PeopleSoft Enterprise

REVISION 2.0

PEOPLESOFT 8.8 HELPDESK FOR HR (CRM) USING SQL SERVER 2000 ON HP PROLIANT BL20p G2 Blade 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 (English)	PeopleSoft HelpDesk for HR (CRM) 8.8	
	Medium Data Volume Model	
	Average Response	1.585 sec
	Concurrent Users	1,250
Référence d'exécution (Français)	PeopleSoft HelpDesk for HR (CRM) 8.8	
	modèle de données de taille moyenne	
	temps de réponse	1,585 sec
	Concourants Utilisateurs	1.250
Benchmark-Test (Deutsch)	PeopleSoft HelpDesk for HR (CRM) 8.8	
	Datenbankmodell "Medium"	
	Antwortzeit	1,585 sek
	Gleichzeitige Benutzer	1.250
Patrón de rendimiento (Español)	PeopleSoft HelpDesk for HR (CRM) 8.8	
	Modelo con volumen media de datos	
	tiempo de reacción	1,585 sec
	Simultáneos Utilizadores	1.250
Benchmark (Português)	PeopleSoft HelpDesk for HR (CRM) 8.8	
	Modelo de Médio Volume	
	tempo de resposta	1,585 sec
	Simultâneos Usuários	1.250

BENCHMARK PROFILE

In April 2004, PeopleSoft and Hewlett-Packard conducted a benchmark in Houston, TX to measure the online performance of PeopleSoft CRM HelpDesk for Human Resources 8.8 using Microsoft® SQL Server™ 2000 Enterprise Edition w/SP 3a and QFE 856 on a 2-way HP ProLiant® BL20p G2 Blade database server, running Microsoft® Windows® Server 2003 Enterprise Edition. Three 2-way BL20p G2 Blade systems were used as Application Servers running Microsoft® Windows® 2000 Advanced Server. Two 2-way BL20p G2 Blade systems were used as Web Servers running Microsoft® Windows® 2000 Advanced Server.

The benchmark measured HelpDesk client response times for 750, 1,000 and 1,250 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 SQL Server Database with HP ProLiant 'Blade' servers.**

Figure 1 illustrates average response times for a single user, and for a single user with 750, 1,000 and 1,250 concurrent users.

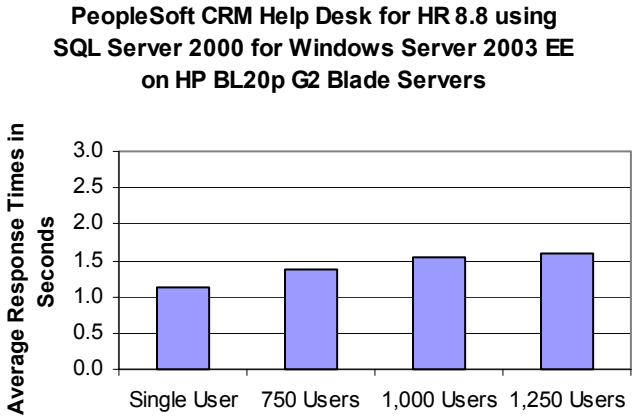

Figure 1: Average Response Times

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

METHODOLOGY

Mercury Interactive'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.

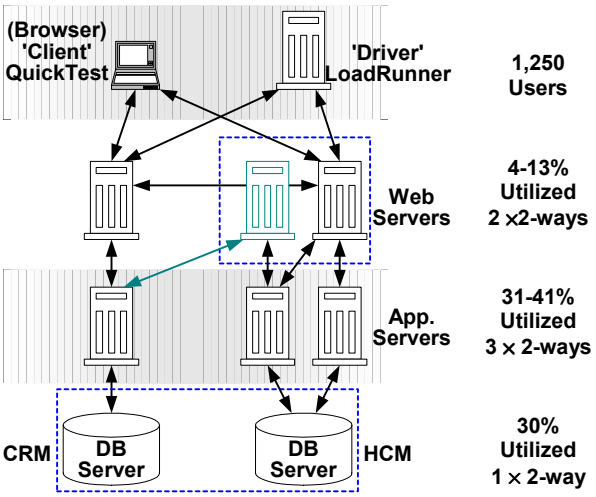

Figure 2: 4-Tier Configuration

Note that the right physical web server in Figure 2 hosts both the HCM 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.

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	1,250 Users
Help Desk Agent				
360 Degree Display	1.253	1.914	2.395	2.205
360 Degree Create a case display	1.486	2.391	3.263	2.5
360 Degree Create a case save	1.77	2.21	2.439	2.653
360 Deg. View paycheck summary	1.283	1.539	1.673	1.533
360 Degree View paycheck detail	0.795	0.783	0.758	0.788
360 Deg. View benefits summary	1.308	1.530	1.666	1.398
360 Degree View benefits detail	0.622	0.731	0.739	0.739
360 Degree Save updated case	1.714	1.961	2.220	2.209
CRM Self-Service				
Create a Case Display	0.700	0.767	0.809	0.983
Create a Case Save	1.731	2.095	2.027	2.806
HCM Self-Service				
View Paycheck	1.392	1.736	2.250	2.205
View Benefits	0.998	1.208	1.173	1.317
View Medical	0.706	0.694	0.713	0.722
* Weighted Avg. Response	**1.133**	**1.369**	**1.537**	**1.585**
Transactions/minute	N/a	122	162	203

Table 2: Business Process Runtimes

The database and application servers were processing a total of ~203 business processes per minute at the peak load of 1,250 concurrent users. The transaction rate is calculated by dividing the number of users by the pacing.

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.

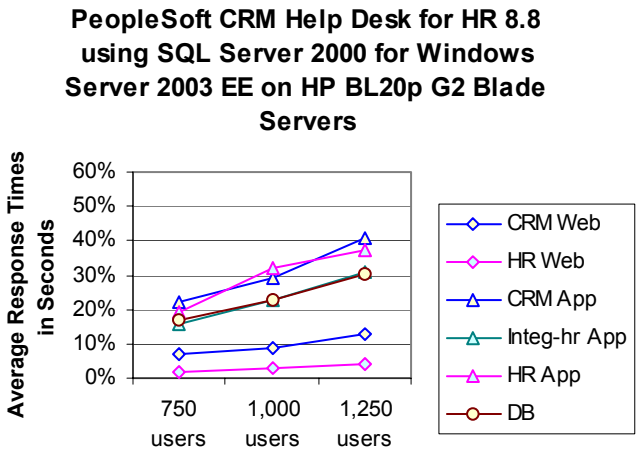

Figure 3: Average Server CPU Utilization

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 HP ProLiant® BL20p G2 blade server was used as the database server. It was equipped with the following:

- 2 × 3.2 GHz Intel® Xeon™ processors, each with 512 Kilobytes of Level 2 Cache and 2 Megabytes of Level-3 write-back cache per CPU
- 8 Gigabytes of Memory
- ~764.4 + 72.8 Gigabytes of total Disk Space (2 × 36.4GB + 42 × 18.2GB)
- 1 × HP SmartArray 5i Plus Disk Controller (integrated on system board)
- 1 × Dual-port Fibre Channel Mezzanine card (2 Gigabit per second)

CRM Application Server(s):

1 × HP ProLiant® BL20p G2 blade server was used as the application server. It was equipped with the following:

- 2 × 3.2 GHz Intel® Xeon™ processors, each with 512 Kilobytes of Level 2 Cache and 2 Megabytes of Level-3 write-back cache per CPU
- 4 Gigabytes of Memory
- ~36.4 GB of storage with an integrated SmartArray 5i Plus Controller

HCM Application Server(s):

2 × HP ProLiant® BL20p G2 blade servers were used as the application servers. They were equipped with the following:

- 2 × 3.06 GHz Intel® Xeon™ processors, each with 512 Kilobytes of Level 2 Cache and 1 Megabyte of Level-3 write-back cache per CPU
- 4 Gigabytes of Memory
- ~36.4 GB of storage with an integrated SmartArray 5i Plus Controller

Web Server(s):

2 × HP ProLiant® BL20p G2 blade servers were used as the web servers. They were equipped with the following:

- 2 × 3.06 GHz Intel® Xeon™ processors, each with 512 Kilobytes of Level 2 Cache and 1 Megabyte of Level-3 write-back cache per CPU
- 2 Gigabytes of Memory
- ~36.4 GB of storage with an integrated SmartArray 5i Plus Controller

QuickTest Client PC:

HP Evo D510 mini-tower with the following:

- 1 × 2.4 GHz Intel® Pentium® IV Processor
- 768 Megabytes of Memory

Load Simulation Driver(s):

1 × HP ProLiant® DL580 server was used as the load driver. It was equipped with the following:

- 2 × 700 MHz Pentium® III processors, each with 2 Megabytes of Level 2 Cache
- 4 Gigabytes of Memory

1 × HP ProLiant® DL580 served as the load controller. It was equipped with the following:

- 2 × 700 MHz Pentium® III processors, each with 2 Megabytes of Level 2 Cache
- 4 Gigabytes of Memory

SOFTWARE VERSIONS

PeopleSoft CRM 8.8 HCM 8.8

PeopleTools 8.43.10

Microsoft® SQL Server™ 2000 Enterprise Edition w/SP 3a and QFE 856

Microsoft® Windows® Server 2003 Enterprise Edition (on the Database server)

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

Microsoft® Windows® 2000 Advanced Server w/SP 3 (on the app servers, web servers, driver and controller)

BEA WebLogic® 6.1 w/SP 1 with Java Hotspot Client VM 1.3.1-b24

Mercury Interactive's LoadRunner® 7.8

Mercury Interactive's QuickTest® Professional 6.0

BEA TUXEDO® 6.5 Java 1.3.1.08

Microsoft Internet Explorer® 6.0

ICE/APRDs applied:

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