

An HP StorageWorks Disk Array XP solution with Oracle 9i Real Application Clusters (RAC)



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executive summary

The following detail is documentation of a lab exercise performed by HP in response to a number of customer requests for sample configurations and validation of Oracle 9i Real Application Clusters (RAC) running Windows leveraging HP StorageWorks XP SAN technology. This activity has satisfied the two target objectives:

1. Define and document a representative, jointly supported, (both HP and Oracle) RAC on Windows configuration utilizing HP StorageWorks XP SAN technology.
2. Validated compatibility and document implementation issues encountered.

This document does not address XP or RAC performance as true performance metrics can only be achieved in conjunction with a specific application and the intention of this exercise is purely generic.

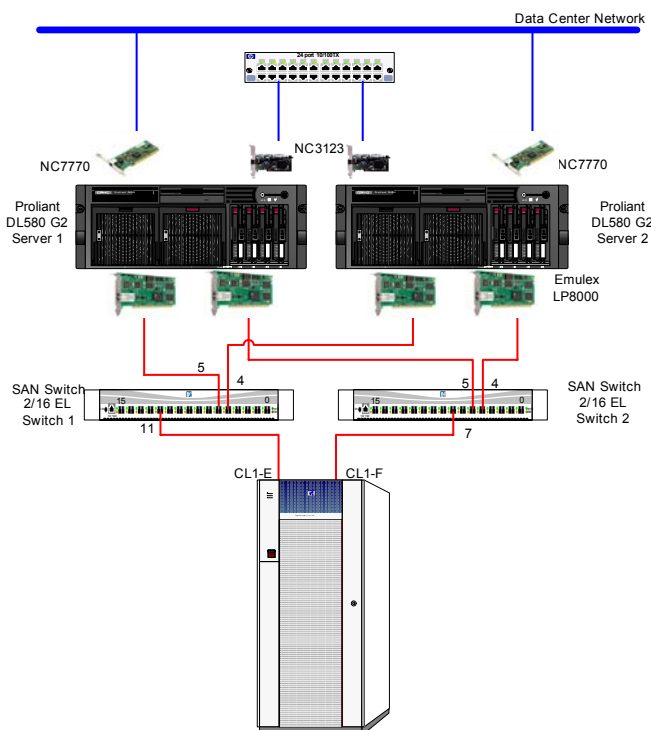
The following detail then is a specific point in time validation of RAC and xp. For assistance in implementing a custom RAC solution to fit specific application requirements contact HP Consulting and Integration.

overview

This technical white paper documents the configuration of the HP StorageWorks XP128 Disk Array with an Oracle 9i Real Application Clusters (RAC) 9.2.0.3.0 environment. This solution is staged on Microsoft® Windows 2000 Advanced Server. It details the hardware, software, array, switch and Oracle setup and documents problems found and how they were resolved.

hp solution overview

The configuration used for this activity was the StorageWorks xp128 disk array in a fibre channel (FC) storage area network (SAN) configuration with a two ProLiant DL580 G2 servers as cluster nodes.



Proliant Configuration

Two HP Proliant DL580 G2 servers were used in this RAC configuration. The server software installation was performed using HP SmartStart version 6.10. Windows 2000 Advanced Server was installed and Service Pack 3 was applied. Server details:

- ROM BIOS – P27 (10/7/2002)
- Processors – (2) 1.4 GHz
 - 256 KB L2, 512 KB L3 cache
- Memory– 5120 MB
- (4) 36.4 GB 15k RPM, Ultra3 SCSI drives
- Smart Array 5i v1.82, slot 0 (Direct Attached Storage – Internal drives)
 - Logical Drive 1 – RAID 0 – Simplex slots 2, 3
 - Total of 67.8 GB (avail. to Windows)
 - SCSI Port 1, ID 0
 - SCSI Port 1, ID 1
 - Logical Drive 2 – RAID 0 – Simplex slots 0, 1
 - Total of 67.8 GB (avail. to Windows)
 - SCSI Port 2, ID 0
 - SCSI Port 2, ID 1
- Same Advanced Memory Protection Mode
- Cluster interconnect achieved with NC2123 fast ethernet NIC PCI 10/100 with a 100BT network hub.
- Public network connection is achieved using the NC7770 pci-x gigabit server adapter
- Emulex LP8000 HBAs were used with version 5-4.82a4 driver for the SAN connection
- Hp StorageWorks AutoPath XP version 2.01.00 was used as the multi-pathing software.

xp array Configuration

The xp128 array was used as the shared storage. Firmware level 21-05-27-00/00 was used. Two new host groups were created on each port, CL1-E and CL1-F, which requires LUN security. The host groups were named “sd1” and “sd3”, abbreviations of the server names. The Fabric-ON, Point-to-Point topology was used. The following LUNs were configured for each of the four host groups:

LUN	CU:LDEV	Emulation	Size (MB)	CMD DEV
00	00:5E	OPEN-9	7042.50	NO
01	00:9F	OPEN-9	7042.50	NO
02	00:A0	OPEN-9	7042.50	NO
03	00:A1	OPEN-9	7042.50	NO
04	00:A2	OPEN-9	7042.50	NO
05	00:85	OPEN-9	7042.50	NO
06	00:86	OPEN-9	7042.50	NO
07	00:87	OPEN-9	7042.50	NO
08	00:88	OPEN-9	7042.50	NO
09	00:89	OPEN-9	7042.50	NO
0A	00:8A	OPEN-9	7042.50	NO
0B	00:8B	OPEN-9	7042.50	NO
0C	00:8C	OPEN-9	7042.50	NO
0D	00:8D	OPEN-9	7042.50	NO

0E	00:8E	OPEN-9	7042.50	NO
0F	00:8F	OPEN-9	7042.50	NO
10	00:6C	OPEN-9	7042.50	NO
11	00:6D	OPEN-9	7042.50	NO
12	00:6E	OPEN-9	7042.50	NO
13	00:6F	OPEN-9	7042.50	NO

See [appendix a](#) for xp128 configuration detail. See [appendix b](#) for AutoPath XP multipathing detail.

Switch Configuration

Two HP StorageWorks SAN switch 2/16-el switches were used in this configuration. Firmware level 3.0.2f was used. Ports CL1-E and CL1-F on the XP array are 1Gbps ports. The switch auto negotiated to 1 Gbps speed for the array connection and the server HBA connections. The switch Ports 2, 5 and 11 on switch 1 are in a zone. Ports 4, 5 and 11 on switch 2 are in a zone. See [appendix c](#) for details.

Oracle Configuration

Oracle's Operating System Dependant (OSD) clusterware installation was performed using the 9.2.0.2 patchset, as using the 9.2.0.1.0 installation has known problems. Oracle installation was then performed using the base 9.2.0.1.0 binaries after meeting it's pre-installation requirements. The 9.2.0.2 general patchset was then applied. Oracle's Database Configuration Assistant (DBCA) was used to create a sample database on the XP shared storage. The 9iRAC installation was verified as successful from coordinated and uncoordinated power outage sequence testing. See [appendix d](#) for details.

Oracle Validation

Benchmark Factory for Oracle (v 3.3) was run to validate the 9iRAC configuration. This included automated creation of tables, loading the tables, creating indices and running a mix of transactions. A total of 531MB was used for the validation database. A separate tablespace was created for this, also on the XP shared storage.

Basic validation steps included pinging both private SAN and public LAN from all nodes and validation that all automatic services are running properly on all nodes.

Multipathing validation included introducing faults while the RAC was under load from the Benchmark Factory for Oracle software clients. For all tests, the AutoPath XP load balancing software was enabled with the Shortest Queue Service Time (SQST) policy. A cable fault between the switch and storage was injected. A cable fault between an active path between the HBA to the switch was injected. Both tests passed. Disconnecting one FC link from a server, restarting that server and returning it's FC link resulted in a restored path as expected. Power down of one of the two switches resulted in a single path loss on each RAC server. Upon power up, that path returned to each RAC server as expected. In all cases, the client workload continued as expected without error.

A number of tests were performed to show high availability (HA) functionality. The first test was to shutdown one instance and verify that instance was removed from the cluster. That was successful. The next test was to remove all paths to the shared storage and verify that node was removed from the cluster. That was successful. The next test was to power one of the nodes down and verify that node was removed from the cluster. That was successful.

The final validation step was to run a TPC-C OLTP benchmark with a 100 user load. The load was accomplished using Benchmark Factory for Oracle software and was spread between two client nodes (50 users on each node). That was successful and the log files can be found in [appendix e](#).

problems, challenges, and constraints

Oracle's Metalink bug 2608337 (OracleGSDService does not start correctly) was encountered and the recommended patch successfully applied. Metalink bug 2623039 (OracleMTSRecoveryService not starting properly) was encountered and its recommended fix was also successful. Metalink note 243549.1 addresses a kccsbck_first problem, found in the CM logs. The recommended fix pertaining to DHCP was applied, though it did not fix the problem.

Resolution of this issue came when the 9.2.0.3.0 patchset was applied. In order to apply the 9.2.0.3.0 patch, the Oracle Universal Installer (OUI) had to be upgraded to version 2.2.0.18.0 or greater. After application of the 9.2.0.3.0 patch, even uncoordinated power down sequence tests resulted in both instances of the RAC databases running properly on each of the two active nodes.

The HP AutoPath XP 2.01.00 software requires the Java 2 Runtime Environment version 1.3.1. The command line interface (CLI) included with the software can be used without installation of JRE1.3.1, but the client graphical user interface (GUI) requires this Java version. Without JRE1.3.1 installed the HP AutoPath Server service fails to start upon boot up.

other solution options

Other supported server host bus adapters (HBA), supported by AutoPath XP, could be used. Specifically, 2 Gbps models for higher throughput. Models currently supported by AutoPath XP on Windows 2000 include Emulex LP9002, Compaq FCA-2101, Agilent D8602B and Qlogic 2310. Refer to HP documentation for the latest AutoPath XP supported HBAs. Use of HBAs not specifically tested in this paper is done at the risk of the user.

A 2 Gbps CHIP board could be used in the XP array which would also increase throughput and use the potential of the 2/16-el switch.

For the HA benefits of the XP, connect one fibre channel (FC) path to a port on cluster 1 and the other path to another port on cluster 2. For this paper, ports on the xp128 array were not available in both clusters, so both ports were connected to cluster 1.

A supported non-blocking Ethernet switch should be used for the cluster interconnect. Where possible, connect gigabit Ethernet NICs to the cluster interconnect.

The XP array configuration can be tailored to the specific database configuration that is desired. LUSE or CVS can be used to make smaller or larger LUN sizes based on requirements. Extended partitions can be created and the Oracle Object Manager can be used to create the symbolic links.

for more information

For more information, refer to the following web sites:

http://www.hp.com/products1/storage/products/disk_arrays/highend/xp128/index.html

<http://h18004.www1.hp.com/solutions/enterprise/highavailability/oracle9i/pdc-eva.html>

<http://h18006.www1.hp.com/products/storageworks/sanswitch216el/index.html>

<http://h18004.www1.hp.com/products/servers/platforms/index-dl-ml.html>

http://www.hp.com/products1/storage/products/disk_arrays/xpstorage/sw/autopathxp/index.html

<http://h18004.www1.hp.com/solutions/enterprise/highavailability/oracle/index.html>

<http://h30046.www3.hp.com/solutions/pdf/Oracleblueprint.pdf>

<http://metalink.oracle.com>

Conclusions and comments:

HP supports all of the HP hardware and software components used in conjunction with the Operating System version utilized. All components meet the Oracle RAC minimum support requirements detailed on Oracle Metalink. HP and Oracle jointly support this solution in production.

No incompatibilities were identified during this testing. During all of the research necessary to complete this effort we found no indication of any support issues pending with either HP or Oracle support on the combination of XP and RAC on Windows.

appendices

[Appendix a: XP128 Configuration](#)

[Appendix b: AutoPath XP configuration](#)

[Appendix c: Switch configuration](#)

[Switch 1](#)

[Switch 2](#)

[Appendix d: Oracle Database verification](#)

[Appendix e: Oracle Validation](#)

appendix a: xp128 configuration

xp128 version information

Version Information

DISK SUBSYSTEM

Currently running Microprogram Version

DKCHAIN	LCP	HTP	LCDG	FCDG	PCDG	BOOT (RAM)	SSVP
21-05-27-00/00	-----	-----	-----	-----	-----	20-01-05	21-05-01

Stored Microprogram Version

Type	MP No.	DKCHAIN	LCP	HTP	LCDG	FCDG	PCDG	BOOT (RAM)	BOOT (ROM)
<input checked="" type="radio"/> Running	CHP00-1C	21-05-27-00/00	-----	-----	-----	-----	-----	20-01-05	20-01-00
	CHP01-1C	21-05-27-00/00	-----	-----	-----	-----	-----	20-01-05	20-01-00
	CHP02-1C	21-05-27-00/00	-----	-----	-----	-----	-----	20-01-05	20-01-00
	CHP03-1C	21-05-27-00/00	-----	-----	-----	-----	-----	20-01-05	20-01-00

SVP

Program	DKCHAIN	Backup Program
21-05-27-00/00	DKCHAIN	21-04-32-00/00
10-00-11	LCP	10-00-10
21-05-03	HTP	21-04-34
10-00-01	LCDG	-----
21-02-02	FCDG	21-02-01
21-05-00	PCDG	21-04-01
21-05-03/10	CONFIG	-----/--
20-01-05	BOOT (RAM)	20-01-04
21-05-21/00	SVP	21-04-32/00
21-05-01	S-SVP	21-04-30
21-05-02	CUDG4	21-04-02

DKU

Current Type	(ROM-RAM /RAM-RAM)
DKS2B-K036FC	F1-C7
-----	-----

SVP Type (RAM)

DKR1B	00-00-G1
DKR2B	00-00-G1
DKR1C	00-00-D3

Backup Type (RAM)

DKR1B	00-00-G1
DKR2B	00-00-G1
DKR1C	00-00-D3

RENEW OK

CHA-1D information - topology

LUN Management -

File Edit View Group WWN LUN CHA Port LDEV LU/SE

Exit Switch New Change Delete Add Change Delete List Add Delete CHA Port Cmd LU/SE

Display Group

Port	Type	Security	Switch	Address	Fabric	Connection	Channel Speed
1E		On		E1(4)	On	Point to Point	1[Gbps]
1F		On		E0(5)	On	Point to Point	1[Gbps]
1G		Off		DC(6)	On	Point to Point	1[Gbps]
1H		Off		DA(7)	On	Point to Point	1[Gbps]

There is no information to display here.

Ready All LU(s) 194 Allocated LU(s) 180

Port CL1-E host groups

The screenshot shows the LUN Management interface with the 'Group' view selected. The left pane displays a tree structure of host groups under 'DKC', including 'CHA', 'CHA-1C', 'CHA-1D', 'CHA-1F', 'CHA-2G', and 'CHA-2J'. The right pane shows a table of host group entries:

#	Group	Host Mode	
00	riker	0C	Windows
01	odr3	0C	Windows
02	odr4	0C	Windows
03	sd1	0C	Windows
04	sd3	0C	Windows

Below the table, a message states: "There is no information to display here." The status bar at the bottom indicates "All LU(s) 194" and "Allocated LU(s) 180".

Port CL1-E host group sd1 LUN configuration

The screenshot shows the LUN Management interface with the 'LUN' view selected. The left pane shows the same tree structure as the previous screenshot. The right pane displays a table of LUN configurations for the 'sd1' host group:

LUN	CU	LDEV	Emulation	CYS	Size	Cmd.Dev.	Cmd.Sec.
00	00	5E++	OPEN-9		7042.50 MB	Off	Off
01	00	9F++	OPEN-9		7042.50 MB	Off	Off
02	00	A0++	OPEN-9		7042.50 MB	Off	Off
03	00	A1++	OPEN-9		7042.50 MB	Off	Off
04	00	A2++	OPEN-9		7042.50 MB	Off	Off
05	00	85++	OPEN-9		7042.50 MB	Off	Off
06	00	86++	OPEN-9		7042.50 MB	Off	Off
07	00	87++	OPEN-9		7042.50 MB	Off	Off
08	00	88++	OPEN-9		7042.50 MB	Off	Off
09	00	89++	OPEN-9		7042.50 MB	Off	Off
0A	00	8A++	OPEN-9		7042.50 MB	Off	Off
0B	00	8B++	OPEN-9		7042.50 MB	Off	Off
0C	00	8C++	OPEN-9		7042.50 MB	Off	Off
0D	00	8D++	OPEN-9		7042.50 MB	Off	Off
0E	00	8E++	OPEN-9		7042.50 MB	Off	Off
0F	00	8F++	OPEN-9		7042.50 MB	Off	Off
10	00	6C++	OPEN-9		7042.50 MB	Off	Off
11	00	6D++	OPEN-9		7042.50 MB	Off	Off
12	00	6E++	OPEN-9		7042.50 MB	Off	Off
13	00	6F++	OPEN-9		7042.50 MB	Off	Off

The status bar at the bottom indicates "All LU(s) 194" and "Allocated LU(s) 180".

Port CL1-D host group sd3 LUN configuration

Ready All LU(s) 194 Allocated LU(s) 180

#	Group	Host	Mode
00	riker	OC	Windows
01	odr3	OC	Windows
02	odr4	OC	Windows
03	sd1	OC	Windows
04	sd3	OC	Windows

LUN	CU : LDEV	Emulation	CVS	Size	Cmd.Dev.	Cmd.Sec.
00	00 : 5E++	OPEN-9		7042.50 MB	Off	Off
01	00 : 9F++	OPEN-9		7042.50 MB	Off	Off
02	00 : A0++	OPEN-9		7042.50 MB	Off	Off
03	00 : A1++	OPEN-9		7042.50 MB	Off	Off
04	00 : A2++	OPEN-9		7042.50 MB	Off	Off
05	00 : 85++	OPEN-9		7042.50 MB	Off	Off
06	00 : 86++	OPEN-9		7042.50 MB	Off	Off
07	00 : 87++	OPEN-9		7042.50 MB	Off	Off
08	00 : 88++	OPEN-9		7042.50 MB	Off	Off
09	00 : 89++	OPEN-9		7042.50 MB	Off	Off
0A	00 : 8A++	OPEN-9		7042.50 MB	Off	Off
0B	00 : 8B++	OPEN-9		7042.50 MB	Off	Off
0C	00 : 8C++	OPEN-9		7042.50 MB	Off	Off
0D	00 : 8D++	OPEN-9		7042.50 MB	Off	Off
0E	00 : 8E++	OPEN-9		7042.50 MB	Off	Off
0F	00 : 8F++	OPEN-9		7042.50 MB	Off	Off
10	00 : 6C++	OPEN-9		7042.50 MB	Off	Off
11	00 : 6D++	OPEN-9		7042.50 MB	Off	Off
12	00 : 6E++	OPEN-9		7042.50 MB	Off	Off
13	00 : 6F++	OPEN-9		7042.50 MB	Off	Off

Port CL1-f host group sd1 LUN configuration

Ready All LU(s) 194 Allocated LU(s) 180

#	Group	Host	Mode
00	riker	OC	Windows
01	odr3	OC	Windows
02	odr4	OC	Windows
03	sd1	OC	Windows
04	sd3	OC	Windows

LUN	CU : LDEV	Emulation	CVS	Size	Cmd.Dev.	Cmd.Sec.
00	00 : 5E++	OPEN-9		7042.50 MB	Off	Off
01	00 : 9F++	OPEN-9		7042.50 MB	Off	Off
02	00 : A0++	OPEN-9		7042.50 MB	Off	Off
03	00 : A1++	OPEN-9		7042.50 MB	Off	Off
04	00 : A2++	OPEN-9		7042.50 MB	Off	Off
05	00 : 85++	OPEN-9		7042.50 MB	Off	Off
06	00 : 86++	OPEN-9		7042.50 MB	Off	Off
07	00 : 87++	OPEN-9		7042.50 MB	Off	Off
08	00 : 88++	OPEN-9		7042.50 MB	Off	Off
09	00 : 89++	OPEN-9		7042.50 MB	Off	Off
0A	00 : 8A++	OPEN-9		7042.50 MB	Off	Off
0B	00 : 8B++	OPEN-9		7042.50 MB	Off	Off
0C	00 : 8C++	OPEN-9		7042.50 MB	Off	Off
0D	00 : 8D++	OPEN-9		7042.50 MB	Off	Off
0E	00 : 8E++	OPEN-9		7042.50 MB	Off	Off
0F	00 : 8F++	OPEN-9		7042.50 MB	Off	Off
10	00 : 6C++	OPEN-9		7042.50 MB	Off	Off
11	00 : 6D++	OPEN-9		7042.50 MB	Off	Off
12	00 : 6E++	OPEN-9		7042.50 MB	Off	Off
13	00 : 6F++	OPEN-9		7042.50 MB	Off	Off

Port CL1-F host group sd3 LUN configuration

The screenshot shows the LUN Management interface with the 'Display' dropdown set to 'LUN'. The left pane shows a tree view of storage components, with 'CHA-1F' selected. The main pane displays a table of LUNs and their properties.

#	Group	Host Mode				
00	riker	0C	Windows			
01	odr3	0C	Windows			
02	odr4	0C	Windows			
03	sd1	0C	Windows			
04	sd3	0C	Windows			

LUN	CU	LDEV	Emulation	CYS	Size	Cmd.Dev.	Cmd.Sec.
00	00	5E++	OPEN-9		7042.50 MB	Off	Off
01	00	9F++	OPEN-9		7042.50 MB	Off	Off
02	00	A0++	OPEN-9		7042.50 MB	Off	Off
03	00	A1++	OPEN-9		7042.50 MB	Off	Off
04	00	A2++	OPEN-9		7042.50 MB	Off	Off
05	00	85++	OPEN-9		7042.50 MB	Off	Off
06	00	86++	OPEN-9		7042.50 MB	Off	Off
07	00	87++	OPEN-9		7042.50 MB	Off	Off
08	00	88++	OPEN-9		7042.50 MB	Off	Off
09	00	89++	OPEN-9		7042.50 MB	Off	Off
0A	00	8A++	OPEN-9		7042.50 MB	Off	Off
0B	00	8B++	OPEN-9		7042.50 MB	Off	Off
0C	00	8C++	OPEN-9		7042.50 MB	Off	Off
0D	00	8D++	OPEN-9		7042.50 MB	Off	Off
0E	00	8E++	OPEN-9		7042.50 MB	Off	Off
0F	00	8F++	OPEN-9		7042.50 MB	Off	Off
10	00	6C++	OPEN-9		7042.50 MB	Off	Off
11	00	6D++	OPEN-9		7042.50 MB	Off	Off
12	00	6E++	OPEN-9		7042.50 MB	Off	Off
13	00	6F++	OPEN-9		7042.50 MB	Off	Off

Ready All LU(s) 194 Allocated LU(s) 180

Port CL1-E host group sd1 LUN security configuration

The screenshot shows the LUN Management interface with the 'Display' dropdown set to 'Group'. The left pane shows a tree view of storage components, with 'CHA-1F' selected. The main pane displays a table of LUNs and their security configurations.

#	Group	Host Mode		
00	riker	0C	Windows	
01	odr3	0C	Windows	
02	odr4	0C	Windows	
03	sd1	0C	Windows	
04	sd3	0C	Windows	

WWN	Nickname
10000000C9219725	sd1_1

Ready All LU(s) 194 Allocated LU(s) 180

Port CL1-E host group sd3 LUN security configuration

The screenshot shows the LUN Management console with the host group 'sd3' selected. The left pane displays a tree view of storage components, including CHA, CHA-1C, CHA-1D, CHA-1F, CHA-2G, CHA-2J, and CHA-2K. The right pane shows a table of host groups and their associated LUNs.

#	Group	Host Mode	
00	riker	OC	Windows
01	odr3	OC	Windows
02	odr4	OC	Windows
03	sd1	OC	Windows
04	sd3	OC	Windows

WWN	Nickname
10000000C9219055	sd3_1

Ready All LU(s) 194 Allocated LU(s) 180

Port CL1-F host group sd1 LUN security configuration

The screenshot shows the LUN Management console with the host group 'sd1' selected. The left pane displays a tree view of storage components, including CHA, CHA-1C, CHA-1D, CHA-1F, CHA-2G, CHA-2J, and CHA-2K. The right pane shows a table of host groups and their associated LUNs.

#	Group	Host Mode	
00	riker	OC	Windows
01	odr3	OC	Windows
02	odr4	OC	Windows
03	sd1	OC	Windows
04	sd3	OC	Windows

WWN	Nickname
10000000C92197AF	sd1_2

Ready All LU(s) 194 Allocated LU(s) 180

Port CL1-F host group sds LUN security configuration

The screenshot displays the LUN Management application window. The interface includes a menu bar (File, Edit, View, Group, WWN, LUN, CHA, Port, LDEV, LUSE), a toolbar with icons for Exit, Switch, New, Change, Delete, Add, Change, Delete, List, Add, Delete, CHA, Port, Cmd, and LUSE, and a 'Display' dropdown menu set to 'Group'.

The left pane shows a hierarchical tree structure under 'DKC'. The tree includes 'CHA' and several sub-groups: 'CHA-1C' (1A-1D), 'CHA-1D' (1E-1H), 'CHA-1F' (1J-1M), 'CHA-2G' (2A RCU-Target, 2B-2D), 'CHA-2J' (2E-2H), and 'CHA-2K' (2J, 2K Initiator, 2L-2M).

The main pane displays a table of host configurations:

#	Group	Host	Mode	
00	riker	OC	Windows	
01	odr3	OC	Windows	
02	odr4	OC	Windows	
03	sd1	OC	Windows	
04	sd3	OC	Windows	

Below the table, a 'WWN' and 'Nickname' section is visible:

WWN	Nickname
10000000C9246769	sd3_2

The status bar at the bottom indicates 'Ready', 'All LU(s) 194', and 'Allocated LU(s) 180'.

appendix b: AutoPath XP configuration

HP Auto Path for Windows 2000 version 2.01.00
Copyright (C) Hewlett Packard Inc.
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Displays details of HP Auto Path software supported devices/adapters

AUTOPATH DEVICES : Displays details of devices
AUTOPATH PATHS DEVICE=# : Displays details of paths to device#
(* at the end of a path signifies that it is the preferred path)
AUTOPATH SET DEVICE=# PATH=# : Sets preferred path to device# as path#
AUTOPATH ADAPTERS : Displays details of adapters
AUTOPATH SET DEVICE=# POLICY=<POLICY_NAME> : Sets load balance policy for device# to <policy_name>

SUPPORTED LOAD BALANCE POLICIES:
No_Load_Balance (NLB)
DefaultBalancePolicy (DBP)
Round_Robin (RR)
Shortest_Queue_Requests (SQR)
Shortest_Queue_Bytes (SQB)
Shortest_Queue_ServiceTime (SQST)

AUTOPATH HELP : Displays help

HP Auto Path> autopath devices

Device# address	Device Name Disk#	Serial No.	State	Paths	Policy	SCSI	
1	HP OPEN-9	04517539005E	Active	2	SQST	0.0.1.0	
Disk 2	2	HP OPEN-9	04517539009F	Active	2	SQST	0.0.2.1
Disk 3	3	HP OPEN-9	0451753900A0	Active	2	SQST	0.0.3.2
Disk 4	4	HP OPEN-9	0451753900A1	Active	2	SQST	0.0.4.3
Disk 5	5	HP OPEN-9	0451753900A2	Active	2	SQST	0.0.5.4
Disk 6	6	HP OPEN-9	045175390085	Active	2	SQST	0.0.6.5
Disk 7	7	HP OPEN-9	045175390086	Active	2	SQST	0.0.7.6
Disk 8	8	HP OPEN-9	045175390087	Active	2	SQST	0.0.8.7
Disk 9	9	HP OPEN-9	045175390088	Active	2	SQST	0.0.9.8
Disk 10	10	HP OPEN-9	045175390089	Active	2	SQST	
0.0.10.9	Disk 11	11	HP OPEN-9	04517539008A	Active	2	SQST
0.0.11.10	Disk 12	12	HP OPEN-9	04517539008B	Active	2	SQST
0.0.12.11	Disk 13	13	HP OPEN-9	04517539008C	Active	2	SQST
0.0.13.12	Disk 14	14	HP OPEN-9	04517539008D	Active	2	SQST
0.0.14.13	Disk 15	15	HP OPEN-9	04517539008E	Active	2	SQST
0.0.15.14	Disk 16	16	HP OPEN-9	04517539008F	Active	2	SQST
0.0.16.15	Disk 17	17	HP OPEN-9	04517539006C	Active	2	SQST
0.0.17.16	Disk 18	18	HP OPEN-9	04517539006D	Active	2	SQST

```

0.0.18.17   Disk 19
19         HP      OPEN-9      04517539006E      Active  2      SQST
0.0.19.18   Disk 20
20         HP      OPEN-9      04517539006F      Active  2      SQST
0.0.20.19   Disk 21

```

HP Auto Path> autopath adapters

Adapter#	Port#	Adapter Name	State	# Paths
1	5	Compaq Smart Array 5i	Active	0
2	6	Emulex LightPulse PCI Fibre Channel HBA (with adjunct driver)	Active	20
3	7	Emulex LightPulse PCI Fibre Channel HBA (with adjunct driver)	Active	20

HP Auto Path> autopath paths device=1

Device Name: HP OPEN-9
Device Serial Number: 04517539005E

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.0
2	CL-1F		Active	6.1.2.0

HP Auto Path> autopath paths device=2

Device Name: HP OPEN-9
Device Serial Number: 04517539009F

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.1
2	CL-1F		Active	6.1.2.1

HP Auto Path> autopath paths device=3

Device Name: HP OPEN-9
Device Serial Number: 0451753900A0

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.2
2	CL-1F		Active	6.1.2.2

HP Auto Path> autopath paths device=4

Device Name: HP OPEN-9
Device Serial Number: 0451753900A1

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.3
2	CL-1F		Active	6.1.2.3

HP Auto Path> autopath paths device=5

Device Name: HP OPEN-9
Device Serial Number: 0451753900A2

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.4
2	CL-1F		Active	6.1.2.4

HP Auto Path> autopath paths device=6

Device Name: HP OPEN-9
Device Serial Number: 045175390085

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.5
2	CL-1F		Active	6.1.2.5

HP Auto Path> autopath paths device=7
Device Name: HP OPEN-9
Device Serial Number: 045175390086

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.6
2	CL-1F		Active	6.1.2.6

HP Auto Path> autopath paths device=8
Device Name: HP OPEN-9
Device Serial Number: 045175390087

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.7
2	CL-1F		Active	6.1.2.7

HP Auto Path> autopath paths device=9
Device Name: HP OPEN-9
Device Serial Number: 045175390088

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.8
2	CL-1F		Active	6.1.2.8

HP Auto Path> autopath paths device=10
Device Name: HP OPEN-9
Device Serial Number: 045175390089

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.9
2	CL-1F		Active	6.1.2.9

HP Auto Path> autopath paths device=11
Device Name: HP OPEN-9
Device Serial Number: 04517539008A

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.10
2	CL-1F		Active	6.1.2.10

HP Auto Path> autopath paths device=12
Device Name: HP OPEN-9
Device Serial Number: 04517539008B

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.11
2	CL-1F		Active	6.1.2.11

HP Auto Path> autopath paths device=13
Device Name: HP OPEN-9
Device Serial Number: 04517539008C

Path#	Controller	Port#	State	Port.Bus.Target.Lun
1	CL-1E		Active	7.1.1.12
2	CL-1F		Active	6.1.2.12

HP Auto Path> autopath paths device=14
Device Name: HP OPEN-9
Device Serial Number: 04517539008D

Path#	Controller	Port#	State	Port.Bus.Target.Lun
-------	------------	-------	-------	---------------------


```

1          CL-1E          Active          7.1.1.13
2          CL-1F          Active          6.1.2.13

```

```

HP Auto Path> autopath paths device=15
Device Name: HP      OPEN-9
Device Serial Number: 04517539008E

```

```

Path#      Controller Port#      State      Port.Bus.Target.Lun
-----
1          CL-1E          Active     7.1.1.14
2          CL-1F          Active     6.1.2.14

```

```

HP Auto Path> autopath paths device=16
Device Name: HP      OPEN-9
Device Serial Number: 04517539008F

```

```

Path#      Controller Port#      State      Port.Bus.Target.Lun
-----
1          CL-1E          Active     7.1.1.15
2          CL-1F          Active     6.1.2.15

```

```

HP Auto Path> autopath paths device=17
Device Name: HP      OPEN-9
Device Serial Number: 04517539006C

```

```

Path#      Controller Port#      State      Port.Bus.Target.Lun
-----
1          CL-1E          Active     7.1.1.16
2          CL-1F          Active     6.1.2.16

```

```

HP Auto Path> autopath paths device=18
Device Name: HP      OPEN-9
Device Serial Number: 04517539006D

```

```

Path#      Controller Port#      State      Port.Bus.Target.Lun
-----
1          CL-1E          Active     7.1.1.17
2          CL-1F          Active     6.1.2.17

```

```

HP Auto Path> autopath paths device=19
Device Name: HP      OPEN-9
Device Serial Number: 04517539006E

```

```

Path#      Controller Port#      State      Port.Bus.Target.Lun
-----
1          CL-1E          Active     7.1.1.18
2          CL-1F          Active     6.1.2.18

```

```

HP Auto Path> autopath paths device=20
Device Name: HP      OPEN-9
Device Serial Number: 04517539006F

```

```

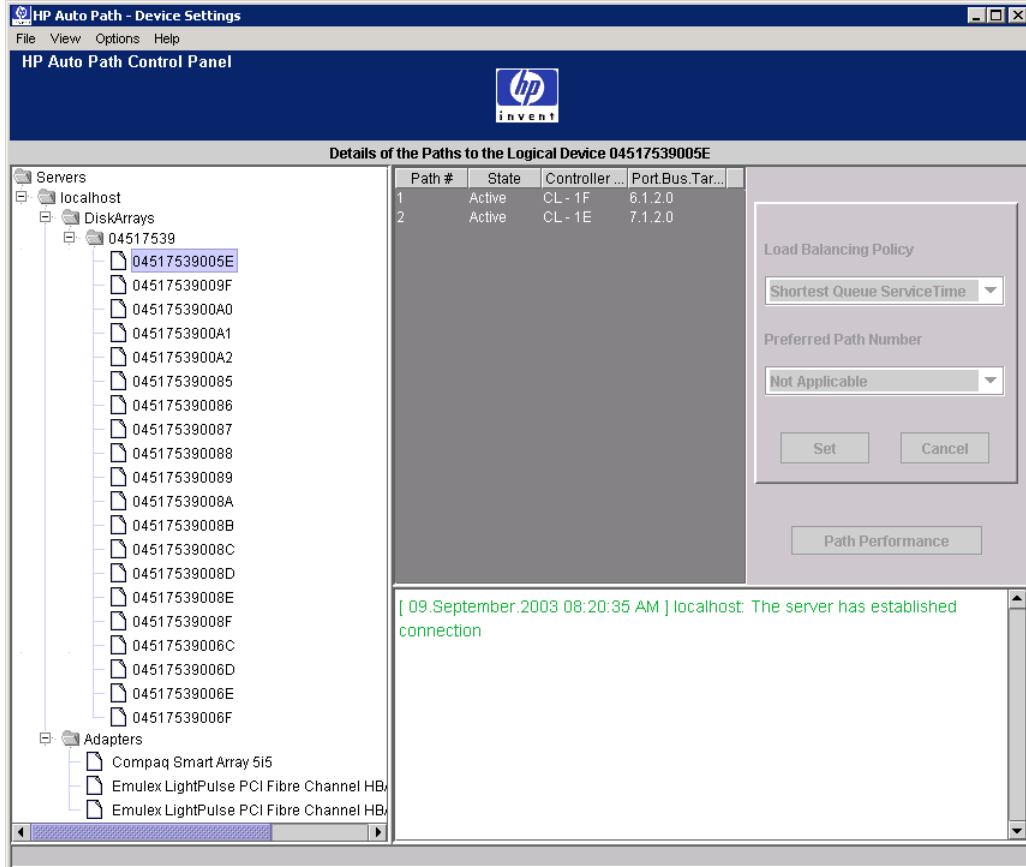
Path#      Controller Port#      State      Port.Bus.Target.Lun
-----
1          CL-1E          Active     7.1.1.19
2          CL-1F          Active     6.1.2.19

```

2



Extended Partition with tablespaces



Extended Partition used by Benchmark Factory Tablespace

HP Auto Path - Device Settings

File View Options Help

HP Auto Path Control Panel

Details of the Paths to the Logical Device 0451753900A0

Path #	State	Controller ...	Port.Bus.Tar...
1	Active	CL - 1F	6.1.2.2
2	Active	CL - 1E	7.1.2.2

Load Balancing Policy: Shortest Queue ServiceTime

Preferred Path Number: Not Applicable

[09.September.2003 08:20:35 AM] localhost: The server has established connection

Expanded partition during sampling

Path Performance Chart for the device: localhost\04517539005E

File Edit View Options Help

Paths: 1[6.1.2.0]

Counter: Disk Transfers/sec

Scale: Default

Path #	Counter	Scale	Color
6.1.2.0	Disk Transfers/sec	1.00	Blue
7.1.2.0	Disk Transfers/sec	1.00	Cyan

Load Balancing Policy: Shortest Queue ServiceTime

Preferred Path Number: Not Applicable

appendix c: Switch configuration

Switch 1

Fabric OS (tm) Release v3.0.2f

login: admin

Password:

casasw8:admin> switchshow

```
switchName:      casasw8
switchType:      17.2
switchState:     Online
switchMode:      Native
switchRole:      Subordinate
switchDomain:    2
switchId:        fffc02
switchWwn:       10:00:00:60:69:5a:09:54
switchBeacon:    OFF
Zoning:          ON (sv3k_cam)
port 0: id N2 Online      F-Port 50:00:1f:e1:50:00:a1:dd
port 1: id N2 Online      F-Port 50:00:1f:e1:50:00:a1:d9
port 2: id N1 Online      F-Port 10:00:00:00:c9:2d:ea:1e
port 3: id N2 No_Light
port 4: id N1 Online      F-Port 10:00:00:00:c9:21:90:55
port 5: id N1 Online      F-Port 10:00:00:00:c9:21:97:25
port 6: id N2 No_Light
port 7: id N2 No_Light
port 8: id N1 Online      F-Port 10:00:00:e0:02:21:d2:7e
port 9: id N2 Online      F-Port 50:06:0b:00:00:12:dc:82
port 10: id N2 Online     F-Port 50:06:0b:00:00:12:dc:7e
port 11: id N1 Online     F-Port 50:06:0e:80:03:75:39:04
port 12: id N2 No_Light
port 13: id N1 Online     E-Port 10:00:00:60:69:15:02:90 "casasw1" (upstream)
port 14: id N2 Online     F-Port 21:00:00:e0:8b:06:d7:85
port 15: id N2 Online     F-Port 21:00:00:e0:8b:06:d6:85
```

casasw8:admin> zoneshow

Defined configuration:

```
cfg:  sv3k_cam
      cam; non_cam_odr3_sz; non_cam_odr4_sz; non_cam_kirk_hz;
      non_cam_soldev3_hz; non_cam_tuvok_hz; perflzone; adm_zone;
      riker_zone; oracle_bones_zone; oracle_kirk_zone; oracle_9irac
zone:  adm_zone
      2,0; 2,1; 2,2
zone:  cam
      1,4; 2,13; 1,6; 2,14
zone:  non_cam_kirk_hz
      1,0; 1,6; 1,9; 1,10; 1,11; 1,12
zone:  non_cam_odr3_sz
      2,0; 2,1; 2,14; 2,11
zone:  non_cam_odr4_sz
      2,0; 2,1; 2,15; 2,11
zone:  non_cam_perfl_sz
      2,0; 2,1; 2,6
zone:  non_cam_soldev3_hz
      1,2; 1,6; 1,9; 1,10; 1,11; 1,12
zone:  non_cam_tuvok_hz
      1,6; 1,8; 1,9; 1,10; 1,11; 1,12
zone:  oracle_9irac
      2,11; 2,5; 2,4
zone:  oracle_bones_zone
      2,0; 2,1; 2,9; 2,8
zone:  oracle_kirk_zone
      2,0; 2,1; 2,10
zone:  perflzone
      2,0; 2,1; 3,0; 3,1
zone:  riker_zone
      2,12; 2,0; 2,1; 2,11
```

Effective configuration:

```
cfg:  sv3k_cam
zone:  adm_zone
      2,0
      2,1
```

```

                2,2
zone: cam       1,4
                2,13
                1,6
                2,14
zone: non_cam_kirk_hz
                1,0
                1,6
                1,9
                1,10
                1,11
                1,12
zone: non_cam_odr3_sz
                2,0
                2,1
                2,14
                2,11
zone: non_cam_odr4_sz
                2,0
                2,1
                2,15
                2,11
zone: non_cam_soldev3_hz
                1,2
                1,6
                1,9
                1,10
                1,11
                1,12
zone: non_cam_tuvok_hz
                1,6
                1,8
                1,9
                1,10
                1,11
                1,12
zone: oracle_9irac
                2,11
                2,5
                2,4
zone: oracle_bones_zone
                2,0
                2,1
                2,9
                2,8
zone: oracle_kirk_zone
                2,0
                2,1
                2,10
zone: perflzone
                2,0
                2,1
                3,0
                3,1
zone: riker_zone
                2,12
                2,0
                2,1
                2,11

```

Switch 2

Fabric OS (tm) Release v3.0.2f

```
login: admin
Password:
```

```
casasw9:admin> switchshow
switchName:  casasw9
switchType:  17.2
switchState: Online
switchMode:  Native
switchRole:  Subordinate
switchDomain: 1
```

```

switchId:          fffc01
switchWwn:         10:00:00:60:69:5a:09:46
switchBeacon:      OFF
Zoning:            ON (sv3k_cam)
port 0: id N2 Online      F-Port 50:00:1f:e1:50:00:a1:dc
port 1: id N2 Online      F-Port 50:00:1f:e1:50:00:a1:d8
port 2: id N2 No_Light
port 3: id N2 No_Light
port 4: id N1 Online      F-Port 10:00:00:00:c9:24:67:69
port 5: id N1 Online      F-Port 10:00:00:00:c9:21:97:af
port 6: id N2 No_Light
port 7: id N1 Online      F-Port 50:06:0e:80:03:75:39:05
port 8: id N2 No_Light
port 9: id N2 Online      F-Port 50:06:0b:00:00:12:dc:78
port 10: id N2 Online     F-Port 50:06:0b:00:00:12:dc:70
port 11: -- 1G Diag_Flt   Disabled
port 12: id N2 No_Light
port 13: id N1 Online     E-Port 10:00:00:60:69:15:03:b0 "casasw2" (upstream)
port 14: id N2 Online     F-Port 21:00:00:e0:8b:06:cc:85
port 15: id N2 Online     F-Port 21:00:00:e0:8b:06:cd:85
casasw9:admin> zoneshow
Defined configuration:
cfg:  sv3k_cam
      cam; non_cam_kirk_hz; non_cam_odr3_sz; non_cam_odr4_sz;
      non_cam_soldev3_hz; non_cam_tuvok_hz; perf2zone; riker_zone;
      oracle_kirk_zone; oracle_bones_zone; oracle_9irac
zone:  cam          1,13; 2,6; 2,4; 1,14
zone:  non_cam_kirk_hz
      2,0; 2,6; 2,9; 2,10; 2,11; 2,12
zone:  non_cam_odr3_sz
      1,0; 1,1; 1,15; 1,11; 1,7
zone:  non_cam_odr4_sz
      1,0; 1,1; 1,14; 1,11; 1,7
zone:  non_cam_perfl_sz
      1,0; 1,1; 1,6
zone:  non_cam_soldev3_hz
      2,2; 2,6; 2,9; 2,10; 2,11; 2,12
zone:  non_cam_tuvok_hz
      2,6; 2,8; 2,9; 2,10; 2,11; 2,12
zone:  oracle_9irac
      1,11; 1,4; 1,5
zone:  oracle_bones_zone
      1,0; 1,1; 1,9
zone:  oracle_kirk_zone
      1,0; 1,1; 1,10
zone:  perf2zone
      1,0; 1,1; 3,0; 3,1
zone:  riker_zone
      1,0; 1,1; 1,12; 1,11

Effective configuration:
cfg:  sv3k_cam
zone:  cam          1,13
      2,6
      2,4
      1,14
zone:  non_cam_kirk_hz
      2,0
      2,6
      2,9
      2,10
      2,11
      2,12
zone:  non_cam_odr3_sz
      1,0
      1,1
      1,15
      1,11
      1,7
zone:  non_cam_odr4_sz
      1,0
      1,1
      1,14
      1,11
      1,7
zone:  non_cam_soldev3_hz
      2,2

```

```
2,6
2,9
2,10
2,11
2,12
zone: non_cam_tuvok_hz
2,6
2,8
2,9
2,10
2,11
2,12
zone: oracle_9irac
1,11
1,4
1,5
zone: oracle_bones_zone
1,0
1,1
1,9
zone: oracle_kirk_zone
1,0
1,1
1,10
zone: perf2zone
1,0
1,1
3,0
3,1
zone: riker_zone
1,0
1,1
1,12
1,11
```

appendix d: Oracle® Database Configuration

SQL*Plus: Release 9.2.0.3.0 - Production on Fri Aug 1 14:33:00 2003

Copyright (c) 1982, 2002, Oracle Corporation. All rights reserved.

Connected.

```

      THREAD# STATUS ENABLED          GROUPS INSTANCE          OPEN_TIME CURRENT_GROUP#
SEQUENCE#
-----

```

```

CHECKPOINT_CHANGE# CHECKPOIN ENABLE_CHANGE# ENABLE_TI DISABLE_CHANGE# DISABLE_T
-----

```

```

-
      1 OPEN PUBLIC          2 rel21          29-JUL-03          1
33      6196490 31-JUL-03          1 11-JUL-03          0
      2 OPEN PUBLIC          2 rel22          29-JUL-03          4
30      5401369 29-JUL-03          177470 11-JUL-03          0

```

2 rows selected.

```

INST_NUMBER INST_NAME
-----

```

```

      1 SOL_DEV1:rel21
      2 SOL_DEV3:rel22

```

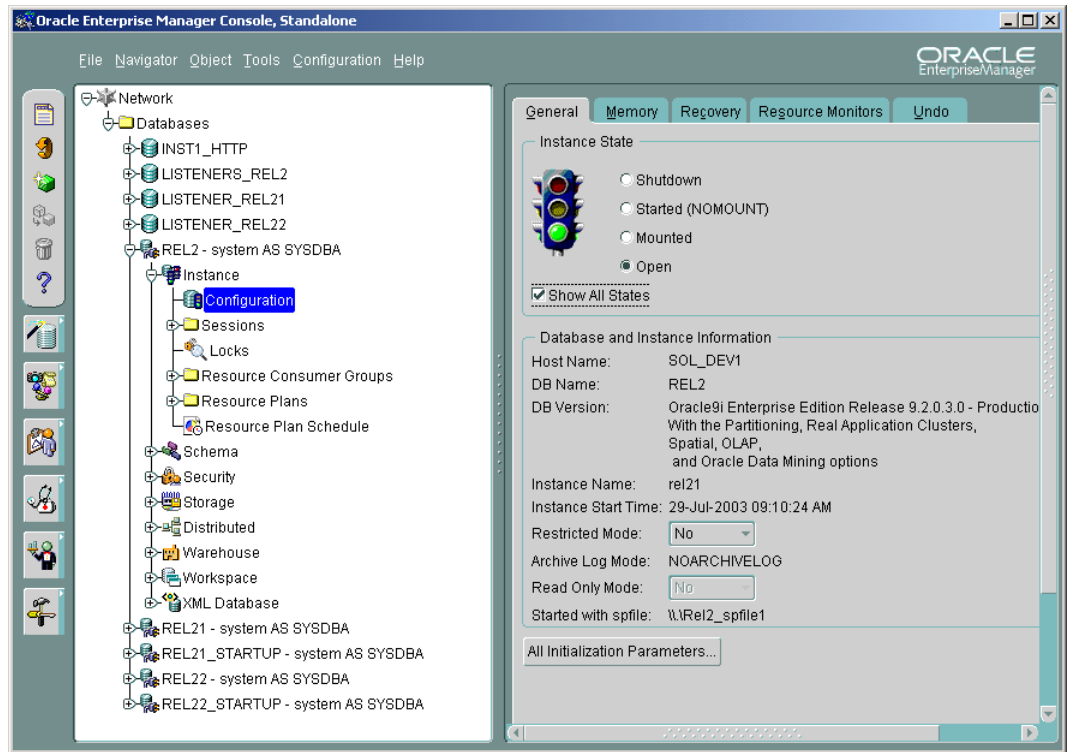
2 rows selected.

OSD information

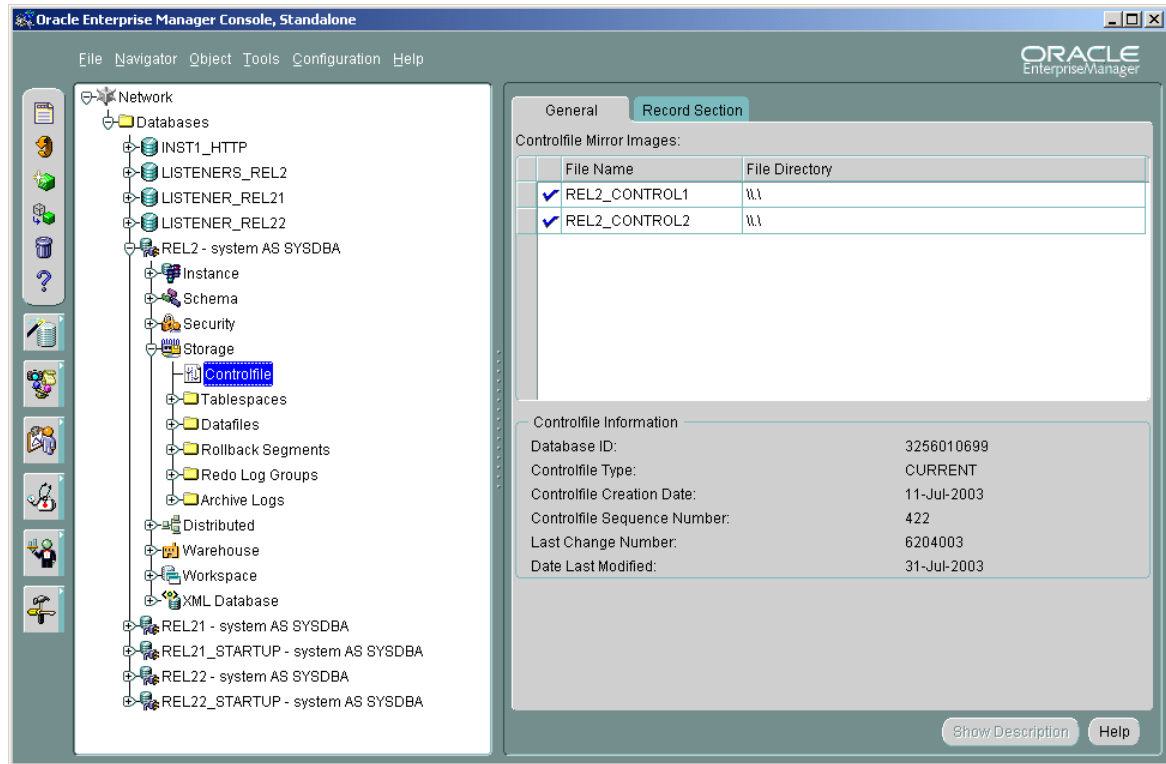
The screenshot shows the Oracle Object Manager window with a table listing Oracle Links. The table has columns for Oracle Link Name, Hard Disk, Partition, and Partition Size. Each row has a checkbox in the first column.

Oracle Link Name	Hard Disk	Partition	Partition Size
svcfg	2	1	104.97 MEG
Rel2_spfile1	2	2	24.97 MEG
Rel2_system01	2	3	404.97 MEG
Rel2_users01	2	4	124.97 MEG
Rel2_temp01	2	5	104.97 MEG
Rel2_undotbs1	2	6	254.97 MEG
Rel2_undotbs2	2	7	254.97 MEG
Rel2_cwmlite01	2	8	104.97 MEG
Rel2_example01	2	9	164.97 MEG
Rel2_indx01	2	10	74.97 MEG
Rel2_tools01	2	11	24.97 MEG
Rel2_drsys01	2	12	94.97 MEG
Rel2_xdb01	2	13	54.97 MEG
Rel2_odm01	2	14	24.97 MEG
Rel2_control1	2	15	114.97 MEG
Rel2_control2	2	16	114.97 MEG
Rel2_redo1_1	2	17	124.97 MEG
Rel2_redo1_2	2	18	124.97 MEG
Rel2_redo2_1	2	19	124.97 MEG
Rel2_redo2_2	2	20	124.97 MEG

RAC DB running with rel21 instance.



Control files.



Tablespaces

Oracle Enterprise Manager Console, Standalone

File Navigator Object Tools Configuration Help

ORACLE Enterprise Manager

Network

- Databases
 - INST1_HTTP
 - LISTENERS_REL2
 - LISTENER_REL21
 - LISTENER_REL22
 - REL2 - system AS SYSDBA
 - Instance
 - Schema
 - Security
 - Storage
 - Controlfile
 - Tablespaces**
 - Datafiles
 - Rollback Segments
 - Redo Log Groups
 - Archive Logs
 - Distributed
 - Warehouse
 - Workspace
 - XML Database
 - REL21 - system AS SYSDBA
 - REL21_STARTUP - system AS SYSDBA
 - REL22 - system AS SYSDBA
 - REL22_STARTUP - system AS SYSDBA

Name	Type	Extent Management	Size (M)	Used (M)	Used %
CWMLITE	PERMANENT LOCAL		20.000	11.250	56.25
DRSYS	PERMANENT LOCAL		20.000	9.688	48.44
INDX	PERMANENT LOCAL		25.000	0.063	0.25
ODM	PERMANENT LOCAL		20.000	9.313	46.56
SYSTEM	PERMANENT LOCAL		400.000	397.313	99.33
TOOLS	PERMANENT LOCAL		10.000	0.063	0.63
UNDOTBS1	UNDO LOCAL		250.000	19.313	7.73
UNDOTBS2	UNDO LOCAL		200.000	1.313	0.66
USERS	PERMANENT LOCAL		25.000	0.063	0.25
XDB	PERMANENT LOCAL		44.375	44.188	99.58
EXAMPLE	PERMANENT LOCAL		138.125	138.125	100.00
TEMP	TEMPORARY LOCAL		41.000	0.000	0.00

Datafiles

Oracle Enterprise Manager Console, Standalone

File Navigator Object Tools Configuration Help

ORACLE Enterprise Manager

Network

- Databases
 - INST1_HTTP
 - LISTENERS_REL2
 - LISTENER_REL21
 - LISTENER_REL22
 - REL2 - system AS SYSDBA
 - Instance
 - Schema
 - Security
 - Storage
 - Controlfile
 - Tablespaces
 - Datafiles**
 - Rollback Segments
 - Redo Log Groups
 - Archive Logs
 - Distributed
 - Warehouse
 - Workspace
 - XML Database
 - REL21 - system AS SYSDBA
 - REL21_STARTUP - system AS SYSDBA
 - REL22 - system AS SYSDBA
 - REL22_STARTUP - system AS SYSDBA

Name	Tablespace	Size (M)	Used (M)	Used %
\\REL2_SYSTEM01	SYSTEM	400.000	397.313	99.33
\\REL2_UNDOTBS1	UNDOTBS1	250.000	19.313	7.73
\\REL2_CWMLITE01	CWMLITE	20.000	11.250	56.25
\\REL2_DRSYS01	DRSYS	20.000	9.688	48.44
\\REL2_INDX01	INDX	25.000	0.063	0.25
\\REL2_ODM01	ODM	20.000	9.313	46.56
\\REL2_TOOLS01	TOOLS	10.000	0.063	0.63
\\REL2_UNDOTBS2	UNDOTBS2	200.000	1.313	0.66
\\REL2_USERS01	USERS	25.000	0.063	0.25
\\REL2_XDB01	XDB	44.375	44.188	99.58
\\REL2_EXAMPLE01	EXAMPLE	138.125	138.125	100.00
\\REL2_TEMP01	TEMP	41.000	0.000	0.00

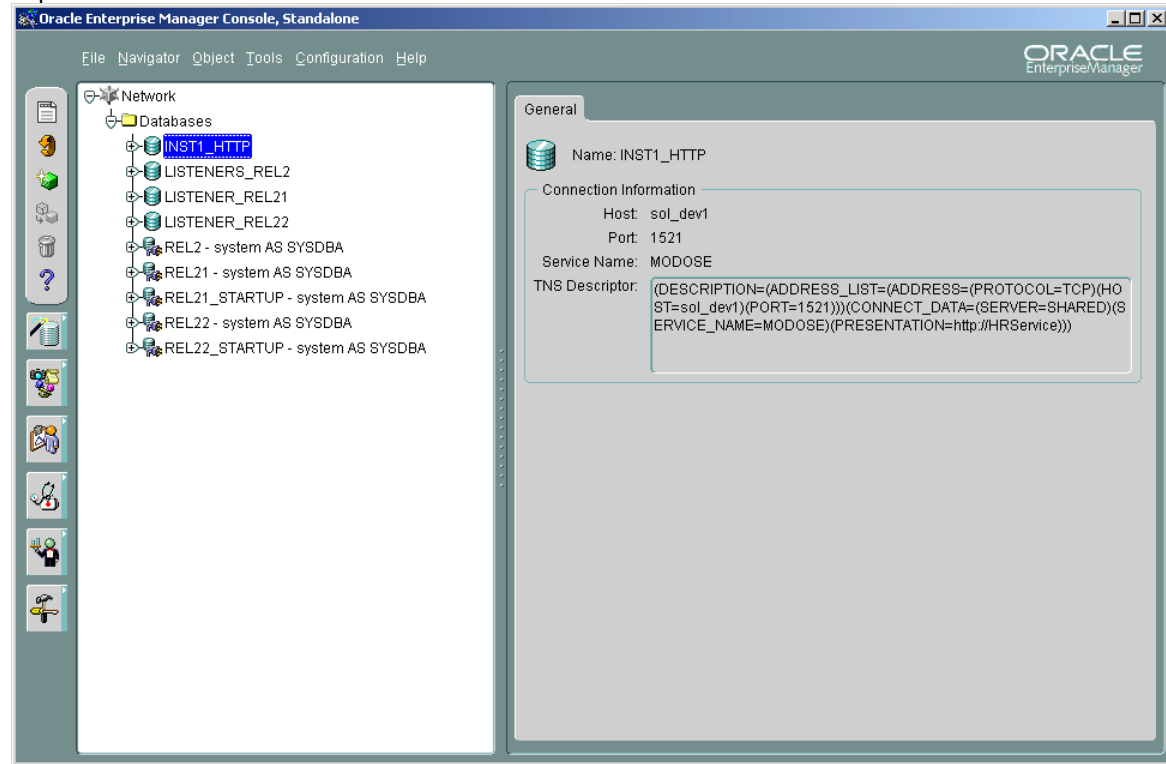
Rollback segment

The screenshot displays the Oracle Enterprise Manager Console interface. On the left, a tree view shows the database hierarchy under 'Network' > 'Databases' > 'REL2 - system AS SYSDBA' > 'Storage' > 'Rollback Segments'. The 'SYSTEM' rollback segment is selected and highlighted in blue. On the right, the 'Storage' tab is active, showing the following configuration:

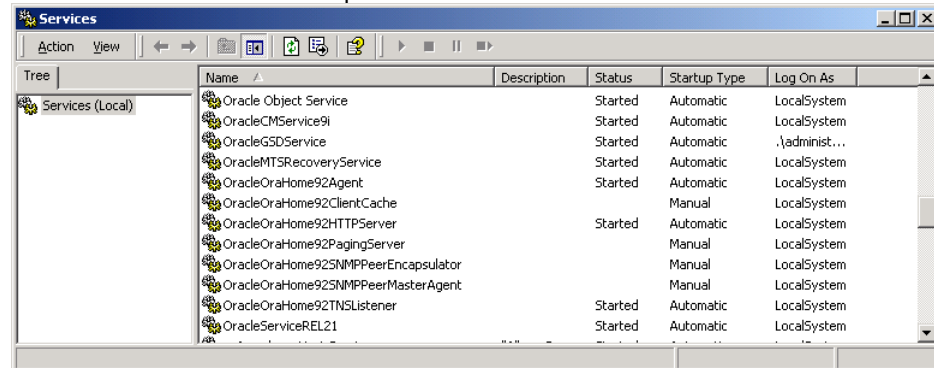
- Name: SYSTEM
- Tablespace: SYSTEM
- Public:
- Status: Online Offline

At the bottom right of the console, there are buttons for 'Apply', 'Revert', 'Show SQL', and 'Help'.

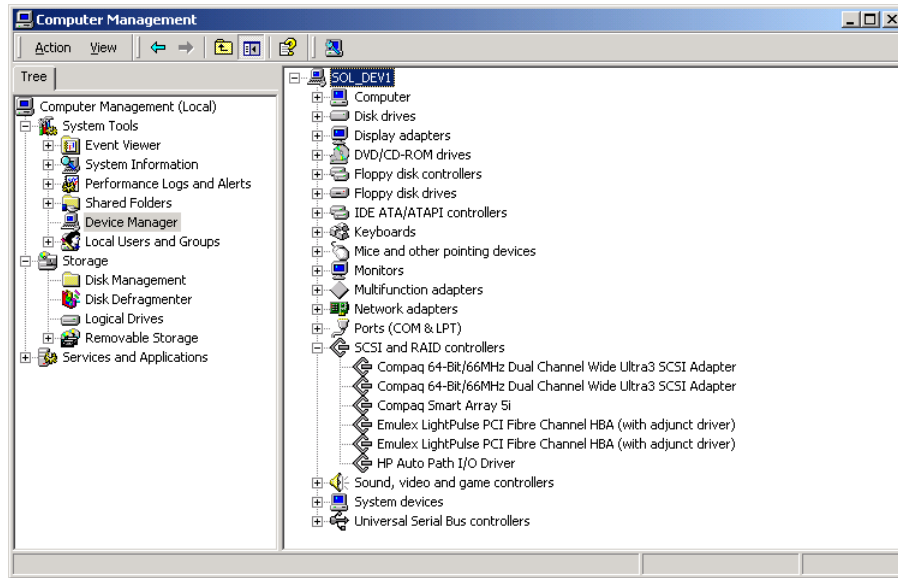
http instance



All of the Windows 2000 expected services on node 0



Fibre Channel HBA information



Raw partition layout

Volume	Layout	Type	File System	Status	Capacity	Free Space	% Free
	Partition	Basic		Healthy	105 MB	105 MB	100 %
	Partition	Basic		Healthy	25 MB	25 MB	100 %
	Partition	Basic		Healthy	405 MB	405 MB	100 %
	Partition	Basic		Healthy	125 MB	125 MB	100 %
	Partition	Basic		Healthy	105 MB	105 MB	100 %
	Partition	Basic		Healthy	255 MB	255 MB	100 %
	Partition	Basic		Healthy	255 MB	255 MB	100 %
	Partition	Basic		Healthy	105 MB	105 MB	100 %
	Partition	Basic		Healthy	165 MB	165 MB	100 %
	Partition	Basic		Healthy	75 MB	75 MB	100 %
	Partition	Basic		Healthy	25 MB	25 MB	100 %
	Partition	Basic		Healthy	95 MB	95 MB	100 %
	Partition	Basic		Healthy	55 MB	55 MB	100 %
	Partition	Basic		Healthy	25 MB	25 MB	100 %
	Partition	Basic		Healthy	115 MB	115 MB	100 %
	Partition	Basic		Healthy	115 MB	115 MB	100 %
	Partition	Basic		Healthy	125 MB	125 MB	100 %
	Partition	Basic		Healthy	125 MB	125 MB	100 %
	Partition	Basic		Healthy	125 MB	125 MB	100 %
	Partition	Basic		Healthy	125 MB	125 MB	100 %
(C:)	Partition	Basic	NTFS	Healthy (System)	67.82 GB	60.52 GB	89 %
oracle_bits (E:)	Partition	Basic	NTFS	Healthy	6.87 GB	4.96 GB	72 %

Load Balancing

While the Benchmark Factory for Oracle software was running (100 user virtual load), the two instances load balanced:

First Instance

```
SQL> select count(*) from v$session;

COUNT(*)
-----
          57
```

Second Instance

```
SQL> select count(*) from v$session;

COUNT(*)
-----
          74
```

tnsnames.ora file (from first node)

```
# TNSNAMES.ORA Network Configuration File:
c:\oracle\ora92\network\admin\tnsnames.ora

# Generated by Oracle configuration tools.

REL2 =
```

```

(DESCRIPTION =
  (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev1)(PORT = 1521))
    (ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev3)(PORT = 1521))
    (LOAD_BALANCE = yes)
  )
  (CONNECT_DATA =
    (SERVER = DEDICATED)
    (SERVICE_NAME = rel2)
  )
)

REL22_STARTUP =
(DESCRIPTION =
  (ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev3)(PORT = 1521))
  (CONNECT_DATA =
    (SID = rel22)
  )
)

LISTENER_REL22 =
(ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev3)(PORT = 1521))

LISTENER_REL21 =
(ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev1)(PORT = 1521))

INST1_HTTP =
(DESCRIPTION =
  (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev1)(PORT = 1521))
  )
  (CONNECT_DATA =
    (SERVER = SHARED)
    (SERVICE_NAME = MODOSE)
    (PRESENTATION = http://HRService)
  )
)

```

```
REL22 =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev3)(PORT = 1521))
    (CONNECT_DATA =
      (SERVICE_NAME = rel2)
      (INSTANCE_NAME = rel22)
    )
  )
```

```
REL21 =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev1)(PORT = 1521))
    (CONNECT_DATA =
      (SERVICE_NAME = rel2)
      (INSTANCE_NAME = rel21)
    )
  )
```

```
LISTENERS_REL2 =
  (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev1)(PORT = 1521))
    (ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev3)(PORT = 1521))
  )
```

```
REL21_STARTUP =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev1)(PORT = 1521))
    (CONNECT_DATA =
      (SID = rel21)
    )
  )
```

listener.ora file (first node)

```
# LISTENER.ORA.SOL_DEV1 Network Configuration File:
c:\oracle\ora92\network\admin\listener.ora.sol_dev1

# Generated by Oracle configuration tools.
```

```
LISTENER =
```



```
(DESCRIPTION_LIST =  
  (DESCRIPTION =  
    (ADDRESS_LIST =  
      (ADDRESS = (PROTOCOL = TCP)(HOST = sol_dev1)(PORT = 1521))  
    )  
  )  
)
```

```
SID_LIST_LISTENER =
```

```
(SID_LIST =  
  (SID_DESC =  
    (SID_NAME = PLSExtProc)  
    (ORACLE_HOME = c:\oracle\ora92)  
    (PROGRAM = extproc)  
  )  
  (SID_DESC =  
    (ORACLE_HOME = c:\oracle\ora92)  
    (SID_NAME = rel21)  
  )  
)
```

appendix e: Oracle Validation

Standard Oracle TPC-C Benchmark configuration

The screenshot shows a configuration window for the Oracle TPC-C Benchmark. The title bar reads "Profile: '9irac-xp'". The window has three tabs: "General", "Options", and "Clustering", with "General" selected. The "Profile Name" field contains "9irac-xp". Below it is a "Server Configuration" dropdown menu. The "Parameters" section includes a "Vendor" dropdown set to "Oracle", a "Net Service Name*" field with "rel2", a "Tablespace*" field with "XP1", a "User Name*" field with "system", and a "Password" field with "XXXXXXXX". A red asterisk indicates that the Net Service Name, Tablespace, and User Name fields are required. There is a "Default Profile" checkbox which is checked. At the bottom of the parameters section is a "Test Profile" button. The window concludes with "OK", "Cancel", "Apply", and "Help" buttons.

Standard Oracle TPC-C Benchmark configuration - 531 MB Database

The screenshot shows the "Standard Benchmark Wizard" window at the "Scale Selection" step. The instruction says "Type or select a dataset size." The "Benchmark Scale" dropdown is set to "1". Below this is a table listing the tables and their sizes:

Table Name	Rows	Bytes/Row	Total Bytes
C_Warehouse	8	89	712
C_District	80	95	7.42 kb
C_Customer	240000	655	149.92 mb
C_History	240000	46	10.53 mb
C_New_Order	72000	8	562.50 kb
C_Order	240000	24	5.49 mb
C_Order_Line	2400000	54	123.60 mb
C_Item	100000	82	7.82 mb
C_Stock	800000	306	233.46 mb

At the bottom of the table area, there is a checkbox for "Show Empty Tables" and a text label "Total Size: 531.37 mb". The window ends with "< Back", "Next >", "Cancel", and "Help" buttons.

Configuration Detail – Transaction Mix settings

'TPC-C Transaction Mix' Properties

General Transactions User Load Latency Timing Options

Available Transaction

- Test Scripts
 - Transactions
 - Available Static Transac
 - Table Creation
 - Create C_Waref
 - Create C_Distric
 - Create C_Custor
 - Create C_History
 - Create C_New_I
 - Create C_Order
 - Create C_Order
 - Create C_Item T
 - Create C_Stock
 - Stored Procedure Cr
 - Create New Ord
 - Create New Ord

Add Selected Test to Mix

Transaction Mix

Scenario	Probability(Wt)
New Order Transaction	450
Payment Transaction	430
Order-Status Transaction	40
Delivery Transaction	40
Stock-Level Transaction	40

Total: 1000

OK Cancel Apply Help

Additional configuration detail – Number of virtual users

'TPC-C Transaction Mix' Properties

General Transactions User Load Latency Timing Options

Userload 123

Available

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22

Selected

100

Sample Throughput Curve

Throughput (TPS)

Virtual Users

Benchmark Factory generates a throughput graph reflecting the performance of a system under test. This graph helps determine system capacity and what happens to the performance of a system under test during extreme loads.

OK Cancel Apply Help

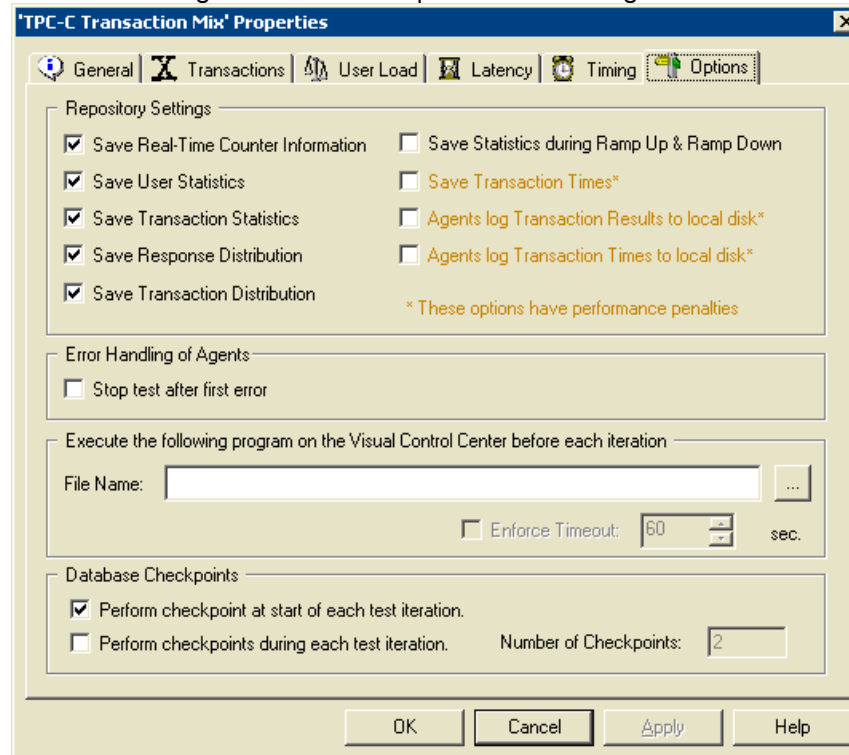
Additional configuration detail – Latency settings

The screenshot shows the 'TPC-C Transaction Mix' Properties dialog box with the 'Latency' tab selected. The dialog has a title bar with a close button (X) and a menu bar with 'General', 'Transactions', 'User Load', 'Latency', 'Timing', and 'Options'. The main area contains the instruction 'Set the appropriate latency between transaction executions.' followed by four options: 'No Delay' (checked), 'Interarrival Time' (unchecked), 'Keying Time' (unchecked), and 'Think Time' (unchecked). Each of the three unchecked options has a dropdown menu set to 'Absolute', a 'Value' field set to '100', and a unit label 'milliseconds (ms)'. At the bottom are buttons for 'OK', 'Cancel', 'Apply', and 'Help'.

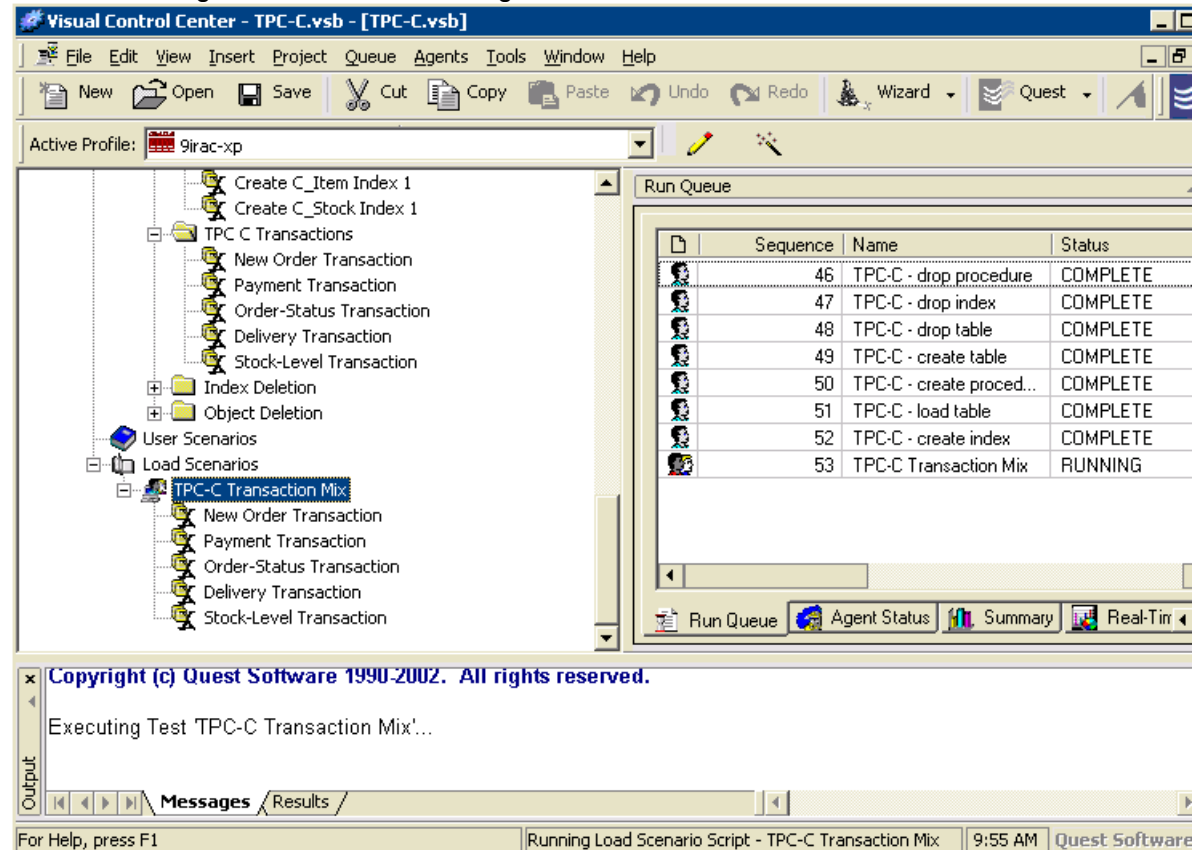
Additional configuration detail – Sample timing

The screenshot shows the 'TPC-C Transaction Mix' Properties dialog box with the 'Timing' tab selected. The dialog has a title bar with a close button (X) and a menu bar with 'General', 'Transactions', 'User Load', 'Latency', 'Timing', and 'Options'. The main area is titled 'Time Phase' and features a horizontal progress bar. Above the bar is the 'Total Iteration Length' set to '1 Day(s) 00:06:45'. Below the bar are four time phase settings: 'Quiet' (red square) set to '0 Day(s) 00:00:30', 'Sampling' (green square) set to '1 Day(s) 00:00:00', 'Ramp Up' (blue square) set to '0 Day(s) 00:05:00', and 'Ramp Down' (magenta square) set to '0 Day(s) 00:01:15'. A text box at the bottom states: 'This test consists a single iteration, and executes for 01 Day(s) : 00 Hour(s) : 06 Minute(s) : 45 Second(s)'. At the bottom are buttons for 'OK', 'Cancel', 'Apply', and 'Help'.

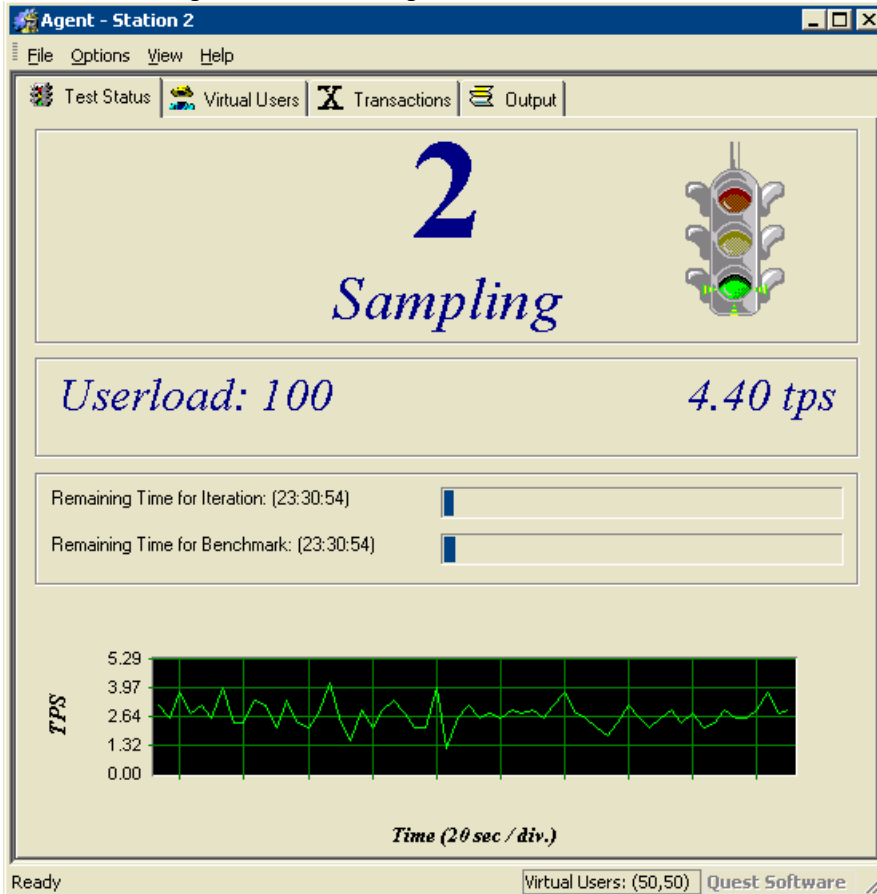
Additional configuration detail – Optional data settings



Additional configuration detail of a running load



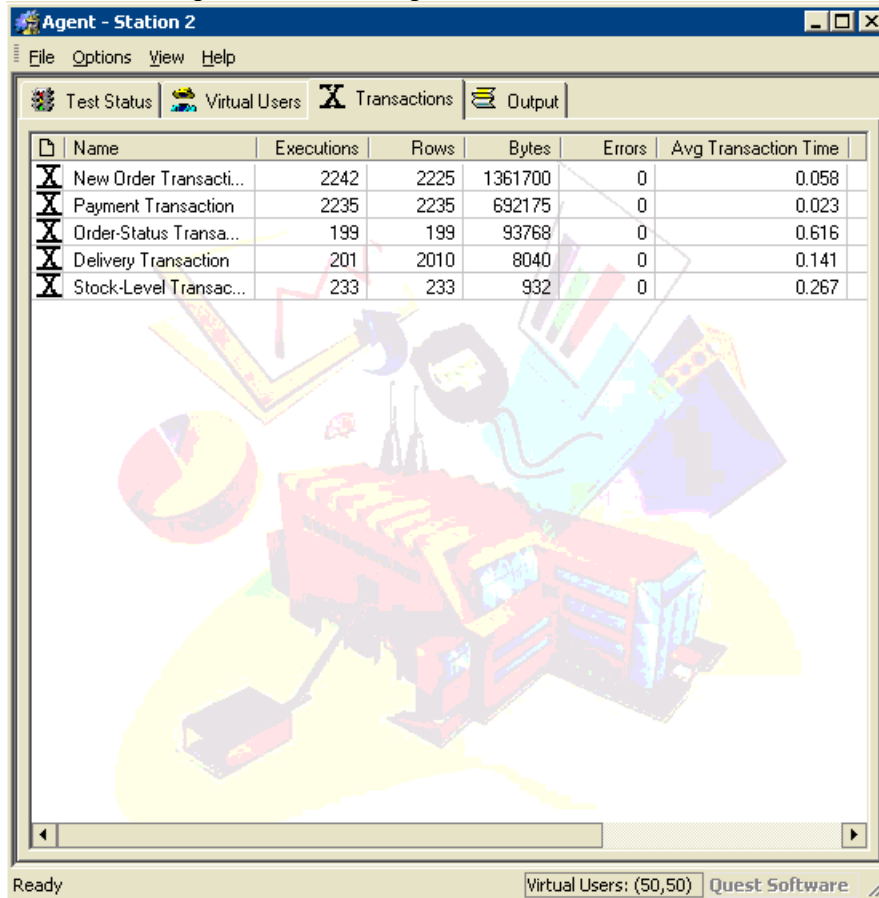
Additional configuration detail – Agent test status



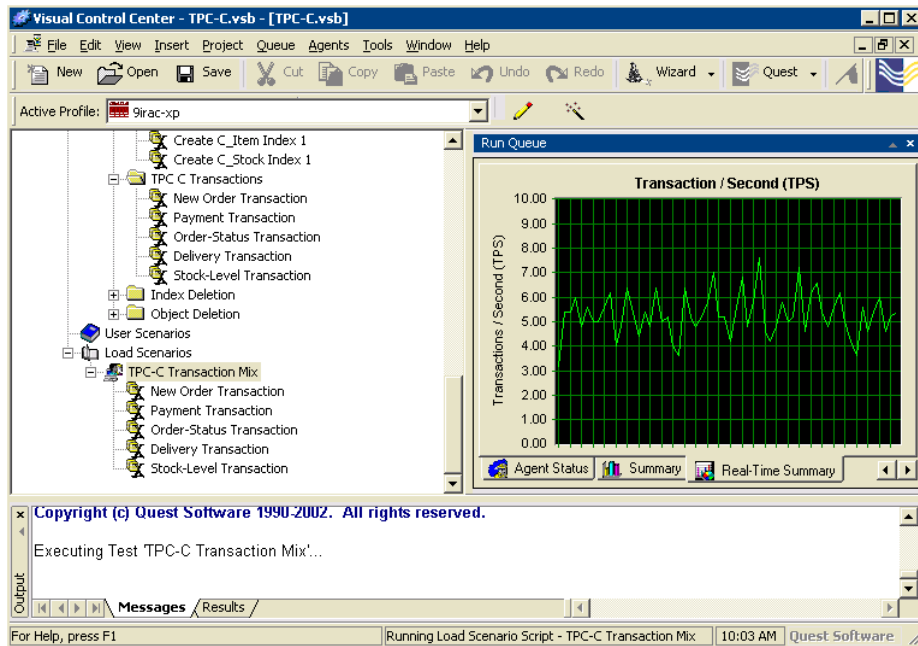
Additional configuration detail – Agent Virtual User status

User	Executing Transaction	TPS	BPS	Rows	Bytes	Errors	Av
Use...	New Order Transacti...	0.05	21.01	144	45707	0	
Use...	Payment Transaction	0.05	23.19	151	50454	0	
Use...	New Order Transacti...	0.06	24.80	152	53956	0	
Use...	New Order Transacti...	0.05	22.26	144	48437	0	
Use...	New Order Transacti...	0.06	23.45	158	51029	0	
Use...	Payment Transaction	0.06	23.79	161	51768	0	
Use...	Payment Transaction	0.05	21.93	135	47725	0	
Use...	New Order Transacti...	0.05	21.99	152	47839	0	
Use...	New Order Transacti...	0.05	21.64	138	47082	0	
Use...	New Order Transacti...	0.06	24.35	160	52993	0	
Use...	Delivery Transaction	0.05	21.72	169	47556	0	
Use...	New Order Transacti...	0.05	22.65	154	49283	0	
Use...	New Order Transacti...	0.05	22.12	131	48124	0	
Use...	New Order Transacti...	0.06	23.10	156	50553	0	
Use...	Payment Transaction	0.05	21.86	146	47568	0	
Use...	New Order Transacti...	0.05	22.34	130	48614	0	
Use...	New Order Transacti...	0.05	21.56	155	46916	0	
Use...	New Order Transacti...	0.06	23.91	167	52026	0	
Use...	New Order Transacti...	0.05	22.66	140	49307	0	
Use...	Payment Transaction	0.05	21.64	147	47091	0	
Use...	Payment Transaction	0.05	22.15	141	48196	0	
Use...	Payment Transaction	0.05	21.03	178	45766	0	
Use...	Payment Transaction	0.05	21.59	142	46978	0	
Use...	New Order Transacti...	0.05	23.12	133	50300	0	

Additional configuration detail – Agent transaction status



TPC-C TPS Summary



Benchmark Factory Message log

```
Benchmark Factory(TM)
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Performing Static Database Test - 'Delete New Order Procedure 1'...
** Static Database Test 'Delete New Order Procedure 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete Payment Procedure 1'...
** Static Database Test 'Delete Payment Procedure 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete Payment Procedure 2'...
** Static Database Test 'Delete Payment Procedure 2' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete Order Status Procedure 1'...
** Static Database Test 'Delete Order Status Procedure 1' has executed 1
Times, returning 0 row(s).

Performing Static Database Test - 'Delete Order Status Procedure 2'...
** Static Database Test 'Delete Order Status Procedure 2' has executed 1
Times, returning 0 row(s).

Performing Static Database Test - 'Delete Delivery Procedure'...
** Static Database Test 'Delete Delivery Procedure' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete Stock Level Procedure'...
** Static Database Test 'Delete Stock Level Procedure' has executed 1 Times,
returning 0 row(s).

** Benchmark complete.

Total Time to perform the benchmark:

Elapsed   : 0 Days 00:00:10.823

Benchmark Factory(TM)
Copyright (c) Quest Software 1990-2002. All rights reserved.

Performing Static Database Test - 'Drop C_Warehouse Index 1'...
** Static Database Test 'Drop C_Warehouse Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_District Index 1'...
** Static Database Test 'Drop C_District Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_Customer Index 1'...
** Static Database Test 'Drop C_Customer Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_Customer Index 2'...
** Static Database Test 'Drop C_Customer Index 2' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_New_Order Index 1'...
** Static Database Test 'Drop C_New_Order Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_Order Index 1'...
** Static Database Test 'Drop C_Order Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_Item Index 1'...
** Static Database Test 'Drop C_Item Index 1' has executed 1 Times, returning
0 row(s).

Performing Static Database Test - 'Drop C_Stock Index 1'...
** Static Database Test 'Drop C_Stock Index 1' has executed 1 Times,
returning 0 row(s).
```


** Benchmark complete.

Total Time to perform the benchmark:

Elapsed : 0 Days 00:00:10.645

Benchmark Factory(TM)

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Performing Static Database Test - 'Delete C_Warehouse Table'...

** Static Database Test 'Delete C_Warehouse Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Delete C_District Table'...

** Static Database Test 'Delete C_District Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Delete C_Customer Table'...

** Static Database Test 'Delete C_Customer Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Delete C_History Table'...

** Static Database Test 'Delete C_History Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Delete C_New_Order Table'...

** Static Database Test 'Delete C_New_Order Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Delete C_Order Table'...

** Static Database Test 'Delete C_Order Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Delete C_Order_Line Table'...

** Static Database Test 'Delete C_Order_Line Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Delete C_Item Table'...

** Static Database Test 'Delete C_Item Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Delete C_Stock Table'...

** Static Database Test 'Delete C_Stock Table' has executed 1 Times, returning 0 row(s).

** Benchmark complete.

Total Time to perform the benchmark:

Elapsed : 0 Days 00:00:13.061

Benchmark Factory(TM)

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Performing Static Database Test - 'Create C_Warehouse Table'...

** Static Database Test 'Create C_Warehouse Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Create C_District Table'...

** Static Database Test 'Create C_District Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Create C_Customer Table'...

** Static Database Test 'Create C_Customer Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Create C_History Table'...

** Static Database Test 'Create C_History Table' has executed 1 Times, returning 0 row(s).

Performing Static Database Test - 'Create C_New_Order Table'...

```

    ** Static Database Test 'Create C_New_Order Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Order Table'...
    ** Static Database Test 'Create C_Order Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Order_Line Table'...
    ** Static Database Test 'Create C_Order_Line Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Item Table'...
** Error **(Fri Sep 05 03 16:06:00) ORA-00604: error occurred at recursive SQL
level 1
ORA-01655: unable to extend cluster SYS.C_OBJ# by 128 in tablespace SYSTEM

    ** Static Database Test 'Create C_Item Table' has executed 0 Times, returning
0 row(s).

Performing Static Database Test - 'Create C_Stock Table'...
    ** Static Database Test 'Create C_Stock Table' has executed 1 Times,
returning 0 row(s).

** Benchmark completed with errors.

Total Time to perform the benchmark:

    Elapsed    : 0 Days 00:00:09.563

Benchmark Factory(TM)
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Performing Static Database Test - 'Create New Order Procedure 1'...
    ** Static Database Test 'Create New Order Procedure 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create Payment Procedure 1'...
    ** Static Database Test 'Create Payment Procedure 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create Payment Procedure 2'...
    ** Static Database Test 'Create Payment Procedure 2' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create Order Status Procedure 1'...
    ** Static Database Test 'Create Order Status Procedure 1' has executed 1
Times, returning 0 row(s).

Performing Static Database Test - 'Create Order Status Procedure 2'...
    ** Static Database Test 'Create Order Status Procedure 2' has executed 1
Times, returning 0 row(s).

Performing Static Database Test - 'Create Delivery Procedure'...
    ** Static Database Test 'Create Delivery Procedure' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create Stock Level Procedure'...
    ** Static Database Test 'Create Stock Level Procedure' has executed 1 Times,
returning 0 row(s).

** Benchmark complete.

Total Time to perform the benchmark:

    Elapsed    : 0 Days 00:00:09.792

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Performing Static Database Test - 'Load C_Warehouse Table '...
    ** Static Database Test 'Load C_Warehouse Table ' has executed 1 Times,
returning 8 row(s).
```

```

Performing Static Database Test - 'Load C_District Table '...
** Static Database Test 'Load C_District Table ' has executed 1 Times,
returning 80 row(s).

Performing Static Database Test - 'Load C_Customer Table '...
** Static Database Test 'Load C_Customer Table ' has executed 1 Times,
returning 240000 row(s).

Performing Static Database Test - 'Load C_History Table '...
** Static Database Test 'Load C_History Table ' has executed 1 Times,
returning 240000 row(s).

Performing Static Database Test - 'Load C_New_Order Table '...
** Static Database Test 'Load C_New_Order Table ' has executed 1 Times,
returning 72000 row(s).

Performing Static Database Test - 'Load C_Order Table '...
** Static Database Test 'Load C_Order Table ' has executed 1 Times, returning
240000 row(s).

Performing Static Database Test - 'Load C_Order_Line Table '...
** Static Database Test 'Load C_Order_Line Table ' has executed 1 Times,
returning 2402330 row(s).

Performing Static Database Test - 'Load C_Item Table '...
** Error **(Fri Sep 05 03 16:11:41) ORA-00942: table or view does not exist

** Static Database Test 'Load C_Item Table ' has executed 0 Times, returning
0 row(s).

Performing Static Database Test - 'Load C_Stock Table '...
** Static Database Test 'Load C_Stock Table ' has executed 1 Times, returning
800000 row(s).

** Benchmark completed with errors.

Total Time to perform the benchmark:

Elapsed   : 0 Days 00:08:07.640

Benchmark Factory(TM)
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Performing Static Database Test - 'Create C_Warehouse Index 1'...
** Static Database Test 'Create C_Warehouse Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_District Index 1'...
** Static Database Test 'Create C_District Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Customer Index 1'...
** Static Database Test 'Create C_Customer Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Customer Index 2'...
** Static Database Test 'Create C_Customer Index 2' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_New_Order Index 1'...
** Static Database Test 'Create C_New_Order Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Order Index 1'...
** Static Database Test 'Create C_Order Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Order_Line Index 1'...
** Static Database Test 'Create C_Order_Line Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Item Index 1'...
** Error **(Fri Sep 05 03 16:15:17) ORA-00942: table or view does not exist

```

```
** Static Database Test 'Create C_Item Index 1' has executed 0 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Stock Index 1'...
** Static Database Test 'Create C_Stock Index 1' has executed 1 Times,
returning 0 row(s).

** Benchmark completed with errors.

Total Time to perform the benchmark:

Elapsed   : 0 Days 00:01:14.496

Benchmark Factory(TM)
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Executing Test 'TPC-C Transaction Mix'...

** Test 'TPC-C Transaction Mix' has been cancelled by user.

** Benchmark has been cancelled by user.

Total Time to perform the benchmark:

Elapsed   : 0 Days 00:10:56.105

Benchmark Factory(TM)
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Performing Static Database Test - 'Delete New Order Procedure 1'...
** Static Database Test 'Delete New Order Procedure 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete Payment Procedure 1'...
** Static Database Test 'Delete Payment Procedure 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete Payment Procedure 2'...
** Static Database Test 'Delete Payment Procedure 2' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete Order Status Procedure 1'...
** Static Database Test 'Delete Order Status Procedure 1' has executed 1
Times, returning 0 row(s).

Performing Static Database Test - 'Delete Order Status Procedure 2'...
** Static Database Test 'Delete Order Status Procedure 2' has executed 1
Times, returning 0 row(s).

Performing Static Database Test - 'Delete Delivery Procedure'...
** Static Database Test 'Delete Delivery Procedure' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete Stock Level Procedure'...
** Static Database Test 'Delete Stock Level Procedure' has executed 1 Times,
returning 0 row(s).

** Benchmark complete.

Total Time to perform the benchmark:

Elapsed   : 0 Days 00:00:09.653

Benchmark Factory(TM)
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Performing Static Database Test - 'Drop C_Warehouse Index 1'...
** Static Database Test 'Drop C_Warehouse Index 1' has executed 1 Times,
returning 0 row(s).
```

```
Performing Static Database Test - 'Drop C_District Index 1'...
** Static Database Test 'Drop C_District Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_Customer Index 1'...
** Static Database Test 'Drop C_Customer Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_Customer Index 2'...
** Static Database Test 'Drop C_Customer Index 2' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_New_Order Index 1'...
** Static Database Test 'Drop C_New_Order Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_Order Index 1'...
** Static Database Test 'Drop C_Order Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_Order_Line Index 1'...
** Static Database Test 'Drop C_Order_Line Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Drop C_Stock Index 1'...
** Static Database Test 'Drop C_Stock Index 1' has executed 1 Times,
returning 0 row(s).
```

** Benchmark complete.

Total Time to perform the benchmark:

Elapsed : 0 Days 00:00:15.412

Benchmark Factory(TM)
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```
Performing Static Database Test - 'Delete C_Warehouse Table'...
** Static Database Test 'Delete C_Warehouse Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete C_District Table'...
** Static Database Test 'Delete C_District Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete C_Customer Table'...
** Static Database Test 'Delete C_Customer Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete C_History Table'...
** Static Database Test 'Delete C_History Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete C_New_Order Table'...
** Static Database Test 'Delete C_New_Order Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete C_Order Table'...
** Static Database Test 'Delete C_Order Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete C_Order_Line Table'...
** Static Database Test 'Delete C_Order_Line Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Delete C_Stock Table'...
** Static Database Test 'Delete C_Stock Table' has executed 1 Times,
returning 0 row(s).
```

** Benchmark complete.

Total Time to perform the benchmark:

Elapsed : 0 Days 00:00:35.810

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Performing Static Database Test - 'Create C_Warehouse Table'...
** Static Database Test 'Create C_Warehouse Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_District Table'...
** Static Database Test 'Create C_District Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Customer Table'...
** Static Database Test 'Create C_Customer Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_History Table'...
** Static Database Test 'Create C_History Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_New_Order Table'...
** Static Database Test 'Create C_New_Order Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Order Table'...
** Static Database Test 'Create C_Order Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Order_Line Table'...
** Static Database Test 'Create C_Order_Line Table' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Item Table'...
** Static Database Test 'Create C_Item Table' has executed 1 Times, returning
0 row(s).

Performing Static Database Test - 'Create C_Stock Table'...
** Static Database Test 'Create C_Stock Table' has executed 1 Times,
returning 0 row(s).

** Benchmark complete.

Total Time to perform the benchmark:

Elapsed : 0 Days 00:00:09.490

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Performing Static Database Test - 'Create New Order Procedure 1'...
** Static Database Test 'Create New Order Procedure 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create Payment Procedure 1'...
** Static Database Test 'Create Payment Procedure 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create Payment Procedure 2'...
** Static Database Test 'Create Payment Procedure 2' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create Order Status Procedure 1'...
** Static Database Test 'Create Order Status Procedure 1' has executed 1
Times, returning 0 row(s).

Performing Static Database Test - 'Create Order Status Procedure 2'...
** Static Database Test 'Create Order Status Procedure 2' has executed 1
Times, returning 0 row(s).

Performing Static Database Test - 'Create Delivery Procedure'...
** Static Database Test 'Create Delivery Procedure' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create Stock Level Procedure'...

```

    ** Static Database Test 'Create Stock Level Procedure' has executed 1 Times,
    returning 0 row(s).

** Benchmark complete.

Total Time to perform the benchmark:

    Elapsed    : 0 Days 00:00:10.557

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Performing Static Database Test - 'Load C_Warehouse Table '...'
    ** Static Database Test 'Load C_Warehouse Table ' has executed 1 Times,
    returning 8 row(s).

Performing Static Database Test - 'Load C_District Table '...'
    ** Static Database Test 'Load C_District Table ' has executed 1 Times,
    returning 80 row(s).

Performing Static Database Test - 'Load C_Customer Table '...'
    ** Static Database Test 'Load C_Customer Table ' has executed 1 Times,
    returning 240000 row(s).

Performing Static Database Test - 'Load C_History Table '...'
    ** Static Database Test 'Load C_History Table ' has executed 1 Times,
    returning 240000 row(s).

Performing Static Database Test - 'Load C_New_Order Table '...'
    ** Static Database Test 'Load C_New_Order Table ' has executed 1 Times,
    returning 72000 row(s).

Performing Static Database Test - 'Load C_Order Table '...'
    ** Static Database Test 'Load C_Order Table ' has executed 1 Times, returning
    240000 row(s).

Performing Static Database Test - 'Load C_Order_Line Table '...'
    ** Static Database Test 'Load C_Order_Line Table ' has executed 1 Times,
    returning 2402330 row(s).

Performing Static Database Test - 'Load C_Item Table '...'
    ** Static Database Test 'Load C_Item Table ' has executed 1 Times, returning
    100000 row(s).

Performing Static Database Test - 'Load C_Stock Table '...'
    ** Static Database Test 'Load C_Stock Table ' has executed 1 Times, returning
    800000 row(s).

** Benchmark complete.

Total Time to perform the benchmark:

    Elapsed    : 0 Days 00:08:28.003

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Performing Static Database Test - 'Create C_Warehouse Index 1'...'
    ** Static Database Test 'Create C_Warehouse Index 1' has executed 1 Times,
    returning 0 row(s).

Performing Static Database Test - 'Create C_District Index 1'...'
    ** Static Database Test 'Create C_District Index 1' has executed 1 Times,
    returning 0 row(s).

Performing Static Database Test - 'Create C_Customer Index 1'...'
    ** Static Database Test 'Create C_Customer Index 1' has executed 1 Times,
    returning 0 row(s).

Performing Static Database Test - 'Create C_Customer Index 2'...'
    ** Static Database Test 'Create C_Customer Index 2' has executed 1 Times,
    returning 0 row(s).
```

```
Performing Static Database Test - 'Create C_New_Order Index 1'...
    ** Static Database Test 'Create C_New_Order Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Order Index 1'...
    ** Static Database Test 'Create C_Order Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Order_Line Index 1'...
    ** Static Database Test 'Create C_Order_Line Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Item Index 1'...
    ** Static Database Test 'Create C_Item Index 1' has executed 1 Times,
returning 0 row(s).

Performing Static Database Test - 'Create C_Stock Index 1'...
    ** Static Database Test 'Create C_Stock Index 1' has executed 1 Times,
returning 0 row(s).
```

** Benchmark complete.

Total Time to perform the benchmark:

Elapsed : 0 Days 00:01:18.522

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Executing Test 'TPC-C Transaction Mix'...

** Benchmark complete.

Total Time to perform the benchmark:

Elapsed : 1 Days 00:11:47.304

Benchmark Factory Test Results...

Transactions

Benchmark Name: TPC-C - drop procedure
 Benchmark Comment: drop procedure Delete New Order Procedure 1

drop procedure Delete Payment Procedure 1
 drop procedure Delete Payment Procedure 2
 drop procedure Delete Order Status Procedure 1
 drop procedure Delete Order Status Procedure 2
 drop procedure Delete Delivery Procedure
 drop procedure Delete Stock Level Procedure

Test Parameters:

Save Results: NO
 Save Timings: NO
 Kill Transaction: NO

Profile Information:

Driver: Oracle
 Profile Name: 9irac-xp
 Net Service Name: rel2
 Tablespace: XP1
 User Name: system
 Password: *****

Test Name	Rows	Stop Time	Rows/Sec	Type	TPS	Total Time
Time	Avg. Time		Min. Time	Response Time	Max. Time	Start Status
Delete New Order Procedure 1	0	16:05:24.017	N/A	Iteration by Loop	0.852	00:00:01.174
	1.174		16:05:25.191		1.174	N/A
			1.174		1.174	COMPLETED.
Delete Payment Procedure 1	0	16:05:25.321	N/A	Iteration by Loop	13.333	00:00:00.075
	0.075		16:05:25.396		0.075	N/A
			0.075		0.075	COMPLETED.
Delete Payment Procedure 2	0	16:05:25.430	N/A	Iteration by Loop	14.085	00:00:00.071
	0.071		16:05:25.501		0.071	N/A
			0.071		0.071	COMPLETED.
Delete Order Status Procedure 1	0	16:05:25.543	N/A	Iteration by Loop	27.027	00:00:00.037
	0.037		16:05:25.580		0.037	N/A
			0.037		0.037	COMPLETED.
Delete Order Status Procedure 2	0	16:05:25.608	N/A	Iteration by Loop	25.641	00:00:00.039
	0.039		16:05:25.647		0.039	N/A
			0.039		0.039	COMPLETED.
Delete Delivery Procedure	0	16:05:25.702	N/A	Iteration by Loop	23.256	00:00:00.043
	0.043		16:05:25.745		0.043	N/A
			0.043		0.043	COMPLETED.
Delete Stock Level Procedure	0	16:05:26.775	N/A	Iteration by Loop	28.571	00:00:00.035
			16:05:26.810		0.035	N/A

0.035 0.035 0.035
 COMPLETED.

** Benchmark complete.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:05:16.006
 End Time : 09/05/03 16:05:26.829
 Elapsed : 0 Days 00:00:10.823

Transactions

Benchmark Name: TPC-C - drop index
 Benchmark Comment: drop index Drop C_Warehouse Index 1

- drop index Drop C_District Index 1
- drop index Drop C_Customer Index 1
- drop index Drop C_Customer Index 2
- drop index Drop C_New_Order Index 1
- drop index Drop C_Order Index 1
- drop index Drop C_Item Index 1
- drop index Drop C_Stock Index 1

Test Parameters:

Save Results: NO
 Save Timings: NO
 Kill Transaction: NO

Profile Information:

Driver: Oracle
 Profile Name: 9irac-xp
 Net Service Name: rel2
 Tablespace: XPl
 User Name: system
 Password: *****

Test Name	Rows	Time	Stop Time	Type	Rows/Sec	Response Time	TPS	Total Time	Start
	Avg. Time				Min. Time	Max. Time		Retrieval Time	Status
Drop C_Warehouse Index 1	N/A			Iteration by Loop	6.173			00:00:00.162	0
		16:05:35.136			0.162			16:05:34.974	
		0.162			0.162			N/A	0.162
								COMPLETED.	
Drop C_District Index 1	N/A			Iteration by Loop	15.152			00:00:00.066	0
		16:05:35.244			0.066			16:05:35.178	
		0.066			0.066			N/A	0.066
								COMPLETED.	
Drop C_Customer Index 1	N/A			Iteration by Loop	5.747			00:00:00.174	0
		16:05:35.447			0.174			16:05:35.273	
		0.174			0.174			N/A	0.174
								COMPLETED.	
Drop C_Customer Index 2	N/A			Iteration by Loop	4.310			00:00:00.232	0
		16:05:35.703			0.232			16:05:35.471	
		0.232			0.232			N/A	0.232
								COMPLETED.	
Drop C_New_Order Index 1	N/A			Iteration by Loop	7.353			00:00:00.136	0
		16:05:35.876			0.136			16:05:35.740	
		0.136			0.136			N/A	0.136
								COMPLETED.	
Drop C_Order Index 1	N/A			Iteration by Loop	5.917			00:00:00.169	0
								16:05:36.045	

	16:05:36.214	0.169	N/A	0.169
	0.169	0.169	COMPLETED.	
Drop C_Item Index 1	N/A	7.042	Iteration by Loop 00:00:00.142	0
	16:05:36.379	0.142	16:05:36.237	
	0.142	0.142	N/A	0.142
			COMPLETED.	
Drop C_Stock Index 1	N/A	4.000	Iteration by Loop 00:00:00.250	0
	16:05:36.660	0.250	16:05:36.410	
	0.250	0.250	N/A	0.250
			COMPLETED.	

** Benchmark complete.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:05:26.034
 End Time : 09/05/03 16:05:36.679
 Elapsed : 0 Days 00:00:10.645

Transactions

Benchmark Name: TPC-C - drop table
 Benchmark Comment: drop table Delete C_Warehouse Table

drop table Delete C_District Table
 drop table Delete C_Customer Table
 drop table Delete C_History Table
 drop table Delete C_New_Order Table
 drop table Delete C_Order Table
 drop table Delete C_Order_Line Table
 drop table Delete C_Item Table
 drop table Delete C_Stock Table

Test Parameters:

Save Results: NO
 Save Timings: NO
 Kill Transaction: NO

Profile Information:

Driver: Oracle
 Profile Name: 9irac-xp
 Net Service Name: rel2
 Tablespace: XP1
 User Name: system
 Password: *****

Test Name	Rows	Stop Time	Type	Total Time	Start
Time	Avg. Time		Rows/Sec	TPS	Status
			Response Time	Retrieval Time	
			Min. Time	Max. Time	
Delete C_Warehouse Table			Iteration by Loop	00:00:00.433	0
	N/A			16:05:45.914	
	16:05:46.347			N/A	0.433
	0.433			COMPLETED.	
Delete C_District Table			Iteration by Loop	00:00:00.062	0
	N/A			16:05:46.381	
	16:05:46.443			N/A	0.062
	0.062			COMPLETED.	
Delete C_Customer Table			Iteration by Loop	00:00:00.779	0
	N/A			16:05:46.471	
	16:05:47.250			N/A	0.779
	0.779			COMPLETED.	

Delete C_History Table		Iteration by Loop	00:00:00.269	0
N/A	3.717		16:05:47.284	
16:05:47.553	0.268		N/A	0.268
0.268	0.268		COMPLETED.	
Delete C_New_Order Table		Iteration by Loop	00:00:00.131	0
N/A	7.634		16:05:47.590	
16:05:47.721	0.131		N/A	0.131
0.131	0.131		COMPLETED.	
Delete C_Order Table		Iteration by Loop	00:00:00.200	0
N/A	5.000		16:05:48.752	
16:05:48.952	0.200		N/A	0.200
0.200	0.200		COMPLETED.	
Delete C_Order_Line Table		Iteration by Loop	00:00:00.782	0
N/A	1.279		16:05:48.984	
16:05:49.766	0.782		N/A	0.782
0.782	0.782		COMPLETED.	
Delete C_Item Table		Iteration by Loop	00:00:00.197	0
N/A	5.076		16:05:48.799	
16:05:48.996	0.196		N/A	0.196
0.196	0.196		COMPLETED.	
Delete C_Stock Table		Iteration by Loop	00:00:01.055	0
N/A	0.948		16:05:49.026	
16:05:50.081	1.055		N/A	1.055
1.055	1.055		COMPLETED.	

** Benchmark complete.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:05:37.036
 End Time : 09/05/03 16:05:50.097
 Elapsed : 0 Days 00:00:13.061

Transactions

Benchmark Name: TPC-C - create table
 Benchmark Comment: create table Create C_Warehouse Table

create table Create C_District Table
 create table Create C_Customer Table
 create table Create C_History Table
 create table Create C_New_Order Table
 create table Create C_Order Table
 create table Create C_Order_Line Table
 create table Create C_Item Table
 create table Create C_Stock Table

Test Parameters:

Save Results: NO
 Save Timings: NO
 Kill Transaction: NO

Profile Information:

Driver: Oracle
 Profile Name: 9irac-xp
 Net Service Name: rel2
 Tablespace: XP1
 User Name: system
 Password: *****

Test Name	Rows	Stop Time	Type	Rows/Sec	Response Time	TPS	Total Time	Start
							Retrieval Time	

	Avg. Time	Min. Time	Max. Time	Status
Create C_Warehouse Table			Iteration by Loop 00:00:00.146	0
N/A		6.849	16:05:59.925	
16:06:00.071		0.146	N/A	0.146
0.146		0.146	COMPLETED.	
Create C_District Table			Iteration by Loop 00:00:00.026	0
N/A		38.462	16:06:00.098	
16:06:00.124		0.026	N/A	0.026
0.026		0.026	COMPLETED.	
Create C_Customer Table			Iteration by Loop 00:00:00.037	0
N/A		27.027	16:06:00.164	
16:06:00.201		0.037	N/A	0.037
0.037		0.037	COMPLETED.	
Create C_History Table			Iteration by Loop 00:00:00.027	0
N/A		37.037	16:06:00.229	
16:06:00.256		0.027	N/A	0.027
0.027		0.027	COMPLETED.	
Create C_New_Order Table			Iteration by Loop 00:00:00.019	0
N/A		52.632	16:06:00.302	
16:06:00.321		0.019	N/A	0.019
0.019		0.019	COMPLETED.	
Create C_Order Table			Iteration by Loop 00:00:00.030	0
N/A		33.333	16:06:00.356	
16:06:00.386		0.029	N/A	0.029
0.029		0.029	COMPLETED.	
Create C_Order_Line Table			Iteration by Loop 00:00:00.023	0
N/A		43.478	16:06:00.415	
16:06:00.438		0.023	N/A	0.023
0.023		0.023	COMPLETED.	
Create C_Item Table			Iteration by Loop 00:00:00.040	0
N/A		0.000	16:06:00.469	
16:06:00.509		0.000	N/A	0.000
2147483.647		0.000	COMPLETED.	
Create C_Stock Table			Iteration by Loop 00:00:00.040	0
N/A		25.000	16:06:00.541	
16:06:00.581		0.040	N/A	0.040
0.040		0.040	COMPLETED.	

** Benchmark completed with errors.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:05:51.036
End Time : 09/05/03 16:06:00.599
Elapsed : 0 Days 00:00:09.563

Transactions

Benchmark Name: TPC-C - create procedure
Benchmark Comment: create procedure Create New Order Procedure 1

create procedure Create Payment Procedure 1

create procedure Create Payment Procedure 2

create procedure Create Order Status Procedure 1

create procedure Create Order Status Procedure 2

create procedure Create Delivery Procedure

create procedure Create Stock Level Procedure

Test Parameters:

Save Results: NO
Save Timings: NO
Kill Transaction: NO

Profile Information:

Driver: Oracle
Profile Name: 9irac-xp

```

Net Service Name:      rel2
Tablespace:           XP1
User Name:            system
Password:             *****

```

Test Name	Rows	Stop Time	Rows/Sec	Type	TPS	Total Time
Time	Avg. Time		Min. Time	Response Time	Max. Time	Start Status
Create New Order Procedure 1	0		N/A	Iteration by Loop	4.505	00:00:00.222
	16:06:09.973		16:06:10.195		0.222	N/A
	0.222		0.222		0.222	
	COMPLETED.					
Create Payment Procedure 1	0		N/A	Iteration by Loop	10.989	00:00:00.091
	16:06:10.230		16:06:10.321		0.091	N/A
	0.091		0.091		0.091	
	COMPLETED.					
Create Payment Procedure 2	0		N/A	Iteration by Loop	9.009	00:00:00.111
	16:06:10.353		16:06:10.464		0.110	N/A
	0.110		0.110		0.110	
	COMPLETED.					
Create Order Status Procedure 1	0		N/A	Iteration by Loop	28.571	00:00:00.035
	16:06:10.493		16:06:10.528		0.035	N/A
	0.035		0.035		0.035	
	COMPLETED.					
Create Order Status Procedure 2	0		N/A	Iteration by Loop	19.231	00:00:00.052
	16:06:10.558		16:06:10.610		0.052	N/A
	0.052		0.052		0.052	
	COMPLETED.					
Create Delivery Procedure	0		N/A	Iteration by Loop	15.873	00:00:00.063
	16:06:10.649		16:06:10.712		0.063	N/A
	0.063		0.063		0.063	
	COMPLETED.					
Create Stock Level Procedure	0		N/A	Iteration by Loop	21.277	00:00:00.047
	16:06:11.763		16:06:11.810		0.047	N/A
	0.047		0.047		0.047	
	COMPLETED.					

** Benchmark complete.

Total Time to perform the benchmark:

```

Start Time:      09/05/03 16:06:02.035
End Time   :    09/05/03 16:06:11.827
Elapsed    :    0 Days 00:00:09.792

```

Transactions

```

Benchmark Name:      TPC-C - load table
Benchmark Comment:   load table Load C_Warehouse Table

```

load table Load C_District Table

load table Load C_Customer Table

load table Load C_History Table

load table Load C_New_Order Table

load table Load C_Order Table

load table Load C_Order_Line Table

load table Load C_Item Table

load table Load C_Stock Table

Test Parameters:

Save Results: NO
 Save Timings: NO
 Kill Transaction: NO

Profile Information:

Driver: Oracle
 Profile Name: 9irac-xp
 Net Service Name: rel2
 Tablespace: XP1
 User Name: system
 Password: *****

Test Name	Type	Total Time	Start
Rows	Rows/Sec	TPS	Status
Time	Response Time	Retrieval Time	
Stop Time	Min. Time	Max. Time	
Avg. Time			
Load C_Warehouse Table	Iteration by Loop	00:00:00.042	8
N/A	23.810	16:06:20.931	
16:06:20.973	0.042	N/A	0.042
0.042	0.042	COMPLETED.	
Load C_District Table	Iteration by Loop	00:00:00.016	80
N/A	62.500	16:06:20.009	
16:06:20.025	0.016	N/A	0.016
0.016	0.016	COMPLETED.	
Load C_Customer Table	Iteration by Loop	00:01:28.207	
240000	N/A	0.011	
16:06:20.087	16:07:48.294	88.207	N/A
88.207	88.207	88.207	
	COMPLETED.		
Load C_History Table	Iteration by Loop	00:00:20.537	
240000	N/A	0.049	
16:07:49.333	16:08:09.870	20.536	N/A
20.536	20.536	20.536	
	COMPLETED.		
Load C_New_Order Table	Iteration by Loop	00:00:04.621	
72000	N/A	0.216	
16:08:08.910	16:08:13.531	4.620	N/A
4.620	4.620	4.620	
	COMPLETED.		
Load C_Order Table	Iteration by Loop	00:00:29.513	
240000	N/A	0.034	
16:08:13.572	16:08:43.085	29.513	N/A
29.513	29.513	29.513	
	COMPLETED.		
Load C_Order_Line Table	Iteration by Loop	00:02:57.933	
2402330	N/A	0.006	
16:08:43.130	16:11:41.063	177.932	N/A
177.932	177.932	177.932	
	COMPLETED.		
Load C_Item Table	Iteration by Loop	00:00:00.079	0
N/A	0.000	16:11:41.099	
16:11:41.178	0.000	N/A	0.000
2147483.647	0.000	COMPLETED.	
Load C_Stock Table	Iteration by Loop	00:02:37.449	
800000	N/A	0.006	
16:11:41.208	16:14:18.657	157.449	N/A
157.449	157.449	157.449	
	COMPLETED.		

** Benchmark completed with errors.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:06:11.036
 End Time : 09/05/03 16:14:18.676
 Elapsed : 0 Days 00:08:07.640

Transactions

Benchmark Name: TPC-C - create index
 Benchmark Comment: create index Create C_Warehouse Index 1

create index Create C_District Index 1
 create index Create C_Customer Index 1
 create index Create C_Customer Index 2
 create index Create C_New_Order Index 1
 create index Create C_Order Index 1
 create index Create C_Order_Line Index 1
 create index Create C_Item Index 1
 create index Create C_Stock Index 1

Test Parameters:

Save Results: NO
 Save Timings: NO
 Kill Transaction: NO

Profile Information:

Driver: Oracle
 Profile Name: 9irac-xp
 Net Service Name: rel2
 Tablespace: XP1
 User Name: system
 Password: *****

Test Name	Type	Total Time	Start
Rows	Rows/Sec	TPS	Status
Time	Response Time	Retrieval Time	
Stop Time	Min. Time	Max. Time	
Avg. Time			
Create C_Warehouse Index 1	Iteration by Loop	00:00:00.373	0
N/A	2.681	16:14:28.276	
16:14:28.649	0.373	N/A	0.373
0.373	0.373	COMPLETED.	
Create C_District Index 1	Iteration by Loop	00:00:00.076	0
N/A	13.158	16:14:29.694	
16:14:29.770	0.075	N/A	0.075
0.075	0.075	COMPLETED.	
Create C_Customer Index 1	Iteration by Loop	00:00:08.186	0
N/A	0.122	16:14:28.808	
16:14:36.994	8.186	N/A	8.186
8.186	8.186	COMPLETED.	
Create C_Customer Index 2	Iteration by Loop	00:00:08.549	0
N/A	0.117	16:14:37.025	
16:14:45.574	8.548	N/A	8.548
8.548	8.548	COMPLETED.	
Create C_New_Order Index 1	Iteration by Loop	00:00:00.655	0
N/A	1.527	16:14:45.610	
16:14:46.265	0.655	N/A	0.655
0.655	0.655	COMPLETED.	
Create C_Order Index 1	Iteration by Loop	00:00:02.215	0
N/A	0.451	16:14:46.302	
16:14:48.517	2.215	N/A	2.215
2.215	2.215	COMPLETED.	
Create C_Order_Line Index 1	Iteration by Loop	00:00:28.375	0
N/A	0.035	16:14:49.555	
16:15:17.930	28.374	N/A	28.374
28.374	28.374	COMPLETED.	
Create C_Item Index 1	Iteration by Loop	00:00:00.014	0
N/A	0.000	16:15:17.973	
16:15:17.987	0.000	N/A	0.000
2147483.647	0.000	COMPLETED.	
Create C_Stock Index 1	Iteration by Loop	00:00:16.494	0
N/A	0.061	16:15:17.014	

16:15:33.508 16.493 N/A 16.493
16.493 16.493 COMPLETED.

** Benchmark completed with errors.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:14:19.035
End Time : 09/05/03 16:15:33.531
Elapsed : 0 Days 00:01:14.496

Mixed Workload Database Benchmark

Benchmark ID: 72
Benchmark Name: TPC-C Transaction Mix
Benchmark Comment:
Timing File: .tim

Profile Information:

Driver: Oracle
Profile Name: 9irac-xp
Net Service Name: rel2
Tablespace: XP1
User Name: system
Password: *****

Test Options:

Stop Benchmark after First Error: NO
Agents Log Transaction Results to disk: NO
Agents Log Transaction Times to disk: NO

Save Real-Time Counter Information: YES
Save User Statistics: YES
Save Transaction Statistics Summary to Repository: YES
Save Response Distribution: YES
Save Transaction Time Distribution to Repository: YES
Save Statistics during Rampup & Rampdown: NO
Save Transaction Timings to Repository: NO

Test Parameters:

Iterations: (50)

Latency No Delay specified

Execution Time: 00:00:00
Rampup Time: 00:05:00
Rampdown Time: 00:01:15
Quiet Time: 00:00:30

Transaction Mix:

Name	Weight	Probability
New Order Transaction	450	45.00 %
Payment Transaction	430	43.00 %
Order-Status Transaction	40	4.00 %
Delivery Transaction	40	4.00 %
Stock-Level Transaction	40	4.00 %

Benchmark Summary Statistics:

Userload	TPS	Rows	Bytes	Avg Time
Min Time	Max Time	Errors		

** Test 'TPC-C Transaction Mix' has been cancelled by user.

** Benchmark has been cancelled by user.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:15:34.036
 End Time : 09/05/03 16:26:30.141
 Elapsed : 0 Days 00:10:56.105

Transactions

Benchmark Name: TPC-C - drop procedure
 Benchmark Comment: drop procedure Delete New Order Procedure 1

- drop procedure Delete Payment Procedure 1
- drop procedure Delete Payment Procedure 2
- drop procedure Delete Order Status Procedure 1
- drop procedure Delete Order Status Procedure 2
- drop procedure Delete Delivery Procedure
- drop procedure Delete Stock Level Procedure

Test Parameters:

Save Results: NO
 Save Timings: NO
 Kill Transaction: NO

Profile Information:

Driver: Oracle
 Profile Name: 9irac-xp
 Net Service Name: rel2
 Tablespace: XP1
 User Name: system
 Password: *****

Test Name	Rows	Stop Time	Rows/Sec	Type	TPS	Total Time
Time	Avg. Time		Min. Time	Response Time	Max. Time	Start Status
Delete New Order Procedure 1	0	16:28:09.719	N/A	Iteration by Loop	5.988	00:00:00.167
	0.167		16:28:09.886		0.167	N/A
			0.167		0.167	
						COMPLETED.
Delete Payment Procedure 1	0	16:28:09.910	N/A	Iteration by Loop	21.277	00:00:00.047
	0.047		16:28:09.957		0.047	N/A
			0.047		0.047	
						COMPLETED.
Delete Payment Procedure 2	0	16:28:08.988	N/A	Iteration by Loop	16.393	00:00:00.061
	0.061		16:28:09.049		0.061	N/A
			0.061		0.061	
						COMPLETED.
Delete Order Status Procedure 1	0	16:28:09.078	N/A	Iteration by Loop	22.222	00:00:00.045
	0.045		16:28:09.123		0.045	N/A
			0.045		0.045	
						COMPLETED.
Delete Order Status Procedure 2	0	16:28:09.161	N/A	Iteration by Loop	29.412	00:00:00.034
	0.034		16:28:09.195		0.034	N/A
			0.034		0.034	
						COMPLETED.
Delete Delivery Procedure	0	16:28:09.236	N/A	Iteration by Loop	28.571	00:00:00.035
	0.035		16:28:09.271		0.035	N/A
			0.035		0.035	
						COMPLETED.
Delete Stock Level Procedure	0	16:28:09.306	N/A	Iteration by Loop	33.333	00:00:00.030
			16:28:09.336		0.030	N/A

0.030 0.030 0.030
 COMPLETED.

** Benchmark complete.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:27:59.694
 End Time : 09/05/03 16:28:09.347
 Elapsed : 0 Days 00:00:09.653

Transactions

Benchmark Name: TPC-C - drop index
 Benchmark Comment: drop index Drop C_Warehouse Index 1

- drop index Drop C_District Index 1
- drop index Drop C_Customer Index 1
- drop index Drop C_Customer Index 2
- drop index Drop C_New_Order Index 1
- drop index Drop C_Order Index 1
- drop index Drop C_Order_Line Index 1
- drop index Drop C_Stock Index 1

Test Parameters:

Save Results: NO
 Save Timings: NO
 Kill Transaction: NO

Profile Information:

Driver: Oracle
 Profile Name: 9irac-xp
 Net Service Name: rel2
 Tablespace: XP1
 User Name: system
 Password: *****

Test Name	Rows	Time	Stop Time	Type	Rows/Sec	TPS	Total Time	Start
	Avg. Time			Response Time	Min. Time	Max. Time	Retrieval Time	Status
Drop C_Warehouse Index 1	N/A			Iteration by Loop	1.215		00:00:00.823	0
	16:28:20.015				0.823	N/A	16:28:19.192	0.823
	0.823				0.823	COMPLETED.		
Drop C_District Index 1	N/A			Iteration by Loop	13.514		00:00:00.074	0
	16:28:20.128				0.074	N/A	16:28:20.054	0.074
	0.074				0.074	COMPLETED.		
Drop C_Customer Index 1	N/A			Iteration by Loop	6.061		00:00:00.165	0
	16:28:20.326				0.165	N/A	16:28:20.161	0.165
	0.165				0.165	COMPLETED.		
Drop C_Customer Index 2	N/A			Iteration by Loop	4.219		00:00:00.237	0
	16:28:20.596				0.237	N/A	16:28:20.359	0.237
	0.237				0.237	COMPLETED.		
Drop C_New_Order Index 1	N/A			Iteration by Loop	1.399		00:00:00.715	0
	16:28:21.384				0.715	N/A	16:28:20.669	0.715
	0.715				0.715	COMPLETED.		
Drop C_Order Index 1	N/A			Iteration by Loop	0.326		00:00:03.070	0
						16:28:21.412		

	16:28:24.482	3.070	N/A	3.070
	3.070	3.070	COMPLETED.	
Drop C_Order_Line Index 1	N/A	1.629	Iteration by Loop 00:00:00.614	0
	16:28:25.132	0.614	16:28:24.518	
	0.614	0.614	N/A	0.614
			COMPLETED.	
Drop C_Stock Index 1	N/A	3.802	Iteration by Loop 00:00:00.263	0
	16:28:25.427	0.262	16:28:25.164	
	0.262	0.262	N/A	0.262
			COMPLETED.	

** Benchmark complete.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:28:10.033
End Time : 09/05/03 16:28:25.445
Elapsed : 0 Days 00:00:15.412

Transactions

Benchmark Name: TPC-C - drop table
Benchmark Comment: drop table Delete C_Warehouse Table

drop table Delete C_District Table

drop table Delete C_Customer Table

drop table Delete C_History Table

drop table Delete C_New_Order Table

drop table Delete C_Order Table

drop table Delete C_Order_Line Table

drop table Delete C_Stock Table

Test Parameters:

Save Results: NO
Save Timings: NO
Kill Transaction: NO

Profile Information:

Driver: Oracle
Profile Name: 9irac-xp
Net Service Name: rel2
Tablespace: XP1
User Name: system
Password: *****

Test Name	Rows	Stop Time	Type	Total Time	Start
Time	Avg. Time		Rows/Sec	TPS	Status
			Response Time	Retrieval Time	
			Min. Time	Max. Time	
Delete C_Warehouse Table	N/A		Iteration by Loop	00:00:00.353	0
	16:28:35.302			16:28:34.949	
	0.353			N/A	0.353
				COMPLETED.	
Delete C_District Table	N/A		Iteration by Loop	00:00:05.972	0
	16:28:41.311			16:28:35.339	
	5.972			N/A	5.972
				COMPLETED.	
Delete C_Customer Table	N/A		Iteration by Loop	00:00:00.833	0
	16:28:42.174			16:28:41.341	
	0.833			N/A	0.833
				COMPLETED.	
Delete C_History Table	N/A		Iteration by Loop	00:00:00.264	0
				16:28:42.215	

	16:28:42.479	0.264	N/A	0.264
	0.264	0.264	COMPLETED.	
Delete	C_New_Order Table		Iteration by Loop 00:00:04.994	0
	N/A	0.200	16:28:42.508	
	16:28:47.502	4.994	N/A	4.994
	4.994	4.994	COMPLETED.	
Delete	C_Order Table		Iteration by Loop 00:00:03.114	0
	N/A	0.321	16:28:47.545	
	16:28:50.659	3.114	N/A	3.114
	3.114	3.114	COMPLETED.	
Delete	C_Order_Line Table		Iteration by Loop 00:00:06.627	0
	N/A	0.151	16:28:50.692	
	16:28:57.319	6.627	N/A	6.627
	6.627	6.627	COMPLETED.	
Delete	C_Stock Table		Iteration by Loop 00:00:04.470	0
	N/A	0.224	16:28:58.355	
	16:29:02.825	4.470	N/A	4.470
	4.470	4.470	COMPLETED.	

** Benchmark complete.

Total Time to perform the benchmark:

```

Start Time:      09/05/03 16:28:27.034
End Time   :      09/05/03 16:29:02.844
Elapsed    :      0 Days 00:00:35.810

```

Transactions

```

Benchmark Name:      TPC-C - create table
Benchmark Comment:   create table Create C_Warehouse Table

```

```

create table Create C_District Table
create table Create C_Customer Table
create table Create C_History Table
create table Create C_New_Order Table
create table Create C_Order Table
create table Create C_Order_Line Table
create table Create C_Item Table
create table Create C_Stock Table

```

Test Parameters:

```

Save Results:      NO
Save Timings:      NO
Kill Transaction:  NO

```

Profile Information:

```

Driver:      Oracle
Profile Name: 9irac-xp
Net Service Name: rel2
Tablespace:  XP1
User Name:   system
Password:    *****

```

Test Name		Type	Total Time	
Rows	Rows/Sec	TPS	Start	
Time	Stop Time	Response Time	Retrieval Time	
Avg. Time	Min. Time	Max. Time	Status	
Create C_Warehouse Table		Iteration by Loop	00:00:00.047	0
N/A	21.277	16:29:11.930		
16:29:11.977	0.047	N/A	0.047	
0.047	0.047	COMPLETED.		

Create C_District Table		Iteration by Loop	00:00:00.035	0
N/A	28.571	16:29:11.007		
16:29:11.042	0.035	N/A	0.035	
0.035	0.035	COMPLETED.		
Create C_Customer Table		Iteration by Loop	00:00:00.040	0
N/A	25.000	16:29:11.085		
16:29:11.125	0.040	N/A	0.040	
0.040	0.040	COMPLETED.		
Create C_History Table		Iteration by Loop	00:00:00.025	0
N/A	40.000	16:29:11.156		
16:29:11.181	0.025	N/A	0.025	
0.025	0.025	COMPLETED.		
Create C_New_Order Table		Iteration by Loop	00:00:00.021	0
N/A	47.619	16:29:11.243		
16:29:11.264	0.021	N/A	0.021	
0.021	0.021	COMPLETED.		
Create C_Order Table		Iteration by Loop	00:00:00.030	0
N/A	33.333	16:29:11.296		
16:29:11.326	0.030	N/A	0.030	
0.030	0.030	COMPLETED.		
Create C_Order_Line Table		Iteration by Loop	00:00:00.025	0
N/A	40.000	16:29:11.353		
16:29:11.378	0.024	N/A	0.024	
0.024	0.024	COMPLETED.		
Create C_Item Table		Iteration by Loop	00:00:00.023	0
N/A	43.478	16:29:11.408		
16:29:11.431	0.023	N/A	0.023	
0.023	0.023	COMPLETED.		
Create C_Stock Table		Iteration by Loop	00:00:00.044	0
N/A	22.727	16:29:11.462		
16:29:11.506	0.044	N/A	0.044	
0.044	0.044	COMPLETED.		

** Benchmark complete.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:29:02.036
End Time : 09/05/03 16:29:11.526
Elapsed : 0 Days 00:00:09.490

Transactions

Benchmark Name: TPC-C - create procedure
Benchmark Comment: create procedure Create New Order Procedure 1

create procedure Create Payment Procedure 1

create procedure Create Payment Procedure 2

create procedure Create Order Status Procedure 1

create procedure Create Order Status Procedure 2

create procedure Create Delivery Procedure

create procedure Create Stock Level Procedure

Test Parameters:

Save Results: NO
Save Timings: NO
Kill Transaction: NO

Profile Information:

Driver: Oracle
Profile Name: 9irac-xp
Net Service Name: rel2
Tablespace: XP1
User Name: system
Password: *****

Test Name	Rows	Stop Time	Rows/Sec	Type	TPS	Total Time
Time	Avg. Time	Time	Min. Time	Response Time	Max. Time	Start
						Status
Create New Order Procedure 1	0	16:29:22.198	N/A	Iteration by Loop	1.684	00:00:00.594
	0.594		16:29:22.792		0.594	N/A
	0.594		0.594		0.594	
	COMPLETED.					
Create Payment Procedure 1	0	16:29:22.833	N/A	Iteration by Loop	8.333	00:00:00.120
	0.120		16:29:22.953		0.120	N/A
	0.120		0.120		0.120	
	COMPLETED.					
Create Payment Procedure 2	0	16:29:21.976	N/A	Iteration by Loop	7.874	00:00:00.127
	0.127		16:29:22.103		0.127	N/A
	0.127		0.127		0.127	
	COMPLETED.					
Create Order Status Procedure 1	0	16:29:22.138	N/A	Iteration by Loop	18.868	00:00:00.053
	0.053		16:29:22.191		0.053	N/A
	0.053		0.053		0.053	
	COMPLETED.					
Create Order Status Procedure 2	0	16:29:22.231	N/A	Iteration by Loop	13.514	00:00:00.074
	0.074		16:29:22.305		0.074	N/A
	0.074		0.074		0.074	
	COMPLETED.					
Create Delivery Procedure	0	16:29:22.366	N/A	Iteration by Loop	9.901	00:00:00.101
	0.101		16:29:22.467		0.101	N/A
	0.101		0.101		0.101	
	COMPLETED.					
Create Stock Level Procedure	0	16:29:22.497	N/A	Iteration by Loop	13.699	00:00:00.073
	0.072		16:29:22.570		0.072	N/A
	0.072		0.072		0.072	
	COMPLETED.					

** Benchmark complete.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:29:12.035
End Time : 09/05/03 16:29:22.592
Elapsed : 0 Days 00:00:10.557

Transactions

Benchmark Name: TPC-C - load table
Benchmark Comment: load table Load C_Warehouse Table

load table Load C_District Table

load table Load C_Customer Table

load table Load C_History Table

load table Load C_New_Order Table

load table Load C_Order Table

load table Load C_Order_Line Table

load table Load C_Item Table

load table Load C_Stock Table

Test Parameters:

Save Results: NO
Save Timings: NO

Kill Transaction: NO

Profile Information:

Driver: Oracle
Profile Name: 9irac-xp
Net Service Name: rel2
Tablespace: XP1
User Name: system
Password: *****

Test Name	Type	Total Time	Start
Rows	Rows/Sec	TPS	Time
Time	Response Time	Retrieval Time	Status
Stop Time	Min. Time	Max. Time	
Avg. Time			
Load C_Warehouse Table	Iteration by Loop	00:00:00.074	8
N/A	13.514	16:29:32.139	
16:29:32.213	0.074	N/A	0.074
0.074	0.074	COMPLETED.	
Load C_District Table	Iteration by Loop	00:00:00.055	80
N/A	18.182	16:29:32.246	
16:29:32.301	0.055	N/A	0.055
0.055	0.055	COMPLETED.	
Load C_Customer Table	Iteration by Loop	00:01:24.045	
240000	N/A	0.012	
16:29:32.330	16:30:56.375	84.045	N/A
84.045	84.045	84.045	
COMPLETED.			
Load C_History Table	Iteration by Loop	00:00:18.046	
240000	N/A	0.055	
16:30:56.413	16:31:14.459	18.046	N/A
18.046	18.046	18.046	
COMPLETED.			
Load C_New_Order Table	Iteration by Loop	00:00:03.567	
72000	N/A	0.280	
16:31:14.490	16:31:18.057	3.567	N/A
3.567	3.567	3.567	
COMPLETED.			
Load C_Order Table	Iteration by Loop	00:00:28.477	
240000	N/A	0.035	
16:31:18.100	16:31:46.577	28.477	N/A
28.477	28.477	28.477	
COMPLETED.			
Load C_Order_Line Table	Iteration by Loop	00:03:06.960	
2402330	N/A	0.005	
16:31:46.618	16:34:53.578	186.960	N/A
186.960	186.960	186.960	
COMPLETED.			
Load C_Item Table	Iteration by Loop	00:00:08.828	
100000	N/A	0.113	
16:34:53.613	16:35:02.441	8.828	N/A
8.828	8.828	8.828	
COMPLETED.			
Load C_Stock Table	Iteration by Loop	00:02:48.534	
800000	N/A	0.006	
16:35:02.482	16:37:51.016	168.534	N/A
168.534	168.534	168.534	
COMPLETED.			

** Benchmark complete.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:29:23.034
End Time : 09/05/03 16:37:51.037
Elapsed : 0 Days 00:08:28.003

Transactions

Benchmark Name: TPC-C - create index
Benchmark Comment: create index Create C_Warehouse Index 1
create index Create C_District Index 1


```

create index Create C_Customer Index 1
create index Create C_Customer Index 2
create index Create C_New_Order Index 1
create index Create C_Order Index 1
create index Create C_Order_Line Index 1
create index Create C_Item Index 1
create index Create C_Stock Index 1

```

Test Parameters:

```

Save Results:          NO
Save Timings:         NO
Kill Transaction:     NO

```

Profile Information:

```

Driver:               Oracle
Profile Name:         9irac-xp
Net Service Name:     rel2
Tablespace:          XP1
User Name:            system
Password:             *****

```

Test Name	Rows	Stop Time	Type	Total Time	Start
Time	Avg. Time		Rows/Sec	TPS	Status
			Response Time	Retrieval Time	
			Min. Time	Max. Time	
Create C_Warehouse Index 1	N/A	16:38:02.250	Iteration by Loop	00:00:00.099	0
	0.099		10.101	16:38:02.151	
			0.099	N/A	0.099
			0.099	COMPLETED.	
Create C_District Index 1	N/A	16:38:02.334	Iteration by Loop	00:00:00.051	0
	0.051		19.608	16:38:02.283	
			0.051	N/A	0.051
			0.051	COMPLETED.	
Create C_Customer Index 1	N/A	16:38:10.529	Iteration by Loop	00:00:08.163	0
	8.163		0.123	16:38:02.366	
			8.163	N/A	8.163
			8.163	COMPLETED.	
Create C_Customer Index 2	N/A	16:38:19.054	Iteration by Loop	00:00:08.495	0
	8.495		0.118	16:38:10.559	
			8.495	N/A	8.495
			8.495	COMPLETED.	
Create C_New_Order Index 1	N/A	16:38:19.997	Iteration by Loop	00:00:00.903	0
	0.903		1.107	16:38:19.094	
			0.903	N/A	0.903
			0.903	COMPLETED.	
Create C_Order Index 1	N/A	16:38:23.884	Iteration by Loop	00:00:02.857	0
	2.857		0.350	16:38:21.027	
			2.857	N/A	2.857
			2.857	COMPLETED.	
Create C_Order_Line Index 1	N/A	16:38:52.663	Iteration by Loop	00:00:29.709	0
	29.709		0.034	16:38:22.954	
			29.709	N/A	29.709
			29.709	COMPLETED.	
Create C_Item Index 1	N/A	16:38:53.697	Iteration by Loop	00:00:01.000	0
	1.000		1.000	16:38:52.697	
			1.000	N/A	1.000
			1.000	COMPLETED.	
Create C_Stock Index 1	N/A	16:39:10.534	Iteration by Loop	00:00:16.807	0
	16.807		0.059	16:38:53.727	
			16.807	N/A	16.807
			16.807	COMPLETED.	

** Benchmark complete.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:37:52.033
End Time : 09/05/03 16:39:10.555
Elapsed : 0 Days 00:01:18.522

Mixed Workload Database Benchmark

Benchmark ID: 72
Benchmark Name: TPC-C Transaction Mix
Benchmark Comment:
Timing File: .tim

Profile Information:

Driver: Oracle
Profile Name: 9irac-xp
Net Service Name: rel2
Tablespace: XP1
User Name: system
Password: *****

Test Options:

Stop Benchmark after First Error: NO
Agents Log Transaction Results to disk: NO
Agents Log Transaction Times to disk: NO

Save Real-Time Counter Information: YES
Save User Statistics: YES
Save Transaction Statistics Summary to Repository: YES
Save Response Distribution: YES
Save Transaction Time Distribution to Repository: YES
Save Statistics during Rampup & Rampdown: NO
Save Transaction Timings to Repository: NO

Test Parameters:

Iterations: (50)
Latency No Delay specified
Execution Time: 00:00:00
Rampup Time: 00:05:00
Rampdown Time: 00:01:15
Quiet Time: 00:00:30

Transaction Mix:

Name	Weight	Probability
New Order Transaction	450	45.00 %
Payment Transaction	430	43.00 %
Order-Status Transaction	40	4.00 %
Delivery Transaction	40	4.00 %
Stock-Level Transaction	40	4.00 %

Benchmark Summary Statistics:

Userload	TPS	Rows	Bytes	Avg Time
Min Time	Max Time	Errors		
50	2.628	307569	96934611	0.052
0.002	1.556	0		

** Benchmark complete.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:39:11.033
End Time : 09/06/03 16:50:58.337
Elapsed : 1 Days 00:11:47.304

Benchmark Factory Transaction Mix Results...

Benchmark Factory(TM)
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Mixed Workload Database Benchmark

September 05, 2003 at 04:39:11 PM

Benchmark ID: 72
Benchmark Name: TPC-C Transaction Mix
Benchmark Comment:
Timing File: .tim

Profile Information:

Driver: Oracle
Profile Name: 9irac-xp
Net Service Name: rel2
Tablespace: XP1
User Name: system
Password: *****

Test Options:

Stop Benchmark after First Error: NO
Agents Log Transaction Results to disk: NO
Agents Log Transaction Times to disk: NO

Save Real-Time Counter Information: YES
Save User Statistics: YES
Save Transaction Statistics Summary to Repository: YES
Save Response Distribution: YES
Save Transaction Time Distribution to Repository: YES
Save Statistics during Rampup & Rampdown: NO
Save Transaction Timings to Repository: NO

Test Parameters:

Iterations: (50)

Latency: No Delay specified

Execution Time: 00:00:00
Rampup Time: 00:05:00
Rampdown Time: 00:01:15
Quiet Time: 00:00:30

Transaction Mix:

Name	Weight	Probability
New Order Transaction	450	0 %
Payment Transaction	430	0 %
Order-Status Transaction	40	0 %
Delivery Transaction	40	0 %
Stock-Level Transaction	40	0 %

Benchmark Summary Statistics:

Userload	TPS	Rows	Bytes	Avg Time
Min Time	Max Time	Errors		
50	2.628	307569	96934611	0.052
0.002	1.556	0		

** Benchmark complete.

Total Time to perform the benchmark:

Start Time: 09/05/03 16:39:11.033
End Time : 09/06/03 16:50:58.337
Elapsed : 1 Days 00:11:47.304

For more information

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HP ENSAextended technical overview, HP, 2003

HP Utility Data Center Overview, HP, 2002

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XXXX-XXXXEN, 09/2003

