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Technology Benchmark

PEOPLESOFT HELPDESK FOR HR (CRM) 8.8 USING DB2 UDB FOR AIX ON IBM eSERVER™ pSeries® Servers

As a global leader in e-business applications, PeopleSoft 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.

PeopleSoft 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 HelpDesk for HR (CRM) 8.8	
	Medium Data Volume Model	
(English)	Average Response	1.399 sec
	Concurrent Users	1,000
Référence d'exécution	PeopleSoft HelpDesk for HR (CRM) 8.8	
	modèle de données de taille moyenne	
(Français)	temps de réponse	1,399 sec
	Concourants Utilisateurs	1.000
Benchmark-Test	PeopleSoft HelpDesk for HR (CRM) 8.8	
	Datenbankmodell "Medium"	
(Deutsch)	Antwortzeit	1,399 sek
	Gleichzeitige Benutzer	1.000
Patrón de rendimiento	PeopleSoft HelpDesk for HR (CRM) 8.8	
	Modelo con volumen media de datos	
(Español)	tiempo de reacción	1,399 sec
	Simultáneos Utilizadores	1.000
Benchmark	PeopleSoft HelpDesk for HR (CRM) 8.8	
	Modelo de Médio Volume	
(Português)	tempo de resposta	1,399 sec
	Simultâneos Usuários	1.000

BENCHMARK PROFILE

In November 2003, PeopleSoft conducted a benchmark in Pleasanton, CA to measure the online performance of PeopleSoft CRM HelpDesk for Human Resources 8.8 using IBM® DB2® Universal Database™ version 8.1 w/FP 4P for IBM AIX® on an 8-way IBM® eServer™ pSeries® p650 database server, running IBM® AIX® 5.2. A 4-way IBM eServer pSeries p630+ application server, an 8-way IBM eServer pSeries p650 application server and two 4-way IBM eServer pSeries p630+ web servers ran IBM AIX 5.2. An IBM® TotalStorage™ FAStT T900 was used for the disk subsystem.

The benchmark measured HelpDesk client response times for 500 and 1,000 concurrent users. Our standard CRM and HCM data composition models were used and the testing was conducted in a controlled environment with no other applications running. All tuning changes were approved by PeopleSoft Development and will be available. **The goal of this benchmark was to obtain baseline performance data for PeopleSoft HelpDesk for HR (CRM) 8.8 on the DB2 Database with IBM servers.**

Figure 1 illustrates average response times for a single user, and for a single user with 500 and 1,000 concurrent users.

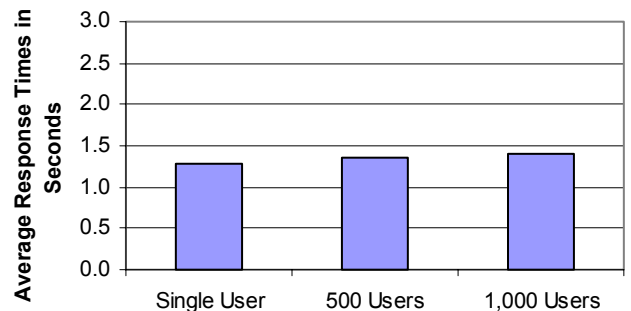**PeopleSoft CRM HelpDesk for HR 8.8 using DB2 UDB for AIX on IBM eServer pSeries Servers**

Figure 1: Average Response Times

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

METHODOLOGY

Mercury Interactive's LoadRunner® was used as the load driver, simulating concurrent users. It submitted a business transaction at an average rate of one every 5 or 10 minutes (varies by process) for each concurrent user to the application servers via the web servers.

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 4-tier benchmark configuration. This benchmark was run using a physical 4–tier configuration; with the database servers being separate instances on a single physical server. The application servers were separate physical servers. The web servers were separate instances on discrete servers.
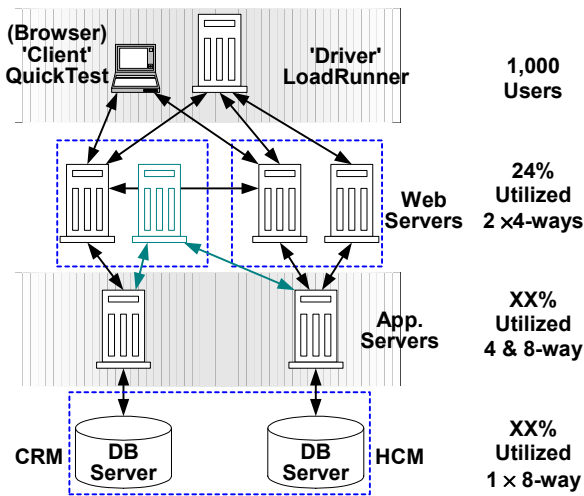

Figure 2: 4-Tier Configuration

Note that the left physical web server in Figure 2 hosts both the CRM web server and the 'Integration Broker' gateway server between the CRM side and the HCM side, though some transactions use direct communications between the CRM web server and the HCM web server.

The right side physical web server hosts two HCM web servers.

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.

BUSINESS PROCESSES

PeopleSoft defines a business transaction as a series of HTML pages that guide a user through a business process, such as creating a new business case.

The three PeopleSoft 8 CRM and HCM 8.8 business processes tested in this benchmark are as follows:

SUPPORT

1.   HelpDesk 360 Degree View: After logging in, the help desk agent navigates to the 'Worker 360 Degree View.' The agent searches for an employee and opens the 360 Degree View for that employee.
The help desk agent opens a case for the employee and selects Payroll to review a paycheck for the caller.
The help desk agent opens a case for the employee and selects Benefits to review a Benefits Summary for the caller.
The status of the case is changed and the case is saved.

2.   Create & Save Case (CRM Self-Service): After logging in, the employee clicks on "Add a New Case." An issue summary is selected. The new case is saved and closed.

3.   Paycheck Inquiry (HCM Self-Service): After sign on, navigate to the HCM (HRMS) sub-site, which has three pagelets. Navigate to the paycheck inquiry link and pull up a paycheck inquiry.
      View Benefits (HCM Self-Service): After sign on, click on the Benefits Enrollment link from the shortcut pagelet.

Process	% in Role	% of Users	Avg. Pacing
1. CRM Help Desk Agent	100%	12.5%	10 min
360 Degree View			
Create Case			
Pay Check (Link)			
Benefits (Link)			
Save Case			
2. CRM Self-Service	100%	25%	10 min
View Pay Check			
View Benefits			
3. HRMS Self-Service		62.5%	5 min
View Pay Check	50%		
View Benefits	50%		
Total		100%	6.875 min average

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 computed overall transaction rate.

Process	Single User	500 Users	1,000 Users
Help Desk Agent			
360 Degree Display	2.166	1.975	2.369
360 Degree Create a case display	2.078	1.929	2.073
360 Degree Create a case save	1.927	1.914	2.077
360 Deg. View paycheck summary	1.651	1.691	1.505
360 Degree View paycheck detail	0.705	0.713	0.733
360 Deg. View benefits summary	1.682	1.643	1.675
360 Degree View benefits detail	0.569	0.616	0.589
360 Degree Save updated case	1.648	1.762	1.773
CRM Self-Service			
Create a Case Display	0.795	1.003	0.920
Create a Case Save	1.655	1.725	1.869
HCM Self-Service			
View Paycheck	1.567	1.727	1.799
View Benefits	1.270	1.263	1.264
View Medical	0.673	0.805	0.819
* Weighted Avg. Response	**1.292**	**1.358**	**1.399**
Transactions/minute	N/a	81	162

Table 2: Business Process Runtimes

The database and application servers were processing a total of ~162 business processes per minute at the peak load of 1,000 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.
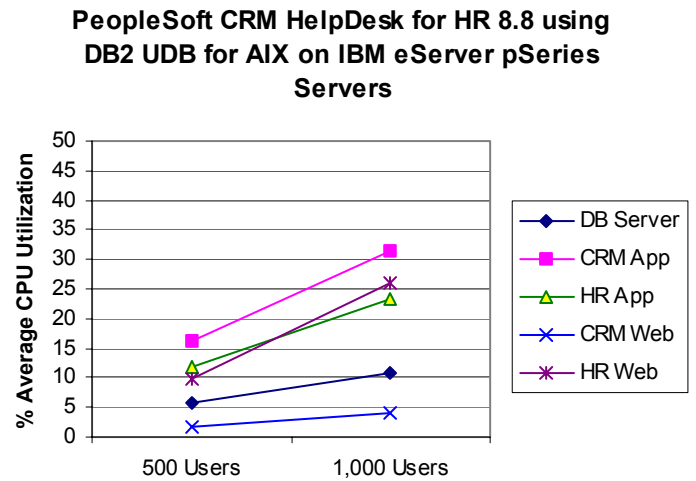

PeopleSoft CRM HelpDesk for HR 8.8 using DB2 UDB for AIX on IBM eServer pSeries Servers

Figure 3: Average Server CPU Utilization

DATA COMPOSITION DESCRIPTION

The standard database was comprised of:

Data Composition	Standard Medium Model
# of Employees	100,000
# of Managers	10,000
# of Help desk Agents	100
# of months of benefits history	6
# of months of payroll history	6

Table 3: Data Composition

Note that 10% of the active employees have multiple jobs (2).

BENCHMARK ENVIRONMENT

HARDWARE CONFIGURATION

CRM/HCM Database Server:

The IBM® ℮ server pSeries p650 (7038-6M2) server was used as the database server. It was equipped with the following:

- 8 × 1.45 GHz POWER4® Processors, each with 32 Kilobytes of Level-1 Data Cache and 64 Kilobytes of Level-1 Instruction Cache, 0.75 Megabytes of Level-2 Cache, with an average of 16 Megabytes of Level 3 Cache

- 32 Gigabytes of Memory

- ~396 Gigabytes of total Disk Space (4×73 GB SCSI + 6×66.8 GB [IBM® TotalStorage™ FAStT RAID 5 arrays]) ~35 GB used

- 3 Disk Controllers (1 × SCSI, 2 × 2 Gbit Fibre Channel)

CRM Application Server:

The IBM ℮ server pSeries p630+ (7028-6C4) server was used as the application server. It was equipped with the following:

- 4 × 1.45 GHz IBM Power4™ processors, each with 32 Kilobytes of Level-1 Data Cache and 64 Kilobytes of Level-1 Instruction Cache, 0.768 Megabytes of Level-2 Cache, with an average of 4 Megabytes of Level 3 Cache

- 32 Gigabytes of Memory

HCM Application Server:

The IBM ℮ server pSeries p650 (7038-6M2) server was used as the application server. It was equipped with the following:

- 8 × 1.45 GHz POWER4® Processors, each with 32 Kilobytes of Level-1 Data Cache and 64 Kilobytes of Level-1 Instruction Cache, 0.75 Megabytes of Level-2 Cache, with an average of 16 Megabytes of Level 3 Cache

- 32 Gigabytes of Memory

Web Server(s):

2 × IBM® ℮ server pSeries p630+ (7028-6C4) servers were used as the web servers. They were equipped with the following:

- 4 × 1.45 GHz IBM Power4™ processors, each with 32 Kilobytes of Level-1 Data Cache and 64 Kilobytes of Level-1 Instruction Cache, 0.768 Megabytes of Level-2 Cache, with an average of 4 Megabytes of Level 3 Cache

- 16 Gigabytes of Memory (? GB used)

QuickTest Client PC:

Hewlett-Packard® Evo D530c desktop (DG767A) with the following:

- 4 × 2.66 GHz Intel® Pentium® IV Processors

- 1 Gigabyte of Memory

Load Simulation Driver(s):

1 × IBM® Netfinity® 7000 M10 served as the driver controller. It was equipped with the following:

- 4 × 500 Megahertz Pentium® III Xeon™ Processors, each with 1 Megabyte of Level-2 Cache

- 2 Gigabytes of Memory

SOFTWARE VERSIONS

PeopleSoft CRM 8.8   HCM 8.8

PeopleTools 8.43.10

IBM® DB2® Universal Database™ 8.1 w/FP 4P for IBM® AIX®

IBM® AIX® 5.2 64-bit (on the database server, application servers and web servers)

Microsoft® Windows® XP Advanced Server w/SP 1 (on the client)

Microsoft® Windows® 2000 Advanced Server w/SP 4 (on the driver)

IBM® WebSphere® Single Server Version 4.0.3 with JRE 1.3.1

Mercury Interactive's LoadRunner® 7.8

Mercury Interactive's QuickTest® Professional 6.0

BEA TUXEDO® 6.5 p190j1.2p4

Microsoft Internet Explorer® 6.0

ICE/APRDs applied:

> 634390000
> 655057000
> 655645000
> 659254000
> 661412000

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