<table>
<thead>
<tr>
<th>IBM @server xSeries 360 c/s with Microsoft SQL Server 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPC-C Rev. 5.0</td>
</tr>
<tr>
<td>Report Date: March 11, 2002</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Total System Cost</th>
<th>TPC-C Throughput</th>
<th>Price/Performance</th>
<th>Availability Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>$101,450</td>
<td>23,027.66 tpmC</td>
<td>$4.41 / tpmC</td>
<td>Sept. 10, 2002</td>
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<table>
<thead>
<tr>
<th>System Component</th>
<th>Qty</th>
<th>Server</th>
<th>Qty</th>
<th>Client</th>
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</thead>
<tbody>
<tr>
<td>Processors</td>
<td>2</td>
<td>1.6GHz Xeon MP w/1MB L3 Cache</td>
<td>2</td>
<td>1.13GHz Pentium III w/512KB L2 Cache</td>
</tr>
<tr>
<td>Cache</td>
<td>4</td>
<td>512MB ECC SDRAM</td>
<td>2</td>
<td>128MB</td>
</tr>
<tr>
<td>Memory</td>
<td>2</td>
<td>256MB ECC SDRAM</td>
<td>2</td>
<td>256MB</td>
</tr>
<tr>
<td>Disk Controllers</td>
<td>3</td>
<td>Mylex eXtremeRAID 2000 Adapter</td>
<td>1</td>
<td>Ultra160 SCSI Interface</td>
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<tr>
<td>Disk Drives</td>
<td>111</td>
<td>18.2GB (10000 rpm)</td>
<td>1</td>
<td>18.2GB Hard Disk</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>36.4GB (10000 rpm)</td>
<td></td>
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<tr>
<td>Total Storage</td>
<td></td>
<td>1879.23GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tape Drive</td>
<td>1</td>
<td>20/40GB SCSI Tape Drive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Order Number</td>
<td>Third-Party Brand</td>
<td>Pricing</td>
<td>Unit Price</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>--------------</td>
<td>-------------------</td>
<td>---------</td>
<td>------------</td>
</tr>
<tr>
<td><strong>Server Hardware</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>IBM @server xSeries 360</td>
<td>8686-3RX</td>
<td>IBM</td>
<td>1</td>
<td>$20,999</td>
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<tr>
<td>Two 1.6GHz/1MB Xeon MP Processor</td>
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<td></td>
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<tr>
<td>Four 512MB ECC SDRAM RDIMMs</td>
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<td></td>
<td></td>
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<tr>
<td>Two 36.4GB 10K Ultra160 SCSI Drives</td>
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<td>Netfinity 4.2M Ultra2 SCSI Cable</td>
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<td>IBM</td>
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<td>IBM UPS 500</td>
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<tr>
<td>E54 14&quot; (13.8&quot; Viewable) Color Monitor*</td>
<td>633147N</td>
<td>IBM</td>
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<td>149</td>
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<tr>
<td>20/40GB Internal SCSI Tape Drive</td>
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<td>IBM</td>
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<tr>
<td>NetBAY42 Standard Rack Cabinet</td>
<td>9306421</td>
<td>IBM</td>
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<td>1,610</td>
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<td><strong>Storage Hardware</strong></td>
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<td>Netfinity EXP300 Rack Storage Enclosure*</td>
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<tr>
<td><strong>Server Software</strong></td>
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<tr>
<td>Microsoft SQL Server 2000 Standard Edition</td>
<td>228-01079</td>
<td>Microsoft</td>
<td>2</td>
<td>4,999</td>
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<tr>
<td>Microsoft Windows 2000 Server</td>
<td>C11-00821</td>
<td>Microsoft</td>
<td>2</td>
<td>738</td>
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<tr>
<td>Three-Year Maintenance for Software</td>
<td>Microsoft</td>
<td>2</td>
<td>2</td>
<td>2,095</td>
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<tr>
<td><strong>Client Hardware</strong></td>
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<tr>
<td>IBM @server xSeries 220 *</td>
<td>8666-31X</td>
<td>IBM</td>
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<tr>
<td>One 128MB 133MHz ECC SDRAM RDIMM</td>
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<tr>
<td>1.13GHz/512KB Pentium III Processor</td>
<td>32P0651</td>
<td>IBM</td>
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<td>18.2GB 10K Ultra160 SCSI Drive</td>
<td>06P5754</td>
<td>IBM</td>
<td>1</td>
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<tr>
<td>E54 15&quot; (13.8&quot; Viewable) Color Monitor*</td>
<td>633147N</td>
<td>IBM</td>
<td>1</td>
<td>149</td>
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<tr>
<td><strong>Client Software</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microsoft Windows 2000 Server with COM+</td>
<td>C11-00821</td>
<td>Microsoft</td>
<td>2</td>
<td>738</td>
</tr>
<tr>
<td>Microsoft Visual C++ Professional 6.0 Win32</td>
<td>048-00317</td>
<td>Microsoft</td>
<td>2</td>
<td>549</td>
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<tr>
<td><strong>User Connectivity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Cross-Over Cable (7 ft.) incl. 2 spares</td>
<td>CBLC57</td>
<td></td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>Large volume discount of 14% on IBM Hardware; prices will vary if purchased separately.</strong></td>
<td>1</td>
<td></td>
<td>11,770</td>
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</tr>
</tbody>
</table>

Notes: * The standard 3-year warranties on IBM hardware have been upgraded to 7x24, 4-hour response time coverage.
** Five-year warranty. *** 10% or minimum 2 spares are added in place of on-site service (products have a 5-year return-to-vendor-warranty).

Pricing: 1 - IBM Corp.; 2 - Microsoft Corp.; 3 - Computer Giants; 4 - LanAdapters.com
Audited by Bradley J. Askins of InfoSizing, Inc.

| Three-Year Cost of Ownership: | $101,450 |
| tpmC Rating:                 | 23,027.66 |
| $ / tpmC:                    | 4.41     |

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 specification. If you find that stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.
## Numerical Quantities Summary

### MQTh, Computed Maximum Qualified Throughput:

<table>
<thead>
<tr>
<th>Response Times (in seconds)</th>
<th>Average</th>
<th>Maximum</th>
<th>90 %-tile</th>
</tr>
</thead>
<tbody>
<tr>
<td>New-Order</td>
<td>0.54</td>
<td>4.69</td>
<td>0.78</td>
</tr>
<tr>
<td>Payment</td>
<td>0.36</td>
<td>1.69</td>
<td>0.59</td>
</tr>
<tr>
<td>Delivery</td>
<td>0.30</td>
<td>1.12</td>
<td>0.52</td>
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<tr>
<td>Stock Level</td>
<td>2.52</td>
<td>5.79</td>
<td>3.72</td>
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<tr>
<td>Order Status</td>
<td>0.40</td>
<td>4.64</td>
<td>0.63</td>
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<tr>
<td>Delivery (Deferred)</td>
<td>0.64</td>
<td>2.00</td>
<td>0.91</td>
</tr>
<tr>
<td>Menu</td>
<td>0.31</td>
<td>1.14</td>
<td>0.53</td>
</tr>
</tbody>
</table>

### Transaction Mix (in percent of total transactions)

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Total Occurrences</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>New-Order</td>
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<td>44.88</td>
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<tr>
<td>Payment</td>
<td>2,649,178</td>
<td>43.03</td>
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<tr>
<td>Delivery</td>
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<td>4.04</td>
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<tr>
<td>Stock-Level</td>
<td>248,177</td>
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<tr>
<td>Order Status</td>
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<td>4.02</td>
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</table>

### Emulation Delay (in seconds)

<table>
<thead>
<tr>
<th>Emulation Delay (in seconds)</th>
<th>Response Time</th>
<th>Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>New-Order</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Payment</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Delivery</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Stock-Level</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Order Status</td>
<td>0.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

### Keying/Think Times (in seconds)

<table>
<thead>
<tr>
<th>Keying/Think Times (in seconds)</th>
<th>Average</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Order</td>
<td>18.01 / 12.05</td>
<td>18.00 / 0.00</td>
<td>18.08 / 120.51</td>
</tr>
<tr>
<td>Payment</td>
<td>3.01 / 12.05</td>
<td>3.00 / 0.00</td>
<td>3.08 / 120.51</td>
</tr>
<tr>
<td>Delivery</td>
<td>2.01 / 5.05</td>
<td>2.00 / 0.00</td>
<td>2.07 / 50.51</td>
</tr>
<tr>
<td>Stock Level</td>
<td>2.01 / 5.04</td>
<td>2.00 / 0.00</td>
<td>2.07 / 50.50</td>
</tr>
<tr>
<td>Order Status</td>
<td>2.01 / 10.05</td>
<td>2.00 / 0.00</td>
<td>2.05 / 100.50</td>
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</tbody>
</table>

### Test Duration

<table>
<thead>
<tr>
<th>Test Duration</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Ramp-up time</td>
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</tr>
<tr>
<td>Measurement interval</td>
<td>120 minutes</td>
</tr>
<tr>
<td>Number of transactions (all types) completed in measurement interval</td>
<td>6,406,081</td>
</tr>
<tr>
<td>Ramp-down time</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Number of checkpoints in measurement interval</td>
<td>4</td>
</tr>
<tr>
<td>Checkpoint interval</td>
<td>30 minutes</td>
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</table>