

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

The IBM Netfinity\* 7000 M10 has demonstrated leadership performance 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 255 SD Benchmark users with 1.95 seconds average dialog response time on Oracle\*\* 8.0.4 and Microsoft\*\* Windows NT\*\* Server 4.0. The measured throughput of 77,000 dialog steps per hour represents 25,670 fully processed order line items per hour. This is a new record for a four-way results using the Intel\*\* 550MHz/2MB Pentium\*\* III Xeon\*\* processor.

### The Benchmark Environment

The hardware configuration for the 255 SD benchmark user run consisted of one database server, an IBM Netfinity 7000 M10 server with four 550MHz Pentium III Xeon processors with 2MB L2 cache, 4GB of main memory, and 96GB of total disk space running Windows NT Server 4.0, Oracle 8.0.4 and SAP's R/3 SD Benchmark, Release 4.0 B. The measured throughput was 77,000 dialog steps per hour with an average CPU utilization of 99 percent for the central server. The central installation server ran Microsoft Windows NT Server 4.0.

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 Performance Laboratory in Research Triangle Park, NC, by IBM engineers.

### 1. General Information about Benchmark Environment

|                                  |   |
|----------------------------------|---|
| <b>Certification Number</b>      | 1999033   |
| <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>                      | October 14, 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 7000 M10                          |                   |                  |
| <b>Processor Type / Clock Rate / Number of Processors</b> | Intel Pentium III Xeon 550MHz / 4               |                   |                  |
| <b>Cache Size / Level</b>                                 | 2MB / Level 2                                   |                   |                  |
| <b>Memory</b>   | 4GB   |                   |                  |
| <b>Operating System</b>                                   | Windows NT Server 4.0                           |                   |                  |
| <b>Database System</b>                                    | Oracle 8.0.4                                    |                   |                  |
| <b>Number of Disks</b>                                    | 10 External, 1 Internal, Total Disk Space: 96GB |                   |                  |
| <b>I/O Subsystem</b>                                      |   |                   |                  |
| <b>Controller Number</b>                                  | <b>Number of Disk Drives</b>                    | <b>RAID Level</b> | <b>Contents</b>  |
| 1st ServeRAID-3HB Ch. 1                                   | 5 x 9.1GB External Drives                       | 0                 | SAPDATA          |
| 1st ServeRAID-3HB Ch. 2                                   | 5 x 9.1GB External Drives                       | 5                 | Oracle 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>   | 1024MB                          |
| <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 | 3             |

| R/3 Module | Simulated Benchmark Users | Dialog Step / Hour | Average Response Time | Average** CPU Utilization of Database Server | Average DB Response Time     | Response Time Distribution |
|------------|---------------------------|--------------------|-----------------------|--|------------------------------|----------------------------|
| SD         | 255                       | 77,000             | 1.95                  | 99%  | d: 0.014 sec<br>u: 0.086 sec | 58% under 2 seconds        |

\*\* as in SAP Operating System Monitor

\*\*\* as in SAP Workload Monitor

| Hardware Disclosure         |             |   |
|-----------------------------|-------------|---|
| Quantity                    | Part Number | Description   |
| <b>Database Servers (1)</b> |             |   |
| 1                           | 8680-3SY    | IBM Netfinity 7000 M10  |
| 3                           | 33L5109     | IBM Netfinity 550MHz/2MB L2 Cache Processor                     |
| 4                           | 01K8046     | IBM Netfinity 1024MB Memory Expansion Kit                       |
| 1                           | 01K8004     | Memory Card   |
| 1                           | 37L6086     | IBM ServeRAID-3HB Ultra2 SCSI Adapter                           |
| 1                           | 86H2432     | Ethernet 10/100 PCI Adapter                                     |
| 1                           | 3520-2RU    | IBM Netfinity EXP15 Rack Storage Enclosure with Redundant Power |
| 10                          | 01K8054     | 9.1GB 10K Wide Ultra SCSI Hard Disk Drive                       |
| 1                           | 9306900     | IBM Netfinity Rack  |
| 1                           | 94G6669     | Side Panel Kit  |



**SAP**  
**Standard Application Benchmarks**  
**Certification Confirmation**

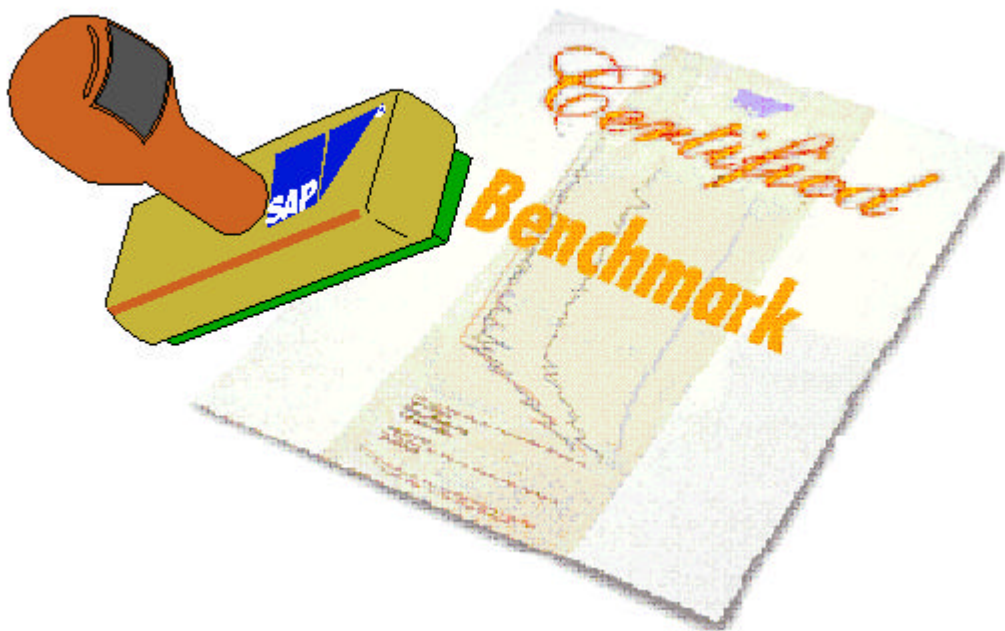
Certification  
Number  
1999033

The SAP standard application benchmark performed on October 14, 1999, by **IBM** in Raleigh, USA, was certified on October 22, 1999 with the following data:

|                                    |                                    |
|------------------------------------|------------------------------------|
| Number of benchmark users:         | 255 SD (Sales & Distribution)      |
| Average dialog response time:      | 1.95 seconds                       |
| Throughput:                        | 1,280 SAPS (77,000 dialog steps/h) |
| Equivalent to (line items / hour): | 25,670 processed order line items  |
| Average DB request time (seconds): | 0.014 (dialog) / 0.086 (update)    |
| CPU utilization central server:    | 99%                                |
| Operating System central server:   | Windows NT 4.0                     |
| RDBMS:                             | Oracle 8.0.4                       |
| R/3 Release:                       | 4.0 B                              |
| Total disk space:                  | 96 GB                              |

*Configuration:*

1 Central Server: IBM Netfinity 7000 M10, 4 processors SMP, Pentium III Xeon 550 MHz, 2 MB Second Level Cache, 4 GB main memory



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