PEOPLESOFT INVENTORY TRANSACTION COST ACCOUNTING 8.8 USING DB2 UDB FOR AIX 5L ON AN IBM® pSERIES 650 SERVER

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 Inventory Transaction Cost Accounting 8.8
	Large Volume Model
Costing to Debits & Credits	2,316,000 Accounting Lines – 3.65 hours
Account Lines/Hour	634,521 per hour

Référence d'exécution (Français)	PeopleSoft Inventory Transaction Cost Accounting 8.8
	Grand modèle de données
Costing to Debits & Credits	2.316.000 Accounting Lines – 3,65 heures
Account Lines/heure	634.521 par heure

Benchmark-Test (Deutsch)	PeopleSoft Inventory Transaction Cost Accounting 8.8
	Datenbankmodell "Large"
Costing to Debits & Credits	2.316.000 Accounting Lines – 3,65 Stunden
Debeten Krediten/Stunde	634.521 pro Stunde

Patrón de rendimiento (Español)	PeopleSoft Inventory Transaction Cost Accounting 8.8
	Volumen grande de los datos
Costing to Debits & Credits	2.316.000 Accounting Lines – 3,65 horas
Account Lines/hora	634.521 por hora

Benchmark (Português)	Inventory Transaction Cost Accounting 8.8 do PeopleSoft
	Volume grande dos dados
Costing to Debits & Credits	2.316.000 Accounting Lines – 3,65 horas
Account Lines/hora	634.521 por a hora

BENCHMARK PROFILE

In June 2004, PeopleSoft conducted a benchmark study in Pleasanton, CA to measure the batch performance of PeopleSoft Inventory Transaction Cost Accounting 8.8 with IBM DB2® Universal Database™ Enterprise Server Edition Version 8.1 w/FP 5 for AIX 5L™ on an 8-way IBM® pSeries® 650 server, running IBM AIX 5L V5.2.

The benchmark measured one Cost Accounting business process runtime using three data composition models. The database models represented small, medium and large sized organizations. The testing was conducted in a controlled environment with no other applications running. The tuning changes were approved by PeopleSoft Development and will be generally available in a future release or update. **The goal of this benchmark test was to obtain baseline PeopleSoft Cost Accounting 8.8 performance metrics with DB2 UDB on an IBM server.**

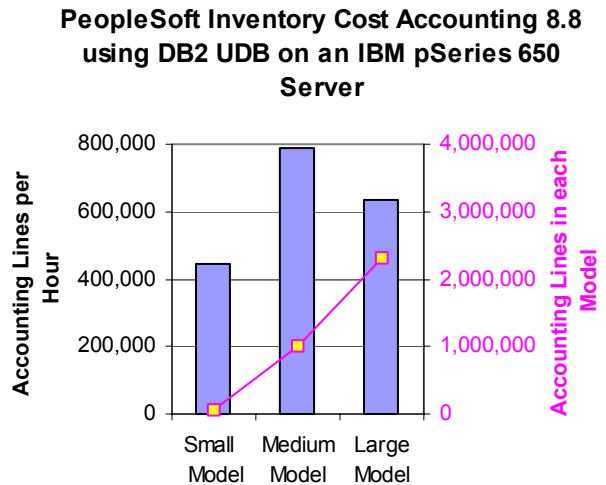The figure below illustrates business process rates for the benchmarked database models.

PeopleSoft Inventory Cost Accounting 8.8 using DB2 UDB on an IBM pSeries 650 Server

Figure 1: Business Process Rates

Note that the Inventory Transaction Cost Accounting processes were run as a single job stream. Thus, it was not necessary to use an 8-way server for this test. A 2-way server would yield comparable performance. The 8-way server was used to support related testing that will be reported separately.

METHODOLOGY

PeopleSoft Cost Accounting 8.8 batch processes are initiated from a browser. For this benchmark, all jobs were initiated from a browser to initiate the Application Engine jobs at staggered intervals.

Batch processes are background processes, requiring no operator intervention or interactivity. The runtimes were taken directly from the system output for each process.

BUSINESS PROCESSES

The two business processes tested (actually run serially as a single job), which represent the inventory-to-general ledger cycle, are as follows:

Transaction Costing (AE): The **Transaction Costing** process identifies Inventory transactions to be costed and determines the cost for each. Each inventory transaction can have one or many costs depending on the cost elements used such as material, freight, and tax. The elements and aggregation levels of costs are user defined. This process stages transactions for Accounting Line Creation.

Accounting Line Creation (AE): The **Accounting Line Creation** process essentially matches up each transaction with the appropriate accounting rules for determining which ChartFields the debit and credit should post into. The process stages transactions for Journal Line Creation into General Ledger.

BATCH PROCESS RESULTS

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

Business Process	Small Model	Medium Model	Large Model
Transaction Costing	6 min	35 min	101 min
Accounting Line Creation	4 min	42 min	118 min
Total	10 min (0.17 hr)	77 min (1.28 hr)	219 min (3.65 hr)
Accounting Lines	73,600	1,008,000	2,316,000
Accounting Lines / Hour	**441,600**	**785,455**	**634,521**

Table 1: Business Process Runtimes

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

SERVER PERFORMANCE

PeopleSoft Inventory Cost Accounting 8.8 using DB2 UDB on an IBM pSeries 650 Server
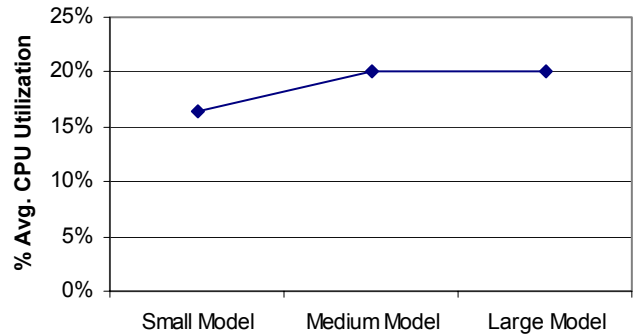

Figure 2: Average CPU Utilization

The CPU Utilization above represents the average across the 8 processors. However, with a single job stream, most of the effort was confined to a single CPU.

I/O Performance

An IBM TotalStorage® FAStT900 with six EXP700 drawers with 14 × 36.4 GB (15K) disks set up in RAID 5 configuration was used for the benchmark. I/O performance is crucial to system performance and is summarized in the following table.

Model Size		DB Server	Read MB/Sec	Write MB/Sec	Disk Transfer MB/Sec
Small		**Average**	1.005	1.383	332.1
		Peak	8.267	7.543	1489.1
Medium		**Average**	5.364	3.428	992.2
		Peak	20.982	7.541	1790.6
Large		**Average**	9.618	2.788	1214.1
		Peak	104.181	8.587	5135.3

Table 2: I/O Performance

DATA COMPOSITION DESCRIPTION

This testing used expanded data with the characteristics outlined in the following table. Note that there are three sets of data that correspond to the small, medium and large data models.

	Items per BU	Cost Type	Cost Elem	Daily Volumes			
				Put Aways	Depletions	Inventry Transact	Acct. Lines
S	1,000	FIFO	1	1,000	3,000	4,000	8,000
M	1,000	Avg.	1	1,000	3,000	4,000	8,000
A	1,000	Std.	2	1,000	3,000	4,000	22,000
L	100	Serial	2	1,000	900	1,900	13,600
L	1,000	Lot	2	1,000	3,000	4,000	22,000
	4,100			**5,000**	**12,900**	**17,900**	**73,600**
M	10,000	FIFO	1	10,000	30,000	40,000	80,000
E	10,000	Avg.	1	10,000	30,000	40,000	80,000
D	10,000	Std.	2	10,000	30,000	40,000	220,000
I	3,000	Serial	2	30,000	27,000	57,000	408,000
U	10,000	Lot	2	10,000	30,000	40,000	220,000
M	**43,000**			**70,000**	**147,000**	**217,000**	**1,008,000**
L	25,000	FIFO	1	25,000	75,000	100,000	200,000
A	25,000	Avg.	1	25,000	75,000	100,000	200,000
R	25,000	Std.	2	25,000	75,000	100,000	550,000
G	6,000	Serial	2	60,000	54,000	114,000	816,000
E	25,000	Lot	2	25,000	75,000	100,000	550,000
	106,000			**160,000**	**354,000**	**514,000**	**2,316,000**

Table 3: Data Composition

	Small	Medium	Large
Receipts/Putaways	100,000	1,400,000	3,200,000
Depletions/Consumption	458,000	5,740,000	13,480,000
Costed Receipts	160,000	2,400,000	5,400,000
Costed Depletions	396,000	4,680,000	11,160,000
Actual Costs for Receipts	100,000	1,400,000	3,200,000
Inventory Transactions	358,000	4,340,000	10,280,000
Accounting Lines	1,472,000	21,160,000	46,320,000

Table 4: 20 Days of History

PERFORMANCE TOOLKIT ENVIRONMENT

HARDWARE CONFIGURATION

The IBM pSeries 650 (7038-6M2) server was used as the database server. It was equipped with the following:

- 8×1.45 GHz POWER4™ Processors, each with 32 Kilobytes of Level-1 Data Cache and 64 Kilobytes of Level-1 Instruction Cache, 0.75 Megabytes of Level-2 Cache, with an average of 16 Megabytes of Level 3 Cache

- 32 Gigabytes of Memory

- ~464 Gigabytes of total Disk Space (2×36.4 GB SCSI + 6×66.8 GB [IBM TotalStorage FAStT RAID 5 arrays]) ~180 GB used

- 2 Disk Controllers ($8 \times$ SCSI, 1×1 Gbit Fibre Channel)

SOFTWARE VERSIONS

PeopleSoft Inventory Transaction Cost Accounting 8.8

PeopleTools 8.44

IBM DB2 Universal Database Version 8.1 for AIX w/FP 5 (64-bit)

IBM AIX 5L V5.2 (64-bit) (on the Database server)

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