



PEOPLESOFT ENTERPRISE EXPENSES 8.8 USING ORACLE9i ON A HEWLETT-PACKARD INTEGRITY rx5670

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 Expenses 8.8	
	Extra-Large Volume Model	
	48,034 Expense Reports	45 minutes
	Expense Reports / hour	64,121 per hour
Référence d'exécution (Français)	PeopleSoft Gestion des Frais 8.8	
	Grand modèle supplémentaire de données	
	48.034 Expense Reports	45 minutes
	Expense Reports / heure	64.121 par heure
Benchmark-Test (Deutsch)	PeopleSoft Spesenabrechnung 8.8	
	Datenbankmodell "Extra-Large"	
	48.034 Expense Reports	45 Minuten
	Expense Reports / Stunde	64.121 pro Stunde
Patrón de rendimiento (Español)	PeopleSoft Gastos 8.8	
	Volumen grande adicional de los datos	
	48.034 Expense Reports	Load 3,31 sec, Save 2,18 sec
	Expense Reports / hora	64.121 por hora
Benchmark (Português)	Despesas 8.8 do PeopleSoft	
	Volume grande extra dos dados	
	48.034 Expense Reports	Load 3,31 sec, Save 2,18 sec
	Expense Reports / hora	64.121 por a hora

BENCHMARK PROFILE

In April 2004, PeopleSoft conducted a benchmark in Pleasanton, CA to measure the batch performance of PeopleSoft Enterprise Expenses 8.8 using Oracle9i™ 9.2.0.4 on a 4-way Hewlett-Packard® Integrity™ rx5670 database server, running Hewlett-Packard® HP-UX 11.23.

The benchmark measured the primary business process runtime for payment processing within Expenses 8.8 using one data composition model. The database model represented an extra-large sized organization. The testing was conducted in a controlled environment with no other applications running. The tuning changes were approved by PeopleSoft Development and will be generally available in a future release or update. **The goal of this benchmark was to obtain baseline performance data for PeopleSoft Expenses 8.8 Batch with Oracle9i on an HP Integrity server.**

The figure below illustrates business process rates for the benchmarked database model.

PeopleSoft Enterprise Expenses 8.8 using Oracle9i on a Hewlett-Packard Integrity rx5670

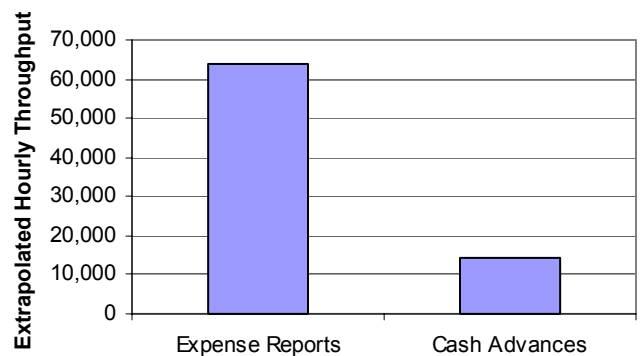


Figure 1: Business Process Rates

METHODOLOGY

PeopleSoft Expenses 8.8 batch processes were initiated from a browser to cue the Process Scheduler to run the Application Engine jobs.

Batch processes are background processes, requiring no operator intervention or interactivity. The runtimes were taken directly from the system output for each process.

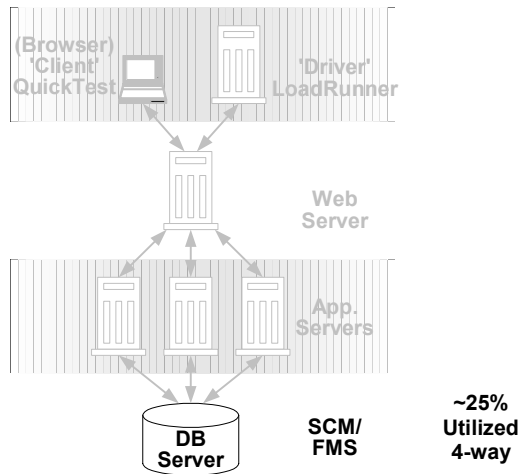


Figure 2: Test Implementation

BUSINESS PROCESSES

The business process tested, which represents the Enterprise Expenses payment reconciliation cycle, is as follows:

Expense Reconciliation: A series of Application Engine (AE) processes are run sequentially. These include the 'Checkpoint,' 'Commit,' 'Stage Payment,' 'Synch Payment,' 'Transfer Process' and 'Un-Stage Payment' (update) functions. Note that the Transfer Process was not included in this testing.

BATCH PROCESS RESULTS

The table below contains the actual runtimes, in seconds and minutes, for the benchmark business processes.

Business Process	Seconds	Minutes
Checkpoint	0.1 sec	
Commit	0.5 sec	
Stage Payment	2501 sec	41.68 min
Synch Payment	2.4 sec	
Transfer Process	n/a	n/a
Un-Stage Payment	175.7 sec	2.93 min
Total	2696.8 sec	44.95 min (0.45 hr)
Expense Reports	48,034	
Cash Advances	10,809	
Expense Reports / Hour	64,121	
Cash Advances / Hour	14,429	

Table 1: Business Process Runtimes

The business processes were run sequentially as a single job stream.

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

SERVER PERFORMANCE

The 4-way database server averaged about 25% utilization, which suggests that one of the four CPUs was heavily utilized. This would be typical for batch processes run as a single job stream.

This batch testing was run after the corresponding online testing and used the same hardware implementation for convenience. A customer could opt to run the batch processes on a smaller server to maximize CPU usage on that instance.

DATA COMPOSITION DESCRIPTION

The database was comprised of:

	Extra-Large Model
# of Business Units (US001, US006, FRA01)	25
# of Expense Reports processed annually	2,371,200
# of My Wallet (20 entries per exp rpt)	47,424,000
# of Projects and Activities (estimates)	15,000
# of Time Reports	5,200,000
# of Travel Authorizations	2,642,400
Average Lines (history and active)	
Expense Reports	25
Time Reports	4
Travel Authorizations	4
Avg. Accounting Lines per Active Expense Entry	
Expense Reports	30
Travel Authorizations	1
Time Reports	2
Avg. Accounting Lines per History Expense Entry	
Expense Reports	1
Travel Authorizations	1
Time Reports	1

Table 3: Data Model Characteristics

Six months of History Data was created for Expense Reports and Cash Advances since these are the only transactions that generate payment processing within Enterprise Expenses.

BENCHMARK ENVIRONMENT

HARDWARE CONFIGURATION

Database Server:

A Hewlett-Packard® Integrity™ rx5670 was used as the batch/database server. It was equipped with the following:

- 4 × 1.3 GHz Intel® Itanium®2 Processors, each with 32 Kilobytes of Level-1 Cache, 256 Kilobytes of Level-2 Cache, 3 Megabytes of Level-3 Cache
- 16 Gigabytes of Memory
- 1 SAN-Connected HP StorageWorks EVA 5000 (2C60-B) disk array with 2 fibre-channel connections
- ~3.1 Terabytes of total Disk Space available (84 × 36 GB disk drives), approximately 755 GB of RAID 0 storage used for this benchmark
- 2 × Hewlett-Packard® Tachyon™ Fibre Channel Disk Controllers connected via two HP 2Gb Fibre Channel 16B switches

SOFTWARE VERSIONS

PeopleSoft Enterprise Expenses 8.8

PeopleTools 8.44.03

Oracle9i™ 9.2.0.4

Hewlett-Packard® HP-UX® 11i v.2 (11.23) (on the database server)

Hewlett-Packard® HP-UX® 11i v.1 (11.11) (on the application servers)

Microsoft® Windows 2000 Advanced Server 5.0 Build 2195 w/SP 4 (on the web server, driver and client)

Mercury Interactive's LoadRunner® 7.8

Mercury Interactive's QuickTest® Professional 6.0 Build 1170

BEA Tuxedo® 8.41 with Jolt 1.2

BEA WebLogic Server™ 8.10 w/SP 1

Merant™ (Micro Focus) Server Express™ 1.1



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