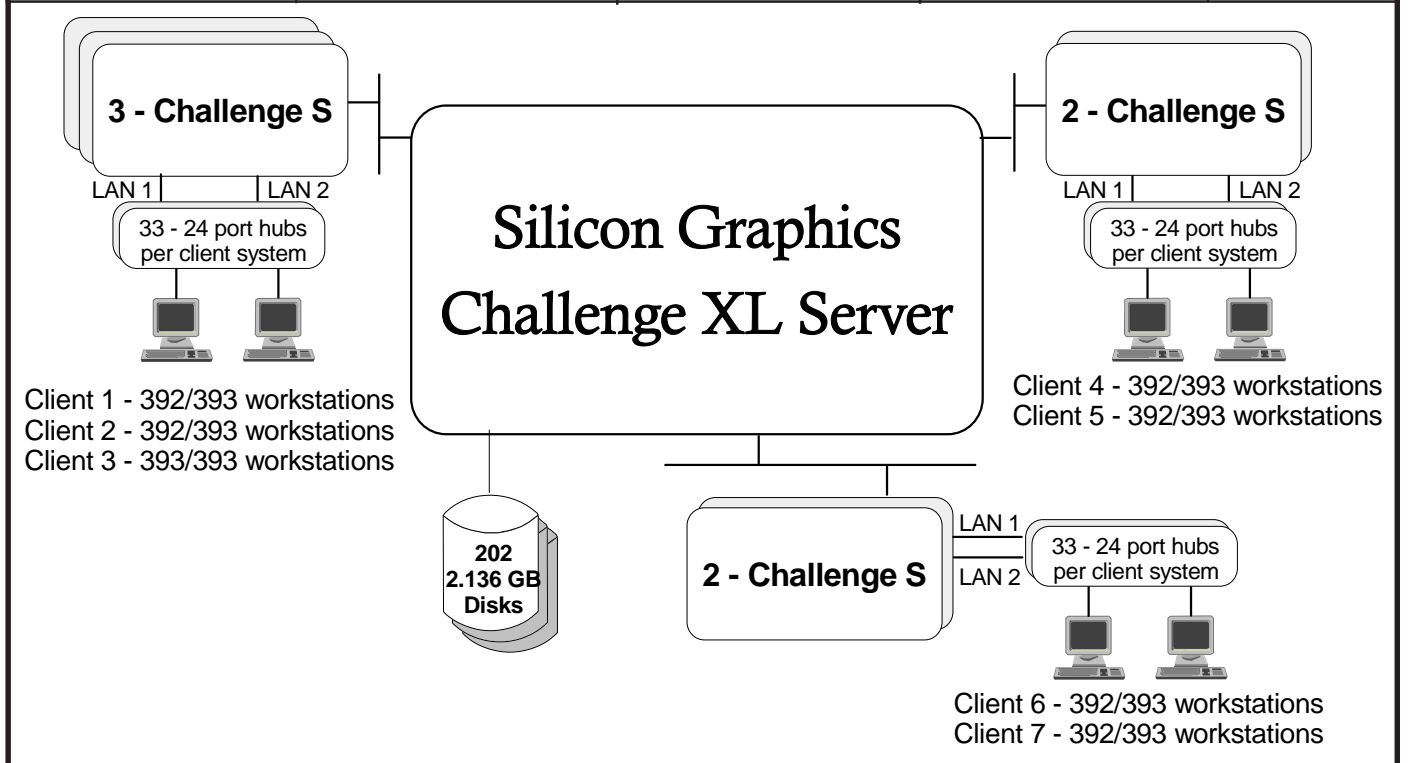


|                                       |   |                   |   |
|---------------------------------------|---|-------------------|---|
| Silicon Graphics<br>Informix Software | <b>Silicon Graphics Challenge XL Server</b><br>C/S Configuration - Seven Challenge S front-ends |                   | TPC-C Rev 3.0<br>Report Date:<br>6 Nov 1995 |
| Total System Cost                     | TPC-C Throughput  | Price/Performance | Availability Date                           |
| \$3,024,897                           | 6,313.78 tpmC   | \$479 per tpmC    | 28 Feb 96                                   |
| Processors                            | Database Manager  | Operating System  | Other Software                              |
| 16 R4400<br>250 MHz                   | INFORMIX-<br>OnLine<br>Dynamic Server<br>version 7.11.UD1                                       | IRIX 6.2          | IMC TUXEDO<br>Transaction Monitor<br>v4.2.2 |
|                                       |   |                   | Number of Users<br>5,500                    |



| System Components     | Server   |  | Client(s) |  |
|-----------------------|----------|--|-----------|--|
|                       | Quantity | Type   | Quantity  | Type   |
| Processors            | 16       | R4400 250 MHz                                | 1         | R4400 175 MHz per client                     |
| Cache Memory          |          | 16 KB Instruction and Data<br>4 MB Secondary |           | 16 KB Instruction and Data<br>1 MB Secondary |
| Memory                |          | 2,048 MB                                     |           | 256 MB per client                            |
| Disk Controllers      | 8        | SCSI2 Fast/Wide Interfaces                   | 1         | SCSI interface per client                    |
| Disk Drives           | 202      | 2.136 GB SCSI                                | 1         | 1.0 GB per client                            |
| Total Storage         |          | 431.503 GB                                   |           |  |
| Tape Drives           | 1        | 7 GB, 8mm internal tape                      |           |  |
| Terminals             | 1        | System Console                               | 1         | System Console per client                    |
| Terminal Connectivity |          |  | 5,500     | Indy R4600 Workstations total                |
|                       |          |  | 33        | 24 port hubs per client<br>(plus 10% spares) |

|                                       |   |                         |
|---------------------------------------|---|-------------------------|
| Silicon Graphics<br>Informix Software | Silicon Graphics Challenge XL Server<br>Client/Server Configuration | TPC-C Rev 3.0           |
|                                       |   | Report Date: 6 Nov 1995 |

| Description                                 | Part Number    | Unit Price         | Quantity | Extended Price        | 5 Year Support      |
|---|----------------|--------------------|----------|-----------------------|---------------------|
| Challenge XL Server; 16 CPU, 250 MHz R4400  | 49816-S4       | \$488,800          | 1        | \$488,800.00          | \$218,673.00        |
| 2 GB Super Density Memory 8-way intlv w/ECC | FTO-64UP2GB-D8 | 213,000            | 1        | 213,000.00            | 25,501.00           |
| Power Channel-2 Controller                  | HU-PC2         | 12,000             | 3        | 36,000.00             | 14,663.00           |
| SCSI2 Fast/Wide Interface Card              | P-S-HIOSCSI    | 3,500              | 8        | 28,000.00             | 13,110.00           |
| 680 MB Quad speed CD-ROM                    | P8-CDROM-rX    | 1,200              | 1        | 1,200.00              | 920.00              |
| 7 GB Internal 8mm tape drive                | P8-S-8MM       | 5,500              | 1        | 5,500.00              | 2,329.00            |
| CHALLENGE Vault XL SCSI Expansion Rack      | P-S-VXL-12     | 9,500              | 2        | 19,000.00             | 3,738.00            |
| Main Rack SCSIbox - 8 x 2 GB disks          | P-S-B8X2D-M    | 30,000             | 1        | 30,000.00             | 3,967.00            |
| CHALLENGE Vault XL SCSIbox - 8 x 2 GB disks | P-S-B8X2D-X    | 30,000             | 24       | 720,000.00            | 91,240.00           |
| 2 GB SCSI-2 FWD for all Challenge systems   | P8-S-2D        | 3,700              | 1        | 3,700.00              | 518.00              |
| 2 GB SCSI-2 FWD System Disk                 | FTO-SD*-2DNC   | 0                  | 1        | 0.00                  | 0.00                |
| Destination Kit for XL Series               | DK-C2-001      | 0                  | 1        | 0.00                  | 0.00                |
| Destination Kit for XL vault                | DK-T2-001      | 0                  | 1        | 0.00                  | 0.00                |
| Operating System Software & Manuals         | SC4-SD4-6.2    | 0                  | 1        | 0.00                  | 0.00                |
| IRIX development options of IRIX 6.2        | SC4-IDO-6.2    | 1,200              | 1        | 1,200.00              | 6,000.00            |
| Software options support                    | CS-SWCARE-DEV  | 1,200              | 1        | 1,200.00              | 6,000.00            |
| Challenge S; 1 CPU, 175 MHz, 64 MB memory   | CH-S175-1G64   | 14,900             | 7        | 104,300.00            | 25,800.00           |
| 64 MB memory upgrade                        | HU-M64A        | 5,300              | 21       | 111,300.00            | 0.00                |
| GIO Ethernet Card for Challenge S           | CC2-E++1.0     | 625                | 7        | 4,375.00              | 0.00                |
| ULTRA SlimLine 24 Port Hub                  | HTI HP-HUB 24L | 318                | 253      | 80,454.00             | 0.00                |
| IMC Tuxedo 4.2.2 Transaction Monitor        |                | 3,500              | 7        | 24,500.00             | 18,375.00           |
| INFORMIX-OnLine RT (5,000+ users)           |                | 702,000            | 1        | 702,000.00            | 168,480.00          |
| INFORMIX-ESQL/C RT (5,000+ users)           |                | 117,000            | 1        | 117,000.00            | 28,080.00           |
| INFORMIX-OnLine Development (1 user)        |                | 1,500              | 1        | 1,500.00              | 1,080.00            |
| INFORMIX -ESQL/C Development (1 user)       |                | 375                | 1        | 375.00                | 300.00              |
| <b>Grand Totals</b>                         |                |                    |          | <b>\$2,693,404.00</b> | <b>\$628,774.00</b> |
| Sgi Service Discount                        |                |                    |          |                       | (38,665.90)         |
| Sgi Challenge XL Discount                   |                |                    |          | (247,616.00)          |                     |
| Sgi Challenge S Discount                    |                |                    |          | (10,998.75)           |                     |
| <b>Grand Totals after Discounts</b>         |                |                    |          | <b>\$2,434,789.25</b> | <b>\$590,108.10</b> |
| <b>Five Year Cost of Ownership</b>          |                | <b>\$3,024,897</b> |          |                       |                     |
| tpmC  |                | <b>6,313.78</b>    |          |                       |                     |
| \$/tmpC                                     |                | <b>\$479</b>       |          |                       |                     |

Notes:

Audited by Tom Sawyer of Performance Metrics, Inc.

**Numerical Quantities Summary**  
**Silicon Graphics Challenge XL Server**  
**INFORMIX-OnLine Dynamic Server version 7.11.UD1**

MQTh, Computed Maximum Qualified Throughput: 6,313.78

**Transaction Mix**  
**(% of Total Transactions)**

|              |             |
|--------------|-------------|
| New-Order    | 44.8000000% |
| Payment      | 43.0900000% |
| Order-Status | 3.9977058%  |
| Delivery     | 4.0300000%  |
| Stock-Level  | 4.0800000%  |

**Response Time (seconds)**

| Transaction            | Average | 90th<br>Percentile | Maximum |
|------------------------|---------|--------------------|---------|
| New-Order              | 2.64    | 2.89               | 63.92   |
| Payment                | 1.26    | 1.50               | 54.03   |
| Order-Status           | 1.24    | 1.73               | 16.83   |
| Delivery (interactive) | 0.19    | 0.33               | 1.56    |
| Delivery (deferred)    | 5.32    | 7.91               | 62.33   |
| Stock-Level            | 9.17    | 14.26              | 73.99   |
| Menu                   |         |                    |         |

**Keying/Think Times (seconds)**

|                        | Minimum      | Average       | Maximum        |
|------------------------|--------------|---------------|----------------|
| New-Order              | 18.00 / 0.10 | 18.00 / 12.03 | 18.00 / 120.00 |
| Payment                | 3.00 / 0.10  | 3.00 / 12.15  | 3.00 / 120.00  |
| Order-Status           | 2.00 / 0.10  | 2.00 / 10.15  | 2.00 / 100.00  |
| Delivery (interactive) | 2.00 / 0.10  | 2.00 / 5.01   | 2.00 / 50.00   |
| Stock-Level            | 2.00 / 0.10  | 2.00 / 5.00   | 2.00 / 44.80   |

| <b>Test Duration:</b>            |               |
|----------------------------------|---------------|
| Ramp-up time                     | 30.03 minutes |
| Measurement interval (MI)        | 30 minutes    |
| Transactions completed during MI | 420,191       |
| Ramp-down time                   | 9 minutes     |
| <b>Checkpointing:</b>            |               |
| Number of checkpoints            | 1             |
| Checkpoint interval              | 30 minutes    |
| <b>Reproducibility:</b>          |               |
| Reported measurement             | 6,313.78      |
| Reproducibility measurement      | 6,257.67      |
| Difference                       | 0.89%         |