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REVISION 2.3

PEOPLESOFT INVENTORY TRANSACTION COST ACCOUNTING 8.8 W/SP 1 USING DB2 UDB FOR AIX 5L ON AN IBM® PSERIES 650 SERVER

As a global leader in e-business applications, Oracle USA is committed to delivering high performance solutions that meet our customers' expectations. Business software must deliver rich functionality with robust performance. This performance must be maintained at volumes that are representative of customer environments.

Oracle USA benchmarks demonstrate our software's performance characteristics for a range of processing volumes in a specific configuration. Customers and prospects can use this information to determine 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	2,372,000 Accounting Lines – 2.5 hours
	Account Lines/Hour	947,747 per hour
Référence d'exécution (Français)	PeopleSoft Inventory Transaction Cost Accounting 8.8	
	Grand modèle de données	
	Costing to Debits & Credits	2.372.000 Accounting Lines – 2,5 heures
	Account Lines/heure	947.747 par heure
Benchmark-Test (Deutsch)	PeopleSoft Inventory Transaction Cost Accounting 8.8	
	Datenbankmodell "Large"	
	Costing to Debits & Credits	2.372.000 Accounting Lines – 2,5 Stunden
	Debeten Krediten/Stunde	947.747 pro Stunde
Patrón de rendimiento (Español)	PeopleSoft Inventory Transaction Cost Accounting 8.8	
	Volumen grande de los datos	
	Costing to Debits & Credits	2.372.000 Accounting Lines – 2,5 horas
	Account Lines/hora	947.747 por hora
Benchmark (Português)	Inventory Transaction Cost Accounting 8.8 do PeopleSoft	
	Volume grande dos dados	
	Costing to Debits & Credits	2.372.000 Accounting Lines – 2,5 horas
	Account Lines/hora	947.747 por a hora

BENCHMARK PROFILE

In February 2005, Oracle USA (PeopleSoft) conducted a benchmark study in Pleasanton, CA to measure the batch performance of PeopleSoft Inventory Transaction Cost Accounting 8.8 w/SP 1 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.

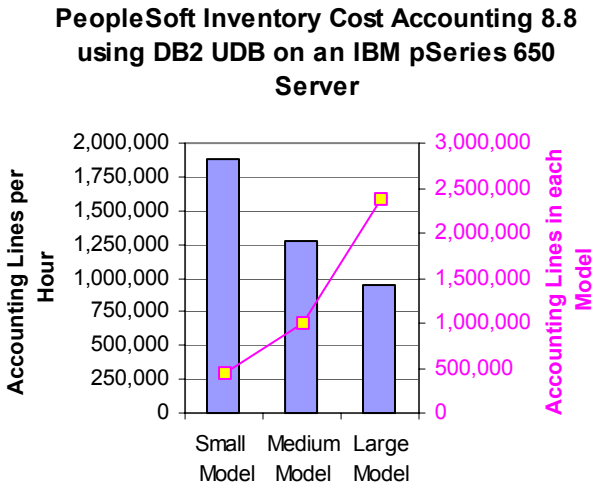

Figure 1: Business Process Rates

Note that the Inventory Transaction Cost Accounting processes were run as five parallel job streams.

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-inventory accounting line 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 in the Inventory Accounting Line table 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 (Single-Threaded)	**Small Model**	**Medium Model**	**Large Model**
Transaction Costing	5.6 min	37.4 min	105.1 min
Accounting Line Creation	4.5 min	44 min	124.3 min
Total	10.8 min (0.18 hr)	83.2 min (1.39 hr)	242.4 min (4.04 hr)
Accounting Lines	73,600	1,008,000	2,316,000
Accounting Lines / Hour	**410,155**	**726,777**	**573,149**

Table 1: Business Process Runtimes (Single Bus. Unit)

Business Process (5 Parallel Job Streams)	**Small Model**	**Medium Model**	**Large Model**
Transaction Costing	7.5 min	31.5 min	105.98 min
Accounting Line Creation	3.8 min	15.7 min	62.4 min
Total	13.9 min (0.23 hr)	47.7 min (0.8 hr)	150.2 min (2.5 hr)
Accounting Lines	436,000	1,008,000	2,372,000
Accounting Lines / Hour	**1,877,512**	**1,267,039**	**947,747**

Table 2: Business Process Runtimes (Multi-Bus. Units)

Note that the "Transaction Costing" and "Accounting Line Creation" times shown in Table 2 are the longest individual times recorded from the five job streams for each model size. In most cases, the longest "Transaction Costing" time and longest "Accounting Line Creation" time occurred in different job streams. The reported 'Total' corresponds to the 'earliest start' to 'last finish' time of the entire process.

The 'Small Model' had 10 Business Units, the 'Medium Model' had 100 Business Units, and the 'Large Model' had 1,000 Business Units.

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

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SERVER PERFORMANCE

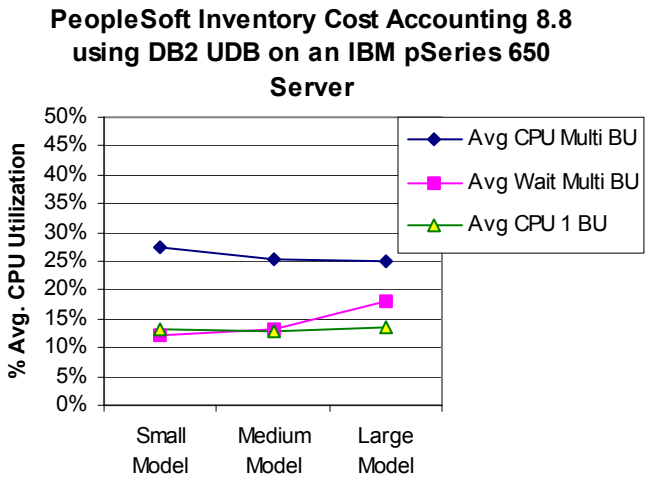

Figure 2: Average CPU Utilization

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. Note that with multiple business units (and parallel job streams) that the I/O wait became more noticable.

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	57,025	8,997	1,050
		Peak	115,723	25,054	1,837
Medium		Average	24,510	9,133	944
		Peak	63,631	30,544	1,768
Large		Average	21,807	19,174	1,526
		Peak	109,371	24,645	2,733

Table 3: 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.

				Daily Volumes			
	Items per BU	Cost Type	Cost Elem	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 4: Data Composition (Single Bus. Unit)

				Daily Volumes			
	Items per BU	Cost Type	Cost Elem	Put Aways	Depletions	Inventry Transact	Acct. Lines
S	500	FIFO	1	5,000	15,000	20,000	40,000
M	500	Avg.	1	5,000	15,000	20,000	40,000
A	500	Std.	2	5,000	15,000	20,000	110,000
L	100	Serial	2	10,000	9,000	19,000	136,000
L	500	Lot	2	5,000	15,000	20,000	110,000
	2,100			**30,000**	**69,000**	**99,000**	**436,000**
M	100	FIFO	1	10,000	30,000	40,000	80,000
E	100	Avg.	1	10,000	30,000	40,000	80,000
D	100	Std.	2	10,000	30,000	40,000	220,000
I	30	Serial	2	30,000	27,000	57,000	408,000
U	100	Lot	2	10,000	30,000	40,000	220,000
M	**430**			**70,000**	**147,000**	**217,000**	**1,008,000**
L	35	FIFO	1	35,000	105,000	140,000	280,000
A	35	Avg.	1	35,000	105,000	140,000	280,000
R	35	Std.	2	35,000	105,000	140,000	770,000
G	2	Serial	2	20,000	18,000	38,000	272,000
E	35	Lot	2	35,000	105,000	140,000	770,000
	142			**160,000**	**438,000**	**598,000**	**2,372,000**

Table 5: Data Composition (Multiple Bus. Units)

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The 'Small Model' had 10 Business Units, the 'Medium Model' had 100 Business Units, and the 'Large Model' had 1,000 Business Units.

	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 6: 20 Days of History (Single Bus. Unit)

	Small	Medium	Large
Receipts/Putaways	600,000	1,400,000	3,200,000
Depletions/Consumption	2,580,000	5,740,000	15,160,000
Costed Receipts	1,000,000	2,400,000	5,000,000
Costed Depletions	2,160,000	4,680,000	13,320,000
Actual Costs for Receipts	600,000	1,400,000	3,200,000
Inventory Transactions	1,980,000	4,340,000	11,960,000
Accounting Lines	8,720,000	21,160,000	47,440,000

Table 7: 20 Days of History (Multiple Bus. Units)

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 × SCSI, 1 × 1 Gbit Fibre Channel)

SOFTWARE VERSIONS

PeopleSoft Inventory Transaction Cost Accounting 8.8 w/SP 1

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)

ICE/APRD Resolution: #619374 8.8sp1 Product Bundle #8

Oracle (PeopleSoft) Pleasanton
4500 PeopleSoft Parkway
P. O. Box 8018
Pleasanton, California 94588-8618
Tel 925/694-3000
Fax 925/694-3100
Email info@peoplesoft.com
World Wide Web http://www.oracle.com

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