PeopleSoft Enterprise

certified Technology Benchmark

REVISION 2.1

PEOPLESOFT TIME & LABOR 8.8 USING DB2 FOR Z/OS ON AN IBM z990 2084-B16 with 313 Feature [8-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 Time & Labor 8.8	
	Large Volume Model	
(English)	From Rapid Time to Load Payroll	120,000 employees – 2.7 hours
	Employees/Hour	44,447 per hour
Référence d'exécution	PeopleSoft Gestion des Temps et des Activités (GTA) 8.8	
	Grand volume de données	
(Français)	From Rapid Time to Load Payroll	120.000 employees – 2,7 heures
	Employees/heure	44.447 par heure
Benchmark-Test	PeopleSoft Zeitmanagement 8.8	
	Datenbankmodell "Large"	
(Deutsch)	From Rapid Time to Load Payroll	120.000 employees – 2,7 Stunden
	Employees/Stunde	44.447 pro Stunde
Patrón de rendimiento	PeopleSoft Gestión de Tiempos y Tareas 8.8	
	Volumen grande de los datos	
(Español)	From Rapid Time to Load Payroll	120.000 employees – 2,7 horas
	Employees/hora	44.447 por hora
Benchmark	Gerenciamento de Horas 8.8 do PeopleSoft	
	Volume grande dos dados	
(Português)	From Rapid Time to Load Payroll	120.000 employees – 2,7 horas
	Employees/hora	44.447 por a hora

BENCHMARK PROFILE

In June 2004, PeopleSoft conducted a benchmark study in Pleasanton, CA to measure the batch performance of PeopleSoft Time and Labor 8.8 using IBM® DB2 for z/OS™ 7.1 on an 8-way IBM® zSeries 990 model 2084-B16 with 313 Feature database server, running IBM® z/OS version 1.2. The 7 Terabyte (~1.2 TB used) IBM® Enterprise Storage Server (ESS SHARK) was used for storage.

The benchmark measured four Time and Labor application business process runtimes using our standard large database model. The testing was conducted in a controlled environment with no other applications running in the 8-way LPAR. The tuning changes were approved by PeopleSoft Development and will be available in a future update or release. **The goal of this performance test was to obtain performance results for PeopleSoft Time and Labor 8.8 on the DB2 Database.**

The figure below illustrates the average processing rates, in employees per hour, for the tested database model size.

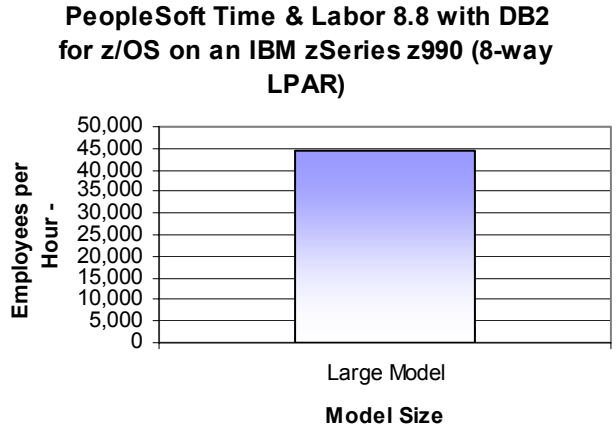

Figure 1: Average Throughput

METHODOLOGY

PeopleSoft Time and Labor 8.8 batch processes can be initiated from a browser.

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 Time and Labor processes are as follows:

Rapid Time: (*Application Engine*) This process loads reported time from the Rapid Time page into the reported time tables.

Time Administration: (*Application Engine*) This process converts reported and scheduled time into payable time.

Batch Approval: **(***Application Engine*) This process updates payable time by marking it as approved for payroll processing.

Load Payroll: (*COBOL*) This process uses the payable time that has been approved from Time and Labor to update pay sheets for payment in PeopleSoft Payroll (North American).

BATCH PROCESS RESULTS

PeopleSoft's Time and Labor application has been designed to support concurrent processing. One job was run for the Rapid Time process, 24 concurrent jobs were run for the Time Administration process and the Batch Approval process and one job was run for the Load Payroll process. This is summarized in Table 1.

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

Business Process	Jobs	Large Model
Rapid Time	1	26.29
Time Administration	24	56.45
Batch Approval	24	7.05
Load Payroll	1	72.20
Total Runtime - min		161.99
Total Runtime - Hours		2.70

Table 1: Business Process Runtimes

Throughput	Large Model
Employee Population	120,000
Hourly Rate	44,447

Table 2: Business Process Rate

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

SERVER PERFORMANCE

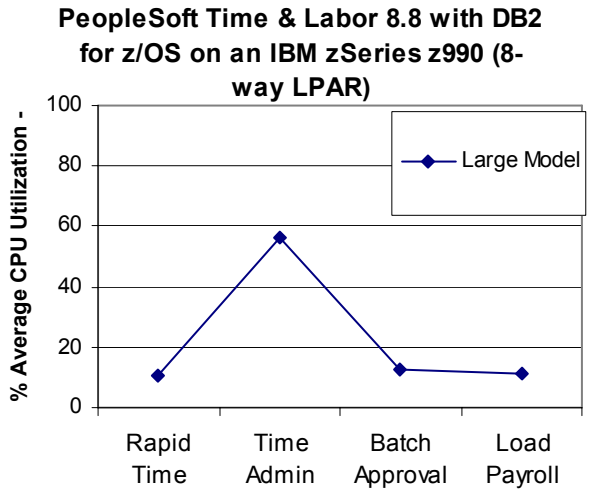

Figure 2: Average CPU Utilization

The CPU utilization shown in Figure 2 is the average across all eight processors for the duration of each process.

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:

	Disk Response Time (millisec)		I/O Operations per Sec	
	Average	Peak	Average	Peak
Rapid Time	2.9	7.3	441.8	800.2
Time Administration	9.4	20.2	1191.8	1987
Batch Approval	5	7.2	494.1	775.7
Load Payroll	2.3	3.3	217.6	847.7

Table 3: I/O Performance

DATA COMPOSITION DESCRIPTION

The database used in the benchmark contained, as a basis, six work groups, five task groups, and twelve employees. Time Reporting Codes represent the level at which an organization actually needs to track employee time to support all of its administrative and compensation needs.

Work Group	Pay Group Type	Employee Type	Time Reporter Type
1	1 Weekly	1 Hourly	1 Punch
2	2 Biweekly 1 Monthly	1 Hourly 1 Salaried 1 Exception	1 Elapsed 2 Punch
3	1 Biweekly 2 Monthly	2 Salaried 1 Exception	3 Elapsed
4	2 monthly	1 Salaried 1 Exception	2 Elapsed
5	1 Monthly	1 Hourly	1 Elapsed
6	1 Weekly 1 Biweekly	1 Hourly 1 Exception	2 Punch

Table 3: Pay Group Breakout

MODEL SIZE(S)

This employee base was expanded to the following standard data composition model size(s):

Model	Population Size	Time Transaction Size
Large	120,000 Employees	Average of 3 Weeks

Table 4: Model Sizes

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:

- 8 × IBM® z990 Gen1 Processors (13 Processors populated, but only 8 available for this testing) 4392 MIPS total for 13 engines, 2702 MIPS for 8 engines
- 32 Gigabytes of Memory (10 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 (~1.2 Terabytes used)

SOFTWARE VERSIONS

PeopleSoft Time & Labor 8.8

PeopleTools 8.43

IBM® DB2 for z/OS 7.1 PUT0402

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

Micro Focus Server Express™ 2.0.11 (COBOL)

APRDs/ICE Applied:

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