

# IBM Netfinity 5500 M20 Server Demonstrates Superior Performance on the SAP R/3 Two-Tier SD Benchmark

April 30, 1999

Running the SAP\*\* R/3 Two-Tier Sales and Distribution (SD) Benchmark, the IBM Netfinity\* 5500 M20 set a performance record for servers configured with the 1MB L2 cache version of the 500MHz Pentium\*\* III Xeon\*\* processor. The IBM Netfinity 5500 M20 server achieved 200 SD Benchmark users with 1.92 seconds average dialog response time on Oracle\*\* 8.0.4 and Microsoft\*\* Windows NT\*\* Server 4.0 Enterprise Edition. This represents a throughput of 60,000 dialog steps per hour, which is equivalent to 20,000 processed order line items per hour. This result is the first on a server using four Intel\*\* 500MHz Pentium III Xeon processors with a 1MB L2 cache.

## The Benchmark Environment

The hardware configuration for the 200 SD benchmark user run consisted of one database server, an IBM Netfinity 5500 M20 server with four 500MHz Pentium III Xeon processors with 1MB L2 cache, 4GB of main memory, and 655GB of total disk space running Windows NT Server 4.0 Enterprise Edition with Service Pack 4, Oracle 8.0.4 and SAP's R/3 Release 4.0 B. The measured throughput was 60,000 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

<b>Certification Number</b>	1999012
<b>Hardware Partner</b>	International Business Machines Corporation
<b>Contact Name/Tel./Mail ID</b>	Phil Horwitz / horwitzp @ us.ibm.com
<b>R/3 Release</b>	4.0 B
<b>DBMS Version</b>	Oracle 8.0.4
<b>Date</b>	April 30, 1999
<b>Location</b>	Research Triangle Park, NC, USA
<b>Lead Engineers</b>	IBM: Phil Horwitz, Martha Centeno, Craig R. Smith
<b>Published</b>	Yes

## 2. Detailed Hardware and System Software Configuration

<b>Central Server</b>			
<b>System Name / Model</b>	IBM Netfinity 5500 M20		
<b>Processor Type / Clock Rate / Number of Processors</b>	Intel Pentium III Xeon 500MHz / 4		
<b>Cache Size / Level</b>	1MB / Level 2		
<b>Memory</b>	4096MB		
<b>Operating System</b>	Windows NT Server 4.0 Enterprise Edition with Service Pack 4		
<b>Database System</b>	Oracle 8.0.4		
<b>Number of Disks</b>	80 External, Total Disk Space: 655GB		
<b>I/O Subsystem</b>			
<b>Controller Number</b>	<b>Number of Disk Drives</b>	<b>RAID Level</b>	<b>Contents</b>
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

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

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

### 3. Detailed R/3 Configuration

<b>SAP R/3 Configuration</b>	
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	200

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	200	60,000	1.92	99 %	99 %	d: 0.056 s u: 0.201 s	56.15 % under 2 seconds

\*\* as in SAP Operating System Monitor

\*\*\* as in SAP Workload Monitor

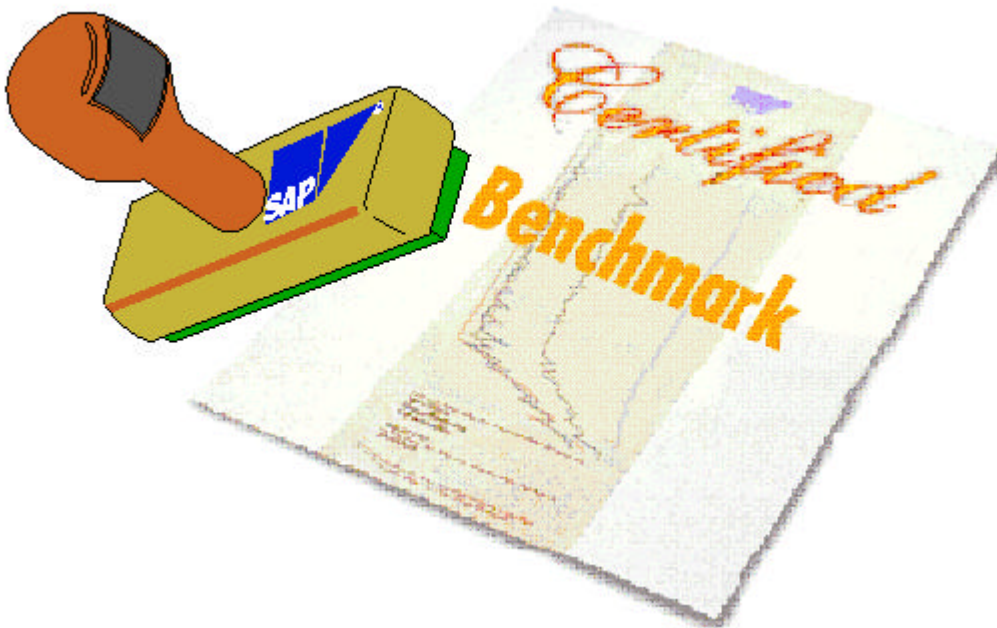
<b>Hardware Disclosure</b>		
Quantity	Part Number	Description
<b>Database Servers (1)</b>		
1	8662-4RY	IBM Netfinity 5500 M20
3	35L5014	IBM Netfinity 500MHz/1MB L2 Cache Processor
8	01K7262	IBM Netfinity 512MB Memory Expansion Kit
3	01K7207	IBM ServeRAID-3H Ultra2 SCSI Adapter
1	86H2432	IBM EtherJet 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
1	93069000	IBM Netfinity Rack

The SAP standard application benchmark performed on March 15, 1999, by IBM in Raleigh, NC, USA, was certified on April 30, 1999 with the following data:

Number of benchmark users:	200 SD (Sales & Distribution)
Average dialog response time:	1.92 seconds
Throughput:	1,000 SAPS (60,000 dialog steps/h)
Equivalent to (line items / hour):	20,000 processed order line items
Average DB request time (seconds):	0.056 (dialog) / 0.201 (update)
CPU utilization central server:	99%
Operating System central server:	Windows NT 4.0 EE
RDBMS:	Oracle 8.0.4
R/3 Release:	4.0 B
Total disk space:	655 GB

*Configuration:*

1 Central Server: IBM Netfinity 5500 M20, 4 processors SMP, Pentium III Xeon  
500 MHz, 1 MB Second Level Cache, 4 GB main memory



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