Check	True
Settable Stop Bits	True
Settable RLSD	True

Supports RLSD	True
Supports 16 Bit Mode	False
Supports Special Characters	False
Baud Rate	9600
Bits/Byte	8
Stop Bits	1
Parity	None
Busy	0
Abort Read/Write on Error	0
Binary Mode Enabled	-1
Continue Xmit on XOff	0
CTS Outflow Control	0
Discard NULL Bytes	0
DSR Outflow Control	0
DSR Sensitivity	0
DTR Flow Control Type	Enable
EOF Character	0
Error Replace Character	0
Error Replacement Enabled	0
Event Character	0
Parity Check Enabled	0
RTS Flow Control Type	Enable
XOff Character	19
XOffXmit Threshold	512
XOn Character	17
XOnXmit Threshold	2048
XOnXOff InFlow Control	0
XOnXOff OutFlow Control	0
IRQ Number	3
I/O Port	0x02F8-0x02FF
Driver	c:\winnt\system32\drivers\serial.sys (62512, 5.00.2195.5080)

[Parallel]

Item	Value
No parallel port information	

[Storage]

[ Following are sub-categories of this main category ]

[Drives]

Item	Value
Drive A:	
Description	3 1/2 Inch Floppy Drive
Drive C:	
Description	Local Fixed Disk
Compressed	False
File System	NTFS
Size	16.95 GB (18,202,509,312 bytes)
Free Space	13.60 GB (14,600,101,888 bytes)
Volume Name	
Volume Serial Number	C0E2039E
Partition	Disk #0, Partition #0
Partition Size	16.95 GB (18,202,512,384 bytes)
Starting Offset	32256 bytes

Drive Description Disk drive  
 Drive Manufacturer (Standard disk drives)  
 Drive Model FUJITSU MAN3184MC SCSI Disk Device  
 Drive BytesPerSector 512  
 Drive MediaLoaded True  
 Drive MediaType Fixed hard disk media  
 Drive Partitions 1  
 Drive SCSIbus 0  
 Drive SCSILogicalUnit 0  
 Drive SCSIPort 2  
 Drive SCsITargetId 0  
 Drive SectorsPerTrack 63  
 Drive Size 18202544640 bytes  
 Drive TotalCylinders 2213  
 Drive TotalSectors 35551845  
 Drive TotalTracks 564315  
 Drive TracksPerCylinder 255

[SCSI]

Item Value  
 Name Adaptec AIC-7899 Ultra160/m PCI SCSI Card  
 Caption Adaptec AIC-7899 Ultra160/m PCI SCSI Card  
 Driver adpu160m  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_00CF&SUBSYS\_01211028&REV\_01\4&22300438&0&3040  
 Device ID  
 PCI\VEN\_9005&DEV\_00CF&SUBSYS\_01211028&REV\_01\4&22300438&0&3040  
 Device Map Not Available  
 Index Not Available  
 Max Number Controlled Not Available  
 IRQ Number 30  
 I/O Port 0xCC00-0xCCFF  
 Driver c:\winnt\system32\drivers\adpu160m.sys (64432, v3.10a)

Name Adaptec AIC-7899 Ultra160/m PCI SCSI Card  
 Caption Adaptec AIC-7899 Ultra160/m PCI SCSI Card  
 Driver adpu160m  
 Status OK  
 PNP Device ID  
 PCI\VEN\_9005&DEV\_00CF&SUBSYS\_01211028&REV\_01\4&22300438&0&3140  
 Device ID  
 PCI\VEN\_9005&DEV\_00CF&SUBSYS\_01211028&REV\_01\4&22300438&0&3140  
 Device Map Not Available  
 Index Not Available  
 Max Number Controlled Not Available  
 IRQ Number 31  
 I/O Port 0xC800-0xC8FF  
 Driver c:\winnt\system32\drivers\adpu160m.sys (64432, v3.10a)

[Printing]

Name Port Name Server Name  
 No printing information

[Problem Devices]

Device PNP Device ID Error Code  
 PCI Device  
 PCI\VEN\_1028&DEV\_000C&SUBSYS\_000C1028&REV\_00\3&13C0B0C5&0&2028  
 PCI Device  
 PCI\VEN\_1028&DEV\_0008&SUBSYS\_00081028&REV\_00\3&13C0B0C5&0&2128  
 PCI Device  
 PCI\VEN\_1028&DEV\_000D&SUBSYS\_000D1028&REV\_00\3&13C0B0C5&0&2228

[USB]

Device PNP Device ID  
 Standard OpenHCD USB Host Controller  
 PCI\VEN\_1166&DEV\_0220&SUBSYS\_02201166&REV\_05\3&13C0B0C5&0&7A  
 USB Root Hub USB\ROOT\_HUB\4&1A0F8909&0

[Software Environment]

[ Following are sub-categories of this main category ]

[Drivers]

Name	Description	File	Type	Started	Start Mode	State	Status
abiosdsk	Abiosdsk		Not Available	Kernel Driver	False		
abp480n5	abp480n5		Not Available	Kernel Driver	False		
acpi	Microsoft ACPI Driver	c:\winnt\system32\drivers\acpi.sys	Kernel Driver	True	Boot	Running	OK
acpiec	ACPIEC	c:\winnt\system32\drivers\acpiec.sys	Kernel Driver	False	Normal	False	False
adpu160m	adpu160m	c:\winnt\system32\drivers\adpu160m.sys	Kernel Driver	True	Boot	Running	OK
afd	AFD Networking Support Environment	c:\winnt\system32\drivers\afd.sys	Kernel Driver	True	Normal	False	True
aha154x	Aha154x		Not Available	Kernel Driver	False	Disabled	
aic116x	aic116x		Not Available	Kernel Driver	False	Disabled	
aic78u2	aic78u2		Not Available	Kernel Driver	False	Disabled	
aic78xx	aic78xx		Not Available	Kernel Driver	False	Disabled	
ami0nt	ami0nt		Not Available	Kernel Driver	False	Disabled	
amsint	amsint		Not Available	Kernel Driver	False	Disabled	
asc	asc		Not Available	Kernel Driver	False	Disabled	
asc3350p	asc3350p		Not Available	Kernel Driver	False	Disabled	
asc3550	asc3550		Not Available	Kernel Driver	False	Disabled	

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asyncmac RAS Asynchronous Media Driver
c:\winnt\system32\drivers\asyncmac.sys Kernel Driver False
Manual Stopped OK Normal False
atapi Standard IDE/ESDI Hard Disk Controller
c:\winnt\system32\drivers\atapi.sys Kernel Driver True Boot
Running OK Normal False True
atdisk Atdisk Not Available Kernel Driver False Disabled
Stopped OK Ignore False False
atirage3 atirage3 c:\winnt\system32\drivers\atimpab.sys Kernel
Driver True Manual Running OK Ignore False True
atmarpc ATM ARP Client Protocol
c:\winnt\system32\drivers\atmarpc.sys Kernel Driver False Manual
Stopped OK Normal False False
audstub Audio Stub Driver c:\winnt\system32\drivers\audstub.sys Kernel
Driver True Manual Running OK Normal False True
b57w2k Broadcom NetXtreme Gigabit Ethernet
c:\winnt\system32\drivers\b57w2k.sys Kernel Driver True Manual
Running OK Normal False True
beep Beep c:\winnt\system32\drivers\beep.sys Kernel Driver True
System Running OK Normal False True
buslogic BusLogic Not Available Kernel Driver False
Disabled Stopped OK Normal False False
cd20xrnt cd20xrnt Not Available Kernel Driver False
Disabled Stopped OK Normal False False
cdaudio Cdaudio c:\winnt\system32\drivers\cdaudio.sys Kernel Driver False
System Stopped OK Ignore False False
cdfs Cdfs c:\winnt\system32\drivers\cdfs.sys File System Driver
True Disabled Running OK Normal False True
cdrom CD-ROM Driver c:\winnt\system32\drivers\cdrom.sys Kernel Driver
True System Running OK Normal False True
changer Changer Not Available Kernel Driver False System Stopped OK
Ignore False False
cpqarray Cpqarray Not Available Kernel Driver False
Disabled Stopped OK Normal False False
cpqarray2 cpqarray2 Not Available Kernel Driver False
Disabled Stopped OK Normal False False
cpqfcalm cpqfcalm Not Available Kernel Driver False
Disabled Stopped OK Normal False False
cpqfws2e cpqfws2e Not Available Kernel Driver False
Disabled Stopped OK Normal False False
dac960nt dac960nt Not Available Kernel Driver False
Disabled Stopped OK Normal False False
deckzpsx deckzpsx Not Available Kernel Driver False
Disabled Stopped OK Normal False False
dfsdriver DfsDriver c:\winnt\system32\drivers\dfs.sys File
System Driver True Boot Running OK Normal False True
disk Disk Driver c:\winnt\system32\drivers\disk.sys Kernel Driver
True Boot Running OK Normal False True
diskperf Diskperf c:\winnt\system32\drivers\diskperf.sys
Kernel Driver True Boot Running OK Normal False True
dmboot dmboot c:\winnt\system32\drivers\dmboot.sys Kernel Driver False
Disabled Stopped OK Normal False False
dmio Logical Disk Manager Driver c:\winnt\system32\drivers\dmio.sys
Kernel Driver True Boot Running OK Normal False True
dmload dmload c:\winnt\system32\drivers\dmload.sys Kernel Driver True
Boot Running OK Normal False True
efs EFS c:\winnt\system32\drivers\efs.sys File System Driver
True Disabled Running OK Normal False True

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fastfat Fastfat c:\winnt\system32\drivers\fastfat.sys File System Driver
True Disabled Running OK Normal False True
fd16_700 Fd16_700 Not Available Kernel Driver False
Disabled Stopped OK Normal False False
fdc Floppy Disk Controller Driver c:\winnt\system32\drivers\fdc.sys
Kernel Driver True Manual Running OK Normal False True
fips Fips c:\winnt\system32\drivers\fips.sys Kernel Driver True
Auto Running OK Normal False True
fireport fireport Not Available Kernel Driver False
Disabled Stopped OK Normal False False
flashpnt flashpnt Not Available Kernel Driver False
Disabled Stopped OK Normal False False
flpydisk Floppy Disk Driver
c:\winnt\system32\drivers\flpydisk.sys Kernel Driver True
Manual Running OK Normal False True
ftdisk Volume Manager Driver c:\winnt\system32\drivers\ftdisk.sys Kernel
Driver True Boot Running OK Normal False True
gnindis cLAN NDIS Driver c:\winnt\system32\drivers\gnindis.sys Kernel
Driver True Auto Running OK Normal False True
gnivia cLAN VIA Driver c:\winnt\system32\drivers\gnivia.sys Kernel
Driver True Auto Running OK Normal False True
gpc Generic Packet Classifier c:\winnt\system32\drivers\msgpc.sys
Kernel Driver True Manual Running OK Normal False True
i8042prt i8042 Keyboard and PS/2 Mouse Port Driver
c:\winnt\system32\drivers\i8042prt.sys Kernel Driver True
System Running OK Normal False True
ini910u ini910u Not Available Kernel Driver False Disabled
Stopped OK Normal False False
intelide IntelIde Not Available Kernel Driver False
Disabled Stopped OK Normal False False
ipfilterdriver IP Traffic Filter Driver
c:\winnt\system32\drivers\ipfltdrv.sys Kernel Driver False
Manual Stopped OK Normal False False
ipinip IP in IP Tunnel Driver c:\winnt\system32\drivers\ipinip.sys Kernel
Driver False Manual Stopped OK Normal False False
ipnat IP Network Address Translator c:\winnt\system32\drivers\ipnat.sys
Kernel Driver False Manual Stopped OK Normal False False
ipsec IPSEC driver c:\winnt\system32\drivers\ipsec.sys Kernel Driver
False Manual Stopped OK Normal False False
ipsraidn ipsraidn Not Available Kernel Driver False
Disabled Stopped OK Normal False False
irenum IR Enumerator Service c:\winnt\system32\drivers\irenum.sys Kernel
Driver False Manual Stopped OK Normal False False
isapnp PnP ISA/EISA Bus Driver c:\winnt\system32\drivers\isapnp.sys
Kernel Driver True Boot Running OK Critical False
True
kbdclass Keyboard Class Driver
c:\winnt\system32\drivers\kbdclass.sys Kernel Driver True
System Running OK Normal False True
ksecdd KSecDD c:\winnt\system32\drivers\ksecdd.sys Kernel Driver True
Boot Running OK Normal False True
lbrtfdc lbrtfdc Not Available Kernel Driver False System Stopped OK
Ignore False False
lp6nds35 lp6nds35 Not Available Kernel Driver False
Disabled Stopped OK Normal False False
mnmdd mnmdd c:\winnt\system32\drivers\mnmdd.sys Kernel Driver True
System Running OK Ignore False True
modem Modem c:\winnt\system32\drivers\modem.sys Kernel Driver False
Manual Stopped OK Ignore False False

```





```

serenum Serenum Filter Driver c:\winnt\system32\drivers\serenum.sys Kernel
Driver True Manual Running OK Normal False True
serial Serial port driver c:\winnt\system32\drivers\serial.sys Kernel
Driver True System Running OK Ignore False True
sfloppy Sfloppy c:\winnt\system32\drivers\sfloppy.sys Kernel Driver False
System Stopped OK Ignore False False
sglfb sglfb Not Available Kernel Driver False System Stopped OK
Normal False False
simbad Simbad Not Available Kernel Driver False Disabled
Stopped OK Normal False False
sparrow Sparrow Not Available Kernel Driver False Disabled
Stopped OK Normal False False
spud Special Purpose Utility Driver
c:\winnt\system32\drivers\spud.sys Kernel Driver True Manual
Running OK Normal False True
srv Srv c:\winnt\system32\drivers\srv.sys File System Driver
True Manual Running OK Normal False True
swenum Software Bus Driver c:\winnt\system32\drivers\swenum.sys Kernel
Driver True Manual Running OK Normal False True
symc810 symc810 Not Available Kernel Driver False Disabled
Stopped OK Normal False False
symc8xx symc8xx Not Available Kernel Driver False Disabled
Stopped OK Normal False False
sym_hi sym_hi Not Available Kernel Driver False Disabled
Stopped OK Normal False False
tcpip TCP/IP Protocol Driver c:\winnt\system32\drivers\tcpip.sys Kernel
Driver True System Running OK Normal False True
tdasync TDASYNC c:\winnt\system32\drivers\tdasync.sys Kernel Driver False
Manual Stopped OK Ignore False False
tdipx TDIPX c:\winnt\system32\drivers\tdipx.sys Kernel Driver False
Manual Stopped OK Ignore False False
tdnetb TDNETB c:\winnt\system32\drivers\tdnetb.sys Kernel Driver False
Manual Stopped OK Ignore False False
tdpipe TDPIPE c:\winnt\system32\drivers\tdpipe.sys Kernel Driver False
Manual Stopped OK Ignore False False
tdspix TDSPIX c:\winnt\system32\drivers\tdspix.sys Kernel Driver False
Manual Stopped OK Ignore False False
tdtcp TDTCP c:\winnt\system32\drivers\tdtcp.sys Kernel Driver True
Manual Running OK Ignore False True
termdd Terminal Device Driver c:\winnt\system32\drivers\termdd.sys Kernel
Driver True Auto Running OK Normal False True
tga tga Not Available Kernel Driver False System Stopped OK
Ignore False False
udfs Udfs c:\winnt\system32\drivers\udfs.sys File System Driver
False Disabled Stopped OK Normal False False
ultra66 ultra66 Not Available Kernel Driver False Disabled
Stopped OK Normal False False
update Microcode Update Driver c:\winnt\system32\drivers\update.sys
Kernel Driver True Manual Running OK Normal False True
usbhub Microsoft USB Standard Hub Driver
c:\winnt\system32\drivers\usbhub.sys Kernel Driver True Manual
Running OK Normal False True
vgasave VgaSave c:\winnt\system32\drivers\vga.sys Kernel Driver True
System Running OK Ignore False True
wanarp Remote Access IP ARP Driver c:\winnt\system32\drivers\wanarp.sys
Kernel Driver True Manual Running OK Normal False True
wdica WDICA Not Available Kernel Driver False Manual Stopped OK
Ignore False False

```

[Environment Variables]

Variable	Value	User Name
ComSpec	%SystemRoot%\system32\cmd.exe	<SYSTEM>
Os2LibPath	%SystemRoot%\system32\os2\dll;	<SYSTEM>
Path	%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;C:\P rogram Files\Microsoft SQL Server\80\Tools\BINN	<SYSTEM>
windir	%SystemRoot%	<SYSTEM>
OS	Windows_NT	<SYSTEM>
PROCESSOR_ARCHITECTURE	x86	<SYSTEM>
PROCESSOR_LEVEL	15	<SYSTEM>
PROCESSOR_IDENTIFIER	x86 Family 15 Model 2 Stepping 4, GenuineIntel	<SYSTEM>
PROCESSOR_REVISION	0204	<SYSTEM>
NUMBER_OF_PROCESSORS	2	<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	CLIENT1\Administrator
TMP	%USERPROFILE%\Local Settings\Temp	CLIENT1\Administrator

[Jobs]

[ Following are sub-categories of this main category ]

[Print]

Document	Size	Owner	Notify	Status	Time Submitted	Start Time
Until Time	Elapsed Time	Pages Printed	Job ID	Priority		
Parameters	Driver Name	Print Processor	Host	Print		
Queue	Data Type	Name				
Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Unknown						

[Network Connections]

Local Name	Remote Name	Type	Status	User Name
No network connections information				

[Running Tasks]

Name	Path	Process ID	Priority	Min Working Set	Max
Working Set	Start Time	Version	Size	File Date	
system	idle process	Not Available	0	0	Not Available
Available	Not Available	Unknown	Unknown	Unknown	Unknown
system	Not Available	8	8	0	1413120
Not Available	Unknown	Unknown	Unknown	Unknown	Unknown
smss.exe	c:\winnt\system32\smss.exe	180	11	204800	
1413120	3/26/2003 2:57:57 PM	5.00.2195.5382	44.77 KB	(45,840	
bytes)	12/7/1999 4:00:00 AM				
csrss.exe	Not Available	208	13	Not Available	Not Available
3/26/2003 2:57:59 PM	Unknown	Unknown	Unknown	Unknown	Unknown
winlogon.exe	c:\winnt\system32\winlogon.exe	204	13	204800	
1413120	3/26/2003 2:58:00 PM	5.00.2195.5386	174.77 KB	(178,960	
bytes)	11/14/2002 9:53:44 PM				

```

services.exe c:\winnt\system32\services.exe 260 9 204800
1413120 3/26/2003 2:58:01 PM 5.00.2195.3940 86.77 KB (88,848
bytes) 12/7/1999 4:00:00 AM
lsass.exe c:\winnt\system32\lsass.exe 272 9 204800
1413120 3/26/2003 2:58:01 PM 5.00.2195.5430 32.77 KB (33,552
bytes) 12/7/1999 4:00:00 AM
termsrv.exe c:\winnt\system32\termsrv.exe 392 10 204800
1413120 3/26/2003 2:58:02 PM 5.00.2195.5276 138.77 KB (142,096
bytes) 11/14/2002 9:53:42 PM
gnconmgr.exe c:\winnt\system32\gnconmgr.exe 456 8 204800
1413120 3/26/2003 2:58:03 PM 4.2.0.75 168.05 KB (172,079
bytes) 2/18/2003 9:21:16 AM
svchost.exe c:\winnt\system32\svchost.exe 496 8 204800
1413120 3/26/2003 2:58:03 PM 5.00.2134.1 7.77 KB (7,952 bytes)
12/7/1999 4:00:00 AM
msdtc.exe c:\winnt\system32\msdtc.exe 524 8 204800
1413120 3/26/2003 2:58:04 PM 1999.9.3421.3 6.77 KB (6,928 bytes)
11/14/2002 12:44:42 PM
svchost.exe c:\winnt\system32\svchost.exe 648 8 204800
1413120 3/26/2003 2:58:05 PM 5.00.2134.1 7.77 KB (7,952 bytes)
12/7/1999 4:00:00 AM
mnmsrvc.exe c:\winnt\system32\mnmsrvc.exe 672 8 204800
1413120 3/26/2003 2:58:05 PM 4.4.3385 21.27 KB (21,776
bytes) 11/14/2002 8:47:09 PM
regsvc.exe c:\winnt\system32\regsvc.exe 688 8 204800
1413120 3/26/2003 2:58:05 PM 5.00.2195.3649 65.27 KB (66,832
bytes) 11/14/2002 9:53:37 PM
mstask.exe c:\winnt\system32\mstask.exe 700 8 204800
1413120 3/26/2003 2:58:05 PM 4.71.2195.1 115.77 KB (118,544
bytes) 11/14/2002 9:53:29 PM
winmgmt.exe c:\winnt\system32\wbem\winmgmt.exe 768 8 204800
1413120 3/26/2003 2:58:06 PM 1.50.1085.0070 192.08 KB (196,685
bytes) 11/14/2002 9:53:50 PM
explorer.exe c:\winnt\explorer.exe 1008 8 204800 1413120
3/26/2003 2:59:07 PM 5.00.3502.5321 237.27 KB (242,960 bytes)
11/14/2002 9:53:45 PM
rhostsrvr.exe c:\rhost\rhostsrvr.exe 932 8 204800 1413120
3/26/2003 2:59:08 PM Not Available 54.50 KB (55,808 bytes)
10/8/2002 4:29:32 PM
taskmgr.exe c:\winnt\system32\taskmgr.exe 412 13 204800
1413120 3/26/2003 3:00:59 PM 5.00.2137.1 85.77 KB (87,824
bytes) 12/7/1999 4:00:00 AM
dllhost.exe Not Available 916 8 Not Available Not Available
3/26/2003 3:02:02 PM Unknown Unknown Unknown
rsrvp.exe c:\winnt\system32\rsrvp.exe 1412 8 204800
1413120 3/27/2003 1:03:51 PM 5.00.2167.1 172.77 KB (176,912
bytes) 12/7/1999 4:00:00 AM
msinfo32.exe c:\program files\common files\microsoft
shared\msinfo\msinfo32.exe 836 8 204800 1413120 3/27/2003
1:11:03 PM 5.00.2134.1 15.77 KB (16,144 bytes) 11/14/2002
8:47:06 PM

```

[Loaded Modules]

Name	Version	Size	File Date	Manufacturer	Path
wbemprox.dll	1.50.1085.0045	40.08 KB	(41,040 bytes)		11/14/2002 9:53:50 PM
cabinet.dll	5.00.2147.1	54.77 KB	(56,080 bytes)		12/7/1999 4:00:00 AM

```

msinfo32.dll 5.00.2195.4601 312.27 KB (319,760 bytes) 11/14/2002
9:53:51 PM Microsoft Corporation c:\program files\common
files\microsoft shared\msinfo\msinfo32.dll
mfc42u.dll 6.00.8665.0 972.05 KB (995,384 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\mfc42u.dll
msinfo32.exe 5.00.2134.1 15.77 KB (16,144 bytes) 11/14/2002
8:47:06 PM Microsoft Corporation c:\program files\common
files\microsoft shared\msinfo\msinfo32.exe
traffic.dll 5.00.2139.1 30.77 KB (31,504 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\traffic.dll
rsrvp.exe 5.00.2167.1 172.77 KB (176,912 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\rsrvp.exe
util.dll 5.00.2153.1 25.77 KB (26,384 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\util.dll
vdmdbg.dll 5.00.2134.1 29.27 KB (29,968 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\vdmdbg.dll
taskmgr.exe 5.00.2137.1 85.77 KB (87,824 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\taskmgr.exe
rhostsrvr.exe Not Available 54.50 KB (55,808 bytes) 10/8/2002
4:29:32 PM Not Available c:\rhost\rhostsrvr.exe
shdoclc.dll 5.00.3502.5039 324.50 KB (332,288 bytes) 11/14/2002
9:53:39 PM Microsoft Corporation c:\winnt\system32\shdoclc.dll
comdlg32.dll 5.00.3315.3727 221.27 KB (226,576 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\comdlg32.dll
mstask.dll 4.71.2195.1 214.27 KB (219,408 bytes) 11/14/2002
9:53:29 PM Microsoft Corporation c:\winnt\system32\mstask.dll
wininet.dll 5.00.3502.4619 450.77 KB (461,584 bytes) 11/14/2002
9:53:44 PM Microsoft Corporation c:\winnt\system32\wininet.dll
urlmon.dll 5.00.3502.5400 442.27 KB (452,880 bytes) 11/14/2002
9:53:43 PM Microsoft Corporation c:\winnt\system32?urlmon.dll
browser.dll 5.00.3502.4373 34.50 KB (35,328 bytes) 11/14/2002
9:53:10 PM Microsoft Corporation c:\winnt\system32\browseui.dll
mydocs.dll 5.00.3315.4065 55.27 KB (56,592 bytes) 11/14/2002
9:53:31 PM Microsoft Corporation c:\winnt\system32\mydocs.dll
ntshui.dll 5.00.2134.1 46.77 KB (47,888 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\ntshui.dll
linkinfo.dll 5.00.2134.1 15.77 KB (16,144 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\linkinfo.dll
msi.dll 2.0.2600.1 1.90 MB (1,991,168 bytes) 11/14/2002 9:53:27 PM
Microsoft Corporation c:\winnt\system32\msi.dll
powrprof.dll 5.00.3502.5305 13.27 KB (13,584 bytes) 11/14/2002
9:53:36 PM Microsoft Corporation c:\winnt\system32\powrprof.dll
batmeter.dll 5.00.3502.5305 20.27 KB (20,752 bytes) 11/14/2002
9:53:10 PM Microsoft Corporation c:\winnt\system32\batmeter.dll
stobject.dll 5.00.2195.4455 79.27 KB (81,168 bytes) 11/14/2002
9:53:41 PM Microsoft Corporation c:\winnt\system32\stobject.dll
webcheck.dll 5.00.3315.3727 250.77 KB (256,784 bytes) 11/14/2002
9:53:44 PM Microsoft Corporation c:\winnt\system32\webcheck.dll
browseui.dll 5.00.3502.4373 791.27 KB (810,256 bytes) 11/14/2002
9:53:10 PM Microsoft Corporation c:\winnt\system32\browseui.dll
shdocvw.dll 5.00.3502.5400 1.05 MB (1,105,168 bytes) 11/14/2002
9:53:39 PM Microsoft Corporation c:\winnt\system32\shdocvw.dll
explorer.exe 5.00.3502.5321 237.27 KB (242,960 bytes) 11/14/2002
9:53:45 PM Microsoft Corporation c:\winnt\explorer.exe
netui1.dll 5.00.2134.1 210.27 KB (215,312 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\netui1.dll
netui0.dll 5.00.2195.4874 70.77 KB (72,464 bytes) 11/14/2002
9:53:32 PM Microsoft Corporation c:\winnt\system32\netui0.dll

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ntlanman.dll 5.00.2195.5428 35.27 KB (36,112 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\ntlanman.dll  
 rapilib.dll 5.00.2195.4874 24.77 KB (25,360 bytes) 11/14/2002  
 9:53:36 PM Microsoft Corporation c:\winnt\system32\rapilib.dll  
 rsvpsp.dll 5.00.2195.4874 75.27 KB (77,072 bytes) 11/14/2002  
 9:53:38 PM Microsoft Corporation c:\winnt\system32\rsvpsp.dll  
 perfos.dll 5.00.2155.1 21.27 KB (21,776 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\perfos.dll  
 psapi.dll 5.00.2134.1 28.27 KB (28,944 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\psapi.dll  
 wshnetbs.dll 5.00.2134.1 7.77 KB (7,952 bytes) 12/7/1999 4:00:00 AM  
 Microsoft Corporation c:\winnt\system32\wshnetbs.dll  
 ntmarta.dll 5.00.2195.4836 99.77 KB (102,160 bytes) 11/14/2002  
 9:53:33 PM Microsoft Corporation c:\winnt\system32\ntmarta.dll  
 provthrd.dll 1.50.1085.0000 68.07 KB (69,708 bytes) 11/14/2002  
 8:46:58 PM Microsoft Corporation c:\winnt\system32\wbem\provthrd.dll  
 ntevt.dll 1.50.1085.0072 192.06 KB (196,671 bytes) 11/14/2002  
 9:53:49 PM Microsoft Corporation c:\winnt\system32\wbem\ntevt.dll  
 framedyn.dll 1.50.1085.0076 164.07 KB (168,009 bytes) 11/14/2002  
 9:53:48 PM Microsoft Corporation c:\winnt\system32\wbem\framedyn.dll  
 cimwin32.dll 1.50.1085.0073 1.04 MB (1,085,520 bytes) 11/14/2002  
 9:53:48 PM Microsoft Corporation c:\winnt\system32\wbem\cimwin32.dll  
 wbemsvc.dll 1.50.1085.0007 40.07 KB (41,036 bytes) 11/14/2002  
 9:53:50 PM Microsoft Corporation c:\winnt\system32\wbem\wbemsvc.dll  
 wbemess.dll 1.50.1085.0074 364.07 KB (372,804 bytes) 11/14/2002  
 9:53:50 PM Microsoft Corporation c:\winnt\system32\wbem\wbemess.dll  
 fastprox.dll 1.50.1085.0056 144.08 KB (147,536 bytes) 11/14/2002  
 9:53:48 PM Microsoft Corporation c:\winnt\system32\wbem\fastprox.dll  
 wbemcore.dll 1.50.1085.0085 628.07 KB (643,146 bytes) 11/14/2002  
 9:53:49 PM Microsoft Corporation c:\winnt\system32\wbem\wbemcore.dll  
 wbemcomm.dll 1.50.1085.0077 692.07 KB (708,675 bytes) 11/14/2002  
 9:53:49 PM Microsoft Corporation c:\winnt\system32\wbem\wbemcomm.dll  
 winmgmt.exe 1.50.1085.0070 192.08 KB (196,685 bytes) 11/14/2002  
 9:53:50 PM Microsoft Corporation c:\winnt\system32\wbem\winmgmt.exe  
 msidle.dll 5.00.2920.0000 6.27 KB (6,416 bytes) 12/7/1999 4:00:00 AM  
 Microsoft Corporation c:\winnt\system32\msidle.dll  
 mstask.exe 4.71.2195.1 115.77 KB (118,544 bytes) 11/14/2002  
 9:53:29 PM Microsoft Corporation c:\winnt\system32\mstask.exe  
 regsvc.exe 5.00.2195.3649 65.27 KB (66,832 bytes) 11/14/2002  
 9:53:37 PM Microsoft Corporation c:\winnt\system32\regsvc.exe  
 dcap32.dll 4.4.3385 35.77 KB (36,624 bytes) 11/14/2002  
 8:47:09 PM Microsoft Corporation c:\program  
 files\netmeeting\dcap32.dll  
 msvfw32.dll 5.00.2134.1 113.77 KB (116,496 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\msvfw32.dll  
 msacm32.dll 5.00.2134.1 65.27 KB (66,832 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\msacm32.dll  
 nac.dll 4.4.3385 196.77 KB (201,488 bytes) 11/14/2002 8:47:08 PM  
 Microsoft Corporation c:\program files\netmeeting\nac.dll  
 callcont.dll 4.4.3385 383.77 KB (392,976 bytes) 11/14/2002  
 9:53:56 PM Microsoft Corporation c:\program  
 files\netmeeting\callcont.dll  
 h323cc.dll 4.4.3385 39.27 KB (40,208 bytes) 11/14/2002  
 8:47:08 PM Microsoft Corporation c:\program  
 files\netmeeting\h323cc.dll  
 nmasnt.dll 4.4.3385 8.77 KB (8,976 bytes) 11/14/2002 8:47:08 PM  
 Microsoft Corporation c:\program files\netmeeting\nmasnt.dll  
 nmas.dll 4.4.3385 207.27 KB (212,240 bytes) 11/14/2002  
 8:47:08 PM Microsoft Corporation c:\program files\netmeeting\nmas.dll

mst120.dll 4.4.3385 241.77 KB (247,568 bytes) 11/14/2002  
 9:53:57 PM Microsoft Corporation c:\program  
 files\netmeeting\mst120.dll  
 nmcom.dll 4.4.3385 60.77 KB (62,224 bytes) 11/14/2002  
 9:53:57 PM Microsoft Corporation c:\program  
 files\netmeeting\nmcom.dll  
 mnmsrvc.exe 4.4.3385 21.27 KB (21,776 bytes) 11/14/2002  
 8:47:09 PM Microsoft Corporation c:\winnt\system32\mnmsrvc.exe  
 rasdlg.dll 5.00.2195.5438 515.77 KB (528,144 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\rasdlg.dll  
 netcfgx.dll 5.00.2195.4874 534.77 KB (547,600 bytes) 11/14/2002  
 9:53:31 PM Microsoft Corporation c:\winnt\system32\netcfgx.dll  
 rasmans.dll 5.00.2195.5436 149.27 KB (152,848 bytes) 11/14/2002  
 9:53:36 PM Microsoft Corporation c:\winnt\system32\rasmans.dll  
 wmi.dll 5.00.2191.1 6.27 KB (6,416 bytes) 12/7/1999 4:00:00 AM  
 Microsoft Corporation c:\winnt\system32\wmi.dll  
 netshell.dll 5.00.2195.5431 457.77 KB (468,752 bytes) 11/14/2002  
 9:53:32 PM Microsoft Corporation c:\winnt\system32\netshell.dll  
 netman.dll 5.00.2195.5282 89.27 KB (91,408 bytes) 11/14/2002  
 9:53:32 PM Microsoft Corporation c:\winnt\system32\netman.dll  
 sens.dll 5.00.2163.1 36.77 KB (37,648 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\sens.dll  
 es.dll 2000.2.3497.0 225.27 KB (230,672 bytes) 11/14/2002 9:53:17 PM  
 Microsoft Corporation c:\winnt\system32\es.dll  
 mtxoci.dll 2000.2.3497.0 103.77 KB (106,256 bytes) 11/14/2002  
 9:53:31 PM Microsoft Corporation c:\winnt\system32\mtxoci.dll  
 resutils.dll 5.00.2195.5339 39.77 KB (40,720 bytes) 11/14/2002  
 9:53:37 PM Microsoft Corporation c:\winnt\system32\resutils.dll  
 clusapi.dll 5.00.2195.4678 54.27 KB (55,568 bytes) 11/14/2002  
 9:53:12 PM Microsoft Corporation c:\winnt\system32\clusapi.dll  
 msvcp50.dll 5.00.7051 552.50 KB (565,760 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\msvcp50.dll  
 xolehlp.dll 1999.9.3421.3 17.27 KB (17,680 bytes) 11/14/2002  
 12:44:42 PM Microsoft Corporation c:\winnt\system32\xolehlp.dll  
 msdtclog.dll 2000.2.3497.0 86.77 KB (88,848 bytes) 11/14/2002  
 9:53:25 PM Microsoft Corporation c:\winnt\system32\msdtclog.dll  
 mtxclu.dll 2000.2.3497.0 51.27 KB (52,496 bytes) 11/14/2002  
 9:53:31 PM Microsoft Corporation c:\winnt\system32\mtxclu.dll  
 msdtcprx.dll 2000.2.3497.0 683.77 KB (700,176 bytes) 11/14/2002  
 9:53:25 PM Microsoft Corporation c:\winnt\system32\msdtcprx.dll  
 txfaux.dll 2000.2.3497.0 383.27 KB (392,464 bytes) 11/14/2002  
 9:53:42 PM Microsoft Corporation c:\winnt\system32\txfaux.dll  
 msdtctm.dll 2000.2.3497.0 1.08 MB (1,128,208 bytes) 11/14/2002  
 9:53:25 PM Microsoft Corporation c:\winnt\system32\msdtctm.dll  
 msdtc.exe 1999.9.3421.3 6.77 KB (6,928 bytes) 11/14/2002 12:44:42  
 PM Microsoft Corporation c:\winnt\system32\msdtc.exe  
 rasadhlp.dll 5.00.2168.1 7.27 KB (7,440 bytes) 12/7/1999 4:00:00 AM  
 Microsoft Corporation c:\winnt\system32\rasadhlp.dll  
 winrnr.dll 5.00.2160.1 18.77 KB (19,216 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\winrnr.dll  
 dhcpcsvc.dll 5.00.2195.4874 87.77 KB (89,872 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\dhcpcsvc.dll  
 tapi32.dll 5.00.2182.1 123.27 KB (126,224 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\tapi32.dll  
 rasman.dll 5.00.2195.5292 54.77 KB (56,080 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\rasman.dll  
 rasapi32.dll 5.00.2195.5438 191.77 KB (196,368 bytes) 12/7/1999  
 4:00:00 AM Microsoft Corporation c:\winnt\system32\rasapi32.dll

icmp.dll	5.00.2134.1	7.27 KB (7,440 bytes)	12/7/1999 4:00:00 AM	mprapi.dll	5.00.2181.1	79.27 KB (81,168 bytes)	12/7/1999
	Microsoft Corporation	c:\winnt\system32\icmp.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\mprapi.dll	
iphlpapi.dll	5.00.2195.2	68.27 KB (69,904 bytes)	11/14/2002	rassfm.dll	5.00.2195.4874	21.27 KB (21,776 bytes)	11/14/2002
9:53:20 PM	Microsoft Corporation	c:\winnt\system32\iphlpapi.dll		9:53:37 PM	Microsoft Corporation	c:\winnt\system32\rassfm.dll	
rnr20.dll	5.00.2195.4874	35.77 KB (36,624 bytes)	11/14/2002	rsabase.dll	5.00.2195.3839	128.27 KB (131,344 bytes)	7/22/2002
9:53:37 PM	Microsoft Corporation	c:\winnt\system32\rnr20.dll		1:05:04 PM	Microsoft Corporation	c:\winnt\system32\rsabase.dll	
wshtcpip.dll	5.00.2195.4874	17.27 KB (17,680 bytes)	11/14/2002	schannel.dll	5.00.2195.5284	139.27 KB (142,608 bytes)	5/4/2001
9:53:45 PM	Microsoft Corporation	c:\winnt\system32\wshtcpip.dll		1:05:02 PM	Microsoft Corporation	c:\winnt\system32\schannel.dll	
msafd.dll	5.00.2195.4874	103.27 KB (105,744 bytes)	11/14/2002	netlogon.dll	5.00.2195.5400	362.77 KB (371,472 bytes)	11/14/2002
9:53:24 PM	Microsoft Corporation	c:\winnt\system32\msafd.dll		9:53:31 PM	Microsoft Corporation	c:\winnt\system32\netlogon.dll	
rpcss.dll	5.00.2195.5429	231.27 KB (236,816 bytes)	11/14/2002	msv1_0.dll	5.00.2195.4745	112.27 KB (114,960 bytes)	12/7/1999
9:53:38 PM	Microsoft Corporation	c:\winnt\system32\rpcss.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\msv1_0.dll	
svchost.exe	5.00.2134.1	7.77 KB (7,952 bytes)	12/7/1999 4:00:00 AM	kerberos.dll	5.00.2195.5246	202.77 KB (207,632 bytes)	11/14/2002
	Microsoft Corporation	c:\winnt\system32\svchost.exe		9:53:22 PM	Microsoft Corporation	c:\winnt\system32\kerberos.dll	
vipl.dll	4.2.0.75	80.00 KB (81,920 bytes)	2/18/2003	msprivs.dll	5.00.2154.1	41.50 KB (42,496 bytes)	12/7/1999
9:21:16 AM	Giganet Incorporated	c:\winnt\system32\vipl.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\msprivs.dll	
gnconmgr.exe	4.2.0.75	168.05 KB (172,079 bytes)	2/18/2003	samsrv.dll	5.00.2195.5201	374.27 KB (383,248 bytes)	12/7/1999
9:21:16 AM	Giganet Incorporated	c:\winnt\system32\gnconmgr.exe		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\samsrv.dll	
rdpwsx.dll	5.00.2195.5243	97.90 KB (100,248 bytes)	11/14/2002	lsasrv.dll	5.00.2195.5430	500.27 KB (512,272 bytes)	12/7/1999
9:53:37 PM	Microsoft Corporation	c:\winnt\system32\rdpwsx.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\lsasrv.dll	
mstlsapi.dll	5.00.2195.3895	25.77 KB (26,384 bytes)	11/14/2002	lsass.exe	5.00.2195.5430	32.77 KB (33,552 bytes)	12/7/1999
9:53:30 PM	Microsoft Corporation	c:\winnt\system32\mstlsapi.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\lsass.exe	
icaapi.dll	5.00.2195.3895	122.77 KB (125,712 bytes)	11/14/2002	ntlsapi.dll	5.00.2195.4907	6.77 KB (6,928 bytes)	12/7/1999 4:00:00 AM
9:53:19 PM	Microsoft Corporation	c:\winnt\system32\icaapi.dll			Microsoft Corporation	c:\winnt\system32\ntlsapi.dll	
regapi.dll	5.00.2195.5201	35.27 KB (36,112 bytes)	11/14/2002	wmicore.dll	5.00.2195.3649	72.27 KB (74,000 bytes)	11/14/2002
9:53:37 PM	Microsoft Corporation	c:\winnt\system32\regapi.dll		9:53:44 PM	Microsoft Corporation	c:\winnt\system32\wmicore.dll	
termsrv.exe	5.00.2195.5276	138.77 KB (142,096 bytes)	11/14/2002	browser.dll	5.00.2195.4874	48.77 KB (49,936 bytes)	11/14/2002
9:53:42 PM	Microsoft Corporation	c:\winnt\system32\termsrv.exe		9:53:10 PM	Microsoft Corporation	c:\winnt\system32\browser.dll	
iissuba.dll	5.00.0984	9.77 KB (10,000 bytes)	12/7/1999 4:00:00 AM	seclogon.dll	5.00.2195.5201	17.27 KB (17,680 bytes)	11/14/2002
	Microsoft Corporation	c:\winnt\system32\iissuba.dll		9:53:38 PM	Microsoft Corporation	c:\winnt\system32\seclogon.dll	
cryptnet.dll	5.131.2195.3992	41.77 KB (42,768 bytes)	11/14/2002 9:53:13 PM	psbase.dll	5.00.2195.4822	111.77 KB (114,448 bytes)	11/14/2002
	Microsoft Corporation	c:\winnt\system32\cryptnet.dll		9:53:36 PM	Microsoft Corporation	c:\winnt\system32\psbase.dll	
dssenh.dll	5.00.2195.3665	142.77 KB (146,192 bytes)	11/14/2002	cryptsvc.dll	5.00.2195.4368	73.27 KB (75,024 bytes)	11/14/2002
9:53:59 PM	Microsoft Corporation	c:\winnt\system32\dssenh.dll		9:53:13 PM	Microsoft Corporation	c:\winnt\system32\cryptsvc.dll	
scecli.dll	5.00.2195.4874	109.27 KB (111,888 bytes)	11/14/2002	cryptdll.dll	5.00.2135.1	41.27 KB (42,256 bytes)	12/7/1999
9:53:38 PM	Microsoft Corporation	c:\winnt\system32\scecli.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\cryptdll.dll	
atl.dll	3.00.9435	73.06 KB (74,810 bytes)	11/14/2002 9:53:09 PM	wkssvc.dll	5.00.2195.4874	95.27 KB (97,552 bytes)	12/7/1999
	Microsoft Corporation	c:\winnt\system32\atl.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\wkssvc.dll	
certcli.dll	5.00.2195.3649	130.27 KB (133,392 bytes)	11/14/2002	srvsvc.dll	5.00.2195.5400	81.77 KB (83,728 bytes)	12/7/1999
9:53:11 PM	Microsoft Corporation	c:\winnt\system32\certcli.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\srvsvc.dll	
esent.dll	6.0.3940.25	1.09 MB (1,137,936 bytes)	11/14/2002	cfgmgr32.dll	5.00.2134.1	16.77 KB (17,168 bytes)	12/7/1999
9:53:17 PM	Microsoft Corporation	c:\winnt\system32\esent.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\cfgmgr32.dll	
mswsock.dll	5.00.2195.4874	62.77 KB (64,272 bytes)	11/14/2002	dmserver.dll	2195.3649.297.3	12.27 KB (12,560 bytes)	11/14/2002 9:53:15 PM
9:53:30 PM	Microsoft Corporation	c:\winnt\system32\mswsock.dll			VERITAS Software Corp.	c:\winnt\system32\dmserver.dll	
ntdsatq.dll	5.00.2195.5246	31.27 KB (32,016 bytes)	11/14/2002	eventlog.dll	5.00.2195.5336	44.27 KB (45,328 bytes)	11/14/2002
9:53:32 PM	Microsoft Corporation	c:\winnt\system32\ntdsatq.dll		9:53:17 PM	Microsoft Corporation	c:\winnt\system32\eventlog.dll	
ntdsa.dll	5.00.2195.5438	1002.27 KB (1,026,320 bytes)	11/14/2002	ntdsapi.dll	5.00.2195.4827	56.27 KB (57,616 bytes)	11/14/2002
9:53:32 PM	Microsoft Corporation	c:\winnt\system32\ntdsa.dll		9:53:32 PM	Microsoft Corporation	c:\winnt\system32\ntdsapi.dll	
kdcsvc.dll	5.00.2195.5246	141.77 KB (145,168 bytes)	11/14/2002	scesrv.dll	5.00.2195.5316	242.77 KB (248,592 bytes)	11/14/2002
9:53:22 PM	Microsoft Corporation	c:\winnt\system32\kdcsvc.dll		9:53:38 PM	Microsoft Corporation	c:\winnt\system32\scesrv.dll	
sfmapi.dll	5.00.2134.1	38.77 KB (39,696 bytes)	12/7/1999	umpnpgm.dll	5.00.2182.1	86.27 KB (88,336 bytes)	12/7/1999
4:00:00 AM	Microsoft Corporation	c:\winnt\system32\sfmapi.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\umpnpgm.dll	
rtutils.dll	5.00.2168.1	43.77 KB (44,816 bytes)	12/7/1999	services.exe	5.00.2195.3940	86.77 KB (88,848 bytes)	12/7/1999
4:00:00 AM	Microsoft Corporation	c:\winnt\system32\rtutils.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\services.exe	
adslrpc.dll	5.00.2195.5400	127.77 KB (130,832 bytes)	11/14/2002	clbcatq.dll	2000.2.3497.0	497.77 KB (509,712 bytes)	11/14/2002
9:53:08 PM	Microsoft Corporation	c:\winnt\system32\adslrpc.dll		9:53:12 PM	Microsoft Corporation	c:\winnt\system32\clbcatq.dll	
activeds.dll	5.00.2195.5312	175.27 KB (179,472 bytes)	11/14/2002	oleaut32.dll	2.40.4518	612.27 KB (626,960 bytes)	12/7/1999
9:53:04 PM	Microsoft Corporation	c:\winnt\system32\activeds.dll		4:00:00 AM	Microsoft Corporation	c:\winnt\system32\oleaut32.dll	

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cscui.dll 5.00.2195.4104 233.77 KB (239,376 bytes) 11/14/2002
9:53:13 PM Microsoft Corporation c:\winnt\system32\cscui.dll
lz32.dll 5.00.2134.1 9.77 KB (10,000 bytes) 12/7/1999 4:00:00 AM
Microsoft Corporation c:\winnt\system32\lz32.dll
version.dll 5.00.2134.1 15.77 KB (16,144 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\version.dll
rsaenh.dll 5.00.2195.3839 130.77 KB (133,904 bytes) 11/14/2002
9:53:59 PM Microsoft Corporation c:\winnt\system32\rsaenh.dll
mscat32.dll 5.131.2134.1 7.77 KB (7,952 bytes) 12/7/1999 4:00:00 AM
Microsoft Corporation c:\winnt\system32\mscat32.dll
ole32.dll 5.00.2195.5400 968.27 KB (991,504 bytes) 11/14/2002
9:53:35 PM Microsoft Corporation c:\winnt\system32\ole32.dll
imagehlp.dll 5.00.2195.5242 125.77 KB (128,784 bytes) 5/4/2001
1:05:02 PM Microsoft Corporation c:\winnt\system32\imagehlp.dll
wintrust.dll 5.131.2195.3775 162.27 KB (166,160 bytes)
11/14/2002 9:53:44 PM Microsoft Corporation
c:\winnt\system32\wintrust.dll
winspool.drv 5.00.2195.5225 111.27 KB (113,936 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\winspool.drv
msasn1.dll 5.00.2195.4067 51.27 KB (52,496 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\msasn1.dll
crypt32.dll 5.131.2195.4558 464.27 KB (475,408 bytes)
11/14/2002 9:53:13 PM Microsoft Corporation
c:\winnt\system32\crypt32.dll
wincard.dll 5.00.2134.1 77.27 KB (79,120 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\wincard.dll
wlnotify.dll 5.00.2195.5377 54.27 KB (55,568 bytes) 11/14/2002
9:53:44 PM Microsoft Corporation c:\winnt\system32\wlnotify.dll
csddl.dll 5.00.2195.5434 98.77 KB (101,136 bytes) 11/14/2002
9:53:13 PM Microsoft Corporation c:\winnt\system32\csddl.dll
mpr.dll 5.00.2195.3649 53.77 KB (55,056 bytes) 11/14/2002 9:53:24 PM
Microsoft Corporation c:\winnt\system32\mpr.dll
shlwapi.dll 5.00.3502.5332 283.27 KB (290,064 bytes) 11/14/2002
9:53:40 PM Microsoft Corporation c:\winnt\system32\shlwapi.dll
shell32.dll 5.00.3502.5436 2.26 MB (2,374,416 bytes) 11/14/2002
9:53:39 PM Microsoft Corporation c:\winnt\system32\shell32.dll
msgina.dll 5.00.2195.4733 324.77 KB (332,560 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\msgina.dll
comctl32.dll 5.81 539.27 KB (552,208 bytes) 12/7/1999 4:00:00 AM
Microsoft Corporation c:\winnt\system32\comctl32.dll
setupapi.dll 5.00.2195.5400 553.77 KB (567,056 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\setupapi.dll
winmm.dll 5.00.2161.1 184.77 KB (189,200 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\winmm.dll
winsta.dll 5.00.2195.4655 36.77 KB (37,648 bytes) 11/14/2002
9:53:44 PM Microsoft Corporation c:\winnt\system32\winsta.dll
wsock32.dll 5.00.2195.4874 21.27 KB (21,776 bytes) 11/14/2002
9:53:45 PM Microsoft Corporation c:\winnt\system32\wsock32.dll
dnsapi.dll 5.00.2195.5354 131.27 KB (134,416 bytes) 11/14/2002
9:53:15 PM Microsoft Corporation c:\winnt\system32\dnsapi.dll
wldap32.dll 5.00.2195.5400 158.77 KB (162,576 bytes) 11/14/2002
9:53:44 PM Microsoft Corporation c:\winnt\system32\wldap32.dll
ws2help.dll 5.00.2134.1 17.77 KB (18,192 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\ws2help.dll
ws2_32.dll 5.00.2195.4874 66.77 KB (68,368 bytes) 11/14/2002
9:53:44 PM Microsoft Corporation c:\winnt\system32\ws2_32.dll
samlib.dll 5.00.2195.4827 49.77 KB (50,960 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\samlib.dll

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netrap.dll 5.00.2134.1 11.27 KB (11,536 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\netrap.dll
netapi32.dll 5.00.2195.5427 305.27 KB (312,592 bytes) 11/14/2002
9:53:31 PM Microsoft Corporation c:\winnt\system32\netapi32.dll
profmap.dll 5.00.2181.1 29.27 KB (29,968 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\profmap.dll
secur32.dll 5.00.2195.4587 47.27 KB (48,400 bytes) 11/14/2002
9:53:38 PM Microsoft Corporation c:\winnt\system32\secur32.dll
sfc.dll 5.00.2195.3649 92.11 KB (94,320 bytes) 11/14/2002 9:53:38 PM
Microsoft Corporation c:\winnt\system32\sfc.dll
nddeapi.dll 5.00.2195.4509 15.77 KB (16,144 bytes) 11/14/2002
9:53:31 PM Microsoft Corporation c:\winnt\system32\nddeapi.dll
userenv.dll 5.00.2195.5425 363.77 KB (372,496 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\userenv.dll
user32.dll 5.00.2195.4314 395.77 KB (405,264 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\user32.dll
gdi32.dll 5.00.2195.5252 228.77 KB (234,256 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\gdi32.dll
rpcrt4.dll 5.00.2195.5419 440.27 KB (450,832 bytes) 11/14/2002
9:53:37 PM Microsoft Corporation c:\winnt\system32\rpcrt4.dll
advapi32.dll 5.00.2195.5385 358.77 KB (367,376 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\advapi32.dll
kernel32.dll 5.00.2195.5400 716.77 KB (733,968 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\kernel32.dll
msvcrt.dll 6.10.9359.0 284.05 KB (290,869 bytes) 7/22/2002
1:05:04 PM Microsoft Corporation c:\winnt\system32\msvcrt.dll
winlogon.exe 5.00.2195.5386 174.77 KB (178,960 bytes) 11/14/2002
9:53:44 PM Microsoft Corporation c:\winnt\system32\winlogon.exe
sfcfiles.dll 5.00.2195.5426 951.27 KB (974,096 bytes) 11/14/2002
9:53:38 PM Microsoft Corporation c:\winnt\system32\sfcfiles.dll
ntdll.dll 5.00.2195.5400 479.27 KB (490,768 bytes) 5/4/2001
1:05:02 PM Microsoft Corporation c:\winnt\system32\ntdll.dll
smss.exe 5.00.2195.5382 44.77 KB (45,840 bytes) 12/7/1999
4:00:00 AM Microsoft Corporation c:\winnt\system32\smss.exe

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[Services]

Display Name	Name	State	Start Mode	Service Type	Path	Error
Control Start	Name Tag ID					
Alerter	Alerter	Stopped	Manual	Share Process	c:\winnt\system32\services.exe	0
Application Management	AppMgmt	Stopped	Manual	Share Process	c:\winnt\system32\services.exe	0
Background Intelligent Transfer Service	BITS	Stopped	Manual	Share Process	c:\winnt\system32\svchost.exe -k bitsgroup	0
Computer Browser	Browser	Running	Auto	Share Process	c:\winnt\system32\services.exe	0
Indexing Service	cisvc	Stopped	Manual	Share Process	c:\winnt\system32\cisvc.exe	0
ClipBook	ClipSrv	Stopped	Manual	Own Process	c:\winnt\system32\clipsrv.exe	0
Distributed File System	Dfs	Stopped	Manual	Own Process	c:\winnt\system32\dfssvc.exe	0
DHCP Client	Dhcp	Stopped	Manual	Share Process	c:\winnt\system32\services.exe	0
Logical Disk Manager	Administrative Service	Stopped	Manual	Share Process	c:\winnt\system32\dmadmin.exe /com	0

Logical Disk Manager	dmserver	Running	Auto	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
DNS Client	Dnscache	Stopped	Manual	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
Event Log	Eventlog	Running	Auto	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
COM+ Event System	EventSystem	Running	Manual	Share	Process
	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Fax Service	Fax	Stopped	Manual	Own	Process
	c:\winnt\system32\faxsvc.exe	Normal	LocalSystem	0	
cLAN Connection Manager	GniConMgr	Running	Auto	Own	Process
	c:\winnt\system32\gnconmgr.exe	Normal	LocalSystem	0	
IIS Admin Service	IISADMIN	Stopped	Auto	Share	Process
	c:\winnt\system32\inetrv\inetinfo.exe	Normal	LocalSystem	0	
Intersite Messaging	IsmServ	Stopped	Disabled	Own	Process
	c:\winnt\system32\ismserv.exe	Normal	LocalSystem	0	
Kerberos Key Distribution Center	kdc	Stopped	Disabled	Share	
Process	c:\winnt\system32\lsass.exe	Normal	LocalSystem	0	
Server	lanmanserver	Running	Auto	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
Workstation	lanmanworkstation	Running	Auto	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
License Logging Service	LicenseService	Stopped	Manual	Own	Process
	c:\winnt\system32\llssrv.exe	Normal	LocalSystem	0	
TCP/IP NetBIOS Helper Service	LmHosts	Stopped	Manual	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
Messenger	Messenger	Stopped	Manual	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
NetMeeting Remote Desktop Sharing	mnmsrvc	Running	Auto	Own	Process
	c:\winnt\system32\mnmsrvc.exe	Normal	LocalSystem	0	
Distributed Transaction Coordinator	MSDTC	Running	Auto	Own	Process
	c:\winnt\system32\msdtc.exe	Normal	LocalSystem	0	
Windows Installer	MSIServer	Stopped	Manual	Share	Process
	c:\winnt\system32\msiexec.exe /v	Normal	LocalSystem	0	
Network DDE	NetDDE	Stopped	Manual	Share	Process
	c:\winnt\system32\netdde.exe	Normal	LocalSystem	0	
Network DDE DSDM	NetDDEdsdm	Stopped	Manual	Share	Process
	c:\winnt\system32\netdde.exe	Normal	LocalSystem	0	
Net Logon	Netlogon	Stopped	Manual	Share	Process
	c:\winnt\system32\lsass.exe	Normal	LocalSystem	0	
Network Connections	Netman	Running	Manual	Share	Process
	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
File Replication	NtFrs	Stopped	Manual	Own	Process
	c:\winnt\system32\ntfrs.exe	Ignore	LocalSystem	0	
NT LM Security Support Provider	NtLmSsp	Stopped	Manual	Share	Process
	c:\winnt\system32\lsass.exe	Normal	LocalSystem	0	
Removable Storage	NtmsSvc	Stopped	Manual	Share	Process
	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Plug and Play	PlugPlay	Running	Auto	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
IPSEC Policy Agent	PolicyAgent	Stopped	Manual	Share	Process
	c:\winnt\system32\lsass.exe	Normal	LocalSystem	0	
Protected Storage	ProtectedStorage	Running	Auto	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	

Remote Access Connection Manager	RasAuto	Stopped	Manual	Share	Process
	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Remote Access Connection Manager	RasMan	Stopped	Manual	Share	Process
	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Routing and Remote Access	RemoteAccess	Stopped	Disabled	Share	Process
	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Remote Registry Service	RemoteRegistry	Running	Auto	Own	Process
	c:\winnt\system32\regsvc.exe	Normal	LocalSystem	0	
Remote Procedure Call (RPC) Locator	RpcLocator	Stopped	Manual	Own	Process
	c:\winnt\system32\locator.exe	Normal	LocalSystem	0	
Remote Procedure Call (RPC)	RpcSs	Running	Auto	Share	Process
	c:\winnt\system32\svchost -k rpcss	Normal	LocalSystem	0	
QoS RSVP	RSVP	Running	Manual	Own	Process
	c:\winnt\system32\rsvp.exe -s	Normal	LocalSystem	0	
Security Accounts Manager	SamSs	Running	Auto	Share	Process
	c:\winnt\system32\lsass.exe	Normal	LocalSystem	0	
Smart Card Helper	SCardDrv	Stopped	Manual	Share	Process
	c:\winnt\system32\scardsvr.exe	Ignore	LocalSystem	0	
Smart Card	SCardSvr	Stopped	Manual	Share	Process
	c:\winnt\system32\scardsvr.exe	Ignore	LocalSystem	0	
Task Scheduler	Schedule	Running	Auto	Share	Process
	c:\winnt\system32\mstask.exe	Normal	LocalSystem	0	
RunAs Service	seclogon	Running	Auto	Share	Process
	c:\winnt\system32\services.exe	Ignore	LocalSystem	0	
System Event Notification	SENS	Running	Auto	Share	Process
	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Internet Connection Sharing	SharedAccess	Stopped	Manual	Share	Process
	c:\winnt\system32\svchost.exe -k netsvcs	Normal	LocalSystem	0	
Print Spooler	Spooler	Stopped	Manual	Own	Process
	c:\winnt\system32\spoolsv.exe	Normal	LocalSystem	0	
Performance Logs and Alerts	SysmonLog	Stopped	Manual	Own	Process
	c:\winnt\system32\smlogsvc.exe	Normal	LocalSystem	0	
Telephony	TapiSrv	Stopped	Disabled	Share	Process
	c:\winnt\system32\svchost.exe -k tapisrv	Normal	LocalSystem	0	
Terminal Services	TermService	Running	Auto	Own	Process
	c:\winnt\system32\termsrv.exe	Normal	LocalSystem	0	
Telnet	TlntSvr	Stopped	Manual	Own	Process
	c:\winnt\system32\tlntsvr.exe	Normal	LocalSystem	0	
Distributed Link Tracking Server	TrkSvr	Stopped	Manual	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
Distributed Link Tracking Client	TrkWks	Stopped	Manual	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
Uninterruptible Power Supply	UPS	Stopped	Manual	Own	Process
	c:\winnt\system32\ups.exe	Normal	LocalSystem	0	
Utility Manager	UtilMan	Stopped	Manual	Own	Process
	c:\winnt\system32\utilman.exe	Normal	LocalSystem	0	
Windows Time	W32Time	Stopped	Manual	Share	Process
	c:\winnt\system32\services.exe	Normal	LocalSystem	0	
World Wide Web Publishing Service	W3SVC	Stopped	Manual	Share	Process
	c:\winnt\system32\inetrv\inetinfo.exe	Normal	LocalSystem	0	
Windows Management Instrumentation	WinMgmt	Running	Auto	Own	Process
	c:\winnt\system32\wbem\winmgmt.exe	Ignore	LocalSystem	0	

```

Windows Management Instrumentation Driver Extensions Wmi Running Manual
Share Process c:\winnt\system32\services.exe Normal
LocalSystem 0
Automatic Updates wuauerv Stopped Manual Share Process
c:\winnt\system32\svchost.exe -k wugroup Normal LocalSystem
0

```

[Program Groups]

Group Name	Name	User Name
Accessories	Default User:Accessories	Default User
Accessories\Accessibility	Default User:Accessories\Accessibility	Default User
Accessories\Entertainment	Default User:Accessories\Entertainment	Default User
Accessories\System Tools	Default User:Accessories\System Tools	Default User
Startup	Default User:Startup	Default User
Accessories	All Users:Accessories	All Users
Accessories\Communications	All Users:Accessories\Communications	All Users
Accessories\Entertainment	All Users:Accessories\Entertainment	All Users
Accessories\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	CLIENT1\Administrator:Accessories	CLIENT1\Administrator
Accessories\Accessibility	CLIENT1\Administrator:Accessories\Accessibility	CLIENT1\Administrator
Accessories\Entertainment	CLIENT1\Administrator:Accessories\Entertainment	CLIENT1\Administrator
Accessories\System Tools	CLIENT1\Administrator:Accessories\System Tools	CLIENT1\Administrator
Administrative Tools	CLIENT1\Administrator:Administrative Tools	CLIENT1\Administrator
QLogic Corporation	CLIENT1\Administrator:QLogic Corporation	CLIENT1\Administrator
QLogic Corporation\SANblade Control VIX	CLIENT1\Administrator:QLogic Corporation\SANblade Control VIX	CLIENT1\Administrator
Startup	CLIENT1\Administrator:Startup	CLIENT1\Administrator

[Startup Programs]

Program Command	User Name	Location
rhostsvr.exe	c:\rhost\rhostsvr.exe	-d\rhost -crhosthdlr.exe
	CLIENT1\Administrator	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
Image Document "C:\Program Files\Windows
NT\Accessories\ImageVue\KodakImg.exe"
WordPad Document "%ProgramFiles%\Windows NT\Accessories\WORDPAD.EXE"
Windows Media Services DRM Storage object Not Available
Bitmap Image mspaint.exe

```

[Internet Explorer 5]

[ Following are sub-categories of this main category ]

[Summary]

Item	Value
Version	5.00.3502.1000
Build	53502.1000
Product ID	51876-270-3062037-05739
Application Path	C:\Program Files\Internet Explorer
Language	English (United States)
Active Printer	Not Available

Cipher Strength	168-bit
Content Advisor	Disabled
IEAK Install	No

[File Versions]

File	Version	Size	Date	Path	Company
advapi32.dll	5.0.2195.5385	359 KB	7/22/2002 12:05:04 PM	C:\WINNT\system32	Microsoft Corporation
advpack.dll	5.0.3502.4373	87 KB	7/22/2002 12:05:04 PM	C:\WINNT\system32	Microsoft Corporation
browsecl.dll	5.0.3502.4373	35 KB	7/22/2002 12:05:04 PM	C:\WINNT\system32	Microsoft Corporation
browseui.dll	5.0.3502.4373	791 KB	7/22/2002 12:05:04 PM	C:\WINNT\system32	Microsoft Corporation
ckcnv.exe	5.0.2189.1	9 KB	12/7/1999 4:00:00 AM	C:\WINNT\system32	Microsoft Corporation
comctl32.dll	5.81.3315.3727	539 KB	7/22/2002 12:05:04 PM	C:\WINNT\system32	Microsoft Corporation
crypt32.dll	5.131.2195.4558	464 KB	7/22/2002 12:05:04 PM	C:\WINNT\system32	Microsoft Corporation
ehnsig.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
iemigrat.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
iesetup.dll	5.0.3502.4373	57 KB	7/22/2002 12:05:04 PM	C:\WINNT\system32	Microsoft Corporation
iexplore.exe	5.0.2920.0	59 KB	12/7/1999 4:00:00 AM	C:\Program Files\Internet Explorer	Microsoft Corporation
imagehlp.dll	5.0.2195.5242	126 KB	7/22/2002 12:05:04 PM	C:\WINNT\system32	Microsoft Corporation
imghelp.dll	<File Missing>	Not Available	Not Available	Not Available	Not Available
inseng.dll	5.0.3502.4373	72 KB	7/22/2002 12:05:04 PM	C:\WINNT\system32	Microsoft Corporation
jobexec.dll	5.0.0.147 KB	12/7/1999 4:00:00 AM	C:\WINNT\system32	Microsoft Corporation	

```

jscript.dll 5.1.0.5907 476 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
jsproxy.dll 5.0.2920.0 13 KB 12/7/1999 4:00:00 AM
C:\WINNT\system32 Microsoft Corporation
msaahtml.dll <File Missing> Not Available Not Available Not Available
Not Available
mshtml.dll 5.0.3502.5390 2284 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
msjava.dll 5.0.3805.0 924 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
msoss.dll <File Missing> Not Available Not Available Not Available
Not Available
msxml.dll 8.0.6730.0 494 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
occache.dll 5.0.3315.3727 86 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
ole32.dll 5.0.2195.5400 968 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
oleaut32.dll 2.40.4518.0 612 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
olepro32.dll 5.0.4518.0 160 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
rsabase.dll 5.0.2195.3839 128 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
rsaenh.dll 5.0.2195.3839 131 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
rsapi32.dll <File Missing> Not Available Not Available Not Available
Not Available
rsasig.dll <File Missing> Not Available Not Available Not Available
Not Available
schannel.dll 5.1.2195.0 139 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
shdoc401.dll <File Missing> Not Available Not Available Not Available
Not Available
shdocvw.dll 5.0.3502.5400 1079 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
shell32.dll 5.0.3502.5436 2319 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
shlwapi.dll 5.0.3502.5332 283 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
url.dll 5.0.3502.4510 82 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
urlmon.dll 5.0.3502.5400 442 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
vbscript.dll 5.1.0.7426 428 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
webcheck.dll 5.0.3315.3727 251 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
win.com 5.0.2134.1 24 KB 12/7/1999 4:00:00 AM
C:\WINNT\system32 Microsoft Corporation
wininet.dll 5.0.3502.4619 451 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
winsock.dll 3.10.0.103 3 KB 12/7/1999 4:00:00 AM
C:\WINNT\system32 Microsoft Corporation
wintrust.dll 5.131.2195.3775 162 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
wsock.vxd <File Missing> Not Available Not Available Not Available
Not Available

```

```

wsock32.dll 5.0.2195.4874 21 KB 7/22/2002 12:05:04 PM
C:\WINNT\system32 Microsoft Corporation
wsock32n.dll <File Missing> Not Available Not Available Not Available
Not Available

```

[Connectivity]

```

Item Value
Connection Preference Never dial
EnableHttp1.1 1
ProxyHttp1.1 0

```

LAN Settings

```

AutoConfigProxy wininet.dll
AutoProxyDetectMode Enabled
AutoConfigURL
Proxy Disabled
ProxyServer
ProxyOverride

```

[Cache]

[ Following are sub-categories of this main category ]

[Summary]

```

Item Value
Page Refresh Type Automatic
Temporary Internet Files Folder C:\Documents and
Settings\Administrator.CLIENT\Local Settings\Temporary Internet Files
Total Disk Space 17359 MB
Available Disk Space 13923 MB
Maximum Cache Size 542 MB
Available Cache Size 542 MB

```

[List of Objects]

```

Program File Status CodeBase
No cached object information available

```

[Content]

[ Following are sub-categories of this main category ]

[Summary]

```

Item Value
Content Advisor Disabled

```

[Personal Certificates]

```

Issued To Issued By Validity Signature Algorithm
Administrator Administrator 11/14/2002 to 10/21/2102 sha1RSA

```

[Other People Certificates]

```

Issued To Issued By Validity Signature Algorithm
No other people certificate information available

```



[Publishers]

Name  
No publisher information available

[Security]

Zone Security Level  
Local intranet Medium-low  
Trusted sites Low  
Internet Medium  
Restricted sites High

## Windows 2000 IP Configuration Information

(common to 4 clients except for Host Name, Physical Address and IP Address)

Windows 2000 IP Configuration

Host Name . . . . . : client1  
Primary DNS Suffix . . . . . :  
Node Type . . . . . : Broadcast

IP Routing Enabled. . . . . : No

WINS Proxy Enabled. . . . . : No

Ethernet adapter Admin:

Connection-specific DNS Suffix . . :  
Description . . . . . : Broadcom NetXtreme Gigabit  
Ethernet #2  
Physical Address. . . . . : 00-06-5B-8C-9B-6E  
  
DHCP Enabled. . . . . : No  
  
IP Address. . . . . : 192.168.91.1  
  
Subnet Mask . . . . . : 255.255.255.0  
  
Default Gateway . . . . . :  
  
DNS Servers . . . . . :  
NetBIOS over Tcpip. . . . . : Disabled

Ethernet adapter RTE:

Connection-specific DNS Suffix . . :  
Description . . . . . : Broadcom NetXtreme Gigabit  
Ethernet  
Physical Address. . . . . : 00-06-5B-8C-9B-6F  
  
DHCP Enabled. . . . . : No  
  
IP Address. . . . . : 192.1.1.1  
  
Subnet Mask . . . . . : 255.255.255.0  
  
Default Gateway . . . . . :  
  
DNS Servers . . . . . :  
NetBIOS over Tcpip. . . . . : Disabled

Volume in drive C has no label.  
Volume Serial Number is C0E2-039E

Directory of C:\inetpub\wwwroot

10/17/2000 12:17p 101,376 tpcc.dll  
1 File(s) 101,376 bytes  
0 Dir(s) 14,599,925,760 bytes free

Volume in drive C has no label.  
Volume Serial Number is C0E2-039E

Directory of C:\inetpub\wwwroot

10/17/2000 12:15p 92,672 tpcc\_com\_all.dll  
1 File(s) 92,672 bytes  
0 Dir(s) 14,599,925,760 bytes free

Volume in drive C has no label.  
Volume Serial Number is C0E2-039E

Directory of C:\inetpub\wwwroot

10/17/2000 12:14p 4,608 tpcc\_com\_ps.dll  
1 File(s) 4,608 bytes  
0 Dir(s) 14,599,925,760 bytes free

## Component Services Configuration

COM+ Component TPCC.AllTxns Settings:  
Transactions not supported  
Enable object pooling  
Minimum pool size 70  
Maximum pool size 70  
Creation timeout 120,000  
Enable object construction  
Enable just in time activation  
Concurrency required

## Internet Information Server Registry Parameters

```
\registry\machine\system\currentcontrolset\services\inetinfo
Parameters
ListenBackLog = REG_DWORD 0x00000019
DispatchEntries = REG_MULTI_SZ "LDAPSV"
PoolThreadLimit = REG_DWORD 0x000000c8
ThreadTimeout = REG_DWORD 0x00015180
BandwidthLevel = REG_DWORD 0xffffffff
DisableMemoryCache = REG_DWORD 0x00000001
MemoryCacheSize = REG_DWORD 0x00000000
ObjectCacheTTL = REG_DWORD 0xffffffff
Performance
Library = infoctrs.dll
Open = OpenINFOPerformanceData
Close = CloseINFOPerformanceData
Collect = CollectINFOPerformanceData
WbemAdapFileTime = REG_BINARY 0x00000008 0x1160d800 0x01c231bb
WbemAdapFileSize = REG_DWORD 0x00002510
WbemAdapStatus = REG_DWORD 0x00000000
Last Counter = REG_DWORD 0x00000b7c
Last Help = REG_DWORD 0x00000b7d
First Counter = REG_DWORD 0x00000b3c
First Help = REG_DWORD 0x00000b3d
Library Validation Code = REG_BINARY 0x00000010 0x4d3ef59a
0x01c28c6b 0x00002510 0x00000000
```

## MSSQL Server Registry Parameters

```
\registry\machine\software\microsoft\microsoft\mssqlserver\client\connectto
DSQUERY = DBMSSOCN
DBSERVER = DBNETLIB,via:MV-BOBDYLAN,1421,0

\registry\machine\software\microsoft\microsoft\mssqlserver\client\connectto
DSQUERY = DBMSSOCN
DBSERVER = DBNETLIB,via:MV-BOBDYLAN,1422,0

\registry\machine\software\microsoft\microsoft\mssqlserver\client\connectto
DSQUERY = DBMSSOCN
DBSERVER = DBNETLIB,via:MV-BOBDYLAN,1423,0

\registry\machine\software\microsoft\microsoft\mssqlserver\client\connectto
DSQUERY = DBMSSOCN
DBSERVER = DBNETLIB,via:MV-BOBDYLAN,1424,0
```

## Start World Wide Web Server Registry Parameters

```
\registry\machine\system\currentcontrolset\services\w3svc
Type = REG_DWORD 0x00000020
Start = REG_DWORD 0x00000003
ErrorControl = REG_DWORD 0x00000001
ImagePath = REG_EXPAND_SZ C:\WINNT\System32\inetrv\inetinfo.exe
DisplayName = World Wide Web Publishing Service
```

```
DependOnService = REG_MULTI_SZ "IISADMIN"
DependOnGroup = REG_MULTI_SZ
ObjectName = LocalSystem
Description = Provides Web connectivity and administration through the
Internet Information Services snap-in.
ASP
NOTE = This is for backward compatibility only.
Parameters
Parameters
MajorVersion = REG_DWORD 0x00000005
MinorVersion = REG_DWORD 0x00000000
InstallPath = C:\WINNT\System32\inetrv
CertMapList = C:\WINNT\System32\inetrv\iisrmap.dll
AccessDeniedMessage = Error: Access is Denied.
Filter DLLs =
LogFileDirectory = C:\WINNT\System32\LogFiles
AcceptExOutstanding = REG_DWORD 0x00000028
ADCLaunch
AdvancedDataFactory
RDSDataFactory
Script Map
Virtual Roots
/ = c:\inetpub\wwwroot,,207
/Scripts = c:\inetpub\scripts,,204
/IISHelp = c:\winnt\help\iishelp,,201
/IISAdmin = C:\WINNT\System32\inetrv\iisadmin,,201
/IISSamples = c:\inetpub\iissamples,,201
/MSADC = c:\program files\common files\system\msadc,,205
/Printers = C:\WINNT\web\printers,,201
Performance
Library = w3ctrs.dll
Open = OpenW3PerformanceData
Close = CloseW3PerformanceData
Collect = CollectW3PerformanceData
WbemAdapFileTime = REG_BINARY 0x00000008 0x1160d800 0x01c231bb
WbemAdapFileSize = REG_DWORD 0x00001d10
WbemAdapStatus = REG_DWORD 0x00000000
Last Counter = REG_DWORD 0x000008e6
Last Help = REG_DWORD 0x000008e7
First Counter = REG_DWORD 0x00000844
First Help = REG_DWORD 0x00000845
Library Validation Code = REG_BINARY 0x00000010 0xc18a727c
0x01c026d2 0x000003d10 0x00000000
Security [17 1]
Security = REG_BINARY 0x000000b8 0x80140001 0x000000a0 0x000000ac
0x00000014 0x00000030 0x001c0002 0x00000001 0x00148002 0x000f01ff
0x00000101 0x01000000 0x00000000 0x00700002 0x00000004 0x00180000
0x000201fd 0x00000101 0x05000000 \
0x00000012 0x006f0074 0x001c0000 0x000f01ff 0x00000201
0x05000000 0x00000020 0x00000220 0x00730072 0x00180000 0x0002018d
0x00000101 0x05000000 0x0000000b 0x00000220 0x001c0000 0x000201fd
0x00000201 0x05000000 0x00000020 \
0x00000223 0x00730072 0x00000101 0x05000000 0x00000012
0x00000101 0x05000000 0x00000012
Enum
0 = Root\LEGACY_W3SVC\0000
Count = REG_DWORD 0x00000001
NextInstance = REG_DWORD 0x00000001
```

## TPCC Application Settings

\registry\machine\software\unisis  
TPCC

MAXTERMS = 60000  
DELIVERYTHREADS = 15  
SERVERNAME = DBSERVER  
DATABASE = tpcc



## Appendix D - RTE Code

### Admin Environment

```
if '%1'==' ' goto usage
if '%2'==' ' goto usage
if '%3'==' ' goto usage

:paramok

set WEBCHECKWIDS=1
set WEBDIAGLEVEL=4
set WEBEVENTLOG=0
set WEBEVENTHOST=
set WEBCHECKLEVEL=2

c:\webdriver\webadmin.exe -cweb%1.cfg -m%2 -d%3 -s160
if %ERRORLEVEL% NEQ 0 pause

goto end

:usage
@ECHO You must supply the following parameters:
@ECHO "webnnn.cmd <cfg file suffix> <min driver #> <max driver #>"
pause

:end
```

### Profiles used for Performance Run

#### WebAdmin.cfg

```
//
// Common Driver Configuration
//
INITBASEPORT 4300
INITSYNCMAX 4
INITPAUSE 1
INITRSCALE 1200
INITTSCALE 100
INITRWID 1,9500
INITFIXEDWID 1
INITCCLAST 208
INITCCID 208
INITCITEMID 208
//
//Configuration Driver 1
//
1 INITIPADDR 192.168.93.1
1 INITIISADDR 192.1.1.1
```

```
1 INITIISPORT 80
1 INITBROWSERS 1000
1 INITMYWID 1,100
//
//Configuration Driver 2
//
2 INITIPADDR 192.168.93.1
2 INITIISADDR 192.1.1.1
2 INITIISPORT 80
2 INITBROWSERS 1000
2 INITMYWID 101,200
//
//Configuration Driver 3
//
3 INITIPADDR 192.168.93.1
3 INITIISADDR 192.1.1.1
3 INITIISPORT 80
3 INITBROWSERS 1000
3 INITMYWID 201,300
//
//Configuration Driver 4
//
4 INITIPADDR 192.168.93.1
4 INITIISADDR 192.1.1.1
4 INITIISPORT 80
4 INITBROWSERS 1000
4 INITMYWID 301,400
//
//Configuration Driver 5
//
5 INITIPADDR 192.168.93.1
5 INITIISADDR 192.1.1.1
5 INITIISPORT 80
5 INITBROWSERS 1000
5 INITMYWID 401,500
//
//Configuration Driver 6
//
6 INITIPADDR 192.168.93.1
6 INITIISADDR 192.1.1.1
6 INITIISPORT 80
6 INITBROWSERS 1000
6 INITMYWID 501,600
//
//Configuration Driver 7
//
7 INITIPADDR 192.168.93.1
7 INITIISADDR 192.1.1.1
7 INITIISPORT 80
7 INITBROWSERS 1000
7 INITMYWID 601,700
//
//Configuration Driver 8
//
```

```

8 INITIPADDR 192.168.93.1
8 INITIISADDR 192.1.1.1
8 INITIISPORT 80
8 INITBROWSERS 1000
8 INITMYWID 701,800
//
//Configuration Driver 9
//
9 INITIPADDR 192.168.93.1
9 INITIISADDR 192.1.1.1
9 INITIISPORT 80
9 INITBROWSERS 1000
9 INITMYWID 801,900
//
//Configuration Driver 10
//
10 INITIPADDR 192.168.93.1
10 INITIISADDR 192.1.1.1
10 INITIISPORT 80
10 INITBROWSERS 1000
10 INITMYWID 901,1000
//
//Configuration Driver 11
//
11 INITIPADDR 192.168.93.1
11 INITIISADDR 192.1.1.1
11 INITIISPORT 80
11 INITBROWSERS 1000
11 INITMYWID 1001,1100
//
//Configuration Driver 12
//
12 INITIPADDR 192.168.93.1
12 INITIISADDR 192.1.1.1
12 INITIISPORT 80
12 INITBROWSERS 1000
12 INITMYWID 1101,1200
//
//Configuration Driver 13
//
13 INITIPADDR 192.168.93.1
13 INITIISADDR 192.1.1.1
13 INITIISPORT 80
13 INITBROWSERS 1000
13 INITMYWID 1201,1300
//
//Configuration Driver 14
//
14 INITIPADDR 192.168.93.1
14 INITIISADDR 192.1.1.1
14 INITIISPORT 80
14 INITBROWSERS 1000
14 INITMYWID 1301,1400
//
//Configuration Driver 15
//
15 INITIPADDR 192.168.93.1
15 INITIISADDR 192.1.1.1
15 INITIISPORT 80

```

```

15 INITBROWSERS 1000
15 INITMYWID 1401,1500
//
//Configuration Driver 16
//
16 INITIPADDR 192.168.93.1
16 INITIISADDR 192.1.1.1
16 INITIISPORT 80
16 INITBROWSERS 1000
16 INITMYWID 1501,1600
//
//Configuration Driver 17
//
17 INITIPADDR 192.168.93.1
17 INITIISADDR 192.1.1.1
17 INITIISPORT 80
17 INITBROWSERS 1000
17 INITMYWID 1601,1700
//
//Configuration Driver 18
//
18 INITIPADDR 192.168.93.1
18 INITIISADDR 192.1.1.1
18 INITIISPORT 80
18 INITBROWSERS 1000
18 INITMYWID 1701,1800
//
//Configuration Driver 19
//
19 INITIPADDR 192.168.93.1
19 INITIISADDR 192.1.1.1
19 INITIISPORT 80
19 INITBROWSERS 1000
19 INITMYWID 1801,1900
//
//Configuration Driver 20
//
20 INITIPADDR 192.168.93.1
20 INITIISADDR 192.1.1.1
20 INITIISPORT 80
20 INITBROWSERS 1000
20 INITMYWID 1901,2000
//
//Configuration Driver 21
//
21 INITIPADDR 192.168.93.1
21 INITIISADDR 192.1.1.1
21 INITIISPORT 80
21 INITBROWSERS 1000
21 INITMYWID 2001,2100
//
//Configuration Driver 22
//
22 INITIPADDR 192.168.93.1
22 INITIISADDR 192.1.1.1
22 INITIISPORT 80
22 INITBROWSERS 1000
22 INITMYWID 2101,2200
//

```

```

//Configuration Driver 23
//
23 INITIPADDR 192.168.93.1
23 INITIISADDR 192.1.1.1
23 INITIISPORT 80
23 INITBROWSERS 1000
23 INITMYWID 2201,2300
//
//Configuration Driver 24
//
24 INITIPADDR 192.168.93.2
24 INITIISADDR 192.2.1.1
24 INITIISPORT 80
24 INITBROWSERS 1010
24 INITMYWID 2301,2401
//
//Configuration Driver 25
//
25 INITIPADDR 192.168.93.2
25 INITIISADDR 192.2.1.1
25 INITIISPORT 80
25 INITBROWSERS 1010
25 INITMYWID 2402,2502
//
//Configuration Driver 26
//
26 INITIPADDR 192.168.93.2
26 INITIISADDR 192.2.1.1
26 INITIISPORT 80
26 INITBROWSERS 1010
26 INITMYWID 2503,2603
//
//Configuration Driver 27
//
27 INITIPADDR 192.168.93.2
27 INITIISADDR 192.2.1.1
27 INITIISPORT 80
27 INITBROWSERS 1010
27 INITMYWID 2604,2704
//
//Configuration Driver 28
//
28 INITIPADDR 192.168.93.2
28 INITIISADDR 192.2.1.1
28 INITIISPORT 80
28 INITBROWSERS 1010
28 INITMYWID 2705,2805
//
//Configuration Driver 29
//
29 INITIPADDR 192.168.93.2
29 INITIISADDR 192.2.1.1
29 INITIISPORT 80
29 INITBROWSERS 1010
29 INITMYWID 2806,2906
//
//Configuration Driver 30
//
30 INITIPADDR 192.168.93.2

```

```

30 INITIISADDR 192.2.1.1
30 INITIISPORT 80
30 INITBROWSERS 1010
30 INITMYWID 2907,3007
//
//Configuration Driver 31
//
31 INITIPADDR 192.168.93.2
31 INITIISADDR 192.2.1.1
31 INITIISPORT 80
31 INITBROWSERS 1010
31 INITMYWID 3008,3108
//
//Configuration Driver 32
//
32 INITIPADDR 192.168.93.2
32 INITIISADDR 192.2.1.1
32 INITIISPORT 80
32 INITBROWSERS 1010
32 INITMYWID 3109,3209
//
//Configuration Driver 33
//
33 INITIPADDR 192.168.93.2
33 INITIISADDR 192.2.1.1
33 INITIISPORT 80
33 INITBROWSERS 1010
33 INITMYWID 3210,3310
//
//Configuration Driver 34
//
34 INITIPADDR 192.168.93.2
34 INITIISADDR 192.2.1.1
34 INITIISPORT 80
34 INITBROWSERS 1010
34 INITMYWID 3311,3411
//
//Configuration Driver 35
//
35 INITIPADDR 192.168.93.2
35 INITIISADDR 192.2.1.1
35 INITIISPORT 80
35 INITBROWSERS 1010
35 INITMYWID 3412,3512
//
//Configuration Driver 36
//
36 INITIPADDR 192.168.93.2
36 INITIISADDR 192.2.1.1
36 INITIISPORT 80
36 INITBROWSERS 1010
36 INITMYWID 3513,3613
//
//Configuration Driver 37
//
37 INITIPADDR 192.168.93.2
37 INITIISADDR 192.2.1.1
37 INITIISPORT 80
37 INITBROWSERS 1010

```

```
37 INITMYWID 3614,3714
//
//Configuration Driver 38
//
38 INITIPADDR 192.168.93.2
38 INITIISADDR 192.2.1.1
38 INITIISPORT 80
38 INITBROWSERS 1010
38 INITMYWID 3715,3815
//
//Configuration Driver 39
//
39 INITIPADDR 192.168.93.2
39 INITIISADDR 192.2.1.1
39 INITIISPORT 80
39 INITBROWSERS 1010
39 INITMYWID 3816,3916
//
//Configuration Driver 40
//
40 INITIPADDR 192.168.93.2
40 INITIISADDR 192.2.1.1
40 INITIISPORT 80
40 INITBROWSERS 1010
40 INITMYWID 3917,4017
//
//Configuration Driver 41
//
41 INITIPADDR 192.168.93.2
41 INITIISADDR 192.2.1.1
41 INITIISPORT 80
41 INITBROWSERS 1010
41 INITMYWID 4018,4118
//
//Configuration Driver 42
//
42 INITIPADDR 192.168.93.2
42 INITIISADDR 192.2.1.1
42 INITIISPORT 80
42 INITBROWSERS 1010
42 INITMYWID 4119,4219
//
//Configuration Driver 43
//
43 INITIPADDR 192.168.93.2
43 INITIISADDR 192.2.1.1
43 INITIISPORT 80
43 INITBROWSERS 1010
43 INITMYWID 4220,4320
//
//Configuration Driver 44
//
44 INITIPADDR 192.168.93.2
44 INITIISADDR 192.2.1.1
44 INITIISPORT 80
44 INITBROWSERS 1010
44 INITMYWID 4321,4421
//
//Configuration Driver 45
```

```
//
45 INITIPADDR 192.168.93.2
45 INITIISADDR 192.2.1.1
45 INITIISPORT 80
45 INITBROWSERS 1010
45 INITMYWID 4422,4522
//
//Configuration Driver 46
//
46 INITIPADDR 192.168.93.2
46 INITIISADDR 192.2.1.1
46 INITIISPORT 80
46 INITBROWSERS 1010
46 INITMYWID 4523,4623
//
//Configuration Driver 47
//
47 INITIPADDR 192.168.93.2
47 INITIISADDR 192.2.1.1
47 INITIISPORT 80
47 INITBROWSERS 1010
47 INITMYWID 4624,4724
//
//Configuration Driver 48
//
48 INITIPADDR 192.168.93.3
48 INITIISADDR 192.3.1.1
48 INITIISPORT 80
48 INITBROWSERS 990
48 INITMYWID 4725,4823
//
//Configuration Driver 49
//
49 INITIPADDR 192.168.93.3
49 INITIISADDR 192.3.1.1
49 INITIISPORT 80
49 INITBROWSERS 990
49 INITMYWID 4824,4922
//
//Configuration Driver 50
//
50 INITIPADDR 192.168.93.3
50 INITIISADDR 192.3.1.1
50 INITIISPORT 80
50 INITBROWSERS 990
50 INITMYWID 4923,5021
//
//Configuration Driver 51
//
51 INITIPADDR 192.168.93.3
51 INITIISADDR 192.3.1.1
51 INITIISPORT 80
51 INITBROWSERS 990
51 INITMYWID 5022,5120
//
//Configuration Driver 52
//
52 INITIPADDR 192.168.93.3
52 INITIISADDR 192.3.1.1
```



```

52 INITIISPORT 80
52 INITBROWSERS 990
52 INITMYWID 5121,5219
//
//Configuration Driver 53
//
53 INITIPADDR 192.168.93.3
53 INITIISADDR 192.3.1.1
53 INITIISPORT 80
53 INITBROWSERS 990
53 INITMYWID 5220,5318
//
//Configuration Driver 54
//
54 INITIPADDR 192.168.93.3
54 INITIISADDR 192.3.1.1
54 INITIISPORT 80
54 INITBROWSERS 990
54 INITMYWID 5319,5417
//
//Configuration Driver 55
//
55 INITIPADDR 192.168.93.3
55 INITIISADDR 192.3.1.1
55 INITIISPORT 80
55 INITBROWSERS 990
55 INITMYWID 5418,5516
//
//Configuration Driver 56
//
56 INITIPADDR 192.168.93.3
56 INITIISADDR 192.3.1.1
56 INITIISPORT 80
56 INITBROWSERS 990
56 INITMYWID 5517,5615
//
//Configuration Driver 57
//
57 INITIPADDR 192.168.93.3
57 INITIISADDR 192.3.1.1
57 INITIISPORT 80
57 INITBROWSERS 990
57 INITMYWID 5616,5714
//
//Configuration Driver 58
//
58 INITIPADDR 192.168.93.3
58 INITIISADDR 192.3.1.1
58 INITIISPORT 80
58 INITBROWSERS 990
58 INITMYWID 5715,5813
//
//Configuration Driver 59
//
59 INITIPADDR 192.168.93.3
59 INITIISADDR 192.3.1.1
59 INITIISPORT 80
59 INITBROWSERS 990
59 INITMYWID 5814,5912

```

```

//
//Configuration Driver 60
//
60 INITIPADDR 192.168.93.3
60 INITIISADDR 192.3.1.1
60 INITIISPORT 80
60 INITBROWSERS 990
60 INITMYWID 5913,6011
//
//Configuration Driver 61
//
61 INITIPADDR 192.168.93.3
61 INITIISADDR 192.3.1.1
61 INITIISPORT 80
61 INITBROWSERS 990
61 INITMYWID 6012,6110
//
//Configuration Driver 62
//
62 INITIPADDR 192.168.93.3
62 INITIISADDR 192.3.1.1
62 INITIISPORT 80
62 INITBROWSERS 990
62 INITMYWID 6111,6209
//
//Configuration Driver 63
//
63 INITIPADDR 192.168.93.3
63 INITIISADDR 192.3.1.1
63 INITIISPORT 80
63 INITBROWSERS 990
63 INITMYWID 6210,6308
//
//Configuration Driver 64
//
64 INITIPADDR 192.168.93.3
64 INITIISADDR 192.3.1.1
64 INITIISPORT 80
64 INITBROWSERS 990
64 INITMYWID 6309,6407
//
//Configuration Driver 65
//
65 INITIPADDR 192.168.93.3
65 INITIISADDR 192.3.1.1
65 INITIISPORT 80
65 INITBROWSERS 990
65 INITMYWID 6408,6506
//
//Configuration Driver 66
//
66 INITIPADDR 192.168.93.3
66 INITIISADDR 192.3.1.1
66 INITIISPORT 80
66 INITBROWSERS 990
66 INITMYWID 6507,6605
//
//Configuration Driver 67
//

```

```

67 INITIPADDR 192.168.93.3
67 INITIISADDR 192.3.1.1
67 INITIISPORT 80
67 INITBROWSERS 990
67 INITMYWID 6606,6704
//
//Configuration Driver 68
//
68 INITIPADDR 192.168.93.3
68 INITIISADDR 192.3.1.1
68 INITIISPORT 80
68 INITBROWSERS 990
68 INITMYWID 6705,6803
//
//Configuration Driver 69
//
69 INITIPADDR 192.168.93.3
69 INITIISADDR 192.3.1.1
69 INITIISPORT 80
69 INITBROWSERS 990
69 INITMYWID 6804,6902
//
//Configuration Driver 70
//
70 INITIPADDR 192.168.93.3
70 INITIISADDR 192.3.1.1
70 INITIISPORT 80
70 INITBROWSERS 990
70 INITMYWID 6903,7001
//
//Configuration Driver 71
//
71 INITIPADDR 192.168.93.3
71 INITIISADDR 192.3.1.1
71 INITIISPORT 80
71 INITBROWSERS 990
71 INITMYWID 7002,7100
//
//Configuration Driver 72
//
72 INITIPADDR 192.168.93.4
72 INITIISADDR 192.4.1.1
72 INITIISPORT 80
72 INITBROWSERS 1000
72 INITMYWID 7101,7200
//
//Configuration Driver 73
//
73 INITIPADDR 192.168.93.4
73 INITIISADDR 192.4.1.1
73 INITIISPORT 80
73 INITBROWSERS 1000
73 INITMYWID 7201,7300
//
//Configuration Driver 74
//
74 INITIPADDR 192.168.93.4
74 INITIISADDR 192.4.1.1
74 INITIISPORT 80

```

```

74 INITBROWSERS 1000
74 INITMYWID 7301,7400
//
//Configuration Driver 75
//
75 INITIPADDR 192.168.93.4
75 INITIISADDR 192.4.1.1
75 INITIISPORT 80
75 INITBROWSERS 1000
75 INITMYWID 7401,7500
//
//Configuration Driver 76
//
76 INITIPADDR 192.168.93.4
76 INITIISADDR 192.4.1.1
76 INITIISPORT 80
76 INITBROWSERS 1000
76 INITMYWID 7501,7600
//
//Configuration Driver 77
//
77 INITIPADDR 192.168.93.4
77 INITIISADDR 192.4.1.1
77 INITIISPORT 80
77 INITBROWSERS 1000
77 INITMYWID 7601,7700
//
//Configuration Driver 78
//
78 INITIPADDR 192.168.93.4
78 INITIISADDR 192.4.1.1
78 INITIISPORT 80
78 INITBROWSERS 1000
78 INITMYWID 7701,7800
//
//Configuration Driver 79
//
79 INITIPADDR 192.168.93.4
79 INITIISADDR 192.4.1.1
79 INITIISPORT 80
79 INITBROWSERS 1000
79 INITMYWID 7801,7900
//
//Configuration Driver 80
//
80 INITIPADDR 192.168.93.4
80 INITIISADDR 192.4.1.1
80 INITIISPORT 80
80 INITBROWSERS 1000
80 INITMYWID 7901,8000
//
//Configuration Driver 81
//
81 INITIPADDR 192.168.93.4
81 INITIISADDR 192.4.1.1
81 INITIISPORT 80
81 INITBROWSERS 1000
81 INITMYWID 8001,8100
//

```

```
//Configuration Driver 82
//
82 INITIPADDR 192.168.93.4
82 INITIISADDR 192.4.1.1
82 INITIISPORT 80
82 INITBROWSERS 1000
82 INITMYWID 8101,8200
//
//Configuration Driver 83
//
83 INITIPADDR 192.168.93.4
83 INITIISADDR 192.4.1.1
83 INITIISPORT 80
83 INITBROWSERS 1000
83 INITMYWID 8201,8300
//
//Configuration Driver 84
//
84 INITIPADDR 192.168.93.4
84 INITIISADDR 192.4.1.1
84 INITIISPORT 80
84 INITBROWSERS 1000
84 INITMYWID 8301,8400
//
//Configuration Driver 85
//
85 INITIPADDR 192.168.93.4
85 INITIISADDR 192.4.1.1
85 INITIISPORT 80
85 INITBROWSERS 1000
85 INITMYWID 8401,8500
//
//Configuration Driver 86
//
86 INITIPADDR 192.168.93.4
86 INITIISADDR 192.4.1.1
86 INITIISPORT 80
86 INITBROWSERS 1000
86 INITMYWID 8501,8600
//
//Configuration Driver 87
//
87 INITIPADDR 192.168.93.4
87 INITIISADDR 192.4.1.1
87 INITIISPORT 80
87 INITBROWSERS 1000
87 INITMYWID 8601,8700
//
//Configuration Driver 88
//
88 INITIPADDR 192.168.93.4
88 INITIISADDR 192.4.1.1
88 INITIISPORT 80
88 INITBROWSERS 1000
88 INITMYWID 8701,8800
//
//Configuration Driver 89
//
89 INITIPADDR 192.168.93.4
```

```
89 INITIISADDR 192.4.1.1
89 INITIISPORT 80
89 INITBROWSERS 1000
89 INITMYWID 8801,8900
//
//Configuration Driver 90
//
90 INITIPADDR 192.168.93.4
90 INITIISADDR 192.4.1.1
90 INITIISPORT 80
90 INITBROWSERS 1000
90 INITMYWID 8901,9000
//
//Configuration Driver 91
//
91 INITIPADDR 192.168.93.4
91 INITIISADDR 192.4.1.1
91 INITIISPORT 80
91 INITBROWSERS 1000
91 INITMYWID 9001,9100
//
//Configuration Driver 92
//
92 INITIPADDR 192.168.93.4
92 INITIISADDR 192.4.1.1
92 INITIISPORT 80
92 INITBROWSERS 1000
92 INITMYWID 9101,9200
//
//Configuration Driver 93
//
93 INITIPADDR 192.168.93.4
93 INITIISADDR 192.4.1.1
93 INITIISPORT 80
93 INITBROWSERS 1000
93 INITMYWID 9201,9300
//
//Configuration Driver 94
//
94 INITIPADDR 192.168.93.4
94 INITIISADDR 192.4.1.1
94 INITIISPORT 80
94 INITBROWSERS 1000
94 INITMYWID 9301,9400
//
//Configuration Driver 95
//
95 INITIPADDR 192.168.93.4
95 INITIISADDR 192.4.1.1
95 INITIISPORT 80
95 INITBROWSERS 1000
95 INITMYWID 9401,9500
```

## Driver Environment

```
if '%1'==' ' goto usage

:paramok

set WEBDRIVERNO=%1
set WEBADMBASEPORT=4300
set WEBDIAGLEVEL=2
set WEBEVENTLOG=1
set WEBEVENTHOST=
set WEBLOGLEVEL=1
set WEBSINGLETRAN=0
set WEBTPCCAUDIT=0
set WEBRTFUDGETM=110
set WEBNEWORDERPROB=4494
set WEBPAYMENTPROB=4303
set WEBORDERSTATUSPROB=401
set WEBDELIVERYPROB=401
set WEBSTOCKLEVELPROB=401
set WEBTNEWORDER=12030
set WEBTTPAYMENT=12030
set WEBTDELIVERY=5060
set WEBTORDERSTATUS=10070
set WEBTSTOCKLEVEL=5060

webdriver.exe

goto end

:usage
@ECHO You must supply the following parameters:
@ECHO "webdriver.cmd <driver number>"
pause

:end
exit
```

## RTE IP Configuration Information

(common to 4 RTEs except for Host Name, Physical Address and IP Address)

```
C:\rhost>if 'ipconfig' == ' ' goto usage

C:\rhost>c:

C:\rhost>cd \webdriver

C:\webdriver>call ipconfig /all

Windows 2000 IP Configuration
```

```
Host Name . . . . . : RTE1
Primary DNS Suffix . . . . . :
Node Type . . . . . : Broadcast

IP Routing Enabled. . . . . : No

WINS Proxy Enabled. . . . . : No
```

Ethernet adapter Client:

```
Connection-specific DNS Suffix . :
Description . . . . . : Broadcom NetXtreme Gigabit
Ethernet
Physical Address. . . . . : 00-06-5B-39-9A-83

DHCP Enabled. . . . . : No

IP Address. . . . . : 192.1.1.2

Subnet Mask . . . . . : 255.255.255.0

Default Gateway . . . . . :

DNS Servers . . . . . :
NetBIOS over Tcpip. . . . . : Disabled
```

Ethernet adapter Admin:

```
Connection-specific DNS Suffix . :
Description . . . . . : Intel 8255x-based PCI Ethernet
Adapter (10/100)
Physical Address. . . . . : 00-06-5B-39-9A-82

DHCP Enabled. . . . . : No

IP Address. . . . . : 192.168.93.1

Subnet Mask . . . . . : 255.255.255.0

Default Gateway . . . . . :

DNS Servers . . . . . :
NetBIOS over Tcpip. . . . . : Disabled
```

C:\webdriver>goto end

```
C:\rhost>if 'ipconfig' == ' ' goto usage
```

```
C:\rhost>c:
```

```
C:\rhost>cd \webdriver
```

```
C:\webdriver>call ipconfig /all
```

```
Windows 2000 IP Configuration
```

```
Host Name . . . . . : RTE2
Primary DNS Suffix . . . . . :
Node Type . . . . . : Broadcast

IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
```

```
Ethernet adapter RTE:
```

```
Media State . . . . . : Cable Disconnected
Description . . . . . : Intel(R) PRO/100+ Server
Adapter (PILA8470B)
Physical Address. . . . . : 00-D0-B7-BF-FE-BE
```

```
Ethernet adapter Client:
```

```
Ethernet
Connection-specific DNS Suffix . :
Description . . . . . : Broadcom NetXtreme Gigabit
Physical Address. . . . . : 00-06-5B-39-9B-F0
DHCP Enabled. . . . . : No
IP Address. . . . . : 192.1.1.22
Subnet Mask . . . . . : 255.255.255.0
IP Address. . . . . : 192.2.1.2
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
DNS Servers . . . . . :
NetBIOS over Tcpip. . . . . : Disabled
```

```
Ethernet adapter Admin:
```

```
Connection-specific DNS Suffix . :
Description . . . . . : Intel 825x-based PCI Ethernet
Adapter (10/100)
```

```
Physical Address. . . . . : 00-06-5B-39-9B-EF
DHCP Enabled. . . . . : No
IP Address. . . . . : 192.168.93.2
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
DNS Servers . . . . . :
NetBIOS over Tcpip. . . . . : Disabled
```

```
C:\webdriver>goto end
```

```
C:\rhost>if 'ipconfig' == '' goto usage
```

```
C:\rhost>c:
```

```
C:\rhost>cd \webdriver
```

```
C:\webdriver>call ipconfig /all
```

```
Windows 2000 IP Configuration
```

```
Host Name . . . . . : RTE3
Primary DNS Suffix . . . . . :
Node Type . . . . . : Broadcast

IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
```

```
Ethernet adapter Client:
```

```
Ethernet
Connection-specific DNS Suffix . :
Description . . . . . : Broadcom NetXtreme Gigabit
Physical Address. . . . . : 00-06-5B-39-9C-DC
DHCP Enabled. . . . . : No
IP Address. . . . . : 192.2.1.23
Subnet Mask . . . . . : 255.255.255.0
IP Address. . . . . : 192.3.1.2
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
```

```

DNS Servers . . . . . :
Ethernet adapter Admin:

    Connection-specific DNS Suffix  . :
    Description . . . . . : Intel 8255x-based PCI Ethernet
Adapter (10/100)
    Physical Address. . . . . : 00-06-5B-39-9C-DB

    DHCP Enabled. . . . . : No

    IP Address. . . . . : 192.168.93.3

    Subnet Mask . . . . . : 255.255.255.0

    Default Gateway . . . . . :

    DNS Servers . . . . . :
    NetBIOS over Tcpip. . . . . : Disabled

```

```

C:\webdriver>goto end
C:\rhost>if 'ipconfig' == '' goto usage
C:\rhost>c:
C:\rhost>cd \webdriver
C:\webdriver>call ipconfig /all

```

Windows 2000 IP Configuration

```

Host Name . . . . . : RTE4
Primary DNS Suffix . . . . . :
Node Type . . . . . : Broadcast

IP Routing Enabled. . . . . : No

WINS Proxy Enabled. . . . . : No

```

Ethernet adapter Client:

```

    Connection-specific DNS Suffix  . :
    Description . . . . . : Broadcom NetXtreme Gigabit
Ethernet
    Physical Address. . . . . : 00-06-5B-39-9E-FE

    DHCP Enabled. . . . . : No

```

```

IP Address. . . . . : 192.2.1.24
Subnet Mask . . . . . : 255.255.255.0

IP Address. . . . . : 192.4.1.2
Subnet Mask . . . . . : 255.255.255.0

Default Gateway . . . . . :

DNS Servers . . . . . :
NetBIOS over Tcpip. . . . . : Disabled

```

Ethernet adapter Admin:

```

    Connection-specific DNS Suffix  . :
    Description . . . . . : Intel 8255x-based PCI Ethernet
Adapter (10/100)
    Physical Address. . . . . : 00-06-5B-39-9E-FD

    DHCP Enabled. . . . . : No

    IP Address. . . . . : 192.168.93.4

    Subnet Mask . . . . . : 255.255.255.0

    Default Gateway . . . . . :

    DNS Servers . . . . . :
    NetBIOS over Tcpip. . . . . : Disabled

```

```

C:\webdriver>goto end
Volume in drive \\rte1\c$ is Server
Volume Serial Number is F4CA-F2E9

Directory of \\rte1\c$\webdriver
03/05/2002  08:34p                104,960  webdriver.exe
              1 File(s)                104,960 bytes
              0 Dir(s)  14,142,197,760 bytes free
Volume in drive \\rte2\c$ is Server
Volume Serial Number is F4CA-F2E9

Directory of \\rte2\c$\webdriver
03/05/2002  08:34p                104,960  webdriver.exe
              1 File(s)                104,960 bytes
              0 Dir(s)  14,076,694,528 bytes free
Volume in drive \\rte3\c$ is Server
Volume Serial Number is F4CA-F2E9

Directory of \\rte3\c$\webdriver
03/05/2002  08:34p                104,960  webdriver.exe
              1 File(s)                104,960 bytes

```

0 Dir(s) 14,126,456,832 bytes free  
Volume in drive \\rte4\c\$ is Server  
Volume Serial Number is F4CA-F2E9

Directory of \\rte4\c\$\webdriver

03/05/2002 08:34p 104,960 webdriver.exe  
1 File(s) 104,960 bytes  
0 Dir(s) 14,087,725,056 bytes free  
Volume in drive C is Local Disk  
Volume Serial Number is 4045-54DA

Directory of c:\webdriver

10/17/2000 01:36p 69,632 rapic.exe  
1 File(s) 69,632 bytes  
0 Dir(s) 7,337,512,960 bytes free

## Start RTE Cmd

```
start " D1 RTE1 " /MIN webdriver.cmd 1
start " D1 RTE2 " /MIN webdriver.cmd 2
start " D1 RTE3 " /MIN webdriver.cmd 3
start " D1 RTE4 " /MIN webdriver.cmd 4
start " D1 RTE5 " /MIN webdriver.cmd 5
start " D1 RTE6 " /MIN webdriver.cmd 6
start " D1 RTE7 " /MIN webdriver.cmd 7
start " D1 RTE8 " /MIN webdriver.cmd 8
start " D1 RTE9 " /MIN webdriver.cmd 9
start " D1 RTE10 " /MIN webdriver.cmd 10
start " D1 RTE11 " /MIN webdriver.cmd 11
start " D1 RTE12 " /MIN webdriver.cmd 12
start " D1 RTE13 " /MIN webdriver.cmd 13
start " D1 RTE14 " /MIN webdriver.cmd 14
start " D1 RTE15 " /MIN webdriver.cmd 15
start " D1 RTE16 " /MIN webdriver.cmd 16
start " D1 RTE17 " /MIN webdriver.cmd 17
start " D1 RTE18 " /MIN webdriver.cmd 18
start " D1 RTE19 " /MIN webdriver.cmd 19
start " D1 RTE20 " /MIN webdriver.cmd 20
start " D1 RTE21 " /MIN webdriver.cmd 21
start " D1 RTE22 " /MIN webdriver.cmd 22
start " D1 RTE23 " /MIN webdriver.cmd 23

start " D2 RTE24 " /MIN webdriver.cmd 24
start " D2 RTE25 " /MIN webdriver.cmd 25
start " D2 RTE26 " /MIN webdriver.cmd 26
start " D2 RTE27 " /MIN webdriver.cmd 27
start " D2 RTE28 " /MIN webdriver.cmd 28
start " D2 RTE29 " /MIN webdriver.cmd 29
start " D2 RTE30 " /MIN webdriver.cmd 30
start " D2 RTE31 " /MIN webdriver.cmd 31
start " D2 RTE32 " /MIN webdriver.cmd 32
start " D2 RTE33 " /MIN webdriver.cmd 33
start " D2 RTE34 " /MIN webdriver.cmd 34
start " D2 RTE35 " /MIN webdriver.cmd 35
```

```
start " D2 RTE36 " /MIN webdriver.cmd 36
start " D2 RTE37 " /MIN webdriver.cmd 37
start " D2 RTE38 " /MIN webdriver.cmd 38
start " D2 RTE39 " /MIN webdriver.cmd 39
start " D2 RTE40 " /MIN webdriver.cmd 40
start " D2 RTE41 " /MIN webdriver.cmd 41
start " D2 RTE42 " /MIN webdriver.cmd 42
start " D2 RTE43 " /MIN webdriver.cmd 43
start " D2 RTE44 " /MIN webdriver.cmd 44
start " D2 RTE45 " /MIN webdriver.cmd 45
start " D2 RTE46 " /MIN webdriver.cmd 46
start " D2 RTE47 " /MIN webdriver.cmd 47

start " D3 RTE48 " /MIN webdriver.cmd 48
start " D3 RTE49 " /MIN webdriver.cmd 49
start " D3 RTE50 " /MIN webdriver.cmd 50
start " D3 RTE51 " /MIN webdriver.cmd 51
start " D3 RTE52 " /MIN webdriver.cmd 52
start " D3 RTE53 " /MIN webdriver.cmd 53
start " D3 RTE54 " /MIN webdriver.cmd 54
start " D3 RTE55 " /MIN webdriver.cmd 55
start " D3 RTE56 " /MIN webdriver.cmd 56
start " D3 RTE57 " /MIN webdriver.cmd 57
start " D3 RTE58 " /MIN webdriver.cmd 58
start " D3 RTE59 " /MIN webdriver.cmd 59
start " D3 RTE60 " /MIN webdriver.cmd 60
start " D3 RTE61 " /MIN webdriver.cmd 61
start " D3 RTE62 " /MIN webdriver.cmd 62
start " D3 RTE63 " /MIN webdriver.cmd 63
start " D3 RTE64 " /MIN webdriver.cmd 64
start " D3 RTE65 " /MIN webdriver.cmd 65
start " D3 RTE66 " /MIN webdriver.cmd 66
start " D3 RTE67 " /MIN webdriver.cmd 67
start " D3 RTE68 " /MIN webdriver.cmd 68
start " D3 RTE69 " /MIN webdriver.cmd 69
start " D3 RTE70 " /MIN webdriver.cmd 70
start " D3 RTE71 " /MIN webdriver.cmd 71

start " D4 RTE72 " /MIN webdriver.cmd 72
start " D4 RTE73 " /MIN webdriver.cmd 73
start " D4 RTE74 " /MIN webdriver.cmd 74
start " D4 RTE75 " /MIN webdriver.cmd 75
start " D4 RTE76 " /MIN webdriver.cmd 76
start " D4 RTE77 " /MIN webdriver.cmd 77
start " D4 RTE78 " /MIN webdriver.cmd 78
start " D4 RTE79 " /MIN webdriver.cmd 79
start " D4 RTE80 " /MIN webdriver.cmd 80
start " D4 RTE81 " /MIN webdriver.cmd 81
start " D4 RTE82 " /MIN webdriver.cmd 82
start " D4 RTE83 " /MIN webdriver.cmd 83
start " D4 RTE84 " /MIN webdriver.cmd 84
start " D4 RTE85 " /MIN webdriver.cmd 85
start " D4 RTE86 " /MIN webdriver.cmd 86
start " D4 RTE87 " /MIN webdriver.cmd 87
start " D4 RTE88 " /MIN webdriver.cmd 88
start " D4 RTE89 " /MIN webdriver.cmd 89
start " D4 RTE90 " /MIN webdriver.cmd 90
start " D4 RTE91 " /MIN webdriver.cmd 91
start " D4 RTE92 " /MIN webdriver.cmd 92
```

```
start " D4 RTE93 " /MIN webdriver.cmd 93
start " D4 RTE94 " /MIN webdriver.cmd 94
start " D4 RTE95 " /MIN webdriver.cmd 95
```



## Appendix E - Disk Storage

TPC-C 60-Day Disk Space Requirements					
Warehouses	<b>9,500</b>	tpmC	<b>118,381.38</b>	tpmC/W	12.46
<b>Table</b>	<b>Initial Rows</b>	<b>Data KB</b>	<b>Index KB</b>	<b>Extra 5% KB</b>	<b>Total With 5% KB</b>
Warehouse	9,500	1,016	192	60	1,268
District	95,000	10,560	472	552	11,584
Customer	285,000,000	58,461,544	12,063,872	3,526,271	74,051,687
Customer.Text	285,000,000	170,467,752		8,523,388	178,991,140
History (D)	285,000,000	15,833,336	57,832		15,891,168
Order (D)	285,000,000	8,735,640	17,832		8,753,472
New-Order	85,500,000	1,500,000	3,760	75,188	1,578,948
Order-Line (D)	2,849,989,329	178,124,336	377,048		178,501,384
Item	100,000	8,744	472	461	9,677
Stock	950,000,000	292,811,872	547,200	14,667,954	308,027,026
<b>Totals KB</b>		725,954,800	13,068,680	26,793,873	765,817,353
<b>Db/Filegroup</b>	<b>Count</b>	<b>Size MB</b>	<b>MB Allocated</b>	<b>MB Loaded +5%</b>	<b>MB for 8 Hours</b>
master, model & msdb		22	22	22	22
tempdb		10	10	10	10
mssql70_tpcc_root	1	10	10	10	10
mssql70_ord_fg	56	4,250	238,000	184,408	224,502
mssql70_cs_fg	56	6,750	378,000	373,124	373,124
mssql70_misc_fg	56	3,600	201,600	190,337	193,496
<b>Total Allocated MB</b>			<b>817,642</b>	<b>747,911</b>	<b>791,164</b>
		<b>MB</b>			
Dynamic Space MB	197,943	Sum of data for orders, order_line & history			
Static Space	549,926	Sum of data+index+5% - Dynamic Space			
Free Space	69,773	Total allocated space - (Dynamic & Static Spaces)			
Daily Growth	39,466	(Dynamic Space / (W * 62.5)) * tpmC			
Daily Spread	10,575	Free space - 1.5 * Daily growth (zero if negative)			
		0 SQL Server can be configured to eliminate Daily Spread			
60 Day Space MB	2,917,865	Static Space + 60 * (Daily Growth + Daily Spread)			
60 Day Space GB	<b>2,849.48</b>				
8 hr log GB	<b>257.09</b>	(need double for mirroring)			
Disk Capacity MB	61841	<b>60.392 GB</b>	Capacity of 73GB disks (10,000 RPM)		
	16744	<b>16.352 GB</b>	Capacity of 18GB disks (15,000 RPM)		
<b>Space Usage</b>	<b>GB Needed</b>	<b>Disks Priced</b>	<b>GB Priced</b>		
60-day space DB	2849.48 GB	224	3662.75 GB	18GB drives	
Total DB		<b>224</b>	<b>3662.75 GB</b>		
8-hr log+mirror	514.17 GB	10	603.92 GB	73GB drives	
OS, SQL Server	3.10 GB	1	16.35 GB	18GB drive	
<b>Total space</b>	<b>3366.75 GB</b>	<b>235</b>	<b>4283.02 GB</b>	<b>4.2 TB</b>	

<b>TPC-C Dynamic Table Growth Rates for 8 Hours</b>					<b>118,381.38 tpmC</b>
<b>Tables</b>	<b>Warm (KB)</b>	<b>Final (KB)</b>	<b>Change(KB)</b>	<b>KB / New-Order</b>	<b>8-Hr MB</b>
History	15,891,168	19,035,512	3,144,344	0.0569	18,678.20
Orders	8,753,472	11,808,768	3,055,296	0.0553	11,618.32
Order_line	178,501,384	214,724,864	36,223,480	0.6559	210,715.65
<b>Dynamic</b>	<b>203,146,024</b>	<b>245,569,144</b>	<b>42,423,120</b>	<b>0.7682</b>	<b>241,012.17</b>
New_order	1,503,760	2,199,944	696,184	0.0126	2,168.05
<b>Static</b>					
<b>Log</b>	8,037,649	262,221,009	254,183,360	<b>4.6027</b>	263,256.48 257.086 GB
<b>SUM(d_next_o_id)</b>	285,095,000	340,320,370	55,225,370		

# ***Appendix F - Third-Party Price Quotations***

Microsoft Corporation  
One Microsoft Way  
Redmond, WA 98052-6399

Tel 425 882 8080  
Fax 425 936 7329  
<http://www.microsoft.com/>

**Microsoft**

March 28, 2003

Unisys Corporation  
Glenn Weeks  
MS237  
25725 Jeronimo Road  
Mission Viejo, CA 92691

Mr. Weeks:

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 (\$).

<b>Part Number</b>	<b>Description</b>	<b>Unit Price</b>	<b>Quantity</b>	<b>Price</b>
C11-00821	<b>Windows 2000 Server</b> <i>Server license only - No CALs</i> <i>Discount Schedule: Open Program - No Level</i> <i>Unit Price reflects a 8% discount from the</i> <i>retail unit price of \$799.</i>	\$738	4	\$2,952
254-00170	<b>Visual C++ Standard</b> <i>No discounts applied</i>	\$109	1	\$109
PRO-PRORS-16U-01	<b>Database Server Support Package</b> <i>1 Year Term</i>	\$1,950	3	\$5,850

All products are currently orderable through Microsoft's normal distribution channels.

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](mailto:jamiere@microsoft.com).

Reference ID: PCglwe0328037691

Please include this Reference ID in any correspondence regarding this price quote.



Advanced Systems Division

Quote # DM030401-UN012

Apr 1, 2003

# To: Unisys Corporation TPC-C

Qty	Prod #	Description	Unit Price	Net Price
<b>ES7000-520 Server</b>				
1	ES7520083-640	SYS: ES7000-520, 8x2.0GHz, 64MB Cache, 64GB Mem.	\$163,200.00	<b>\$163,200.00</b>
5	FC76222-P64	CTRL: Fibre Channel HBA, 2-Port, 64-bit PCI	\$2,720.00	<b>\$13,600.00</b>
4	PCI10001-CXG	CTRL: cLAN, PCI Host Adapter & Cable	\$721.00	<b>\$2,884.00</b>
1	ES70003-UIF	I/F: Monitor, 15-inch Color, Kybrd, Mse & Cable	\$544.00	<b>\$544.00</b>
1	WXQ320808-L	O/S: Microsoft Windows 2003 Datacenter & SQL Package	\$116,235.00	<b>\$116,235.00</b>
<b>USS2200/RS2000 Storage</b>				
247	JBD201815-2F	DISK: 18GB Drive, 15K FC, SCA + 10% spares	\$551.00	<b>\$136,097.00</b>
12	CXR7310-2GF	DISK: 73GB Drive, 10K FC, SCA + 10% spares	\$1,668.00	<b>\$20,016.00</b>
8	JBD2002-SA	RCK: FC 2Gb Storage, Standard, Copper/Copper I/F	\$3,051.00	<b>\$24,408.00</b>
8	JBD2011-SA	RCK: FC 2Gb Storage, Standard, Optical/Copper I/F	\$3,257.00	<b>\$26,056.00</b>
4	RMM20103-ELS	CTRL: Symmetric Disk Virt. 2x2GHz, 512MB Mem	\$5,252.00	<b>\$21,008.00</b>
12	RMM20701-TAR	CTRL: USS, Fibre Channel HBA, 1-Port, 64-bit PCI	\$2,108.00	<b>\$25,296.00</b>
1	USS10300-SW	APP: Unisys Storage Sentinel 2200 SDV Software	\$8,160.00	<b>\$8,160.00</b>
1	USS20305-LIC	APP: Storage Sentinel SDV SW, 5TB License	\$29,467.00	<b>\$29,467.00</b>
8	JBD20003-CCL	CBL: FC, Copper, HSDC2 Conn's, 0.3m	\$52.00	<b>\$416.00</b>
13	JBD2010-OCL	CBL: FC, 50um Dupx, LC->LC Conn's, 10m	\$164.00	<b>\$2,132.00</b>
16	JBD2000-RMK	RCK: Rack Mount Kit, Disk Enclosure	\$175.00	<b>\$2,800.00</b>
1	CX200-DPE	CTRL: DPE: 2 RAID Cntrl, 1GB Cache ea., 0 Disk	\$18,133.00	<b>\$18,133.00</b>
1	CXN200-T3	SYS MGT: Storage, Navisphere Manager	\$3,627.00	<b>\$3,627.00</b>
1	CXN600-WIN	SYS MGT: Storage, Navisphere Agent	\$907.00	<b>\$907.00</b>
1	GS516-T16	SWTCH: Switch, 10/100/1000Mb Ethernet	\$2,720.00	<b>\$2,720.00</b>
1	SWC81-SXR	SWTCH: Switch, 8-port KVM	\$1,451.00	<b>\$1,451.00</b>
8	CBL121-SWC	CBL: Cable, KVM, 12 foot	\$136.00	<b>\$1,088.00</b>
1	KBR28301-SXR	KBD: Keyboard & Drawer, Rackmount	\$317.00	<b>\$317.00</b>
1	MON2145-LCD	MON: Display, Rackmount LCD	\$2,448.00	<b>\$2,448.00</b>
4	SFR9-PWR	PWR: Distribution Strip, 9-Plug, 220V	\$154.00	<b>\$616.00</b>
4	USE1936-LC6	CBL: Power, U.S. (Domestic), C20 - L6-20P	\$82.00	<b>\$328.00</b>
2	HRT361941-OFT	CAB: 36U x 19" x 41" Open Front Cabinet	\$1,360.00	<b>\$2,720.00</b>
2	HRT3619-RDR	DOOR: 36U x 19", Rear	\$453.00	<b>\$906.00</b>
2	HRT3641-SDS	PNL: 36U x 41" Side Skins, L&R HRT	\$453.00	<b>\$906.00</b>
2	RM1936-FOT	INSTL: Stabilizer Foot	\$154.00	<b>\$308.00</b>
<b>ES3020L Servers</b>				
4	ESL30201-240	SYS: ES3020L w/ 1x 2.4GHz Proc., 0MB Mem	\$1,486.00	<b>\$5,944.00</b>
4	CPL3020241-512	PROC:1x 2.4GHz Intel Xeon/512KB Cache	\$635.00	<b>\$2,540.00</b>
4	DIM3000022-1GB	MEM: 1GB, 2x512MB DDR DRAM PC133ECC	\$891.00	<b>\$3,564.00</b>
4	HBP3020101-51	RCK: ESL2026 Disk Backpanel, 1x4	\$253.00	<b>\$1,012.00</b>
4	HDM18110-DC4	DISK: 18GB 10Krpm U160 3.5 Internal	\$317.00	<b>\$1,268.00</b>
4	PCI10001-CXG	CTRL: cLAN, PCI Host Adapter & Cable	\$721.00	<b>\$2,884.00</b>
4	ESL3020-VRL	RCK: ES3020L Universal Rack Kit	\$317.00	<b>\$1,268.00</b>
1		Large Volume Cash Discount	-\$64,727.00	<b>-\$64,727.00</b>
Prices may vary when items are purchased separately. Disks come with a 3 year return-to-factory warranty, 7 day replenishment. Quote valid for 90 days.				

**TOTAL**

**\$582,547.00**