## Database Server Configuration

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Database Manager</th>
<th>Processors/Cores/Threads</th>
<th>Memory</th>
</tr>
</thead>
</table>

### Initial Database Size

**4,568 GB**

### Redundancy Level: 1

**RAID-10**

### Database Storage

**675 x 73GB 15K rpm**

**6 x 146GB 15K rpm**

### TPC-E Throughput

**1165.56 tpsE**

### Price/Performance

**$783.56 USD per tpsE**

### Availability Date

**April 13, 2009**

### Total System Cost

**$913,284 USD**

### TPC-E 1.7.0

### TPC Pricing 1.4.0

### Report Date

**April 13, 2009**

### Server Configuration Diagram

- **Client**: ES3220L Server
- **Server**: ES7000 Model 7600R
- **Storage**: RTS 4200 RAID

### Client ES3220L Server
- 2 x 2.00GHz Intel® Quad-core Xeon™
- w/ 4MB L2 cache,
- 4 GB memory,
- 1 x 73GB internal disk,
- 1x PCI VI-over-FC cntrls,
- 2 Inbuilt 1Gb Eth. cntrls.

### Server ES7000 Model 7600R
- 8 x Intel® Hex-core Xeon™ X7460 2.66GHz w/ 16MB L3 cache
- 256 GB memory,
- 2 x 36GB SAS disk, internal ,
- 1 x PCI SAS RAID cntrl, internal,
- 8 x PCI Fibre Channel cntrls,
- 1x PCI VI-over-FC cntrls,
- 4 Inbuilt 1Gb Eth. cntrls. (0 used).

### Storage RTS 4200 RAID Storage
- 675 x 73GB
- 6 x 146GB
- External Fibre Channel disks, 17 x FC RAID controllers
### ES7000 Model 7600R Enterprise Server (8s)

**Description** | Part Number | Price Source | Unit Price | Qty | Extended Price | 3-yr. Maint. Price |
---|---|---|---|---|---|---|
Server Hardware: | ES7/7600R 6x X7460, 16GB | ES7763083-100 | 1 | $66,729 | $66,729 | **$3,384** |
Snap-in 1U Filler | RCX4219421-1UP | 1 | $20 | $20 |
Snap-In 3U Filler | RCX4219421-3UP | 1 | $22 | $22 |
42U Shipping Config | RCX4219421-SC1 | 1 | $115 | $115 |
Power Strip | PWH4243001-SU | 1 | $392 | $392 |
Power Strip | PWH4243001-SVD | 1 | $403 | $403 |
42U Rack | RCX4219421-FSS | 1 | $2,769 | $2,769 |
Rack Trim Kit | RCX4219421-OTK | 1 | $350 | $350 |
2 x 36GB Hard Drive | FAC7760361-IDK | 1 | $2,083 | $2,083 |
Initial Memory - 8GB | FAC7120403-ICA | 1 | $1,378 | $2,756 |
Memory Expansion - 8GB | FAC7120403-8GB | 1 | $585 | $16,380 |
Emulex LPE12002 - Disk HBA and VI | FCH5940203-PCE | 1 | $3,986 | $39,860 |
Subtotal | | | | **$132,175** | **$3,384** |
Server Software: | Windows Server 2008 Enterprise Edition (x64) | P7Z-03168 | 2 | $2,310 | $2,310 |
SQL Server 2008 Enterprise x64 Edition | 810-07507 | 2 | $23,432 | $87,146 |
SRVC: Microsoft Problem Resolution Services | | | 2 | | $245 |
Subtotal | | | | **$189,766** | **$245** |
Storage Hardware: | Rack Mount Kit | RTS400012-HK | 1 | $220 | $220 |
Disk Enclosure with (15) 73GB Disk - 30 Pack | RTS4307315-30P | S | $333,144 | **$333,144** |
Disk for RAID Controller | RTS4307315-4FH | S | $484,210 | **$101,840** |
Dual HAID Controller for Log | RTS4228801-T2 | 1 | $15,840 | **$15,840** |
UPS for Log Disk | UPS120 | 5 | $1,000 | $1,000 |
SAN Manager Software | RTS44101-SAN | 1 | $2,246 | **$2,246** |
146 GB Disk Drive | RTS4314615-4FH | 1 | $650 | $3,960 |
RAID Controller 1x1 - 15 Pack | RTS4228801-P15 | 1 | $104,277 | **$104,277** |
AC Power Cord | RTS400740-CBL | 1 | $11 | $34 |
Subtotal | | | | **$566,001** |
Infrastructure | 8 port KVM switch | KVM9083101-SWC | 1 | $1,300 | **$1,300** |
16 Port Ethernet Switch (Netgear) | FSI16 | 4 | $65 | **$260** |
Rack mount LCD w/1U Drawer | MON2145-LCD | 1 | $2,700 | **$2,700** |
Rack mount keyboard, w/touchpad, USB | KBR210501-USB | 1 | $275 | **$275** |
42U Rack - No Doors | RM421940-FRM | 1 | $1,286 | **$6,429** |
8 Outlet Power Strip | SH9-FPW | 1 | $170 | **$3,400** |
Power Cord | USE1936-LCB | 1 | $90 | **$1,800** |
Fiber Channel Cable | GCFAZLMM20-M | 3 | $35 | **$50** |
Ethernet Cable | GCP0988650-5L | 3 | $12 | **$20** |
Subtotal | | | | **$16,760** |
Client Hardware: | ES7/3220 Quad Core Server 2.0 GHz | ESL3220611-200 | 1 | $787 | **$787** |
ES/3220 Brand Kit | ESL322001-UNI | 1 | $19 | **$19** |
VersaRail Mount Kit | ESL322001-RVR | 1 | $249 | **$249** |
Processor Upgrade | GPJ3220812-200 | 1 | $389 | **$389** |
Hard Drive - 73GB 15K SAS | HDP73115-SAS | 1 | $299 | **$299** |
Memory - 4GB (8 x 512 DIMMs) | DIM3220083-4GB | 1 | $628 | **$628** |
Bezel | ESL322001-BZL | 1 | **$19** |
SAS HAID Controller | HA322004-P6L | 1 | **$299** |
CD/DVD Drive | DVW322001-INT | 1 | **$99** |
CD/DVD Drive Cable | CBL322001-CD | 1 | **$20** |
USB to Cabs KVM Adapter | KVM9002031-CNV | 1 | **$250** |
Subtotal | | | | **$3,038** |
Client Software: | Windows Server 2008 Standard Edition (x64) | P7Z-04165 | 2 | $711 | **$711** |
Unisys Product Pricing (List Pricing) - Michael Helfner (215)-986-4757 | | | | **$711** |
where Price Source = 1 or S | | | | **$0** |
Total USD | | | | **$908,451** |

**Notes:**
1. HW & SW maintenance at 24 x 7 w/ 4 hr. max. response time for spares.
2. Price Source: 1 = Unisys Product Price, 2 = Unisys Maintenance Price, 3 = GoCables, 4 = NewEgg, 5 = IQstore

**TPC-E 1.7.0**
**TPC Pricing 1.4.0**

Report Date: April 13, 2009

Benchmark results and test methodology audited by Lorna Livingtree of Performance Metrics, Inc.
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<thead>
<tr>
<th>Configured Customers:</th>
<th>Reported Throughput:</th>
<th>1165.56</th>
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<td><strong>Average</strong></td>
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<td><strong>Transaction Count</strong></td>
<td><strong>Mix</strong></td>
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**Test Duration and Timing**

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<th>Description</th>
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<tbody>
<tr>
<td>Ramp-up Time (hh:mm:ss)</td>
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<td>Measurement Interval (hh:mm:ss)</td>
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