PEOPLESOFT ENTERPRISE PAYROLL 8.8 USING ORACLE9i ON A HEWLETT-PACKARD PROLIANT DL580 G3

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

Oracle 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 Payroll (North American) 8.8	
	Large Volume Model	
(English)	Payroll	90,080 checks - 47.52 minutes
	Pay Checks/Hour	113,745 per hour
Référence d'exécution	PeopleSoft Paie (Nord-américain) 8.8	
	Grand modèle de données	
(Français)	Livre de paie	90.080 Chèques – 47,52 minutes
	Chèques/heure	113.745 par heure
Benchmark-Test	PeopleSoft Personalabrechnung (Nordamerikaner) 8.8	
	Datenbankmodell "Large"	
(Deutsch)		90.080 Schecks – 47,52 Minuten
	Schecks/Stunde	113.745 pro Stunde
Patrón de rendimiento	PeopleSoft Pago (Norteamericano) 8.8	
	Modelo con volumen superior de datos	
(Español)	Nomina de pago	90.080 Cheques – 47,52 minutos
	Cheques/hora	113.745 por hora
Benchmark	Pagamento (North-american) 8.8 do PeopleSoft	
	Modelo de Grande Volume	
(Português)		90.080 Cheques – 47,52 minutos
	Cheques/hora	113.745 por a hora

The benchmark measured three Payroll application business process runtimes for one database model representing a large organization. Testing was conducted in a controlled environment with no other applications running. The tuning changes, (if any) were approved by Oracle Enterprise Development and will be generally available in a future release or update. **The goal of this benchmark was to obtain baseline Large-model results for Oracle's PeopleSoft Enterprise Payroll 8.8 using Oracle9i on an HP ProLiant server.**

PeopleSoft Enterprise Payroll 8.8 using Oracle9i on a 4-Way HP ProLiant DL580
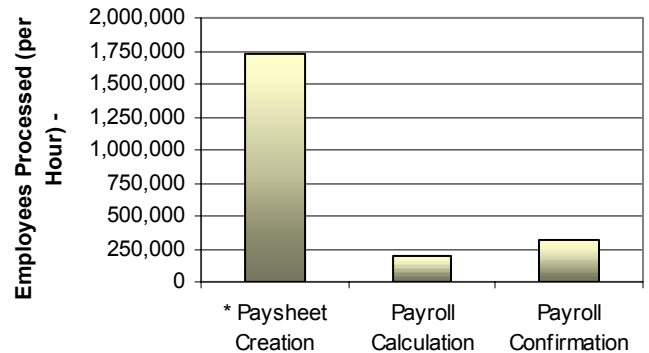

Figure 1: Oracle Enterprise 8.8 Payroll Processing Rates

* The Paysheet Creation process may be run separately, however, it was included with the other two processes for this benchmark.

METHODOLOGY

PeopleSoft Enterprise Payroll 8.8 business processes can be initiated from a browser. For this benchmark, all COBOL processes were initiated from a browser. This application was run as eight concurrent processes.

BENCHMARK PROFILE

In July 2005, Oracle (PeopleSoft) and Hewlett-Packard conducted a benchmark in Nashua, NH to measure the batch performance of the Paysheet Creation, Payroll Calculation and Payroll Confirmation processes in Oracle's PeopleSoft Enterprise Payroll 8.8 (North American) using Oracle9i™ 9.2.0.6 w/Patch Set 5 for Windows® on an 4-way Hewlett-Packard® ProLiant® DL580 G3 database server, running Microsoft® Windows® Server 2003 Enterprise Edition.

Batch processes are background processes, requiring no operator intervention or interactivity. Results of these processes are automatically logged in the database. The runtimes are posted to the Process Request database table where they are stored for subsequent analysis.

BUSINESS PROCESSES

The three Payroll processes tested are as follows:

Paysheet Creation: Generates payroll data worksheets for employees, consisting of standard payroll information for each employee for the given pay cycle. The Paysheet process can be run separately from the other two tasks, usually before the end of the pay period.

Payroll Calculation: Looks at Paysheets and calculates checks for those employees. Payroll Calculation can be run any number of times throughout the pay period. The first run will do most of the processing, while each successive run updates only the calculated totals of changed items. This iterative design minimizes the time required to calculate a payroll, as well as the processing resources required. In this benchmark, Payroll Calculation was run only once, as though at the end of a pay period.

Payroll Confirmation: Takes the information generated by Payroll Calculation and updates the employees' balances with the calculated amounts. The system assigns check numbers at this time and creates direct deposit records. Confirm can only be run once, and therefore, must be run at the end of the pay period.

BATCH RESULTS

The tables below contain the actual runtimes, in minutes, for the Payroll processes. It also shows how many employees were processed and the total checks per hour.

Business Process	Large
Paysheet Creation	3.12 min
Payroll Calculation	27.22 min
Payroll Confirmation	17.18 min
Total Runtime	47.52 min
Employees Processed per Hour	
Total Checks	90,080
Checks per Hour	113,745

Table 1: PeopleSoft 8 Payroll Process Runtimes

Although there were 72,064 active employees, 90,080 checks were processed since one of the four active profiles actually received two checks.

Eight concurrent processes were run for each batch job shown in Table 1 (as 8 × 4 paygroups). Performance may vary on other hardware and software platforms and with other data composition models.
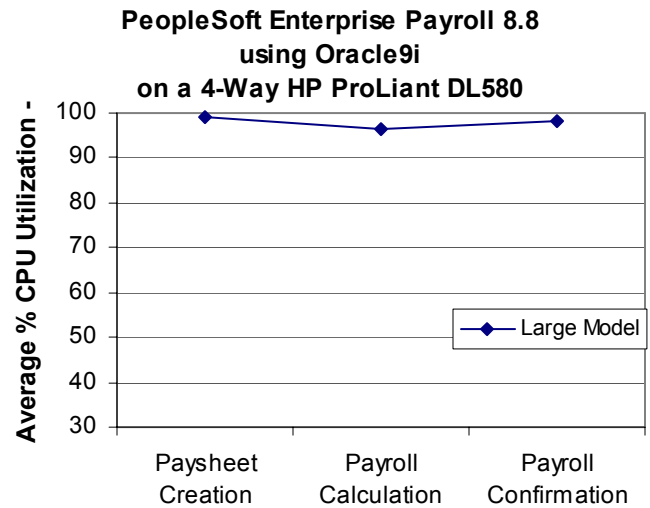
SERVER PERFORMANCE

PeopleSoft Enterprise Payroll 8.8 using Oracle9i on a 4-Way HP ProLiant DL580

Figure 2: Average CPU Utilization

DATA COMPOSITION DESCRIPTION

The database used in the benchmark contained six months history data. The following table shows the total number of employees, and the number of active employees for each model.

Profile	Large
Total	90,080
Active	72,064

Table 2: Database Composition

The employees were distributed over thirty-two bi-weekly pay groups with five different employee profiles. The profiles are as follows:

❖ Full time, salaried, with federal and New York State and local tax deductions and eight per pay period benefit deductions

❖ Full time, hourly, with federal and Delaware state tax deductions, thirteen per pay period benefit deductions, and one general deduction, one garnishment and direct deposit

❖ Full time, salaried, with federal and Texas State tax deductions, twelve per pay period benefit deductions, three general deductions, and one garnishment

❖ Full time, hourly, with federal and Alaska state tax deductions, eleven per pay period benefit deductions, three general deductions, and direct deposit

❖ Inactive – on leave of absence

The benchmarking payroll run is Dec 2-15 2003.   Each database reflects 6 months history in calendar year 2003.

I/O PERFORMANCE

The Direct-Connected HP Storage Works MSA30 disk arrays were used for storage. I/O performance is crucial to batch performance and is summarized as follows:

	I/O Operations per Sec	
	Average	Peak
Paysheet	697	2,003
Calculate	275	1,913
Pay Confirm	236	864

Table 3: I/O Performance

BENCHMARK ENVIRONMENT

HARDWARE CONFIGURATION

A Hewlett-Packard® ProLiant® DL580 G3 server was used as the database server. It was equipped with the following:

- 4×3.3 GHz Intel® Xeon™ processors MP, each with 1 Megabyte of Level 2 Cache and 8 Megabytes of Level-3 Cache (note that with Hyperthreading, each CPU executes two processes making this 4-way look and act like an 8-way)

- 16 Gigabytes of Memory (~12.1 GB used)

- $7 \times$ Direct-Connected HP StorageWorks MSA30 disk arrays attached to 3 SmartArray 6404 controllers for Data

- ~4 Terabytes of (Data) total Disk Space available (42×72 GB + 21×36 GB + 14×18 GB + 4×72 GB internal disk drives), approximately 507 GB of RAID 0 storage used for this benchmark

- $1 \times$ Hewlett-Packard® SmartArray 6i Plus Integrated Disk Controller

SOFTWARE VERSIONS

Oracle's PeopleSoft Enterprise Payroll 8.8

Oracle's PeopleSoft Enterprise (PeopleTools) 8.46 Patch 05b

Oracle9i™ 9.2.0.6 w/Patch Set 5

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

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