PeopleSoft | Enterprise

REVISION 2.3

PEOPLESOFT 8.8 W/SP 1 GLOBAL PAYROLL (SPAIN) USING ORACLE9i ON A SUN MICROSYSTEMS' SUN FIRE™ 6800

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 Global Payroll 8.8 (Spain)	
	10,000 Payees	
(English)	# Minutes to Process	12.13 minutes
	Payees per Hour	49,451 per hour
	50,000 Payees	
	# Minutes to Process	65.52 minutes
	Payees per Hour	45,790 per hour
Patrón de rendimiento	PeopleSoft Global Payroll 8.8 (España)	
	10.000 Beneficiarios	
(Español)	# Minutos al Proceso	12,13 minutos
	Beneficiarios por Hora	49.451 por hora
	50.000 Beneficiarios	
	# Minutos al Proceso	65,52 minutos
	Beneficiarios por Hora	45.790 por hora

Note that the summary above includes the processing times for the 'identify,' 'calculate' and 'finalize' payroll processes.

BENCHMARK PROFILE

In June 2004, PeopleSoft conducted a benchmark in Pleasanton, CA to measure the batch performance of the [Employee] Identification, [Payroll] Calculation, Finalize, Banking, Payslip, Social Security and Tax Reporting processes in PeopleSoft Global Payroll 8.8 (Spain) with Oracle9i™ 9.2.0.4. We used a Sun Microsystems' Sun Fire™ 6800 (8-way) database server. The 6800 utilized the Solaris™ 9 Operating Environment (OE).

The benchmark measured 'Global Payroll' application business process runtimes for two database models. 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 update or Release 8.9. **The goal of this Benchmark was to obtain reference performance results for PeopleSoft Global Payroll 8.8.**

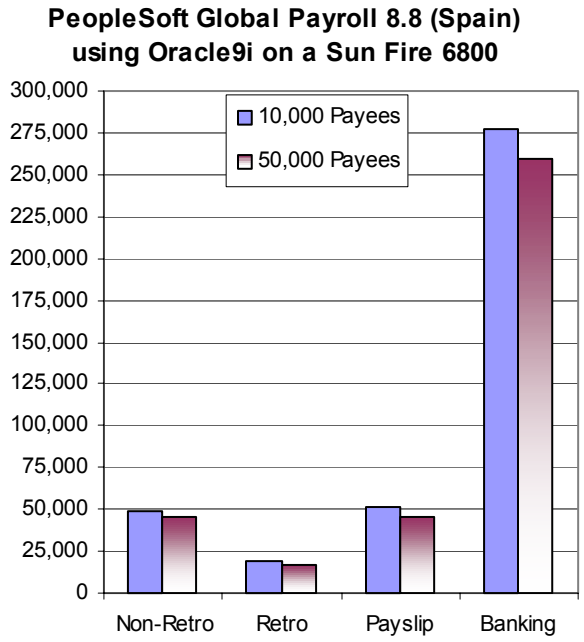

Figure 1: PeopleSoft Global Payroll 8.8 Processing Rates

The "Non-Retro' and 'Retro' throughput rates above include the Identification, Calculate and Finalize processes. The "Payslip' and 'Banking' processes include 'Retro' processing.

METHODOLOGY

PeopleSoft Global Payroll 8.8 batch processes can be initiated from a browser. For this benchmark, all runs used a browser to initiate COBOL, Application Engine (AE) or SQR jobs.

The Identify, Calculation and Banking processes were run as 8 concurrent processes—based upon the employee ID number ranges. The Banking process is run partly single-threaded and partly as parallel concurrent jobs.

Business Process	Job Streams	Process Type
Identify	8	COBOL
Calculate	8	COBOL
Finalize	Single-Threaded	COBOL
Payslip	Single-Threaded	AE & SQR
Banking	8 Single-Threaded	App Engine & SQR
Social Insurance	Single-Threaded	App Engine
Tax Reporting	Single-Threaded	App Engine

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 PeopleSoft Global Payroll 8.8 processes tested are as follows:

[Employee] Identification: (COBOL) Identifies eligible payees for the selected Calendar period. The process looks at the Calendar selection criteria and then compares this to the employee's pay system flag (JOB.PAY_SYSTEM_FLG), pay group (JOB.GP_PAYGROUP), and status (JOB.EMPL_STATUS). When applicable, it also looks at Positive Input information as well as Retro Triggers. The Identification process can be run separately from the other two tasks, usually right before the first calculation is run.

[Payroll] Calculation: (COBOL) Looks at identified payees and performs appropriate payroll calculations 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 run, as well as the processing resources required. In this benchmark, Payroll Calculation was run only once, as though at the end of a payroll period.

Finalize: (COBOL) Takes the information generated by Calculation and 'closes' the period. Finalize can only be run once, and therefore, must be run at the end of the pay period.

Payslip: (AE & SQR) Provides payroll information at the employee-level, allowing the employee to view their net pay.

Banking: (AE & SQR) Setup to prepare for the creation of a single entity for each payroll result that needs to be 'paid out,' in an interface table. The table keeps all of the information required to execute the payment (net payment and external deductions). This process generates a flat file for Electronic File Transfer purposes.

Social Security Insurance (FAN): (AE) A process specific to Spain used to report Social Security contributions.

Tax Reporting (111/110): (AE) A process specific to Spain used to report tax withholding records.

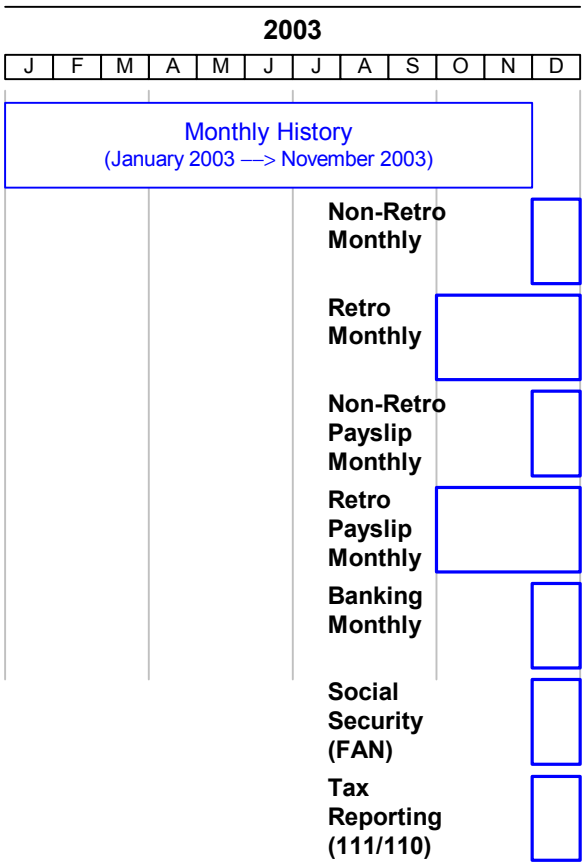

Figure 2: History and Execution Plan

Figure 2 summarizes the periods used in the creation of historical data and the corresponding execution periods. Eleven months of history were created and then the year-end payroll calculations were performed.

The monthly payroll with retroactivity and monthly payslip with retroactivity processes were the only processes involving more than a single (monthly) pay period. Other processes may take into account the results of retro calculations. In this case, all of the payees had their payroll recalculated for two previous periods.

BATCH RESULTS

The retro calculation involved all of the 'monthly' population having their payroll recalculated for October and November. Thus, the 10,000-payee monthly [Retro] run processed 60,000 segments rather than the base 10,000 employees. Likewise, the 50,000 payee monthly [Retro] run processed 300,000 segments rather than the base 50,000 payees. The computed transaction rates are still based upon the 10,000 or 50,000 monthly payees.

	10,000 Payees	50,000 Payees
Active Payees	10,000	50,000
Total Segments (No Retro)	20,000	100,000
Total Segments (Including Retro)	60,000	300,000

Table 1: Payee and Retro Correspondence

Tables 2 and 3 contain the actual runtimes, in minutes, for the Global Payroll processes.

10,000 Payees	Payroll – Not Including Retroactivity			Payroll - Including Retroactivity		
Process Tested	# Min. to Process	# Payees Processed per Hour	# Segments Processed per Hour	# Min. to Process	# Payees Processed per Hour	# Segments Processed per Hour
Payroll						
Identify	0.38	1,565,217	3,130,435	1.15	521,739	3,130,435
Calculate	11.52	52,098	104,197	30.07	19,956	119,734
Finalize	0.23	2,571,429	5,142,857	0.25	2,400,000	14,400,000
Payroll SubTotal:	12.13	49,451	98,901	31.47	19,068	114,407
Payslip						
Payslip Subtotal	3.32	180,905	361,809	11.70	51,282	307,692
Payroll + Payslip Totals	15.45	38,835	77,670	43.17	13,900	83,398
Banking						
Banking Prep	0.70	857,143	1,714,286	0.95	631,579	3,789,474
Banking ESP	0.58	1,028,571	2,057,143	0.63	947,368	5,684,211
EFT File	0.45	1,333,333	2,666,667	0.58	1,028,571	6,171,429
Banking SubTotal:	1.73	346,154	692,308	2.17	276,923	1,661,538
Payroll + Payslip + Banking Totals	17.18	34,918	69,835	45.33	13,235	79,412
Social Security Reporting						
FAN SubTotal:	2.80	214,286	428,571	6.52	92,072	552,430
Payroll + Payslip + Banking + Social Security Totals	19.98	30,025	60,050	51.85	11,572	69,431
Tax Reporting						
111/110 SubTotal:	0.37	1,636,364	3,272,727	0.28	2,117,647	12,705,882
Payroll + Payslip + Banking + Social Security + Tax Totals	20.35	29,484	58,968	52.13	11,509	69,054

Table 2: PeopleSoft Global Payroll 8.8 w/SP 1 Process Runtimes

50,000 Payees	Payroll – Not Including Retroactivity			Payroll - Including Retroactivity		
Process Tested	# Min. to Process	# Payees Processed per Hour	# Segments Processed per Hour	# Min. to Process	# Payees Processed per Hour	# Segments Processed per Hour
Payroll						
Identify	2.67	1,125,000	2,250,000	7.78	385,439	2,312,634
Calculate	61.10	49,100	98,200	167.82	17,877	107,260
Finalize	1.75	1,714,286	3,428,571	2.88	1,040,462	6,242,775
Payroll SubTotal:	65.52	45,790	91,580	178.48	16,808	100,850
Payslip						
Payslip Subtotal	17.50	171,429	342,857	65.70	45,662	273,973
Payroll + Payslip Totals	83.02	36,137	72,275	244.18	12,286	73,715
Banking						
Banking Prep	2.12	1,417,323	2,834,646	4.65	645,161	3,870,968
Banking ESP	3.73	803,571	1,607,143	3.80	789,474	4,736,842
EFT File	3.05	983,607	1,967,213	3.13	957,447	5,744,681
Banking SubTotal:	8.90	337,079	674,157	11.58	258,993	1,553,957
Payroll + Payslip + Banking Totals	91.92	32,638	65,277	255.77	11,729	70,377
Social Security Reporting						
FAN SubTotal:	14.08	213,018	426,036	33.13	90,543	543,260
Payroll + Payslip + Banking + Social Security Totals	106.00	28,302	56,604	288.90	10,384	62,305
Tax Reporting						
111/110 SubTotal:	2.75	1,090,909	2,181,818	3.02	994,475	5,966,851
Payroll + Payslip + Banking + Social Security + Tax Totals	108.75	27,586	55,172	291.92	10,277	61,661

Table 3: PeopleSoft Global Payroll 8.8 w/SP 1 Process Runtimes

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

SERVER PERFORMANCE

Table 4 shows the average CPU utilization for each process. The value shown is the average across all eight processors.

	10,000 Payees		50,000 Payees	
	Non-Retro	Retro	Non-Retro	Retro
Payroll				
Identify	*85.25*	81.15	59.45	71.8
Calculate	72.38	75.22	71.12	70.38
Finalize	*16.0*	*12.5*	9.65	9.90
Payslip	13.43	11.34	13.3	11.01
Banking				
Prep	16.0	34.83	56.22	43.43
ESP	15.25	15.57	12.47	13.44
EFT	*14.6*	10.67	13.78	13.23
Social Security Report	14.41	14.54	14.36	14.95
Tax Reporting	*14.33*	*12.0*	10.7	10.85

Table 4: Average CPU Utilization

Five CPU values for processes lasting less than 30 seconds are shown in *italics* in Table 4. Their averages are based on few samples and thus offer less insight into this implementation's behavior.

DATA COMPOSITION DESCRIPTION

History data for January 2003 through November 2003 was created prior to the timed benchmark runs (11 periods for monthly payees). This is shown graphically in Figure 2.

A payroll calendar was run for each month of this benchmark using individual Calendar Groups for each month.

The Retro calculation primarily involves the first three processes (ID, Calc, Finalize). All of the 'monthly employee' profiles have retro processing for the previous two months (October and November).

The employees were distributed over a single pay entity and a single pay group. There are 10 different monthly employee profiles. The distribution is as follows:

Pay Entities	Pay Entity 1 (1 Pay Group) Monthly
Payees (Population)	100%
Payees with Element Segmentation	5%
Payees with Disability	7%
Payees with Dependents	50%
Absence	10%
Vacation	5%
Sickness	3%
Maternity	1%
Un-Paid Leave	1%
Payees Terminated in 1 Month	2%
Payees with Positive Input	20%
E & D Override	1%
Payees with Loan	5%
Payees with Multi-Employment	1%

Table 5: Spain Specific Setup

BENCHMARK ENVIRONMENT

HARDWARE CONFIGURATION

One Sun Fire™ 6800 was used as the database server. It was equipped with the following:

- 8 × 1,050 Megahertz UltraSPARC® III Processors each with 8 Megabytes of Level-2 Cache
- 32 Gigabytes of Memory
- ~684 Gigabytes of total Disk Space (2 × 18 GB + 18 × 36 GB)
- 2 × Sun T3 Integrated Fibre Channel Disk Controllers
- 1 × SCSI Disk Controller (internal)

SOFTWARE VERSIONS

PeopleSoft Global Payroll (España extension) 8.8 w/SP 1

PeopleTools 8.43.09

Oracle9i™ 9.2.0.4 (64-bit)

Sun Solaris 9 Operating Environment, 9 9/02 s9s_u1wos_08b SPARC

Micro Focus™ Server Express™ (COBOL) 2.0.11

BEA Tuxedo® 6.5 with Jolt 1.2

Oracle Patch **3769909**
Opatch **2617419**

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