
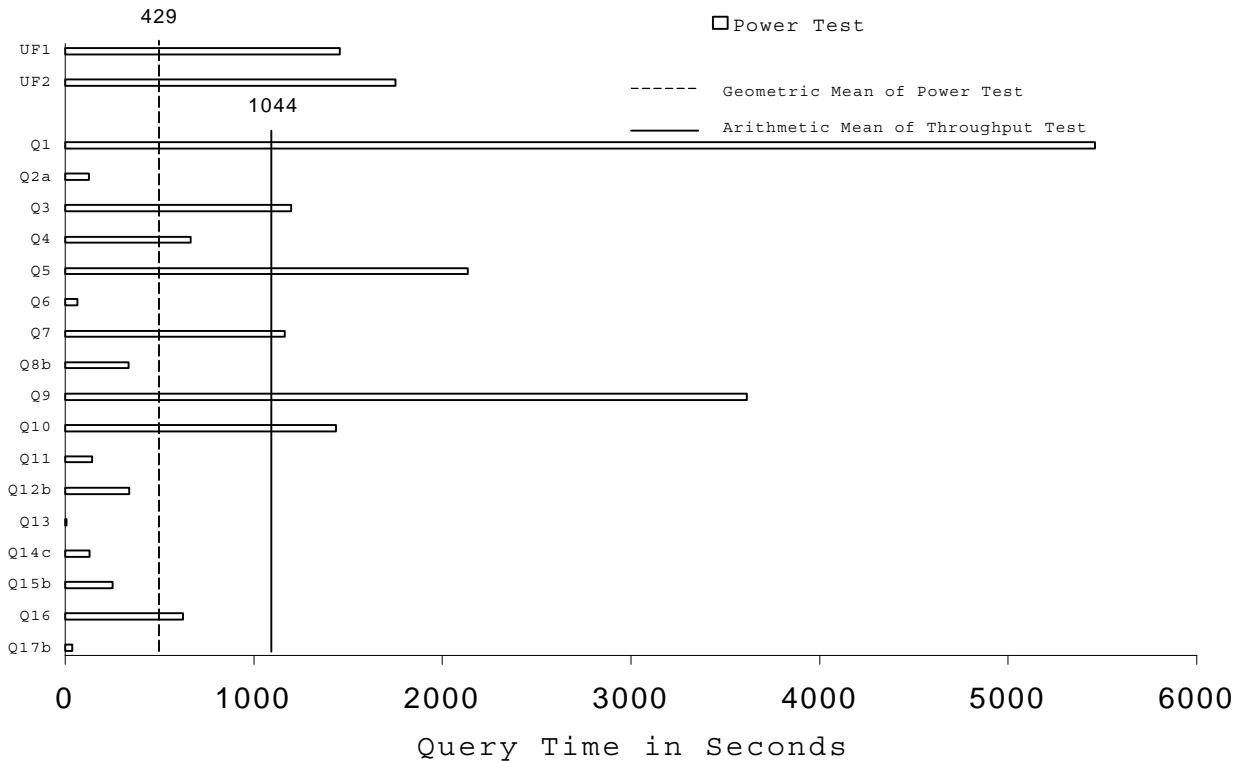



Executive Summary

|  |  |                              |  |                                   |  |                               |         |   |  |
|--|--|------------------------------|--|-----------------------------------|--|-------------------------------|---------|---|--|
|   |  | NUMA-Q 2000<br>using Oracle8 |  | TPC-D™ 1.2.3                      |  |                               |         |   |  |
|  |  |                              |  | REPORT DATE:<br>December 13, 1997 |  |                               |         |   |  |
| TOTAL SYSTEM COST  |  | TPC-D POWER                  |  | TPC-D THROUGHPUT                  |  | PRICE/PERFORMANCE             |         |   |  |
| \$5,246,772  |  | 2514.7<br>QppD@300GB         |  | 876.3<br>QthD@300GB               |  | \$3,534<br>\$/QphD@300GB      |         |   |  |
| DATABASE SIZE  |  | DATABASE MANAGER             |  | OPERATING SYSTEM                  |  | OTHER SOFTWARE                |         | AVAILABILITY DATE                         |  |
| 300GB  |  | Oracle8 v8.0.4               |  | DYNIX/ptx<br>4.4.1                |  | Sequent Volume<br>Manager 2.0 |         | February 27, 1997<br>(see note next page) |  |
|  <p>Legend:<br/>                 □ Power Test<br/>                 - - - - - Geometric Mean of Power Test<br/>                 ——— Arithmetic Mean of Throughput Test</p>                 |  |                              |  |                                   |  |                               |         |   |  |
| DATABASE LOAD TIME = 28 HOURS, 27 MINUTES, 0 SECONDS   |  |                              |  | DISK SIZE/DATABASE SIZE = 10.24   |  |                               | RAID: Y |   |  |
| SYSTEM CONFIGURATION   |  |                              |  |                                   |  |                               |         |   |  |
| <ul style="list-style-type: none"> <li>• 24 180Mhz Intel Pentium Pro Processors with 1MB Cache</li> <li>• 12 GB Memory</li> <li>• 12 CLARiiON DASS (20 Slot W/20 4G Drives)</li> <li>• 12 CLARiiON DASS (20 Slot W/20 9G Drives)</li> <li>• 21 4.5 GB Disk Drives</li> </ul> |  |                              |  |                                   |  |                               |         |   |  |

|   |              | NUMA-Q 2000<br>using Oracle8 |            | TPC-D™ 1.2.3<br><br>Report Date:<br>December 13, 1997 |  |
|--|--------------|------------------------------|------------|---|--|
| Product Description  | Model Number | Qty                          | Unit Price | Extended Price  |  |
| Enterprise (large) NUMA-Q cabinet  | CABE-0000-00 | 10                           | 13,000     | 130,000   |  |
| 3.5" Pbays with N+1 Redundant Power  | EXP-PBAY-04  | 2                            | 3,900      | 7,800   |  |
| Boot Pbay SCSI cable   | CBL-0300-RL  | 3                            | 91         | 273   |  |
| PCI - SCSI Controller for VLM  | IOC-0120-51  | 3                            | 715        | 2,145   |  |
| Quad with IQ Link-VLM 1GB Mem (P6 1M Procs)  | QUAD-0200    | 6                            | 223,600    | 1,341,600   |  |
| IQ Plus-IQ Link Interconnect Cables  | CBL-PLUS-05  | 6                            | 1,375      | 8,250   |  |
| 6GB Memory bundle  | MEM-6000     | 1                            | 319,410    | 319,410   |  |
| Single Port Ethernet Adapter   | COM-0041-50  | 1                            | 374        | 374   |  |
| Fibre Channel Bridges  | FCB-1000-01  | 12                           | 17,550     | 210,600   |  |
| Fibre Channel HUBs   | FCL-LKIT-01  | 6                            | 10,400     | 62,400  |  |
| Fibre Channel PCI Host Adapters  | IOC-0110-51  | 18                           | 3,250      | 58,500  |  |
| NUMA-Q Console with ethernet   | CON-0000     | 1                            | 6,000      | 6,000   |  |
| 7.5M Terminated SCSI Cable Bridge to wide SCSI device  | CBL-0750-B3  | 72                           | 179        | 12,888  |  |
| 20M, Multi Mode Fibre Channel Cables with duplex SC connector  | CBL-2000-F1  | 18                           | 125        | 2,250   |  |
| NON STORAGE HARDWARE SUBTOTAL  |              |                              |            | 2,162,490   |  |
| 4.5 GB Disks in 3.5" Pbay Carrier  | DSK-4000-33  | 21                           | 1,457      | 30,597  |  |
| CLARiiON DASS (20 Slot W/20 4G Drives)   | DSK-0500-20  | 12                           | 52,000     | 624,000   |  |
| CLARiiON DASS (20 Slot W/20 9G Drives)   | DSK-0500-30  | 12                           | 79,300     | 951,600   |  |
| STORAGE SUBTOTAL   |              |                              |            | 1,606,197   |  |
| DYNIX/ptx V4.4 CD-ROM Media (NAO)<br>Includes:ptx/TCP.IP, ptx/LAN, ptx/SYNC, ptx/Windows   | PTX-C440-00  | 1                            | -          | -   |  |
| Sequent Volume Manager for the Base Quad   | SVM-4100-001 | 1                            | 5,000      | 5,000   |  |
| Sequent Volume Manager for Additional Quads  | SVM-4100-ADD | 5                            | 4,857      | 24,285  |  |
| Oracle8 Server—Enterprise Edition (v8.0.4) w/Partitioning Opt.   | A22684       | 1                            | 300,960    | 300,960   |  |
| SOFTWARE SUBTOTAL  |              |                              |            | 330,245   |  |
| HARDWARE AND SOFTWARE SUBTOTAL   |              |                              |            | 4,098,932   |  |
| Five Year Sequent Customer Support for NUMA-Q 2000   |              |                              |            | 748,000   |  |
| Five Year Oracle Customer Support for Oracle8  |              |                              |            | 399,840   |  |
| CUSTOMER SUPPORT SUBTOTAL  |              |                              |            | 1,147,840   |  |
| Five Year Cost of Ownership  |              |                              |            | 5,246,772   |  |
| Audited by: Francois Raab, Information Paradigm, Inc.  |              |                              |            |   |  |
| Notes:   |              |                              |            |   |  |
| <ul style="list-style-type: none"> <li>• Hardware and Sequent Software is available immediately.</li> <li>• Oracle8 v8.0.4 available February 27, 1998.</li> </ul> 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. |              |                              |            |   |  |



# Numerical Quantities

TPC-D™ Rev. 1.2.3

Report Date:  
December 13, 1997

## Measurement Results:

|   |   |                   |
|---|---|-------------------|
| Database Scaling (SF/Size)                    | = | 300               |
| Total Data Storage/Database Size              | = | 10.24             |
| Database Load Time                            | = | 28 Hrs, 27 M, 0 S |
| Query Streams for Throughput Test (S)         | = | 0                 |
| TPC-D Power Metric (QppD@300GB)               | = | 2514.7            |
| TPC-D Throughput Metric (QthD@300GB)          | = | 876.3             |
| TPC-D Composite Metric (QphD@300GB)           | = | 1484.5            |
| Total System Price Over five years            | = | \$5,246,772       |
| TPC-D Power Throughput Metric (\$/QphD@300GB) | = | \$3,534           |

## Measurement Intervals:

Measurement Interval in Throughput Test (T<sub>s</sub>)            20,952 Seconds

## Duration of Stream Execution:

| Stream ID | Seed       | Start Date | Start Time | End Date | End Time | Total Time |
|-----------|------------|------------|------------|----------|----------|------------|
| Stream 00 | 2127447133 | 12/13/97   | 19:50:33   | 12/14/97 | 01:39:45 | 05:49:12   |
| UF1       |            | 12/13/97   | 19:50:33   | 12/13/97 | 20:14:50 | 00:24:17   |
| UF2       |            | 12/14/97   | 01:10:32   | 12/14/97 | 01:39:45 | 00:29:13   |

## TPC-D Timing Intervals (in seconds):

| Q1     | Q2a   | Q3     | Q4    | Q5     | Q6   | Q7     | Q8b   | Q9     |
|--------|-------|--------|-------|--------|------|--------|-------|--------|
| 5462.0 | 127.0 | 1197.3 | 664.7 | 2134.2 | 65.5 | 1163.0 | 338.1 | 3615.9 |

| Q10    | Q11   | Q12b  | Q13 | Q14c  | Q15b  | Q16   | Q17b | UF1    | UF2    |
|--------|-------|-------|-----|-------|-------|-------|------|--------|--------|
| 1436.2 | 143.7 | 338.9 | 6.6 | 130.3 | 251.5 | 625.7 | 40.0 | 1457.1 | 1752.9 |