ORACLE | PeopleSoft.
PeopleSoft. | Enterprise

ORACLE REVISION 2.0

PEOPLESOFT ENTERPRISE CRM FOR SUPPORT 8.9 USING ORACLE9i ON AN IBM® p5 570 Server (16-WAY)

As a global leader in e-business applications, Oracle is committed to delivering high performance solutions that meet our customers' expectations. Business software must deliver rich functionality with robust performance. This performance must be maintained at volumes that are representative of customer environments.

Oracle benchmarks demonstrate our software's performance characteristics for a range of processing volumes in a specific configuration. Customers and prospects can use this information to determine the software, hardware, and network configurations necessary to support their processing volumes.

The primary objective of our benchmarking effort is to provide as many data points as possible to support this important decision.

SUMMARY OF RESULTS

Benchmark	PeopleSoft Enterprise CRM 8.9	
	Medium Data Volume Model	
(English)	Average Response	Load 3.6 sec, Save 2.3 sec
	Concurrent Users	2,300
Référence d'exécution	PeopleSoft Enterprise CRM 8.9	
	modèle de données de taille moyenne	
(Français)	temps de réponse	Load 3,6 sec, Save 2,3 sec
	Concourants Utilisateurs	2.300
Benchmark-Test	PeopleSoft Enterprise CRM 8.9	
	Datenbankmodell "Medium"	
(Deutsch)	Antwortzeit	Load 3,6 sek, Save 2,3 sek
	Gleichzeitige Benutzer	2.300
Patrón de rendimiento	PeopleSoft Enterprise CRM 8.9	
	Modelo con volumen media de datos	
(Español)	tiempo de reacción	Load 3,6 sec, Save 2,3 sec
	Simultáneos Utilizadores	2.300
Benchmark	PeopleSoft Enterprise CRM 8.9	
	Modelo de Médio Volume	
(Português)	tempo de resposta	Load 3,6 sec, Save 2,3 sec
	Simultâneos Usuários	2.300

BENCHMARK PROFILE

In September 2005, Oracle (PeopleSoft) and IBM conducted a benchmark in Beaverton, OR to measure the online performance of Oracle's PeopleSoft Enterprise CRM for Support 8.9 using Oracle9i™ 9.2.0.5 on a 16-way IBM p5 570 server, running IBM AIX 5L™ V5.3. The single server logically hosted the database, application server and web server functions.

The benchmark measured Services client response times for 1,600, 1,800, 2,000, 2,200 and 2,300 concurrent users. Our standard Medium CRM Support data composition model (see Table 5, page 4) was used and the testing was conducted in a controlled environment with no other applications running. **The goal of this benchmark was to obtain baseline performance data for Oracle's PeopleSoft Enterprise CRM for Support 8.9 on the Oracle Database with IBM servers.**

Figure 1 illustrates average response times for a single user, and for a single user with 1,600, 1,800, 2,000, 2,200 and 2,300 concurrent users.

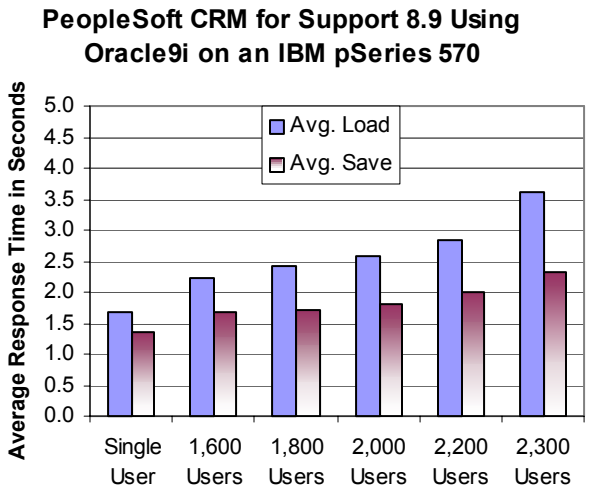

Figure 1: Average Response Times

* The response times are weighted averages corresponding to the transaction mix percentages in Table 1.

METHODOLOGY

Mercury Interactive LoadRunner® was used as the load driver, simulating concurrent users. It submitted a business transaction at an average rate of one every ten minutes for each concurrent user to the application servers via the web servers.

Mercury Interactive QuickTest® Professional was used to automatically submit transactions and to record the benchmark measurements on the client PC.

Measurements were recorded when the user load was attained and the environment reached a steady state.

Figure 2 shows the benchmark configuration. This benchmark was run using a logical 4–tier configuration; with the database server, application server and the web server instances each sharing a single physical server.

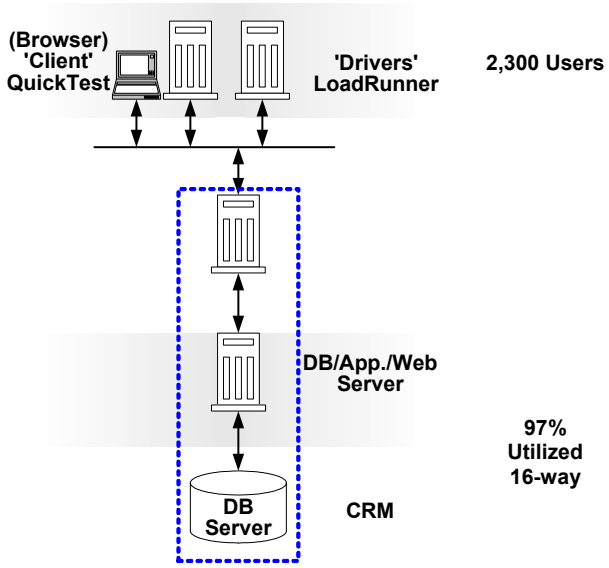

Figure 2: 4-Tier Configuration

Load times were measured from the time the user clicks a hyperlink or push button until the new HTML page has been rendered. Update times were measured from the time the user clicks the <SAVE> button until the new HTML page has been rendered.

Measurements were recorded on all of the servers when the user load was attained and the environment reached a steady state.

BUSINESS PROCESSES

Oracle (PeopleSoft) defines a business transaction as a series of HTML pages that guide a user through a business process, such as resolving a customer case.

The eight PeopleSoft Enterprise CRM 8.9 business processes tested in this benchmark are as follows:

COMMON COMPONENTS

1. Modify Customer Phone Info: After logging in, the user launches the customer 360-degree view. Search for a customer and update their phone information.

2. Modify Address Info: After logging in, the user launches the customer 360-degree view. Search for a customer and update their address information.

CASE CREATION (SUPPORT)

3. Create a New Case from 360: After logging in, the user launches the customer 360-degree view. Search for a customer and click on 'Add Case.' Select a quick code and verify that fields were correctly populated.

4. Create a Case with Entitlement: After logging in, the user launches the customer 360-degree view. Search for a customer and click on 'Add Case.' Enter a case summary and description along with a serial number to validate the entitlement (warranty coverage).

5. Create a Case and Search for a Solution: After logging in, the user launches the customer 360-degree view. Search for a customer and click on 'Add Case.' Select a quick code and verify that fields were correctly populated. Click on the 'Find Solutions' button and initiate the top-ranked solution.

6. Create a Case and Create a Service Order: After logging in, the user launches the customer 360-degree view. Search for a customer and click on 'Add Case.' Enter a case summary and description along with a serial number to validate the entitlement (warranty coverage). Click on "Suggested Next Steps" and follow through to 'Create Service Order.'

CASE UPDATE (SUPPORT)

7. Update a Case with a Note: After logging in, the user launches the customer 360-degree view. Search for a customer and click on 'Support Cases.' Click on the 'Case ID' and then on the "Add Note" button when the summary page opens. Type in the note and click on 'Apply Note.'

8. Email Solution to a Customer: After logging in, the user launches the customer 360-degree view. Search for a customer and click on 'Support Cases.' Click on the 'Case ID' and then on the "Email" button when the summary page opens. Click the checkbox next to a solution and click on 'Send.'

Process	% of Users	Avg. Pacing
Common Components 15%		
Modify Customer Phone Info	7%	10 min
Modify Address Info	8%	10 min
Case Creation 60%		
Create New Case from 360	25%	10 min
Create Case with Entitlement	5%	10 min
Create Case and Search	20%	10 min
Create Case & Service Order	10%	10 min
Case Update 25%		
Update Case with Note	15%	10 min
Email Solution to Customer	10%	10 min
Total	100%	

Table 1: Business Process Mix

Table 1 shows the proportions of the business processes used in the measurements of this benchmark. The proportions are intended to simulate a typical user scenario.

ONLINE PROCESS RESULTS

Table 2 shows average response times, in seconds, for each business process along with the overall averages. It also shows the approximate overall transaction rate.

Process	Single User	1,600 Users	1,800 Users	2,000 Users	2,200 Users	2,300 Users
Common Components						
Modify Customer Phone Info Load	1.7	2.2	2.3	2.5	2.6	3.3
Save	1.2	1.2	1.2	1.2	1.3	1.5
Modify Address Info Load	1.7	2.1	2.3	2.5	2.5	3.1
Save	1.2	1.2	1.2	1.3	1.4	1.8
Case Creation						
Create New Case from 360 Load	1.7	2.1	2.4	2.3	2.8	3.2
Save	1.5	2.0	2.0	2.2	2.8	2.6
Create Case with Entitlement Load	1.7	2.3	2.3	2.6	2.7	2.8
Save	1.8	2.5	2.7	2.7	2.9	3.3
Create Case, Search for Solution Load	1.7	2.2	2.6	2.6	3.0	4.2
Save	1.4	1.7	1.7	1.7	1.7	2.4
Create Case and Service Order	1.7	2.3	2.6	2.7	3.2	3.1
Save 1	1.8	2.0	2.1	2.3	2.3	2.6
Save 2	1.4	1.7	1.7	1.7	2.0	2.1
Case Update						
Update Case with Note Load	1.6	2.4	2.3	2.6	2.7	4.6
Save	1.2	1.4	1.6	1.5	1.6	2.6
Email Solution to Customer Load	1.6	2.3	2.6	3.0	2.9	3.4
Save	0.9	1.3	1.2	1.4	1.8	1.7
* Weighted Avg. Load	**1.67**	**2.23**	**2.43**	**2.57**	**2.85**	**3.61**
* Weighted Avg. Save	**1.36**	**1.68**	**1.72**	**1.82**	**2.02**	**2.34**
Transactions/ minute	N/a	160	180	200	220	230

Table 2: Business Process Runtimes

The database and application servers were processing a total of ~230 business processes per minute at the peak load of 2,300 concurrent users. The transaction rate is calculated by dividing the total number of completed transactions by the test duration.

Performance may vary on other hardware and software platforms and with other data composition models.

SERVER PERFORMANCE

Figure 3 shows the average CPU utilization for the Database server, Application servers and Web servers. This is the average across all of the active CPUs for the duration of the test.

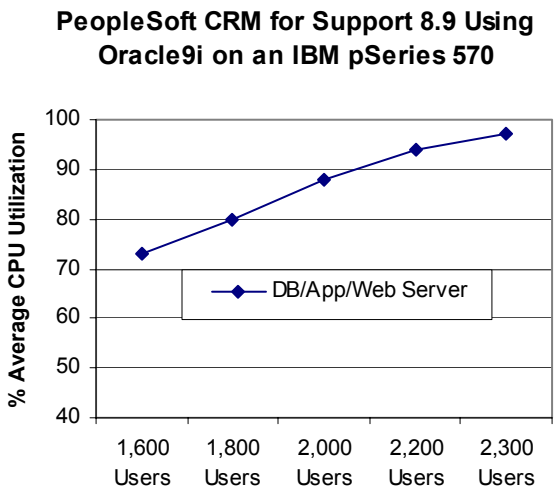

Figure 3: Average Server CPU Utilization

Note that the CPU utilization scaled fairly linearly as the number of concurrent users was increased. Most of the load was attributable to the application server.

	Single User	1,600 Users	1,800 Users	2,000 Users	2,200 Users	2,300 Users
PSAPPSRVs	1	64	80	80	80	80
WEBSRVs	1	8	10	10	10	10

Table 3: Instance Mapping

I/O SYSTEM PERFORMANCE

An IBM TotalStorage® DS4500 with 84 × 36.4 GB disks set up in RAID 0 configuration (as 12 sets of 7 disks per 'hdisk') was used for the benchmark. I/O performance is crucial to system performance and is summarized in the following table.

DB Server	Read KB/Sec	Write KB/Sec	Disk Transfer KB/Sec
Average	31.8	234.0	265.8
Peak	132.3	1,073.6	1,103.4

Table 4: I/O Performance for 2,300 User Run

DATA COMPOSITION DESCRIPTION

The standard database was comprised of:

Data Composition	Standard Medium Model
# of Consumers	5,000,000
# of Consumer Phones (2 each)	10,000,000
# of Consumer Addresses (2)	10,000,000
# of Consumer Email Addresses	10,000,000
# of Customer Companies	250,000
# of Company Addresses (1)	250,000
# of Contacts (3 each)	750,000
# of Contact Addresses (1 each)	750,000
# of Contact Email Addresses	750,000
# of Contact Phones (2 each)	1,500,000
# of Workers	6,000
# of Cases (1 per consumer, 2 per company)	5,500,000
# of Solutions	200,000
# of Products/Items	50,000

Table 5: Data Composition

BENCHMARK ENVIRONMENT

HARDWARE CONFIGURATION

Database/Application/Web Server:

The IBM p5 570 (9117-570) server was used as the database server-application server-web server. It was equipped with the following:

- 16 × 1.9 GHz IBM POWER5™ processors, each with 32 Kilobytes of Level-1 Data Cache and 64 Kilobytes of Level-1 Instruction Cache, with an average of 0.95 Megabytes of Level-2 Cache, with an average of 18 Megabytes of Level 3 Cache
- 80 Gigabytes of Memory (~50 GB used)
- ~3713 Gigabytes of total Disk Space (18 × 36.4 GB + 84 × 36.4) (~400 GB used)
- 8 Disk Controllers (6 × SCSI, 2 × 1 Gbit Fibre Channel DS4500)
- One IBM TotalStorage DS4500

Load Simulation Driver:

1 × IBM eServer™ 325 was used as the driver controller. It was equipped with the following:

- 2 × 2.0 Gigahertz AMD® Opteron™ 246 Processors, each with 1 Megabyte of Level-2 Cache
- 3 Gigabytes of Memory

1 × IBM eServer™ HS20 was used as a driver. It was equipped with the following:

- 2 × 3.6 GHz Intel® Xeon™ Processor MP, each with 2 Megabytes of Level-2 Cache
- 8 Gigabytes of Memory

1 × IBM xSeries™ 360 workstation was used as a driver. It was equipped with the following:

- 4 × 1.5 GHz Intel® Xeon™ DP Processors, each with 256 Kilobytes of Level-2 Cache
- 3.6 Gigabytes of Memory

Client PC:

1 × IBM xSeries™ 306 was used as the client. It was equipped with the following:

- 1 × 3.2 GHz Intel® Pentium® 4 Processor, with 2 Megabytes of Level-2 Cache
- 512 Megabytes of Memory

SOFTWARE VERSIONS

Oracle's PeopleSoft Enterprise CRM for Support 8.9

Oracle's PeopleSoft Enterprise (PeopleTools) 8.45.03

Oracle9i™ 9.2.0.5

IBM AIX 5L V5.3 ML02 (64-bit) (on the Database server, App server and Web server)

Microsoft® Windows Server 2003 Enterprise Edition w/SP 1 (on the Driver and Controller)

Microsoft® Windows 2000 Advanced Server 5.0 Build 2195 (on the Driver and Client)

Mercury Interactive's LoadRunner® 8.0

Mercury Interactive's QuickTest® Professional 6.5

BEA Tuxedo® 8.1 RP89 with Jolt 8.1

BEA WebLogic Server™ 8.10 w/SP 2

Microsoft Internet Explorer® 6.0

ICE/APRDs applied:

ORACLE | PeopleSoft.

Oracle (PeopleSoft) Pleasanton
4500 PeopleSoft Parkway
P. O. Box 8018
Pleasanton, California 94588-8618
Tel 925/694-3000
Fax 925/694-3100
Email info@peoplesoft.com
World Wide Web http://www.oracle.com