

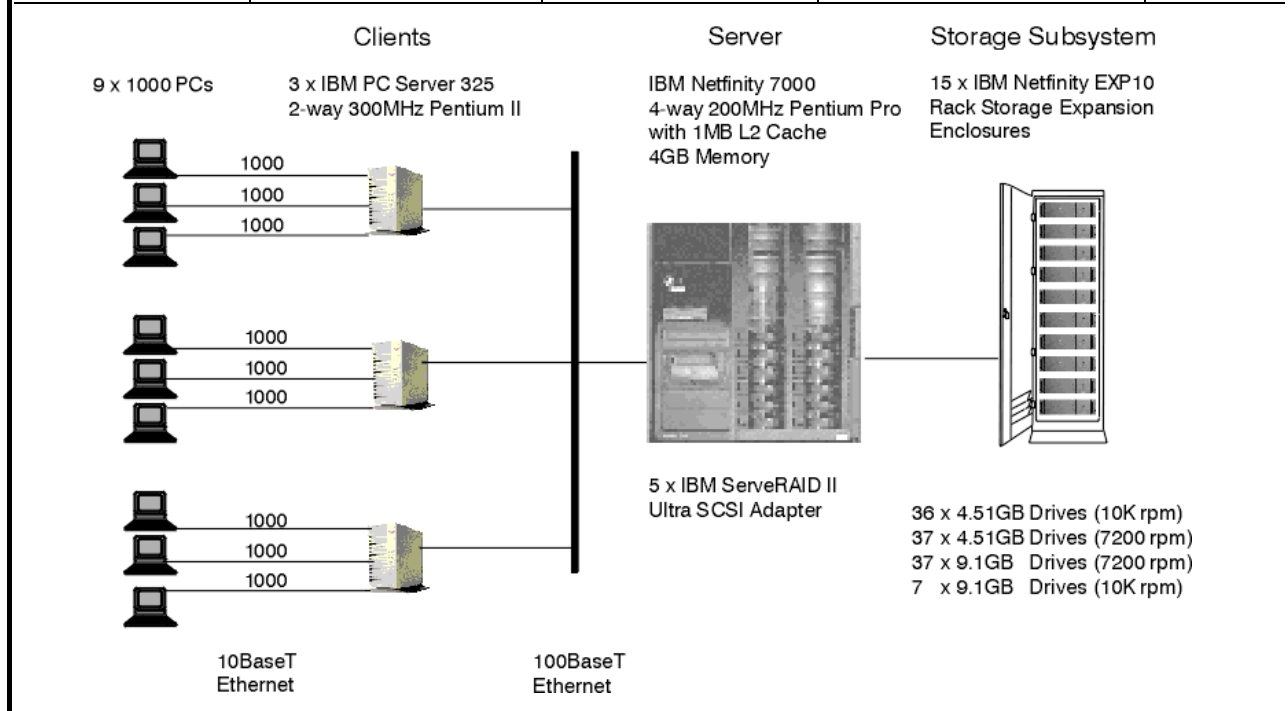


IBM® Netfinity™ 7000 C/S

TPC-C Rev 3.3

Report Date: 8 April 1998

| | | | | |
|---|---|---|------------------------|-----------------------|
| Total System Cost | | TPC-C Throughput | Price/Performance | Availability Date |
| \$425,795 | | 11,078.00 tpmC | \$38.44/tpmC | April 30, 1998 |
| Processors | Database Manager | Operating System | Other Software | Number of Users |
| 4 Pentium® Pro 200MHz 1MB L2 Cache | Microsoft® SQL Server 6.5 Enterprise Edition | Microsoft Windows® NT 4.0 Enterprise Edition | TUXEDO® 6.3 CFS | 9,000 |



| System Component | Qty | Server | Qty | Each of Three Clients |
|-------------------|-----|---------------------------|------|-----------------------------------|
| Processors | 4 | 200MHz Pentium Pro | 2 | 300MHz Pentium II |
| Cache | | 1MB L2 Cache | | 512KB L2 Cache |
| Memory | 1 | 4096MB | 1 | 384MB |
| Disk Controllers | 5 | IBM ServeRAID II Ultra | 1 | Wide Ultra SCSI Onboard |
| Disk Drives | 36 | 4.51GB (10000rpm) | 1 | 4.51GB Hard Disk |
| | 37 | 4.51GB (7200rpm) | | |
| | 37 | 9.1GB (7200rpm) | | |
| | 7 | 9.1GB (10000rpm) | | |
| Total Storage | | 729.63GB | | |
| Tape Drive | 1 | 20/40GB SCSI Tape Drive | | |
| Terminals | 1 | 14-inch Display | 1 | 14-inch Display |
| User Connectivity | 1 | NETLUX 8-Port 100Mbps Hub | 1239 | COMPEX 8-Port 10Mbps Ethernet Hub |

| IBM Corporation | | IBM Netfinity 7000 C/S | | TPC-C Revision 3.3 | | | |
|---|---------------------|-----------------------------------|----------------|---|------------|-------------------|--------------------------|
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| Description | Order Number | Third-Party Brand | Pricing | Unit Price | Qty | Ext. Price | 5-Yr. Maint.* |
| Server Hardware | | | | | | | |
| IBM Netfinity 7000 / 1MB L2 200MHz Pentium Pro | 8651-RH0 | | 1 | \$13,358 | 1 | \$13,358 | \$5,985 |
| PC Server SMP 200MHz / 1MB Processor Upgrade | 94G7147 | | 1 | 4,842 | 3 | 14,526 | 0 |
| Netfinity 1024MB Memory Expansion Kit | 94G7386 | | 1 | 9,852 | 4 | 39,408 | 0 |
| IBM ServeRAID II Ultra SCSI Adapter | 76H3584 | | 1 | 1,784 | 5 | 8,920 | 0 |
| IBM 3M External .8mm SCSI Cable | 01K8027 | | 1 | 45 | 15 | 675 | 0 |
| IBM Third SCSI Internal Channel Cable | 76H5400 | | 1 | 26 | 5 | 130 | 0 |
| IBM EtherJet 100/10 PCI Adapter | 86H2432 | | 1 | 78 | 1 | 78 | 0 |
| IBM G42 14" (13.2" Viewable) Color Monitor | 654000N | | 1 | 208 | 1 | 208 | 408 |
| 20/40GB SCSI Tape Drive | 76H0485 | | 1 | 3,157 | 1 | 3,157 | 0 |
| Netfinity Rack | 9306900 | | 1 | 1,695 | 2 | 3,390 | 0 |
| Side Panel Kit | 94G6669 | | 1 | 196 | 2 | 392 | 0 |
| Server Storage | | | | | | | |
| IBM Netfinity EXP10 Rack Storage Exp. Enclosure | 35201RU | | 1 | 2,698 | 15 | 40,470 | 27,000 |
| APC Smart-UPS 1400RMB | 94G6674 | | 1 | 1,120 | 1 | 1,120 | 0 |
| Netfinity EXP10 4.51GB Wide Ultra SCSI Drive | 01K7956 | | 1 | 736 | 37 | 27,232 | 0 |
| Netfinity EXP10 4.51GB 10K Wide Ultra SCSI Drive | 01K7960 | | 1 | 1,052 | 36 | 37,872 | 0 |
| Netfinity EXP10 9.1GB Wide Ultra SCSI Drive | 01K7959 | | 1 | 1,262 | 37 | 46,694 | 0 |
| Netfinity EXP10 9.1GB 10K Wide Ultra SCSI Drive | 01K7968 | | 1 | 1,683 | 7 | 11,781 | 0 |
| Subtotal | | | | | | 249,411 | \$33,393 |
| Server Software | | | | | | | |
| Microsoft SQL Server Enterprise Edition 6.5, unlimited user license | | Microsoft | 2 | 28,999 | 1 | \$28,999 | \$10,475 |
| Microsoft Windows NT Server Enterprise Edition 4.0, including 25 CALs | | Microsoft | 2 | 3,999 | 1 | 3,999 | 0 |
| Subtotal | | | | | | \$32,998 | \$10,475 |
| Client Hardware | | | | | | | |
| IBM PC Server 325 / 300MHz Pentium II | 8639-1RY | | 1 | 3,263 | 3 | 9,789 | 9,450 |
| IBM Netfinity 300MHz Upgrade with Pentium II | 10L5886 | | 1 | 1,079 | 3 | 3,237 | 0 |
| IBM Ultrastar 2XP 4.51GB Wide Ultra SCSI Drive | 76H2687 | | 1 | 631 | 3 | 1,893 | 0 |
| 128MB DIMMs | 94G6475 | | 1 | 1,188 | 6 | 7,128 | 0 |
| 64MB DIMMs | 94G6474 | | 1 | 377 | 3 | 1,131 | 0 |
| IBM EtherJet 100/10 PCI Adapter | 86H2432 | | 1 | 78 | 9 | 702 | 0 |
| IBM G42 14" (13.2" Viewable) Color Monitor | 654000N | | 1 | 208 | 3 | 624 | 1,224 |
| Subtotal | | | | | | \$24,504 | \$10,674 |
| Client Software | | | | | | | |
| Microsoft Windows NT Server 4.0, incl. 5 CALs | | Microsoft | 2 | 809 | 3 | 2,427 | 0 |
| Microsoft SQL Workstation, incl. programmer's toolkit | | Microsoft | 2 | 499 | 1 | 499 | 0 |
| Microsoft Visual C++ 32-bit edition (subscription) | | Microsoft | 2 | 499 | 1 | 499 | 0 |
| TUXEDO 6.3 Core Functionality Services for NT | | BEA | 3 | 3,000 | 3 | 9,000 | 6,750 |
| Subtotal | | | | | | \$12,425 | \$6,750 |
| User Connectivity | | | | | | | |
| COMPEX MicroHub/8-Port 10Mbps Hub** | DEH2924 | COMPEX | 4 | 35.85 | 1,239 | 44,418 | 0 |
| NetLUX 8-Port 100Mbps Hub** | NX-H8TX | NETLUX | 5 | 249 | 3 | 747 | 0 |
| Subtotal | | | | | | \$45,165 | \$0 |
| Total | | | | | | \$364,503 | \$61,292 |
| Notes: * The standard 3-year warranty and the extended warranty on all IBM hardware is for 7x24, on-site same day coverage. **10% or minimum 2 spares are added in place of on-site service (products have a 5-year return-to-vendor-warranty) Pricing: 1 - Merisel; 2 - Microsoft Corp.; 3 - BEA Systems; 4 - DataComm Warehouse; 5 - NETLUX | | | | Five-Year Cost of Ownership: \$425,795 tpmC Rating: 11,078 \$/ tpmC: 38.44 | | | |
| Audited by Francois Raab of Information Paradigm. | | | | | | | |
| Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated components. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchases are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing sections of the TPC benchmark specification. If you find that stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you. | | | | | | | |

Numerical Quantities Summary

| | | | |
|--|------------------------|--------------------------|-----------------------------------|
| MQTh, computed Maximum Qualified Throughput: | | | 11,078.00 tpmC |
| % throughput difference, reported and reproducibility runs : | | | 0.0026 % |
| Response Times (in seconds) | 90th Percentile | Average | Maximum |
| New-Order | 0.65 | 0.45 | 22.29 |
| Payment | 1.51 | 0.72 | 80.55 |
| Order-Status | 0.91 | 0.61 | 3.80 |
| Delivery (Interactive) | 0.30 | 0.30 | 2.04 |
| Delivery (Deferred) | 0.60 | 0.43 | 2.06 |
| Stock Level | 2.49 | 1.54 | 4.34 |
| Menu | 0.31 | 0.20 | 0.79 |
| Response time delay added for menu delay is 0.1 seconds. | | | |
| Response time delay added for response time delay is 0.1 seconds. | | | |
| | | | |
| Transaction Mix, in percent of total transactions | | Total Occurrences | Percent |
| New-Order | | 332,340 | 44.88 % |
| Payment | | 318,462 | 43.00 % |
| Order-Status | | 30,008 | 4.05 % |
| Delivery | | 29,983 | 4.05 % |
| Stock-Level | | 29,783 | 4.02 % |
| | | | |
| Keying/Think Times (in seconds) | Minimum | Average | Maximum |
| New-Order | 18.00 / 0.00 | 18.01 / 12.06 | 18.03 / 121.00 |
| Payment | 3.00 / 0.00 | 3.01 / 12.10 | 3.03 / 121.00 |
| Order Status | 2.00 / 0.00 | 2.01 / 10.14 | 2.03 / 99.33 |
| Delivery | 2.00 / 0.00 | 2.01 / 5.17 | 2.03 / 51.00 |
| Stock-Level | 2.00 / 0.00 | 2.01 / 5.04 | 2.02 / 45.78 |
| | | | |
| Test Duration | | | |
| Ramp-up time | | | 1 hour, 48 minutes, 41 seconds |
| Measurement interval | | | 30 minutes |
| Number of checkpoints in measurement interval | | | 1 |
| Checkpoint interval | | | 30 minutes |
| Number of transactions (all types) completed in measurement interval | | | 740,576 |