



PEOPLESOFT ENTERPRISE PORTAL SOLUTION 8.4 USING ORACLE⁹ⁱ ON SUN MICROSYSTEMS' SUN FIRETM V480 SERVERS

As the world's leading provider of application software for the Real-Time Enterprise, PeopleSoft delivers high performance solutions that exceed our customers' expectations. Business software must deliver rich functionality with robust performance maintained at volumes representative of customer environments.

PeopleSoft benchmarks demonstrate our software's performance characteristics for a range of processing volumes with a specific platform configuration. Customers and prospects can use this information while planning 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 (English)	PeopleSoft Enterprise Portal Solution 8.4	
	Standard Data Volume Model	
	Average Response	Login 1.73 sec, News 1.51 sec, CRM 1.16 sec
	Concurrent Users	3,000
Référence d'exécution (Français)	PeopleSoft Enterprise Portal Solution 8.4	
	Norme modèle de données	
	temps de réponse	Login 1,73 sec, News 1,51 sec, CRM 1,16 sec
	Concourants Utilisateurs	3.000
Benchmark-Test (Deutsch)	PeopleSoft Enterprise Portal Solution 8.4	
	Datenbankmodell "Standard"	
	Antwortzeit	Login 1,73 sek, News 1,51 sek, CRM 1,16 sek
	Gleichzeitige Benutzer	3.000
Patrón de rendimiento (Español)	PeopleSoft Enterprise Portal Solution 8.4	
	Volumen Estándar de los datos	
	tiempo de reacción	Login 1,73 sec, News 1,51 sec, CRM 1,16 sec
	Simultáneos Utilizadores	3.000
Benchmark (Português)	PeopleSoft Enterprise Portal Solution 8.4	
	Volume Padrão dos dados	
	tempo de resposta	Login 1,73 sec, News 1,51 sec, CRM 1,16 sec
	Simultâneos Usuários	3.000

A 16-way Sun Fire 6800 server was used as the Portal Application Server. Two 4-way Sun Fire V480 servers were used as Portal Web Servers.

The benchmark measured the portal client response times for 1500 and 3000 concurrent users. The standard database composition model represents a medium-sized company profile. The testing was conducted in a controlled environment with no other applications running. The tuning changes, if any, were approved by PeopleSoft Development and are generally available. **The goal of this Benchmark was to obtain baseline results and to show application scalability for the PeopleSoft Enterprise Portal 8.4 running PeopleSoft customer self-service applications with Oracle on Sun. The Enterprise Portal Solution is comprised of the Enterprise Portal and Self-Service transactions in CRM's Support product.**

The figure below illustrates average load/search response times for 1500 and 3000 concurrent users.

PeopleSoft Enterprise Portal Solution 8.4 with Oracle⁹ⁱ on Sun Fire Servers

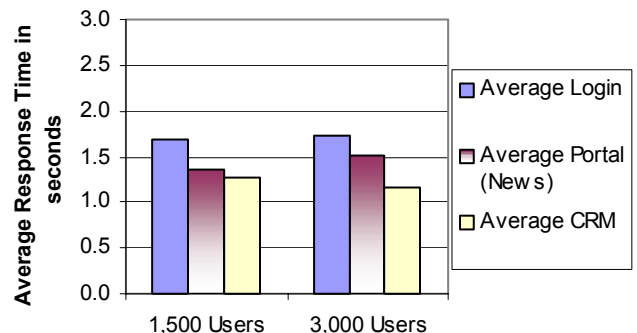


Figure 1: Average Response Times

BENCHMARK PROFILE

In June 2003, PeopleSoft conducted a benchmark in Pleasanton, CA to measure the online performance of the PeopleSoft Enterprise Portal Solution 8.4 using Oracle⁹ⁱTM 9.2.0.2 on Sun Microsystems' Sun FireTM V480 servers, running the SolarisTM 8 Operating Environment (OE).

METHODOLOGY

Mercury Interactive’s LoadRunner® was used as the load driver, simulating concurrent users. It submitted business processes at an average pacing of 12—15 minutes for each concurrent user.

Mercury Interactive’s 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 this test’s 4-tier benchmark configuration.

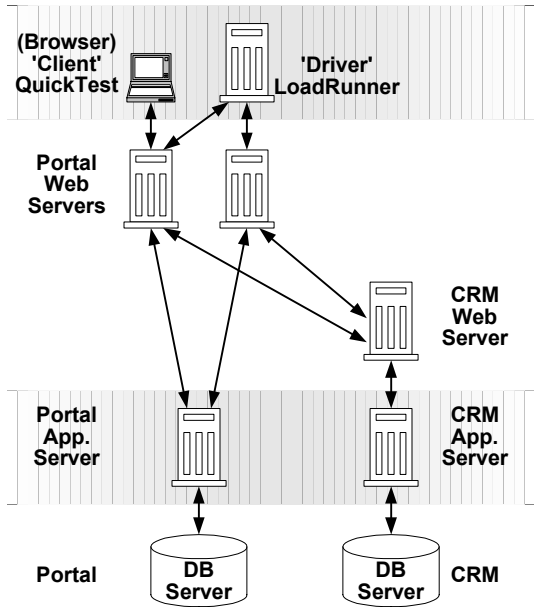
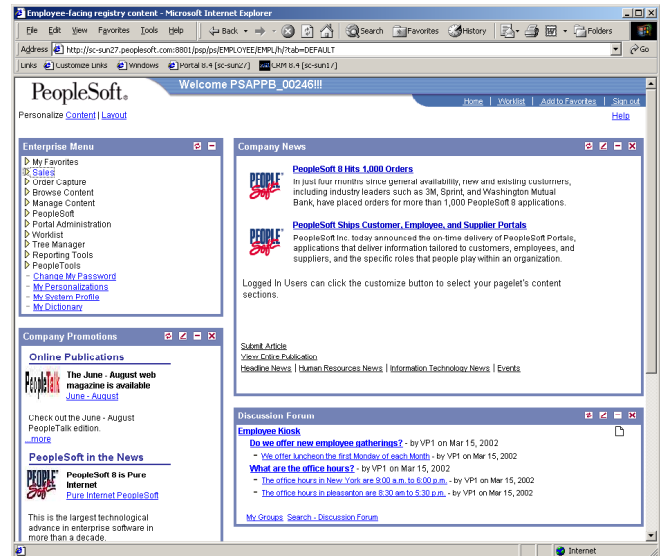


Figure 2: 4-Tier Test Configuration

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

PORTAL ‘SELF-SERVICE’ TRANSACTIONS

Login: Sign on with user logon id and password for the Enterprise Portal Solution. Authentication of the user takes place and the default homepage (4 pagelets) is displayed.



Click on ‘News’ Link in News Pagelet: User clicks on news link to read the full article.

Click on ‘News’ Link from the News Menu: User clicks on news link to read another article.

Sign-out: User logs off the Portal system.

CRM ‘SELF-SERVICE’ TRANSACTIONS

Login: Sign on with user logon id and password for the Enterprise Portal Solution. Authentication of the user takes place and ‘single sign on’ occurs with the PeopleSoft CRM application. The default homepage (4 pagelets) is displayed.

Search on ‘Customer Profile’ Page: An end user accesses the Customer Profile page in the CRM application and selects a customer profile. The customer profile is displayed.

Sign-out: User logs off the Portal system.

Process	% of Users	Pacing
Login	15.42%	12—15 min
Home Page Views	15.35%	15 min
News Page Views	38.57%	15 min
CRM Transactions	15.35%	12 min
Sign-out	15.31%	12—15 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. The pacing for each transaction is also shown.

ONLINE PROCESS RESULTS

The table below shows average retrieval (load) times, in seconds, for each business process.

Business Process	1,500 users	3,000 Users
User Login	1.692	1.731
Click News Article 1 from Home	1.438	1.563
Click News Article 2 from News Menu	1.283	1.464
Click CRM Customer Profile	1.275	1.16
Logout	0.614	0.717
Average Response	1.26	1.33
Approx. Transactions/minute	110	220

Table 2: Business Process Runtimes

The database and application servers were processing a total of 220 business processes per minute at the peak load of 3,000 concurrent users. The transaction rate is calculated by dividing the total number of concurrent users by the average pacing rates. The Average Response values show the smooth performance scaling as more users were added.

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

SERVER PERFORMANCE

Figure 3 and Table 3 shows the average CPU utilization for each of the servers in this test.

Average CPU Utilization	1500 Users	3000 Users
Portal Database Server	13%	28%
Portal Application Server	33%	71%
Portal Web Server(s)	36%	36%
CRM Database Server	1%	1%
CRM App. Server	2%	3%
CRM Web Server	4%	7%

Table 3: Average Server CPU Utilization

Services	1500 Users	3000 Users
Portal Application Server Instances	1	2
PSAPPSRV Processes	30	60
Portal Web Server Instances	6	12
CRM App. Server Instances	1	1
PSAPPSRV Processes	5	5
CRM Web Server Instances	1	1

Table 4: Service Distribution

DATA COMPOSITION DESCRIPTION

The standard database was comprised of information on 50,000 employees in both the Portal and CRM databases.

**PeopleSoft Enterprise Portal Solution 8.4
with Oracle9i on Sun Fire Servers**

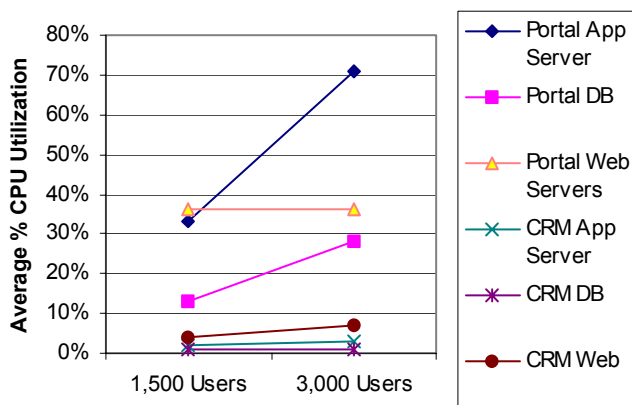


Figure 3: Server Performance

BENCHMARK ENVIRONMENT

HARDWARE CONFIGURATION

Database Server (Portal):

One Sun Fire™ V480 was used as the batch and database server. It was equipped with the following:

- 4 × 900 MHz UltraSPARC III Cu processors, each with 8 Megabytes of E-Cache
- 8 Gigabytes of Memory
- ~200 Gigabytes of total Disk Space (2 × 36 + 4 × 36 GB)
- 1 × Sun StorEdge T3+ Disk Array, each with 1 GB cache
- 1 × Sun Integrated Fibre Channel Disk Controller

Database Server (CRM):

One Sun Fire™ 280R was used as the batch and database server. It was equipped with the following:

- 2 × 900 MHz UltraSPARC III Cu processors, each with 8 Megabytes of E-Cache
- 16 Gigabytes of Memory
- ~500 Gigabytes of total Disk Space (2 × 36 + 14 × 36 GB)
- 1 × Sun StorEdge T3+ Disk Array, each with 1 GB cache
- 1 × Sun Integrated Fibre Channel Disk Controller

Application Server (Portal):

One Sun Fire™ 6800 was used as the application server. It was equipped with the following:

- 16 × 1,050 MHz UltraSPARC III Cu processors, each with 8 Megabytes of E-Cache
- 48 Gigabytes of Memory
- ~36 Gigabytes of total Disk Space

Application Server (CRM):

One Sun Fire™ V480 was used as the application server. It was equipped with the following:

- 4 × 900 MHz UltraSPARC III Cu processors, each with 8 Megabytes of E-Cache
- 16 Gigabytes of Memory
- ~36 Gigabytes of total Disk Space

Web Servers (Portal):

Two Sun Fire™ V480s were used as the web servers. They were equipped with the following:

- 4 × 900 MHz UltraSPARC III Cu processors, each with 8 Megabytes of E-Cache
- 16 Gigabytes of Memory
- ~36 Gigabytes of total Disk Space

Web Server (CRM):

One Sun Fire™ 280R was used as the web server. It was equipped with the following:

- 2 × 900 MHz UltraSPARC III Cu processors, each with 8 Megabytes of E-Cache
- 16 Gigabytes of Memory
- ~36 Gigabytes of total Disk Space

Load Simulation Driver(s):

One Sun Enterprise 4500 was used as the load driver. It was equipped with the following:

- 8 × 400 MHz Sun's UltraSPARC II Processors each with 8 Megabytes of Level-2 Cache
- 16 Gigabytes of Memory
- ~36 Gigabytes of total Disk Space

Load Driver Controller:

1 × Toshiba® Tecra™ 9100 workstation was used as a controller. It was equipped with the following:

- 1,400 Megahertz Pentium® III Mobile Processor with 512 kilobytes of Level-2 Cache
- 1 Gigabyte of Memory

Client PC:

Dell® PowerEdge™ 6650 workstation with the following:

- 4 × 1,500 Megahertz Pentium® III Xeon™ Processors, each with 512 kilobytes of Level-2 Cache
- 3.5 Gigabytes of Memory

SOFTWARE VERSIONS

PeopleSoft Enterprise Portal 8.4

PeopleSoft CRM 8.4

PeopleTools 8.43.01

Sun Solaris 8 Operating Environment with update 7 (on the database server, application servers, web servers, and driver)

Microsoft® Windows 2000 Professional (on the driver controller)

Microsoft® Windows 2000 Advanced Server 5.0 Build 2195 (on the client)

Oracle9i™ 9.2.0.2.0 (32-bit)

Mercury Interactive's LoadRunner® 7.51 w/SP 1

Mercury Interactive's QuickTest® Professional 6.0

BEA TUXEDO® 6.5 Jolt 1.2 with Rolling Patch 397+

BEA WebLogic Server™ 6.1.0 w/SP 4

The logo for PeopleSoft, featuring the word "PeopleSoft" in a blue serif font. The "P" is significantly larger than the other letters, and the "S" is also larger than the "o" and "f".

PeopleSoft Worldwide Headquarters

4460 Hacienda Drive

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.peoplesoft.com>

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