### ES7000 Orion 540 Enterprise Server (16P)

**Total System Cost**

<table>
<thead>
<tr>
<th>Processors/Cores/Threads</th>
<th>Database Manager</th>
<th>Operating System</th>
<th>Other Software</th>
<th>Number of Users</th>
</tr>
</thead>
</table>

**System Components**

- **ES7000 Orion 540 Enterprise Server**
  - 16 x 1.5GHz Intel® Xeon™ MP w/ 1MB L3 cache,
  - 64 GB memory,
  - 1 x 30GB internal disk,
  - 7 x PCI Fibre Channel controllers,
  - 4 x PCI cLAN controllers

- **ES3020L Server**
  - 2 x 2.4GHz Intel® Xeon™
  - w/ 512KB L2 cache,
  - 2 GB memory,
  - 1 x 18GB internal disk,
  - 2 Inbuilt 10/100/1000Mb Ethernet (1 used),
  - 1 x PCI cLAN controller

- **Storage**
  - USS2200/RS2000 & CX200
  - 412 x 18GB + 14 x 73GB
  - Hot-Pluggable,
  - External Fibre Channel disks,
  - 8 x FC RAID controllers

**TPC-C Rev. 5.1**

- **Report Date**
  - May 16, 2003

- **Availability Date**
  - May 30, 2003

**TPC-C Throughput**

- $986,622

**Price Performance**

- $6.11 / tpmC

**Availability Date**

- May 30, 2003
## ES7000 Orion 540
Enterprise Server (16P)

### Server Hardware:
- **SYS:** ES7000-540, 16x 1.5GHz, 128MB Cach, 64GB Mem. (Included)
- **Inbuilt Disk Controller, 1x 30GB Disk (boot media):** Included
- **Sentinel System Management S/W and Media:** Included
- **CTRL:** Fibre Channel HBA, 2-Port, 64-bit PCI
- **CTRL:** eLAN, PCI Host Adapter & Cable
- **I/F:** Monitor, 15-inch Color, Kybd, Mice & Cable

### Server Software:
- **O/S:** Windows 2003 Srvr, Datacenter Edtn, 16P, 1yr Lsusb.
- **Server Subtotal:** $444,086
  - $55,956

### Storage Hardware:
- **DISK:** 18GB Drive, 15Krpm, 2Gb FC, SCA
  - JBD201815-2F
  - JBD201815-2F
- **DISK:** 73GB Drive, 10Krpm, 2Gb FC, SCA
  - CJR7310-2G
- **DISK:** 73GB Drive, 10Krpm, 2Gb FC, SCA
  - CJR7310-2G
- **RCK:** FC 2G Storage, Standard, Copper/Copper I/F
  - JBD2002-SA
- **RCK:** FC 2G Storage, Standard, Optical/Copper I/F
  - JBD2011-SA
- **CTRL:** Symmetric Disk Vrt, 2x2GHz, 512MB Mem
  - RMS20100-ELS
- **CTRL:** USS, Fibre Channel HBA, 1-Port, 64-bit PCI
  - RMS20701-TAR
- **APP:** Unisys Storage Sentinel 2200 SDV Software
  - USS10300-SW
- **APP:** Storage Sentinel SDV SW, 10TB License
  - USS20310-LIC
- **CTRL:** USS, Fibre Channel HBA, 1-Port, 64-bit PCI
  - RMS20701-TAR
- **APP:** Microsoft SQL Server 2000 Enterprise Edtn, 16P
  - SQL200316-LX
- **SRVC:** Microsoft Database Server Support Package*
  - PRO-PRORS-16U-01

### Notes:
- Inbuilt Disk Controller, 1x 30GB Disk (boot media) Included
- **$46,313**
- **$1,425**
- **$1,520**
- **$3,197**
- **$1,748**
- **$1,748**
- **$5,502**
- **$33,012**

### Client Hardware:
- **SYS:** ES3020L w/ 1x 2.4GHz Proc., 0MB Mem
  - ELS30201-240
- **MEM:** 2GB, 2x 1GB DDR DRAM PCI133ECC
  - DIM3000022-2GB
- **RCK:** ESL0265 Disk Backpanel, 1x4
  - HBP020101-51
- **DISK:** 10Krpm U160 3.5 Internal
  - HDM18110-DC4
- **CTRL:** eLAN, PCI Host Adapter & Cable
  - PCI10001-CXG
- **RCK:** ES3020L Universal Rack Kit
  - ESL3020-VRL

### Client Software:
- **O/S:** Microsoft Windows 2000 Server
  - C11-00821
- **ACC:** Microsoft Visual C++ Standard
  - 254-00170

### Computer Resolutions Large Volume Discount
- **Total:** $1,017,608
  - ($162,006)

### Notes:
1. 3rd Party Brand & Pricing: 1 = CRI Product Price, Unisys Maintenance Price

### Three Year Cost of Ownership:
- **$986,622**
- **161,542.04**
- **$6.11**

**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 assumption 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 benchmarks 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.**

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**Server Subtotal:** $444,086

**Storage Subtotal:** $548,437

**Client Subtotal:** $25,085

**Total:** $1,017,608

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**Server Subtotal:** $55,956

**Storage Subtotal:** $69,832

**Client Subtotal:** $5,232

**Total:** $131,020
Numerical Quantities Summary

MQTh, Computed Maximum Qualified Throughput:  161,542.04  tpmC

Response Times, in seconds

<table>
<thead>
<tr>
<th>Transaction</th>
<th>90th %ile</th>
<th>Average</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>New-Order</td>
<td>0.57</td>
<td>0.41</td>
<td>36.58</td>
</tr>
<tr>
<td>Payment</td>
<td>0.53</td>
<td>0.36</td>
<td>29.30</td>
</tr>
<tr>
<td>Order-Status</td>
<td>0.54</td>
<td>0.37</td>
<td>23.20</td>
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<tr>
<td>Delivery (interactive portion)</td>
<td>0.42</td>
<td>0.27</td>
<td>4.31</td>
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<tr>
<td>Delivery (deferred portion)</td>
<td>0.28</td>
<td>0.21</td>
<td>32.27</td>
</tr>
<tr>
<td>Stock-Level</td>
<td>1.06</td>
<td>0.78</td>
<td>34.91</td>
</tr>
<tr>
<td>Menu</td>
<td>0.43</td>
<td>0.27</td>
<td>4.31</td>
</tr>
</tbody>
</table>

Response time delay added for emulated components, in seconds

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RT Response time</td>
<td>0.1</td>
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<tr>
<td>Menu Response time</td>
<td>0.1</td>
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</tbody>
</table>

Transaction Mix, in percent of total transactions

<table>
<thead>
<tr>
<th>Transaction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New Order</td>
<td>44.93%</td>
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<tr>
<td>Payment</td>
<td>43.02%</td>
</tr>
<tr>
<td>Order-Status</td>
<td>4.00%</td>
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<tr>
<td>Delivery (interactive portion)</td>
<td>4.01%</td>
</tr>
<tr>
<td>Stock-Level</td>
<td>4.01%</td>
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</tbody>
</table>

Keying / Think Time Times, in seconds

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Minimum</th>
<th>Average</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Order</td>
<td>18.01 / 0.00</td>
<td>18.01 / 12.03</td>
<td>18.03 / 120.31</td>
</tr>
<tr>
<td>Payment</td>
<td>3.01 / 0.00</td>
<td>3.01 / 12.03</td>
<td>3.03 / 120.31</td>
</tr>
<tr>
<td>Order-Status</td>
<td>2.01 / 0.00</td>
<td>2.01 / 10.07</td>
<td>2.03 / 100.70</td>
</tr>
<tr>
<td>Delivery (interactive portion)</td>
<td>2.01 / 0.00</td>
<td>2.01 / 5.07</td>
<td>2.03 / 50.61</td>
</tr>
<tr>
<td>Stock-Level</td>
<td>2.01 / 0.00</td>
<td>2.01 / 5.06</td>
<td>2.03 / 50.61</td>
</tr>
</tbody>
</table>

Test Duration

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramp up time</td>
<td>90 minutes</td>
</tr>
<tr>
<td>Measurement interval (M)</td>
<td>120 minutes</td>
</tr>
<tr>
<td>Transactions (all types) completed during measurement interval</td>
<td>43,137,403</td>
</tr>
<tr>
<td>Ramp-down time</td>
<td>36 minutes</td>
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</tbody>
</table>

Checkpointing:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of checkpoints</td>
<td>4</td>
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<tr>
<td>Checkpoint interval</td>
<td>30 minutes</td>
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