PeopleSoft8

certified Technology Benchmark

PEOPLESOFT ePERFORMANCE 8.8 USING ORACLE9i ON SUN MICROSYSTEMS' SUN FIRE™ 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	PeopleSoft ePerformance 8.8 Self-Service	
	Standard Data Model	
(English)	Average Response	Search 1.91 sec
	Hourly Transactions	12,000
Référence d'exécution	PeopleSoft ePerformance 8.8 Self-Service	
	Norme modèle de données	
(Français)	temps de réponse	Search 1,91 sec
	Hourly Transactions	12.000
Benchmark-Test	PeopleSoft ePerformance 8.8 Self-Service	
	Datenbankmodell "Standard"	
(Deutsch)	Antwortzeit	Search 1,91 sek
	Hourly Transactions	12.000
Patrón de rendimiento	PeopleSoft ePerformance 8.8 Self-Service	
	Volumen Estándar de datos	
(Español)	tiempo de reacción	Search 1,91 sec
	Hourly Transactions	12.000
Benchmark	PeopleSoft ePerformance 8.8 Self-Service	
	Volume Padrão dos dados	
(Português)	tempo de resposta	Search 1,91 sec
	Hourly Transactions	12.000

BENCHMARK PROFILE

In September 2003, PeopleSoft conducted a benchmark in Pleasanton, CA to measure the online performance of PeopleSoft ePerformance 8.8 using Oracle9i™ 9.2.0.2 on a Sun Microsystems' Sun Fire™ V480 (4-way) for the database server. One 16-way Sun Fire 6800 was used for the application server. Two 2-way Sun Fire 280Rs were used for the web servers. All Sun systems utilized the Solaris™ 8 Operating Environment (OE).

The benchmark measured client response times for hourly transaction rates of 3,000, 6,000 and 12,000—corresponding to 250, 500 and 1,000 concurrent users entering a transaction every 5 minutes. 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 for PeopleSoft ePerformance 8.8 self-service transactions with Oracle9i on Sun Microsystems' servers.**

The figure below illustrates average response times for hourly transaction rates of 3,000, 6,000 and 12,000—corresponding to 250, 500 and 1,000 concurrent users entering a transaction every 5 minutes.
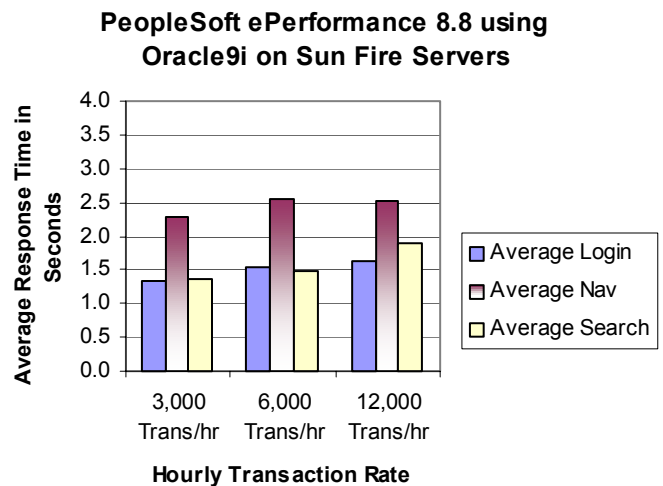

Figure 1: Average Response Times

* This average is weighted based on the business mix as reflected in Table 1: Business Process Mix.

METHODOLOGY

Mercury Interactive's LoadRunner® was used as the load driver, simulating concurrent users. It submitted a business process at an average rate of one every five 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.

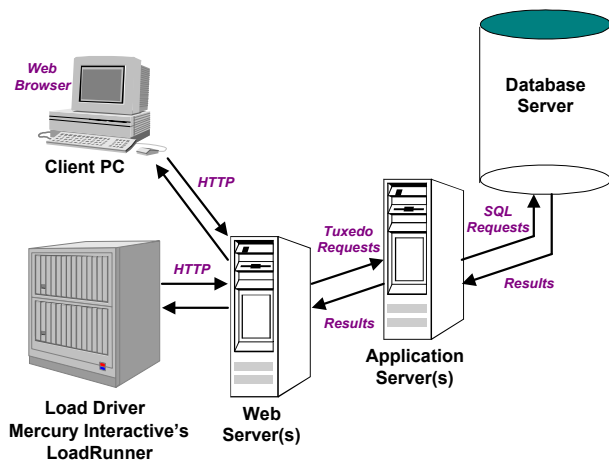Figure 2 shows a typical 4-tier benchmark configuration.

Figure 2: 4-Tier Configuration

Load times were measured from the time the user clicks the <OK> button until all the data for the entire business transaction has been retrieved.

Update times were measured from the time the user clicks the <SAVE> button until the system has released the page.

ONLINE BUSINESS PROCESSES

PeopleSoft defines a business transaction as a series of HTML pages that guide a user through a business process, such as browsing a course catalog.

The nine PeopleSoft ePerformance 8.8 business processes tested in this benchmark are as follows:

EMPLOYEE SELF-SERVICE

Update Self-Appraisal: User logs in and navigates to access his appraisal, add comments in the Employee Comments section, mark the Document as complete and save it.

Print Self-Appraisal: User logs in and navigates to bring up the 'formatted for printing' appraisal (i.e., press "Format for Printing", and have the formatted document displayed).

MANAGER SELF-SERVICE

Create Documents (Use Job Profile): The manager logs in and navigates to their Home page. Using the Create Employee Documents component, record the time it takes to create managers documents for a manager's direct reports. In this case, the Document type should be setup so that the Document criteria come from the job profile attached to the direct reports job code.

Create Documents (Use Template): The manager logs in and navigates to their Home page. Using the Create Employee Documents component, record the time it takes to create manager's documents for one manager's direct reports. In this case, the Document type should be setup so that the template is manually entered during the Document creation process. Workflow should be turned on.

Create Self-Appraisal: The manager logs in and navigates to their Home page. From the maintain Documents component, record the time it takes for a manager to create an employee's self-appraisal.

Complete Appraisal: The manager logs in and navigates to their Home page. Using the Manager Maintain Documents component, record the time it takes from the initial selection of an employee to merge the employee's performance notes, enter ratings, recalculate the overall rating, and press submit for approval.

Language Checking: The manager logs in and navigates to their Home page. Using the Manager Maintain Documents component, and record the time it takes after accessing an appraisal to perform a full language check against the appraisal.

HR ADMINISTRATOR TRANSACTIONS

View Rating Distribution Summary: The user logs in and navigates to retrieve the Rating Distribution Chart (comparison of actual rating distribution versus desired rating distributions) for a large group of employees.

View Status Summary: The user logs in and navigates to retrieve the Status Summary Chart (chart shows the status of all Documents in group) for a large group of employees.

Process by Role	Percent Within Role	Net Percent of Total	Average Pacing (Minutes)
Employee Self-Service 90.5% Overall			
Update Self-Appraisal	80%	72.4%	5 min
Print Self-Appraisal	20%	18.1%	5 min
Manager Self-Service 9% Overall			
Create Documents (Profile)	13.3%	1.2%	5 min
Create Documents (Template)	13.3%	1.2%	5 min
Create Self-Appraisal	24.4%	2.2%	5 min
Complete Appraisal	24.4%	2.2%	5 min
Language Checking	24.4%	2.2%	5 min
Administrator 0.5% Overall			
View Rating Distribution	40%	0.2%	5 min
View Status Summary	60%	0.3%	5 min
Total		100%	

Table 1: Business Process Mix

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

Metric Type	Metric Description	Metric Details
R1	Retrieval of page from menu	The time it takes to bring up a detail page after selecting an item from the menu
R2	Retrieval of page from transaction	The time it takes to bring up a detail page after selecting an item from a transaction

Table 2: Legend for Metrics

ONLINE PROCESS RESULTS

The table below shows average login, navigation and retrieval (search) times, in seconds, for each business process.

		(Base) Single User	3,000 Trans per Hour	6,000 Trans per Hour	12,000 Trans per Hour
Employee Self-Service					
Update Self-Appraisal	Login	1.28	1.36	1.59	1.69
	Nav	2.74	2.24	2.56	2.51
	R1	0.77	0.92	0.97	1.07
	R2	1.87	1.95	2.18	3.11
Print Self-Appraisal	Login	1.26	1.21	1.37	1.36
	Nav	2.45	2.24	2.39	2.43
	R1	0.80	0.89	0.95	1.19
	R2	0.71	0.95	0.94	1.04
Manager Self-Service					
Create Documents – Use Job Profile	Login	1.33	1.48	1.51	1.71
	Nav	3.00	2.51	2.65	2.83
	R1	1.02	1.21	1.12	1.13
	R2	2.27	2.61	2.70	3.37
Create Documents – Use Specified Template	Login	1.49	1.26	1.58	1.40
	Nav	2.88	2.58	2.42	2.91
	R1	1.07	1.11	0.99	1.21
	R2	1.26	1.27	1.25	1.58
Create Self-Appraisal	Login	1.46	1.36	1.27	1.70
	Nav	2.84	2.63	2.53	2.90
	R1	1.15	1.21	1.31	1.30
	R2	1.83	1.90	2.35	2.75
Complete Appraisal	Login	1.44	1.40	1.42	1.35
	Nav	2.99	2.66	2.45	2.83
	R1	1.12	1.14	1.30	1.62
	R2-1	1.81	1.98	2.42	3.09
	R2-2	0.94	1.16	1.04	1.30
Language Checking	Login	2.41	1.29	1.49	1.35
	Nav	2.66	2.30	2.74	2.64
	R1	0.97	1.05	1.27	1.41
	R2	1.87	2.27	2.55	3.66

Table 3a: Employee/Manager Process Runtimes

		(Base) Single User	3,000 Trans per Hour	6,000 Trans per Hour	12,000 Trans per Hour
Administrator Processes					
View Rating Distribution Summary	Login	1.55	1.55	1.44	1.93
	Nav	2.84	2.94	3.96	3.09
	R1	1.44	1.40	1.57	2.03
	R2	0.68	0.68	0.68	0.77
View Status	Login	1.48	1.50	2.04	3.05
	Nav	3.92	2.88	3.20	3.15
	R1	1.13	1.26	1.52	1.90
	R2	0.65	0.64	0.66	0.62
* Average Login		1.31	1.33	1.54	1.62
* Average Navigation		2.70	2.27	2.53	2.53
* Average Search		1.22	1.35	1.47	1.91
Transactions per Minute (TPM)			50	100	200

Table 3b: Administrator Process Runtimes

G1 refers to the overall elapsed time (see Table 2).

The database and application servers were processing a total of 200 business processes per minute (12,000 per hour) at the peak load of 1,000 concurrent users. The estimated transaction rate is calculated by dividing the total number of concurrent users by the average pacing rate.

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 each of the servers in this test. The CPU utilization is the average across all of the CPUs in each server. Two web servers were only used for the '12,000 transaction per hour' (1,000 concurrent user) test.
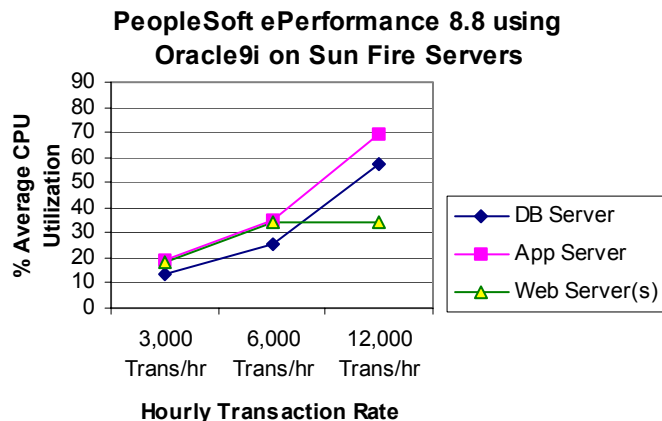

PeopleSoft ePerformance 8.8 using Oracle9i on Sun Fire Servers

Figure 3: Average Server CPU Utilization

BATCH BUSINESS PROCESSES

Groups of three sequential batch jobs were initiated every 15 minutes concurrent with the online testing. The number of groups of employees processed was proportional to the hourly transaction rate via the number of concurrent users, e.g., 500 Users/50 groups per job; 1,000 Users/100 groups per job.

BACKGROUND ADMINISTRATIVE TRANSACTIONS

Batch Creation of Performance Documents (Group ID previously built): Using the HR Administrator component "Create Group Appraisals" record the time it takes to create manager appraisals for several large Groups of employees (with workflow turned on) that has been previously built.

Batch Creation of Performance Documents (Group ID not previously built): Using the HR Administrator component "Create Group Appraisals" record the time it takes to create manager appraisals for several large Groups of employees (with workflow turned on) that has not been previously built.

Run the Summary Snapshot Process: Using the HR administrator component, record the time it takes to produce a snapshot of Document data for large groups of employees.
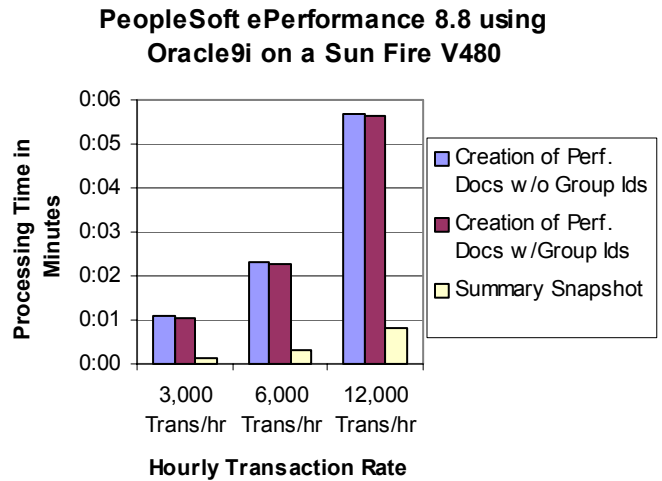

PeopleSoft ePerformance 8.8 using Oracle9i on a Sun Fire V480

Figure 4: Average Batch Run Times

DATA COMPOSITION DESCRIPTION

The standard database was comprised of:

- 85,000 Employees
- 17,000 Managers (1 manager for each 5 employees)
- 100 Administrators
- 17,000 Department Ids

History:

- 1 Document per Employee after M1, M2 (Online), A1, A2 (BATCH) run

BENCHMARK ENVIRONMENT

HARDWARE CONFIGURATION

Database Server:

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

- 4 × 900 Megahertz UltraSPARC® III Processors each with 8 Megabytes of Level-2 Cache
- 16 Gigabytes of Memory
- ~324 Gigabytes of total Disk Space (9 × 36 GB)
- 1 × Sun Integrated Fibre Channel Disk Controller

Application Server(s):

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

- 16 × 1.05 Gigahertz UltraSPARC® III Processors each with 8 Megabytes of Level-2 Cache
- 96 Gigabytes of Memory
- 36 Gigabytes of total Disk Space (1 × 36 GB)

Web Server(s):

2 × Sun Fire™ 280Rs were used as the web servers. They were equipped with the following:

- 2 × 900 Megahertz UltraSPARC® III Processors each with 8 Megabytes of Level-2 Cache
- 8 Gigabytes of Memory
- ~36 Gigabytes of total Disk Space (1 × 36 GB)

Load Simulation Driver:

1 × Compaq® ProLiant® DL580 served as the driver. It was equipped with the following:

- 4 × 700 Megahertz Pentium® III Xeon™ Processors, each with 2 Megabytes of Level-2 Cache
- 3.5 Gigabytes of Memory

Client PC:

1 × Toshiba® Tecra™ 9100 workstation (notebook) was used as a client. It was equipped with the following:

- 1,800 Megahertz Pentium® III Mobile Processor with 512 kilobytes of Level-2 Cache
- 1 Gigabyte of Memory

SOFTWARE VERSIONS

PeopleSoft ePerformance 8.8 with Performance Bundle

PeopleTools 8.43.08

Oracle9i™ 9.2.0.2 (32 Bit)

Sun Solaris 8 Operating Environment, 2.8 with Update 7
 (on the database server, application server and web servers)

Microsoft® Windows 2000 Advanced Server 5.0 Build 2195 (on the driver and client) w/SP 3

Mercury Interactive's LoadRunner® 7.6 with Caching Patch

Mercury Interactive's QuickTest® Professional 6.0

BEA Tuxedo® 6.5 with Jolt 1.2

BEA WebLogic Server™ 6.10 w/SP 4

ICE/APRDs applied:

642687000
642679001
645518000
647190000
653695000
615399000, 614408001 – Resolution ID 132133

PeopleSoft.

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