

IBM Netfinity 7000 M10 Sets Performance Record for SAP R/3 Two-Tier SD Benchmark on a Four-Way Intel-Based Server

April 23, 1999

IBM Netfinity* 7000 M10 set a new performance record for running the SAP** R/3 Two-Tier Centralized Sales and Distribution (SD) Benchmark on a four-way, Intel-based server. The IBM Netfinity 7000 M10 server achieved 221 SD Benchmark users with 1.97 seconds average dialog response time on Oracle 8.0.4.2 and Microsoft Windows NT Server 4.0 Enterprise Edition. The measured throughput of 66,000 dialog steps per hour represents 22,000 fully processed order line items per hour. This record surpasses all previous competitive results using four Intel** 500MHz Pentium** III Xeon** processors.

The Benchmark Environment

The hardware configuration for the 221 SD benchmark user run consisted of one database server, an IBM Netfinity 7000 M10 server with four 500MHz Pentium III Xeon processors with 2MB L2 cache, 4GB of main memory, and 655GB of total disk space running Windows NT Server 4.0 Enterprise Edition with Service Pack 3, Oracle 8.0.4.2 and SAP's R/3 Release 4.0 B. The measured throughput was 66,000 dialog steps per hour with an average CPU utilization of 99 percent for the database server.

This benchmark fully complies with SAP's issued benchmark regulations and has been audited and certified by SAP. Details can be obtained from IBM and SAP AG. The benchmark was performed at IBM's Netfinity Server Performance Laboratory in Research Triangle Park, NC, by IBM engineers.

1. General Information about Benchmark Environment

Certification Number	1999010
Hardware Partner	International Business Machines Corporation
Contact Name/Tel./Mail ID	Phil Horwitz / horwitzp@us.ibm.com
R/3 Release	4.0 B
DBMS Version	Oracle 8.0.4.2
Date	April 14, 1999
Location	Research Triangle Park, NC, USA
Lead Engineers	IBM: Phil Horwitz, Martha Centeno, Craig R. Smith
Published	Yes

2. Detailed Hardware and System Software Configuration

Central Server			
System Name / Model	IBM Netfinity 7000 M10		
Processor Type / Clock Rate / Number of Processors	Intel Pentium III Xeon 500MHz / 4		
Cache Size / Level	2MB / Level 2		
Memory	4096MB		
Operating System	Windows NT Server 4.0 Enterprise Edition with Service Pack 3		
Database System	Oracle 8.0.4.2		
Number of Disks	80 External, Total Disk Space: 655GB		
I/O Subsystem			
Controller Number	Number of Disk Drives	RAID Level	Contents
1st ServeRAID-3H Ch. 1	10 x 9.1GB External Drives	0	SAPDATA
1st ServeRAID-3H Ch. 2	10 x 9.1GB External Drives	0	SAPDATA
1st ServeRAID-3H Ch. 3	10 x 9.1GB External Drives	0	SAPDATA
2nd ServeRAID-3H Ch. 1	10 x 9.1GB External Drives	0	SAPDATA
2nd ServeRAID-3H Ch. 2	10 x 9.1GB External Drives	0	SAPDATA
2nd ServeRAID-3H Ch. 3	10 x 9.1GB External Drives	0	SAPDATA
3rd ServeRAID-3H Ch. 1	10 x 9.1GB External Drives	1	Redo Logs
3rd ServeRAID-3H Ch. 2	10 x 9.1GB External Drives	1	Redo Logs

Benchmark Driver (1)	
System Name / Model	IBM RS/6000* PowerPC* Model F50
Processor Type / Clock Rate / Number of Processors	IBM PowerPC 166MHz / 4
Memory	3072MB
Operating System	AIX*
Number of Disks	4

Network Configuration	
Type	100Mbps Switched Ethernet
Number of Segments	1 Segment Attached to a Switched Hub
Speed	100Mbps Full-Duplex Ethernet

3. Detailed R/3 Configuration

SAP R/3 Configuration	
SAP R/3 Version (Application)	SAP R/3 4.0 B
SAP R/3 Version (Kernel)	SAP R/3 4.0 B
Number of benchmark clients used	221

R/3 Module	Simulated Benchmark Users	Dialog Step / Hour	Average Response Time	Average** CPU Utilization of Application Servers	Average** CPU Utilization of Database Server	Average DB Response Time	Response Time Distribution
SD	221	66,000	1.97	99 %	99 %	d: 108 ms u: 342 ms	50.86 % under 2 seconds

** as in SAP Operating System Monitor

*** as in SAP Workload Monitor

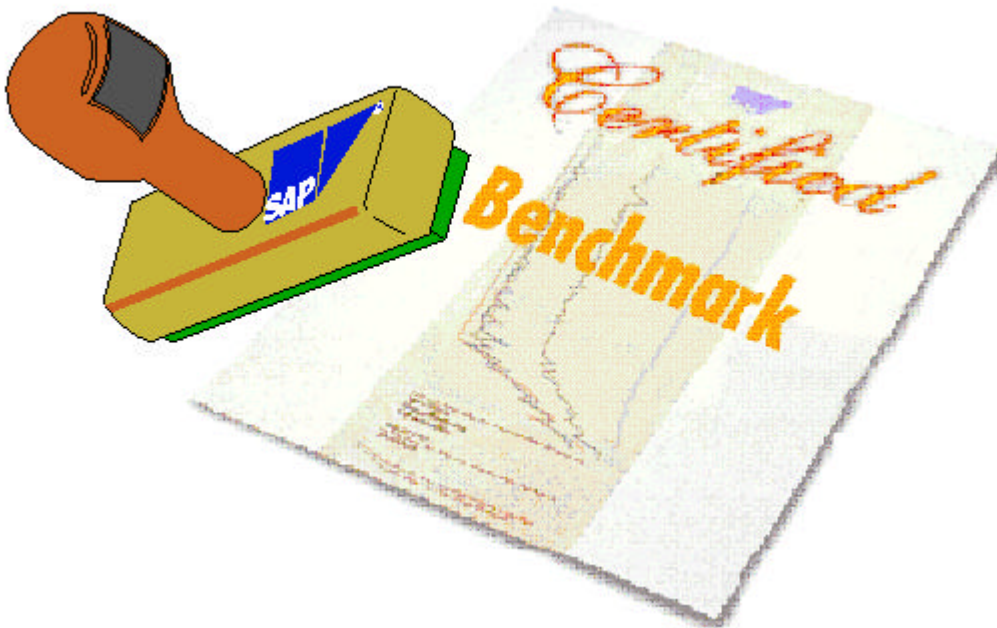
Hardware Disclosure		
Quantity	Part Number	Description
Database Servers (1)		
1	8680-8RY	IBM Netfinity 7000 M10
3	28L4735	IBM Netfinity 500MHz/2MB L2 Cache Processor
4	94G7385	IBM Netfinity 1024MB Memory Expansion Kit
3	01K7207	IBM ServeRAID-3H Ultra2 SCSI Adapter
1	86H2432	IBM EtherJet 100/10 PCI Adapter
8	3520-2RU	IBM Netfinity EXP15 Rack Storage Enclosure with Redundant Power
80	01K8054	IBM 9.1GB 10K Wide Ultra SCSI Hard Disk Drive

The SAP standard application benchmark performed on April 14, 1999, by IBM in Raleigh, NC, USA, was certified on April 23, 1999 with the following data:

Number of benchmark users:	221 SD (Sales & Distribution)
Average dialog response time:	1.97 seconds
Throughput:	1,100 SAPS (66,000 dialog steps/h)
Equivalent to (line items / hour):	22,000 processed order line items
Average DB request time (seconds):	0.108 (dialog) / 0.342 (update)
CPU utilization central server:	99%
Operating System central server:	Windows NT 4.0 EE
RDBMS:	Oracle 8.0.4.2
R/3 Release:	4.0 B
Total disk space:	655 GB

Configuration:

1 Central Server: IBM Netfinity 7000 M10, 4 processors SMP, Pentium III Xeon
500 MHz, 2 MB Second Level Cache, 4 GB main memory



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