PeopleSoft8

REVISION 2.2

PEOPLESOFT PAYROLL 8.8 USING DB2 FOR Z/OS ON AN IBM z990 2084-B16 with 313 Feature [6-way LPAR]

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 Payroll (North American) 8.8	
	Large Volume Model	
(English)	Payroll	90,080 checks - 11.96 minutes
	Pay Checks/Hour	451,500 per hour
Référence d'exécution	PeopleSoft Paie (Nord-américain) 8.8	
	Grand modèle de données	
(Français)	Livre de paie	90.080 Chèques – 11,96 minutes
	Chèques/heure	451.500 par heure
Benchmark-Test	PeopleSoft Personalabrechnung (Nordamerikaner) 8.8	
	Datenbankmodell "Large"	
(Deutsch)		90.080 Schecks – 11,96 Minuten
	Schecks/Stunde	451.500 pro Stunde
Patrón de rendimiento	PeopleSoft Pago (Norteamericano) 8.8	
	Modelo con volumen superior de datos	
(Español)	Nomina de pago	90.080 Cheques – 11,96 minutos
	Cheques/hora	451.500 por hora
Benchmark	Pagamento (North-american) 8.8 do PeopleSoft	
	Modelo de Grande Volume	
(Português)		90.080 Cheques – 11,96 minutos
	Cheques/hora	451.500 por a hora

BENCHMARK PROFILE

In June 2003, PeopleSoft conducted a benchmark in Pleasanton, CA to measure the batch performance of the Paysheet Creation, Payroll Calculation and Payroll Confirmation processes in PeopleSoft Payroll 8.8 (North American) using IBM® DB2 for z/OS 7.1 on an IBM® zSeries 990 model 2084-B16 with 313 Feature database server, running IBM® z/OS version 1.2.

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 PeopleSoft 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 PeopleSoft Payroll 8.8 using DB2 for z/OS.**

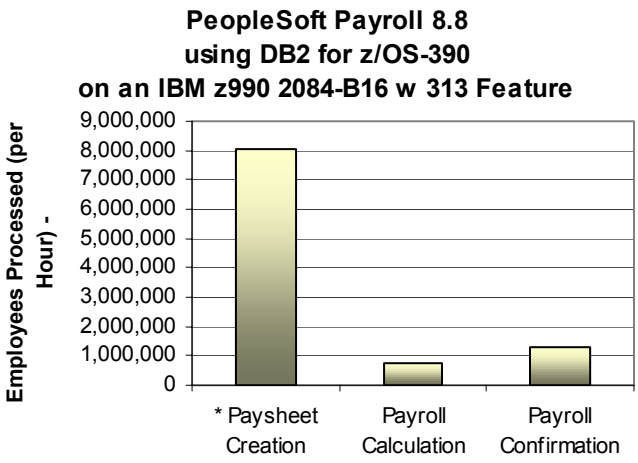

Figure 1: PeopleSoft 8 Payroll Processing Rates

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

METHODOLOGY

PeopleSoft Payroll 8.8 batch processes can be initiated either from a browser or on the server. For this benchmark, all jobs were initiated on the server using Job Control Language (JCL).

This application was run as sixteen concurrent processes.

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	0.67 min
Payroll Calculation	7.04 min
Payroll Confirmation	4.25 min
Total Runtime	11.96 min
Employees Processed per Hour	
Total Checks	90,080
Checks per Hour	451,500

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.

Sixteen concurrent processes were run for each batch job shown in Table 1 (16 × 2 paygroups). Performance may vary on other hardware and software platforms and with other data composition models.

SERVER PERFORMANCE

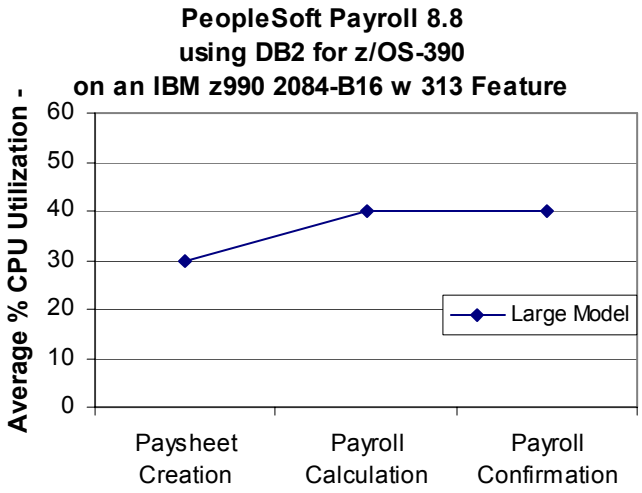

Figure 2: Average CPU Utilization

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 2000. Each database reflects 6 months history in calendar year 2000.

I/O PERFORMANCE

The 7 Terabyte IBM® Enterprise Storage Server (ESS SHARK) was used for storage. I/O performance is crucial to batch performance and is summarized as follows:

Paycalc and Payconfirm

I/O average - 4.74 millisecond per I/O, and 1,922.5 I/O operations per sec.

BENCHMARK ENVIRONMENT

HARDWARE CONFIGURATION

The IBM® zSeries 990 model 2084-B16 with 313 Feature was used as the database server. It was equipped with the following:

- 6 × IBM® z990 Gen1 Processors (13 Processors populated, but only 6 available for this testing) 4392 MIPS total for 13 engines, 2027 MIPS for 6 engines
- 64 Gigabytes of Memory (6 GB available for this test)

The IBM® zSeries 990 was attached to:

- One IBM® Enterprise Storage Server, 2105-800 Turbo, 36.4 GB disk size, 7 Terabytes of total Disk Space, with 4 Terabytes available (300 Gigabytes used)

SOFTWARE VERSIONS

PeopleSoft Payroll 8.8

PeopleTools 8.43

IBM® DB2 for z/OS 7.1

IBM® z/OS version 1.2 (on the Database server)

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