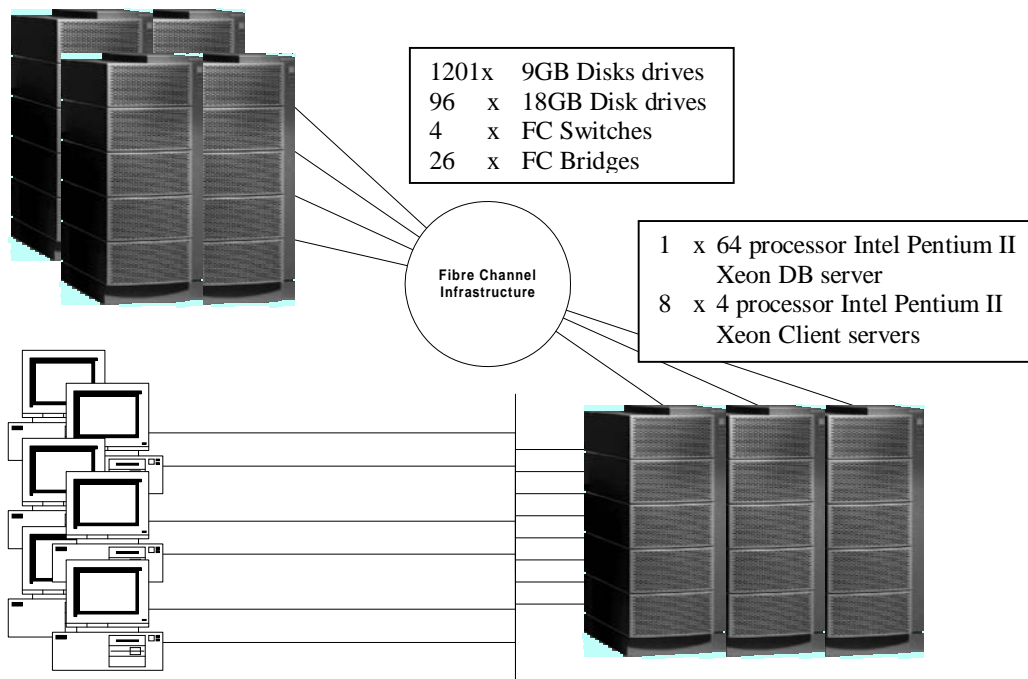


| | | | | | |
|--|--|---------------------------------|--|---|--|
| SEQUENT | | NUMA Center 2000 | | TPC-C Rev 3.4 | |
| ORACLE | | (C/S) | | Report Date | |
| | | | | 18-Dec-1998 | |
| Total System Cost | | TPC-C Throughput | | Price/Performance | |
| \$12,363,684 | | 93,900.85 | | \$131.67/tpmC | |
| | | | | Availability Date | |
| | | | | 15-Jun-1999 | |
| Processors | | Database Manager | | OS | |
| Other Software | | Number of Users | | | |
| 64 x Intel Pentium II Xeon Processors 405MHz | | Oracle 8.0.4 Enterprise Edition | | DYNIX/ptx 4.4.4 | |
| | | | | Tuxedo 6.3 CFS Microsoft Internet Information Server Microsoft Visual C++ | |
| | | | | 80,000 | |



| System Component | Server | | Each Client | |
|------------------|--------|-------------------------------|-------------|---------------------------------|
| Processors | 64 | Intel Pentium II Xeon® 405MHz | 4 | Intel Pentium II Xeon® @ 400MHz |
| Cache | | 2MB | | 512 KB |
| Memory | 1 | 64GB | 1 | 1GB |
| Disk Controllers | 32 | Fiber controllers | | |
| | 32 | SCSI controllers | 1 | Adaptec On-Board |
| Disk Drives | 1201 | 9 GB (8.473 GB useable) | 1 | 9GB |
| | 96 | 18GB disks (17.1 useable) | | |
| Total Storage | | 12582GB | | 9GB |
| Other | 15 | PCI 1-port Ethernet NIC | 1 | CD-ROM |
| | 1 | PCI 4-port Ethernet NIC | 4 | PCI 4-port Ethernet NIC |
| | 1 | Tape Drive | | |



NUMACenter 2000

TPC-C Rev 3.4
Report Date
18-Dec-1998

| Description | Part Number | Brand ¹ | Unit Price | Qty | Extended Price | 5 yr. Maint. Price |
|--|--------------|--------------------|------------|--------|---------------------|--------------------|
| Console | | | | | | |
| NUMA-Q Console the ethernet | CON-0000 | 1 | 6,500 | 1 | 6,500 | |
| Server Hardware | | | | | | |
| Enterprise (large) NUMA-Q cabinet | CABE-0000-00 | 1 | 6,500 | 4 | 26,000 | |
| Boot Pbay | EXP-PBAY-04 | 1 | 3,900 | 1 | 3,900 | |
| CDROM | CDR-0004-01 | 1 | 2,080 | 1 | 2,080 | |
| SCSI Pbay cable | CBL-0300-RL | 1 | 91 | 32 | 2,912 | |
| PCI SCSI Adapter | IOC-0120-51 | 1 | 715 | 32 | 22,880 | |
| Xeon Quad w/ IQ-LINK 405MHz 2MB | QUAD-0301 | 1 | 159,250 | 16 | 2,548,000 | |
| IQ Plus-IQ Link interconnect cable | CBL-PLUS-03 | 1 | 455 | 16 | 7,280 | |
| 8G Addon Memory for Xeon Quad | MEM-8100-00 | 1 | 127,400 | 6 | 764,400 | |
| Single port ethernet adapter | COM-0041-50 | 1 | 374 | 15 | 5,610 | |
| Four port ethernet adapter | COM-0040-50 | 1 | 975 | 1 | 975 | |
| Rev 4 Fibre Channel PCI Host adapter | IOC-0210-54 | 1 | 2612 | 32 | 83,584 | |
| Server Hardware total | | | | | 3,474,121 | |
| Storage Subsystem | | | | | | |
| 48 x 9GB disk Storage unit - Includes 1 FC Bridge, 4 PBAYs, Cables, Cabinet | DSK-0948-40 | 1 | 84,500 | 25 | 2,112,500 | |
| 48 x 18GB disk Storage unit - Includes 1 FC Bridge, 4 PBAYs, Cables, Cabinet | DSK-1848-40 | 1 | 123,500 | 2 | 247,000 | |
| 9gb Add-on disk drive | DSK-0009-40 | 1 | 1,690 | 1 | 1,690 | |
| Add-on PBAY | EXP-PBAY-00 | 1 | 3,900 | 7 | 27,300 | |
| Fibre Channel Switch | FCS-0016-02 | 1 | 32,435 | 4 | 129,740 | |
| Storage Subsystem total | | | | | 2,518,230 | |
| Server Hardware total | | | | | 5,992,351 | 1,198,470 |
| Server Software | | | | | | |
| DYNIX/ptx V4.4.2 CD-ROM Media (NAO) | PTX-C440-00 | 1 | 0 | 1 | 0 | |
| Sequent Volume Manager for Base Quad | SVM-444-001 | 1 | 3,750 | 1 | 3,750 | |
| Sequent Volume Manager for Additional Quads | SVM-444-ADD | 1 | 3,750 | 15 | 56,250 | |
| Server software subtotal | | | | | 60,000 | 12,000 |
| Oracle8 DataBase licenses w/ Parallel Server and Partitioning Options | ORA8.0.4 | 2 | 2,069,841 | 1 | 2,069,841 | 2,069,841 |
| Server Software total | | | | | 2,129,841 | 2,081,841 |
| Client Hardware | | | | | | |
| Xeon 4x 400MHz 512K cache 1G mem | NTM-N300-00 | 1 | 40,860 | 8 | 326,880 | |
| 4-port Ether | COM-0040-50 | 1 | 975 | 32 | 31,200 | |
| Client Hardware Subtotal | | | | | 358,080 | 71,616 |
| Client Software | | | | | | |
| MS Windows NT Server 4.0 w/5 CAL | OS-NT4-00 | 1 | 809 | 8 | 6,472 | 1,940 |
| Tuxedo 6.3 Core Functionality Services for NT | | 3 | 12,000 | 8 | 96,000 | 72,000 |
| Visual C++ 32 bit Edition | | Microsoft | 499 | 1 | 499 | 150 |
| Client Software subtotal | | | | | 102,971 | 74,090 |
| User Connectivity | | | | | | |
| COMPEX MicroHub/8 8+1 A11Port 10BaseT Hub (including 10% spare) | DEH2924 | Compex | 33 | 11,000 | 363,000 | |
| User Connectivity subtotal | | | | | 363,000 | |
| Total cost of hardware and software | | | | | 8,941,955 | 3,421,729 |
| Five-Year Cost of Ownership: | | | | | \$12,363,684 | |
| TPM-C rating | | | | | 93,900.85 | |
| \$/tpmC: | | | | | 131.67 | |

Audited by Tom Sawyer, Performance Metrics

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 specifications. If you find that the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.

¹ Pricing sources – 1=Sequent, 2=Oracle, 3=BEA

Numerical Quantities Summary for the Sequent NUMACentre 2000 NE300

| | | | |
|---|------------|-----------------------|----------------------|
| MQTh, computed Maximum Qualified Throughput | | 93,900.85tpm-C | |
| % throughput difference, reported & reproducibility runs | | <1% | |
| Response Times (in seconds) | Average | 90th | Max |
| - Neworder | 0.90 | 1.600 | 133.32 |
| - Payment | 0.71 | 1.300 | 89.23 |
| - Order Status | 0.76 | 1.400 | 6.15 |
| - Delivery (interactive portion) | 0.70 | 1.100 | 6.11 |
| - Delivery (deferred portion) | 1.01 | 1.493 | 228.20 |
| - Stock-Level | 1.15 | 2.100 | 6.94 |
| - Menu | 0.20 | 0.440 | 10.29 |
| Response time delay added for emulated components | | | Menu 0.1 Resp 0.1 |
| Transaction Mix , in percent of total transactions | | | |
| - New-Order | | | 44.78% |
| - Payment | | | 43.07% |
| - Order-Status | | | 4.04% |
| - Delivery | | | 4.04% |
| - Stock-Level | | | 4.05% |
| Keying/Think Times (in seconds), | Min | Average | Max |
| - New-Order | 18.88 0.00 | 18.89 12.02 | 19.22 120.39 |
| - Payment | 3.88 0.00 | 3.89 12.02 | 4.17 120.44 |
| - Order-Status | 2.88 0.00 | 2.89 10.07 | 3.13 100.86 |
| - Delivery | 2.88 0.00 | 2.89 5.03 | 3.08 50.37 |
| - Stock-Level | 2.88 0.00 | 2.89 5.03 | 3.09 50.36 |
| Test Duration | | | |
| - Ramp-up time | | | 46 minutes |
| - Measurement interval | | | 120 minutes |
| - Number of checkpoints | | | 4 |
| - Checkpoint interval | | | 30 minutes |
| - Number of transactions (all types) completed in measurement interval | | | 25,161,760 |