



# PEOPLESOFT 8.8 GLOBAL PAYROLL (AUSTRALIA) USING MICROSOFT SQL SERVER 2000 ON A UNISYS ES7000 540

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.



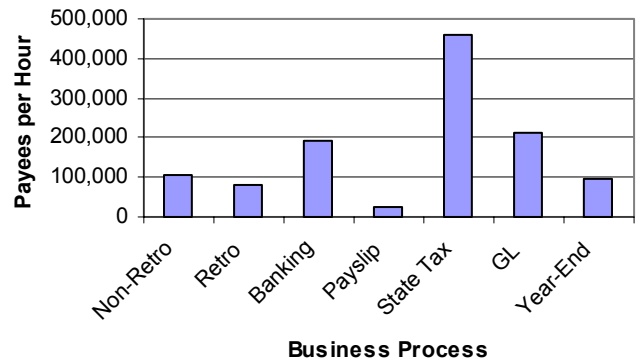
## SUMMARY OF RESULTS

Benchmark  (English)	PeopleSoft Global Payroll 8.8 (Australia)	
	Medium Model	
	Payroll	37,648 Payees – 27.3 minutes
	Payees/Hr	82,743 per hour* (*Monthly w/Retro processing)
Référence d'exécution  (Français)	PeopleSoft Paie Globale 8.8 (L'Australie)	
	modèle de données de taille moyenne	
	Livre de paie	37.648 Payees – 27,3 minutes
	Payees/heure	82.743 par heure
Benchmark-Test  (Deutsch)	PeopleSoft Personalabrechnung 8.8 (Australien)	
	Datenbankmodell "Medium"	
		37.648 Payees – 27,3 Minuten
	Payees/Stunde	82.743 pro Stunde
Patrón de rendimiento  (Español)	PeopleSoft Nomina Global para Australia 8.8	
	Modelo con volumen mediano de datos	
	Nómina	37.648 Payees – 27,3 minutos
	Payees/hora	82.743 por hora
Benchmark  (Português)	Pagamento 8.88 (Austrália) do PeopleSoft	
	Modelo de Médio Volume	
		37.648 Payees – 27,3 minutos
	Payees/hora	82.743 por a hora

The implementation was an 8-way Unisys® ES7000® 540 database server, running Microsoft® Windows® 2003 Datacenter Server.

The benchmark measured 'Global Payroll' application business process runtimes for one database model representing a medium-sized 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 reference performance results for PeopleSoft Global Payroll 8.8.**

**PeopleSoft 8.8 Global Payroll (Australia) using Microsoft® SQL Server™ 2000 on an 8-way Unisys ES7000 540**



**Figure 1: PeopleSoft Global Payroll 8.8 Processing Rates**

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

## 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.

## BENCHMARK PROFILE

In February 2004, PeopleSoft and Unisys conducted a benchmark in Pleasanton, CA to measure the batch performance of the [Employee] Identification, [Payroll] Calculation, Finalize, Banking, Payslip, State Payroll Tax Report, General Ledger and End of Year processes in PeopleSoft Global Payroll 8.8 (Australia) using Microsoft® SQL Server™ 2000 Enterprise Edition w/SP 3a and QFE 856.

The Identify, Calculation and General Ledger 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
Banking	8 Single-Threaded	App Engine
Payslip	Single-Threaded	SQR
State Payroll Tax Report	Single-Threaded	App Engine/SQR
GL	8	App Engine
End of Year	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 8 Global Payroll 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 and/or absence 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 or absence 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/absence 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.

**Banking:** (AE) 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, garnishments, and external deductions). This process generates a flat file for Electronic File Transfer purposes.

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

**State Payroll Tax Report:** (AE & SQR) Produces a detailed break out of the earnings, benefits, deductions and expenses that have been identified as payroll taxable or as payroll tax exempt.

**General Ledger:** (AE) Application Engine job specific to Australia that accounts for the expense of leave — 'taken' or 'accrued.'

**End of Year:** (AE) An End of Year process specific to Australia used to create an employee payment summary.

## BATCH RESULTS

Table 1 contains the actual runtimes, in minutes, for the Global Payroll processes.

37,648 Monthly Payees	Time (Minutes)	Hourly Rate	Job Streams
<b>Non-Retro Payroll</b>			
Identify	2.45	921,992	8
Calculate	18.42	122,632	8
Finalize	0.83	2,721,542	single
<b>Total:</b>	<b>21.70</b>	<b>104,096</b>	<b>N/A</b>
<b>Retro Payroll</b>			
Identify	4.55	496,457	8
Calculate	21.88	103,239	8
Finalize	0.87	2,596,414	single
<b>Total:</b>	<b>27.30</b>	<b>82,743</b>	<b>N/A</b>
<b>Banking</b>			
Calculate	6.9	327,374	8
Finalize	0.17	13,287,529	single
EFT	4.68	482,667	8 serial
<b>Total:</b>	<b>11.75</b>	<b>192,245</b>	<b>N/A</b>
Payslip – Payees/hr	84.28	26,802	single
† Payslip – Payslips/hr	84.28	31,827	single
State Payroll Tax Rpt	4.9	460,996	single
<b>General Ledger</b>			
Calculate	8.27	273,141	8
Leave Entitlement	2.47	914,526	8 serial
Finalize	0.03	75,296,000	single
<b>Total:</b>	<b>10.77</b>	<b>209,738</b>	<b>N/A</b>
Year-End	23.45	96,328	single

**Table 1: PeopleSoft Global Payroll 8.8 Process Runtimes**

The retro calculation involved approximately 12.5% of the population. Their payroll data was re-run for the previous two periods. Thus, this run processed 47,060 segments rather than the base 37,648 payees. The computed transaction rate is still based upon the 37,648 payees.

† About 18.75% of the population gets two Payslips. Thus, there were 44,707 Payslips for 37,648 employees.

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

## SERVER PERFORMANCE

Table 2 shows the average CPU utilization for each process. The value shown is the average across all eight processors.

37,648 Monthly Payees	Average CPU	Memory Usage - Megabytes
<b>Non-Retro Payroll</b>		
Identify	49%	14,348
Calculate	83%	14,718
Finalize	5%	14,225
<b>Retro Payroll</b>		
Identify	57%	14,441
Calculate	82%	14,836
Finalize	6%	14,249
<b>Banking</b>		
Calculate	31%	14,401
Finalize	19%	14,385
EFT	4%	14,249
<b>Payslip</b>		
	12%	14,266
<b>State Payroll Tax Rpt</b>		
	17%	14,389
<b>General Ledger</b>		
Calculate	72%	14,419
Leave Entitlement	6%	14,393
Finalize	3%	14,262
<b>Year-End</b>		
	15%	14,401

**Table 2: Average CPU Utilization**

EFT (Electronic Funds Transfer – within the Banking process) and the State Payroll Tax Report processes were somewhat I/O bound. Note that the ‘Finalize’ processes were too brief to collect many CPU data points — their values are approximate. Any single-jobstream processes are going to show low average CPU, since only one of the eight CPUs would typically be busy.

Note that the memory usage averaged about 14 of the available 16 Gigabytes.

## DATA COMPOSITION DESCRIPTION

History data for July 2003 through May 2004 was created prior to the timed benchmark runs (11 periods for monthly payees). A payroll calendar, absence calendar and hourly absence accrual calendar were run for each month of this benchmark (as part of a single Calendar Group).

The following table shows the total number of paid employees for each model.

	Monthly Period
Active Payees	37,648
Retro segments	47,060

**Table 6: Database Composition**

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

The employees were distributed over a single pay entity and pay group with 18 different employee profiles. The distribution is as follows:

Pay Entities	Pay Entity 1 (Pay Group 1) Monthly
Payees (Population)	100%
Period Segmentation (changed department/job)	10%
Element Segmentation (changed pay rate)	10%
Absence	10%
Vacation	10%
Positive Input	30%

**Table 7: Australia Specific Setup**

## BENCHMARK ENVIRONMENT

### HARDWARE CONFIGURATION

A Unisys® ES7000® 540 server was used as a batch/database server. It was equipped with the following:

- 8 × 2.8 GHz Intel® Xeon™ processors MP, each with 8 Kilobytes of Level 1 Cache, 512 Kilobytes of Level 2 Cache, 2 Megabytes of Level 3 Cache and an average of 8 Megabytes of Level-4 Cache (an 8-CPU partition out of a possible 32 CPU's was allocated)
- 16 Gigabytes of Memory (only 13 GB for SQL Server)
- 4,654 Gigabytes of total Disk Space (70 × 66 GB + 1 × 34 GB) (~35 GB used)
- 1 SCSI Disk Controller (Internal)
- 3 × Emulex LP-9002L Fibre Channel Host Bus Adapter Disk Controllers (Internal)
- 1 × Gigabit Ethernet Intel® PRO/1000 MT Dual Port Adapter Network Card

### SOFTWARE VERSIONS

PeopleSoft Global Payroll (Australia extension) 8.8

PeopleTools 8.44.08

Microsoft® SQL Server™ 2000 Enterprise Edition w/SP 3a and QFE 856

Microsoft® Windows® 2003 Datacenter Server (on the Database server)

Micro Focus™ Net Express™ (COBOL) 3.1 w/SP 1

BEA Tuxedo® 8.1 with Jolt 8.1

BEA WebLogic® 8.1



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