




|  |  |   |  |  |   |   |  |  |  |
|--|--|---|--|--|---|---|--|--|--|
| <br><b>RackSaver</b> <sup>®</sup><br><small>Leader in High-Density Servers!</small> |  | <u>RS-2164/op-r</u><br><u>Server 2P</u>               |  | <b>TPC-C Rev 5.1</b><br><br>Report Date: Sept. 8, 2003 |   |   |  |  |  |
| <b>Total System Cost</b>   |  | <b>TPC-C Throughput</b>                               |  | <b>Price /Performance</b>                              |   | <b>Availability Date</b>  |  |  |  |
| <b>\$42,266</b>  |  | <b>20,507.36</b>                                      |  | <b>\$2.06</b>  |   | <b>Oct 21, 2003</b>   |  |  |  |
| <b>Processors</b>  |  | <b>Database Manager</b>                               |  | <b>Operating System</b>                                |   | <b>Other Software</b>   |  | <b>Number of Users</b>                   |  |
| <b>1 AMD Opteron Processor Model 246 (1 HyperTransport Link, 1M Cache, 2.0 GHz)</b>  |  | <b>Microsoft SQL Server 2000 Standard Edition SP3</b> |  | <b>Microsoft Server 2003, Standard Server</b>          |   | <b>Microsoft Windows 2000 Server w/COM+ Microsoft Visual C++ Standard</b> |  | <b>16,500</b>                            |  |
| <b>Clients</b>   |  |   |  |  | <b>Server</b>   |   |  |  |  |
|    |  |   |  |  | <div style="border: 1px solid black; padding: 5px;"> <b>RackSaver RS-2164/op-r</b><br/> w/1 AMD Opteron Processor Model 246, 2 HyperTransport Links, 1M Cache, 2.0 GHz, 2.5 GB RAM, 3 Compaq 5312/128 SMART Array Controllers<br/> 4 36 GB 10K SCSI Drives </div> |   |  |  |  |
| <div style="border: 1px solid black; padding: 5px;"> <b>RackSaver RS-1132</b><br/> w/1 AMD Athlon MP 2400+ Processor, 256K Cache, 2.0 GHz, 512 MB RAM </div>         |  |   |  |  |   |   |  |  |  |
| <div style="border: 1px solid black; padding: 5px;"> 4 RackSaver Disk Pods<br/> 60 18GB 15K SCSI Drives </div>   |  |   |  |  |   |   |  |  |  |
| <b><u>System Component</u></b>   |  | <b><u>Qty</u></b>                                     |  | <b><u>Server</u></b>                                   |   | <b><u>Qty</u></b>   |  | <b><u>Each Client</u></b>                |  |
| Processors   |  | 1   |  | AMD Opteron Model 246 Processors (2.0 GHz)             |   | 1   |  | AMD Athlon MP 2400+ Processors (2.0 GHz) |  |
| Cache  |  |   |  | 1 M  |   |   |  | 256 K                                    |  |
| Memory   |  | 2   |  | 1 GB PC2100 DDR Reg.                                   |   | 1   |  | 512 MB P2100 DDR Reg.                    |  |
|  |  | 2   |  | 256 MB PC2100 DDR Reg.                                 |   |   |  |  |  |
| Disk Controllers   |  | 3   |  | Compaq 5312 SMART Array Controllers                    |   |   |  |  |  |
| Disk Drives  |  | 60  |  | 18 GB SCSI Drives 15K                                  |   | 1   |  | 40 GB EIDE                               |  |
|  |  | 4   |  | 36 GB SCSI Drives 10K                                  |   |   |  |  |  |
|  |  | 1   |  | 40 GB EIDE   |   |   |  |  |  |
| Total Storage  |  |   |  | 1.2 TB   |   | 1   |  | 40 GB                                    |  |

# RackSaver

**RS-2164/op-r Server  
AMD Opteron 246 (1P, 2.0GHz)  
with 2 RackSaver RS-1132**

TPC-C REV 5.1

**Report Date: 8-Sept-2003**

| Description   | Part Number         | Third Party Brand | Pricing | Unit Price | Qty   | Extended Price | 3 yr. Maint. Price |
|---|---------------------|-------------------|---------|------------|-------|----------------|--------------------|
| <b>Server Hardware</b>                              |                     |                   |         |            |       |                |                    |
| <b>RS-2164/op-r Bundle (includes the following)</b> | <b>RS-2164/op-r</b> |                   |         | 1          | 2,500 | 1              | 2,500              |
| ARIMA AMD 811 OP DP MOTHERBOARD                     | MBARAMD811          |                   |         |            |       | 1              | 0                  |
| AMD CPU 2.0   | AMDOP246            |                   |         |            |       | 1              | 0                  |
| 1.44, 3 1/2 Black                                   | SONY1.44BLACK       |                   |         |            |       | 1              | 0                  |
| DDR 256MB PC2100 ECC REG LP                         | DDR256ECCREGLP      |                   |         |            |       | 2              | 0                  |
| DDR 1GB PC2100 ECC REG LP                           | DDR1GBECCREG1U      |                   |         |            |       | 2              | 0                  |
| IDE 40GB 7200 8MB                                   | HDWE4018M72         |                   |         |            |       | 1              | 0                  |
| SONY 48X  | 48XSONYCDROM        |                   |         |            |       | 1              | 0                  |
| Compaq 5312/128 SMART Array Controller              | 238633-B21          | Compaq/HP         |         | 1          | 1150  | 3              | 3,450              |
| Seagate SCSI 36GB 10K 4MB 80PIN                     | HDSE36S4M1080       |                   |         | 1          | 200   | 4              | 800                |
| 17" Monitor 1280x1024                               | MOKD17              |                   |         | 1          | 200   | 1              | 200                |
| 104 Windows Keyboard                                | 7603                |                   |         | 1          | 29    | 1              | 29                 |
| Microsoft Intellimouse USB                          | MIMIUSB             |                   |         | 1          | 15    | 1              | 15                 |
| 3 Year Warranty, 4 Hour Response Time               | EWSS21643YR4HR      |                   |         | 1          |       | 1              | 700                |
| <b>Subtotal</b>                                     |                     |                   |         |            |       | <b>6994</b>    | <b>700</b>         |
| <b>Server Storage</b>                               |                     |                   |         |            |       |                |                    |
| <b>RackStor 4150-250 (includes the following)</b>   | <b>RS4150-250</b>   |                   |         | 1          | 4,400 | 4              | 17,600             |
| 4U SCA RAID Chassis/400W black                      | RMC4D2-6-0S         |                   |         |            |       | 4              | 0                  |
| SCSI 18GB 15K 8MB 80P                               | HDSE18SAM1580       |                   |         |            |       | 60             | 0                  |
| SCSI Cable/Internal Daisy Chain                     | HDC-23C04           |                   |         |            |       | 8              | 0                  |
| SCSI Cable/Int 68 pin W/EXT con                     | HDC-23C06           |                   |         |            |       | 4              | 0                  |
| Ext SCSI Cable 2M 68pin 2 VHDCI                     | CBRA1402-006        |                   |         |            |       | 4              | 0                  |
| SCSI Male Terminator                                | SCA-TERM160M        |                   |         |            |       | 4              | 0                  |
| 3 Year Warranty, 4 Hour Response Time               |                     |                   |         |            |       | 4              | 0                  |
| <b>Subtotal</b>                                     |                     |                   |         |            |       | <b>17,600</b>  | <b>0</b>           |
| <b>Server Software</b>                              |                     |                   |         |            |       |                |                    |
| Microsoft SQL Server 2000, Standard Edition         | 228-01079           | Microsoft         | 2       | 4,999      | 1     | 4,999          | 5,850              |
| Microsoft Visual C++ Standard                       | 254-00170           | Microsoft         | 2       | 109        | 1     | 109            | Inc Above          |
| Microsoft Server 2003, Standard Server              | P73-00295           | Microsoft         | 2       | 738        | 1     | 738            | Inc Above          |
| <b>Subtotal</b>                                     |                     |                   |         |            |       | <b>5,846</b>   | <b>5,850</b>       |

## Client Hardware

|  |                |  |   |       |   |                 |              |            |
|--|----------------|--|---|-------|---|-----------------|--------------|------------|
| Client Hardware (includes the following) | <b>RS-1132</b> |  | 1 | 1,400 | 2 | 2,800           |              |            |
| RackSaver RS-1100 Chassis                | CHRA1100       |  |   |       | 2 | 0               | 0            |            |
| Tyan S2469GN IDE AMD MP                  | MBTYS2469GN    |  |   |       | 2 | 0               | 0            |            |
| 1.44, 3 1/2 Black                        | SONY1.44BLACK  |  |   |       | 2 | 0               | 0            |            |
| Slimline 24X CDROM                       | 24X1UCD-PANAS  |  |   |       | 2 | 0               | 0            |            |
| RackSaver PS 1U 300W SPI                 | RSP-SP1300     |  |   |       | 2 | 0               | 0            |            |
| AMD Athlon MP Processor 2400+ (2.0 GHz)  | CPAMMP2400     |  |   |       | 2 | 0               | 0            |            |
| IDE 40GB 7200 2MB                        | HDWE4012M72    |  |   |       | 2 | 0               | 0            |            |
| DDR 512MB PC2100 ECC Reg                 | MECODR21512ER  |  |   |       | 2 | 0               | 0            |            |
| Copper 1U HeatSink/Fan                   | SRF-1UCOPPER-2 |  |   |       | 2 | 0               | 0            |            |
| 17" Monitor 1280x1024                    | MOKD17         |  |   | 200   | 2 | 400             | 0            |            |
| 104 Windows Keyboard                     | 7603           |  |   | 29    | 2 | 58              | 0            |            |
| Microsoft Intellimouse USB               | MIMIUSB        |  |   | 15    | 2 | 30              | 0            |            |
| 3 Year Warranty, 4 Hour Response Time    |                |  |   | 250   | 2 |                 | 500          |            |
|  |                |  |   |       |   | <b>Subtotal</b> | <b>3,288</b> | <b>500</b> |

## Client Software

|                               |           |           |   |     |   |       |            |
|-------------------------------|-----------|-----------|---|-----|---|-------|------------|
| Microsoft Windows 2000 Server | C11-00821 | Microsoft | 2 | 738 | 2 | 1,476 | Inc. Above |
|-------------------------------|-----------|-----------|---|-----|---|-------|------------|

## Miscellaneous

|                          |           |  |   |   |   |                 |              |          |
|--------------------------|-----------|--|---|---|---|-----------------|--------------|----------|
|                          |           |  |   |   |   | <b>Subtotal</b> | <b>1,476</b> | <b>0</b> |
| 6' Crossover cat5e cable | Cabcross6 |  | 1 | 6 | 2 | 12              | 0            |          |
|                          |           |  |   |   |   | <b>Subtotal</b> | <b>12</b>    | <b>0</b> |

**Other Discounts\***

**Total \$35,216 \$ 7,050**

### Notes:

\* 10% or minimum 2 spares added in place of on-site service

**Pricing: 1=RackSaver, 2=Microsoft**

**Audited by Performance Metrics**

**Three Year Cost of Ownership: \$42,226**  
**tpmC Rating: 20,507.36**  
**\$ / tpmC: 2.06**

**MQTh**, computed Maximum Qualified Throughput 20.477.37  
tpmC

**Response Times** (in seconds)

|                          | Average | 90 th | Max   |
|--------------------------|---------|-------|-------|
| - New order              | 0.57    | 0.91  | 5.84  |
| - Payment                | 0.36    | 0.67  | 5.51  |
| - Order Status           | 0.45    | 0.77  | 5.43  |
| - Delivery (interactive) | 0.10    | 0.11  | 0.12  |
| - Delivery (deferred)    | 0.77    | 1.08  | 1.89  |
| - Stock-Level            | 3.21    | 4.11  | 10.09 |
| - Menu                   | 0.10    | 0.11  | 1.15  |

Response time delay added for emulated components

Menu 0.1  
Resp. 0.1

**Transaction Mix**, in percent of total transactions

|                |         |
|----------------|---------|
| - New-Order    | 44.91 % |
| - Payment      | 43.01 % |
| - Order-Status | 4.01 %  |
| - Delivery     | 4.04 %  |
| - Stock-Level  | 4.04 %  |

**Keying/Think Times** (in seconds),

|                | Min   |     | Average |       | Max   |        |
|----------------|-------|-----|---------|-------|-------|--------|
| - New-Order    | 18.02 | 0.0 | 18.03   | 12.04 | 18.04 | 120.41 |
| - Payment      | 3.01  | 0.0 | 3.03    | 12.05 | 3.04  | 120.41 |
| - Order-Status | 2.01  | 0.0 | 2.03    | 10.06 | 2.04  | 100.41 |
| - Delivery     | 2.01  | 0.0 | 2.03    | 5.04  | 2.04  | 50.41  |
| - Stock-Level  | 2.01  | 0.0 | 2.03    | 5.04  | 2.04  | 50.40  |

**Test Duration**

|   |              |
|---|--------------|
| - Ramp-up time  | 17 minutes   |
| - Measurement interval  | 120 minutes  |
| - Number of checkpoints   | 4            |
| - Checkpoint interval   | 29.9 minutes |
| - Number of transactions (all types)<br>Completed in measurement interval | 5,692,642    |