



# Sun Fire™ V 440 Server with Sybase IQ 12.5 Single Application Server

TPC-H Rev.2.0

Report Date: May 9, 2005  
Revision Date: July 25, 2005

Total System Cost

Composite Query per Hour Metric

Price/Performance

\$49,294.55

2882.6  
QphH@ 100GB

\$ 17  
per QphH@ 100GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

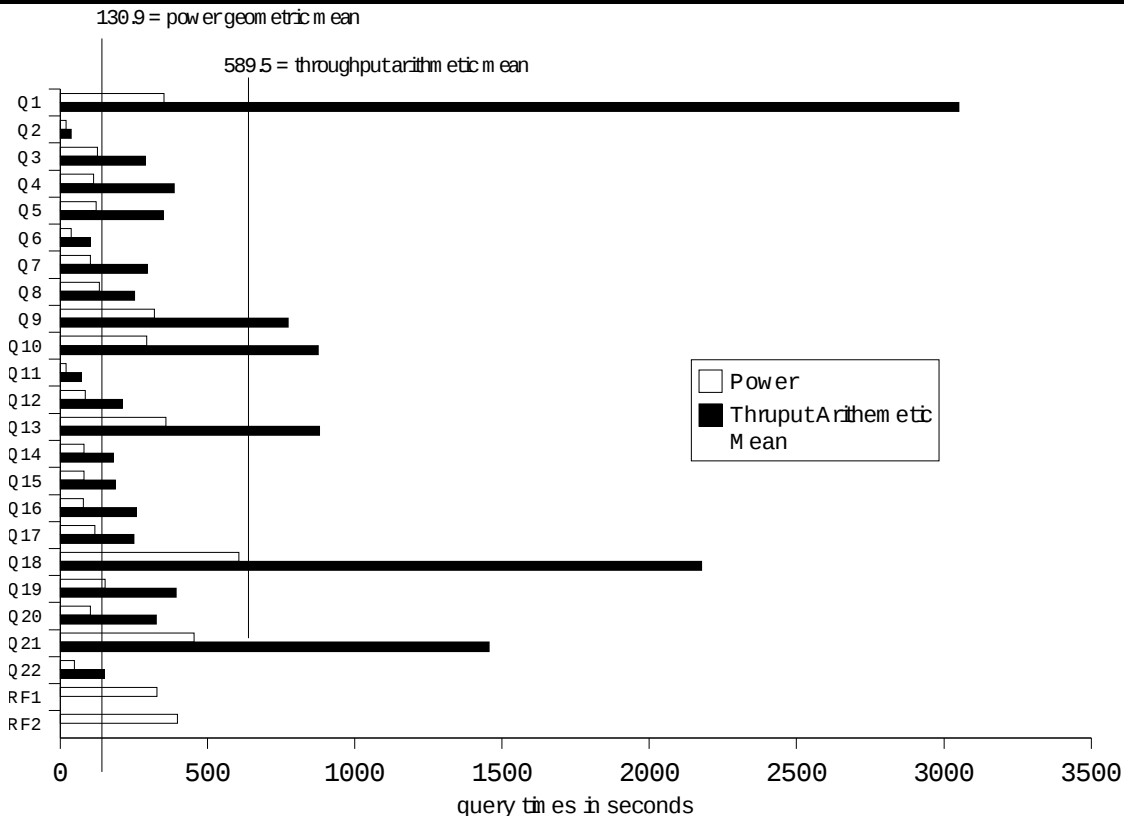
100GB

Sybase IQ 12.5  
Single Application  
Server

Solaris 10

Solaris Volume  
Manager

May 9, 2005



Database Load Time = 2hr 17m 14.9sec

Load Includes Backup: N

Total Storage/Database Size = 2.72

RAID (Base tables): RAID 1

RAID (Base tables and auxiliary data structures): RAID 1

RAID (All): N

## System Configuration:

Sun Fire V 440 Server with

4 UltraSPARC III 1.6 GHz processors

16 GB memory

4 x 73GB (10K RPM) internal disks

Total Storage: 272 GB

(in this calculation 1 GB is defined as 1024 \* 1024 \* 1024)



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| Description                                                          | Part Number     | Source | Unit Price | Qty | Ext. Price | 3 Yr. Maint. |
|----------------------------------------------------------------------|-----------------|--------|------------|-----|------------|--------------|
| <b>Server Hardware</b>                                               |                 |        |            |     |            |              |
| Sun Fire V440 4x1.6GHz CPUs, 16GB memory, 4x73GB disk drives         | A42-XHB4B1-16HD | 1      | 33,995.00  | 1   | 33,995.00  |              |
| 3 Year Gold Warranty Upgrade - V440 Server (includes internal disks) | W90-A42-3G      | 1      | 5,832.00   | 1   |            | 5,832.00     |
| Sun Discount                                                         |                 | 1      |            |     | -5,099.25  | -2,041.20    |
| Server Hardware Subtotal                                             |                 |        |            |     | 28,895.75  | 3,790.80     |
| <b>External Storage</b>                                              |                 |        |            |     |            |              |
| NONE                                                                 |                 |        |            |     |            |              |
| Storage Subtotal                                                     |                 |        |            |     | 0.00       | .00          |
| <b>Server Software</b>                                               |                 |        |            |     |            |              |
| Sybase IQ M Single App Svr, per cpu                                  | 11467           | 2      | 2,595.00   | 4   | 10,380.00  |              |
| Sybase IQ 3 Years Extended Support 24 x 7, per cpu                   | 98477           | 2      | 1,557      | 4   |            | 6,228.00     |
| Sybase Discount                                                      |                 | 2      |            |     | 0.00       |              |
| Server Software Subtotal                                             |                 |        |            |     | 10,380.00  | 6,228.00     |
| Total                                                                |                 |        |            |     | 39,275.75  | 10,018.80    |
| 3 Yr. Cost                                                           |                 |        |            |     | 49,294.55  |              |
| QphH@ 1000GB                                                         |                 |        |            |     | 2,882.6    |              |
| \$QphH@ 100GB                                                        |                 |        |            |     | \$17       |              |

Service for Sun products is from Sun Microsystems, Inc.  
Service for Sybase products is from Sybase Inc.

## Notes (Source):

1. Sun Microsystems Inc.
2. Sybase Inc.
3. Price quotes provided in Appendix G
4. The pricing of the Sybase IQ Single Application Server was found to be an "insignificant deviation" of Clause 0.2 by the General Council. This was corrected by increasing the visibility of Sybase IQ Single Application Server on the Web.

Audited by: Brad A skins, InfoSizing, Inc. (www.sizing.com )

Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the standard components. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchase 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](mailto:pricing@tpc.org). Thank you.



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## Numerical Quantities

### Measurement Results:

|                                                      |                       |
|------------------------------------------------------|-----------------------|
| Database Scale Factor                                | = 100GB               |
| Total Data Storage / Database Size                   | = 2.72                |
| Start of database load time                          | = 2004-10-27 20:32:47 |
| End of database load time                            | = 2004-10-27 22:50:36 |
| Database Load Time                                   | = 2hr17m149sec        |
| Query Streams for Throughput Test                    | = 5                   |
| TPC-H Power                                          | = 2750.2              |
| TPC-H Throughput                                     | = 3021.3              |
| TPC-H Composite Query-per-Hour Rating (QphH @ 100GB) | = 2882.6              |
| Total System Price Over 3 Years                      | = \$49,294.55         |
| TPC-H Price/Performance Metric (\$/QphH @ 100GB)     | = \$17                |

### Measurement Intervals:

|                                              |                  |
|----------------------------------------------|------------------|
| Measurement Interval in Throughput Test (Ts) | = 13,107 seconds |
|----------------------------------------------|------------------|

### Duration of Stream Execution:

| Stream ID | Seed       | Start Date   | Start Time | End Date     | End Time | Duration |
|-----------|------------|--------------|------------|--------------|----------|----------|
| Stream 00 | 1027225036 | Oct 27, 2004 | 22:51:38   | Oct 28, 2004 | 00:07:27 | 1:15:49  |
| Stream 01 | 1027225037 | Oct 28, 2004 | 00:07:28   | Oct 28, 2004 | 03:44:49 | 3:37:21  |
| Stream 02 | 1027225038 | Oct 28, 2004 | 00:07:28   | Oct 28, 2004 | 03:42:19 | 3:34:51  |
| Stream 03 | 1027225039 | Oct 28, 2004 | 00:07:28   | Oct 28, 2004 | 03:40:18 | 3:32:50  |
| Stream 04 | 1027225040 | Oct 28, 2004 | 00:07:28   | Oct 28, 2004 | 03:45:55 | 3:38:27  |
| Stream 05 | 1027225041 | Oct 28, 2004 | 00:07:28   | Oct 28, 2004 | 03:45:02 | 3:37:34  |
| Refresh   |            | Oct 28, 2004 | 00:07:28   | Oct 28, 2004 | 03:15:38 | 3:8:10   |



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TPC-H Timing Intervals (in seconds)

|           | Q 1     | Q 2   | Q 3    | Q 4    | Q 5    | Q 6    | Q 7    | Q 8    | Q 9    | Q 10    | Q 11   | Q 12   |
|-----------|---------|-------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|
| Stream 00 | 352.81  | 19.36 | 127.47 | 114.16 | 122.93 | 38.34  | 103.64 | 133.08 | 319.93 | 294.76  | 20.91  | 84.58  |
| Stream 01 | 3060.45 | 63.95 | 383.52 | 178.49 | 281.64 | 60.82  | 239.49 | 154.46 | 663.27 | 831.24  | 66.86  | 346.4  |
| Stream 02 | 2864.89 | 57.68 | 328.97 | 293.62 | 217.48 | 131.32 | 185.14 | 345.42 | 937.04 | 887.58  | 72.78  | 180.4  |
| Stream 03 | 3580.96 | 29.86 | 323.42 | 361.88 | 472.39 | 90.46  | 256.14 | 380.26 | 756.65 | 766.77  | 35.35  | 178.95 |
| Stream 04 | 2894.58 | 14.53 | 171.68 | 719.7  | 577.86 | 74.94  | 337.69 | 206.7  | 785.69 | 1187.39 | 50.2   | 152.51 |
| Stream 05 | 2851.62 | 26.25 | 238.39 | 383.02 | 206.53 | 161.95 | 458.66 | 181.8  | 730.23 | 713.98  | 135.84 | 194.48 |
| Minimum   | 2851.62 | 14.53 | 171.68 | 178.49 | 206.53 | 60.82  | 185.14 | 154.46 | 663.27 | 713.98  | 35.35  | 152.51 |
| Average   | 3050.50 | 38.46 | 289.20 | 387.34 | 351.18 | 103.90 | 295.43 | 253.73 | 774.57 | 877.39  | 72.21  | 210.55 |
| Maximum   | 3580.96 | 63.95 | 383.52 | 719.70 | 577.86 | 161.95 | 458.66 | 380.26 | 937.04 | 1187.39 | 135.84 | 346.40 |

|           | Q 13    | Q 14   | Q 15   | Q 16   | Q 17   | Q 18    | Q 19   | Q 20   | Q 21    | Q 22   | RF1    | RF2    |
|-----------|---------|--------|--------|--------|--------|---------|--------|--------|---------|--------|--------|--------|
| Stream 00 | 358.74  | 80.29  | 81.81  | 78.41  | 118    | 606.45  | 153.35 | 102.73 | 455.09  | 47.8   | 328.48 | 399.25 |
| Stream 01 | 631.55  | 101.16 | 169.05 | 322.18 | 283.33 | 2651.38 | 407.78 | 306.45 | 1742.89 | 92.64  | 774.48 | 691.84 |
| Stream 02 | 736.29  | 287.32 | 205.76 | 333.1  | 436.67 | 2158.52 | 389.37 | 428.52 | 1260.46 | 141.84 | 595.64 | 774    |
| Stream 03 | 980.35  | 216.25 | 102.33 | 234.77 | 202.63 | 2261.1  | 397.88 | 154.84 | 838.37  | 145.43 | 637.63 | 751.63 |
| Stream 04 | 871.45  | 175.27 | 200.9  | 209.19 | 140.49 | 1908.29 | 519.68 | 116.12 | 1696.47 | 91.64  | 490.48 | 658.74 |
| Stream 05 | 1183.71 | 120.83 | 257.18 | 200.92 | 186.02 | 1912.74 | 252.77 | 628.06 | 1749.19 | 279.67 | 509.74 | 596.88 |
| Minimum   | 631.55  | 101.16 | 102.33 | 200.92 | 140.49 | 1908.29 | 252.77 | 116.12 | 838.37  | 91.64  | 490.48 | 596.88 |
| Average   | 880.67  | 180.16 | 187.04 | 260.03 | 249.83 | 2178.40 | 393.50 | 326.80 | 1457.48 | 150.24 | 601.59 | 694.62 |
| Maximum   | 1183.71 | 287.32 | 257.18 | 333.10 | 436.67 | 2651.38 | 519.68 | 628.06 | 1749.19 | 279.67 | 774.48 | 774.00 |