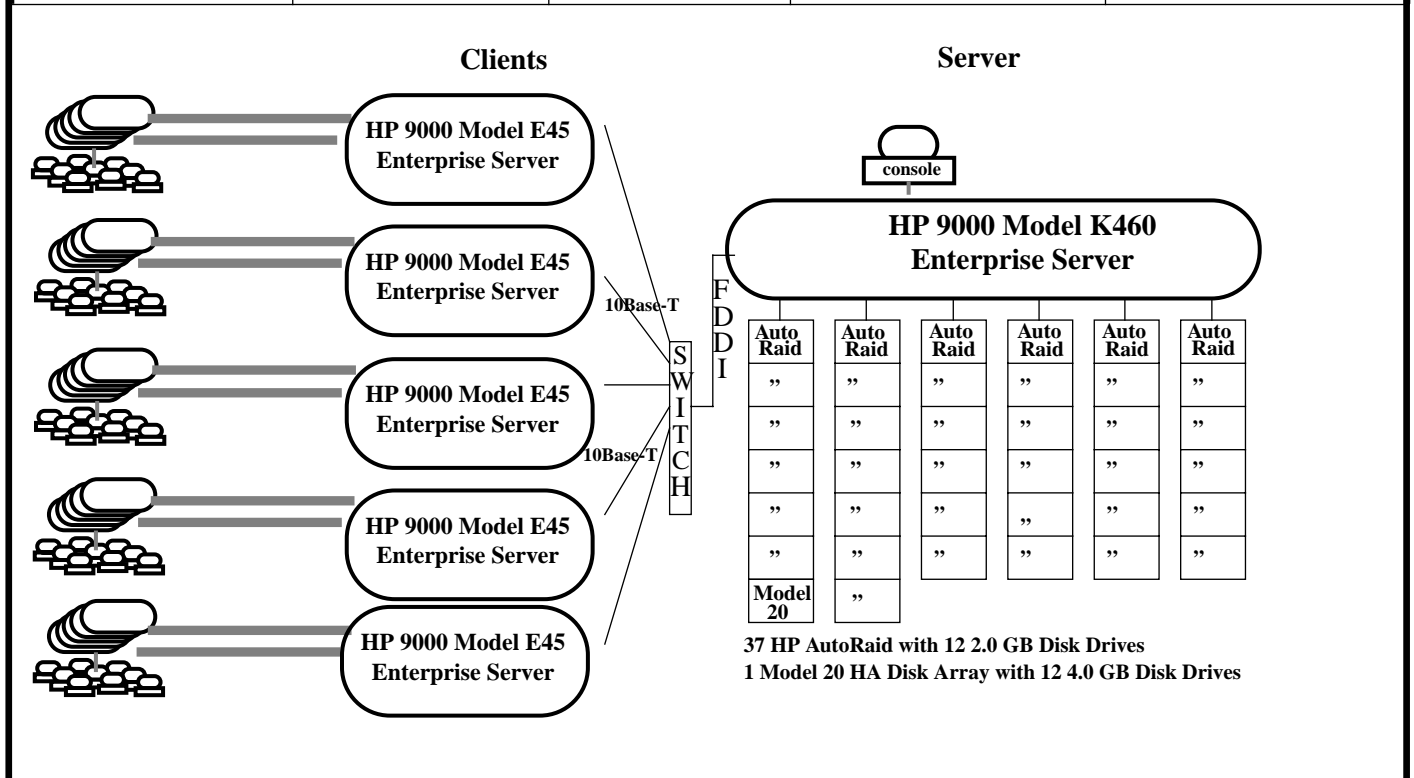


|                            |                                                                                           |                                |                                            |
|----------------------------|-------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------|
| <b>Hewlett-Packard Co.</b> | <b>HP 9000 Model K460 Enterprise Server<br/>Client/Server with 5 Model E45 front-ends</b> |                                | TPC-C® Rev 3.2                             |
|                            |                                                                                           |                                | Report Date:<br>September 17, 1996.        |
| Total System Cost          | TPC-C® Throughput                                                                         | Price/Performance              | Availability Date                          |
| <b>\$2,312,516</b>         | <b>12,321.87 tpmC®</b>                                                                    | <b>\$188 / tpmC®</b>           | HW: September 17, 1996<br>SW: January 1997 |
| Processors                 | Database Manager                                                                          | Operating System               | Other Software                             |
| 4 PA-RISC 8000<br>180 MHz  | Sybase SQL Server<br>Version 11.0.3                                                       | HP-UX 10.10 and<br>HP-UX 10.20 | TUXEDO<br>Transaction Monitor              |
|                            |                                                                                           |                                | Number of Users                            |
|                            |                                                                                           |                                | <b>10,080</b>                              |



| System Components  | Server (K460) |                                | Each Client (E45) |                                |
|--------------------|---------------|--------------------------------|-------------------|--------------------------------|
|                    | Qty           | Type                           | Qty               | Type                           |
| Processors         | 4             | 180 MHz PA-RISC 8000           | 1                 | 80 MHz PA-RISC 7100LC          |
| Cache memory       | each          | 1MB I-cache 1MB D-cache        |                   | 256 KB combined external cache |
| Memory             | 3             | GB                             | 320               | MB                             |
| Disk Controllers   | 6             | HP-HSC FWD SCSI-2              | 1                 | HP-PB SE SCSI-2                |
| Disk Drives        | 37            | HP AutoRAID with 12 2 GB Disks | 1                 | 1 GB Disk                      |
|                    | 1             | High Availability Disk Array   |                   |                                |
| Total Storage (GB) | 762           | GB                             |                   |                                |
| Tape Drives        | 1             | DDS Storage System             |                   |                                |
| Terminals          | 1             | Console terminal               | 1                 | Console terminal               |

Hardware and Software Pricing

| Description                                  | Part Number       | 3d Party |    | Unit Price             | Qty. | Extended Price   | 5 Year Maint. \$ |
|----------------------------------------------|-------------------|----------|----|------------------------|------|------------------|------------------|
|                                              |                   | Brand    | \$ |                        |      |                  |                  |
| <b>Server Hardware</b>                       |                   |          |    |                        |      |                  |                  |
| Hewlett Packard 9000 Model K460              | A3284A            |          |    | 74,900                 | 1    | 74,900           | 31,584           |
| Upgrade base memory to 256 MB                | A3294A            |          |    | 14,090                 | 1    | 14,090           |                  |
| Additional Processors                        | A3261A            |          |    | 20,000                 | 3    | 60,000           | 4,752            |
| Hardware & Software Support, Year 1          | Opt. 0S3          |          |    |                        |      |                  | 5,340            |
| HP-UX Sys. Media, CD-ROM, Mat'ls             | B3920AA, Opt. AAF |          |    | 520                    | 1    | 520              |                  |
| 256 MB ECC Memory Board                      | A3483A, Opt. OD1  |          |    | 14,976                 | 11   | 164,736          |                  |
| 2.0 GB DAT Storage System (internal)         | C2478SZ, Opt. ODZ |          |    | 1,520                  | 1    | 1,520            |                  |
| 700/96 Console                               | C1064GX           |          |    | 539                    | 1    | 539              | 336              |
| Memory Carrier                               | A2992A, Opt. OD1  |          |    | 4,950                  | 1    | 4,950            |                  |
| Add 4 HP-HSC slots                           | A2990A, Opt. OD1  |          |    | 8,000                  | 1    | 8,000            |                  |
| FDDI Interface Card                          | J2157A Opt. AU3   |          |    | 5,695                  | 1    | 5,695            |                  |
| HP-HSC Fast/Wide Differential SCSI Int.      | A2999A, Opt. OD1  |          |    | 1,295                  | 5    | 6,475            |                  |
| 20 GB Auto Raid disk Array                   | A3516A            |          |    | 11,083                 | 37   | 410,071          | 181,152          |
| Twelve 2 GB disk modules                     | Opt. 112          |          |    | 10,536                 | 37   | 389,832          |                  |
| Support, Year 1-3                            | 3Y3               |          |    |                        |      | 0                | 147,852          |
| 1.3 kVA UPS Rackmount                        | A2996A Opt. 002   |          |    | 2,500                  | 19   | 47,500           | 7,296            |
| Disk Array Model 20                          | A3550A            |          |    | 15,000                 | 1    | 15,000           | 13,440           |
| Support, Year 1                              | 0S3               |          |    |                        |      |                  | 1,344            |
| 64 MB write cache Opt.                       | Opt. 204          |          |    | 16,920                 | 1    | 16,920           |                  |
| Ten 4.2 GB disk modules                      | Opt. 312          |          |    | 24,150                 | 1    | 24,150           |                  |
| Add-on 4.2 GB disk module                    | A3396A            |          |    | 2,415                  | 2    | 4,830            |                  |
| 2m Field Integrated Cabinet                  | C2787A            |          |    | 2,000                  | 19   | 38,000           |                  |
| Fast/Wide SCSI Interface Cable(2.5m)         | C2924A            |          |    | 140                    | 6    | 840              |                  |
| Fast/Wide SCSI Interface Cable(0.9m)         | C2911A            |          |    | 120                    | 32   | 3,840            |                  |
| <b>Subtotal</b>                              |                   |          |    |                        |      | <b>1,292,408</b> | <b>393,096</b>   |
| <b>Server Software</b>                       |                   |          |    |                        |      |                  |                  |
| Sybase V11.0.3                               | Runtime           | Sybase   | 1  | 150,000                | 1    | 150,000          | 128,316          |
| Sybase development                           |                   | Sybase   | 1  | 9,600                  | 1    | 9,600            |                  |
| Sybase open client                           |                   | Sybase   | 1  | 795                    | 1    | 795              |                  |
| Sybase discount                              |                   | Sybase   | 1  |                        |      | -8,020           |                  |
| <b>Subtotal</b>                              |                   |          |    |                        |      | <b>152,375</b>   | <b>128,316</b>   |
| <b>Client Hardware</b>                       |                   |          |    |                        |      |                  |                  |
| Hewlett Packard 9000 Model E45 Client        | A3130AW           |          |    | 8,000                  | 5    | 40,000           | 6,240            |
| Hardware & Software Support, Year 1          | Opt. 0S3          |          |    |                        |      |                  | 2,880            |
| 650 MB CD-ROM                                | A3184A            |          |    | 655                    | 5    | 3,275            | 2,640            |
| Console                                      | C1064GX           |          |    | 539                    | 5    | 2,695            | 1,680            |
| 1 GB internal disk                           | A3349A, Opt. ODZ  |          |    | 800                    | 5    | 4,000            | 5,040            |
| 8 RS-232 modem ports                         | A2442A, Opt. ODU  |          |    | 300                    | 5    | 1,500            |                  |
| LAN/9000 Interface Card                      | J2146A Opt. ODM   |          |    | 1,150                  | 10   | 11,500           |                  |
| 64 MB Memory Module                          | A2948A Opt. ODZ   |          |    | 4,480                  | 5    | 22,400           |                  |
| 128 MB Memory Module                         | A3131A, Opt. ODZ  |          |    | 8,960                  | 10   | 89,600           |                  |
| <b>Subtotal</b>                              |                   |          |    |                        |      | <b>174,970</b>   | <b>18,480</b>    |
| <b>Client Software</b>                       |                   |          |    |                        |      |                  |                  |
| HP C/ANSI C Compiler                         | B2412A, Opt. AH0  |          |    | 1,575                  | 1    | 1,575            | 1,920            |
| Support, Year 1                              | Opt. 0S3          |          |    |                        |      |                  | 225              |
| BEA Tuxedo 4.1                               |                   | Bea Sys. | 2  | 3,500                  | 5    | 17,500           | 13,125           |
| <b>Subtotal</b>                              |                   |          |    |                        |      | <b>19,075</b>    | <b>15,270</b>    |
| <b>User Connectivity</b>                     |                   |          |    |                        |      |                  |                  |
| HTI Ultra Slimline 24 Port Hub, 19 spares    | DEH1477           | Data W.  | 3  | 310                    | 462  | 143,220          | 0                |
| LANPLEX 2500 Chassis                         | 3C250100          | 3COM     | 4  | 6,095                  | 1    | 6,095            | 5,484            |
| 8-port 10 base T module                      | 3C201000          | 3COM     | 4  | 2,800                  | 1    | 2,800            | 2,520            |
| FDDI module                                  | 3C200100          | 3COM     | 4  | 1,995                  | 1    | 1,995            | 1,800            |
| <b>Subtotal</b>                              |                   |          |    |                        |      | <b>154,110</b>   | <b>9,804</b>     |
| Other discounts*                             |                   |          |    |                        |      | -45,388          |                  |
| <b>Total</b>                                 |                   |          |    |                        |      | <b>1,747,550</b> | <b>564,966</b>   |
| <b>Notes:</b>                                |                   |          |    |                        |      |                  |                  |
| * HP Volume end user discount 9%             |                   |          |    | <b>Five Year Cost:</b> |      | <b>2,312,516</b> |                  |
| 1=Sybase, 2=BEA Systems, 3= Telesyn, 4= 3COM |                   |          |    | <b>fpmC Rating:</b>    |      | <b>12,321.87</b> |                  |
|                                              |                   |          |    | <b>\$/tpmC:</b>        |      | <b>187.68</b>    |                  |

Note: audited by Richard Gimarc of Performance Metrics, Inc,

## Numerical Quantities Summary for HP 9000 Model K460 Enterprise Server

**MQTH, Computed Maximum Qualified Throughput** **12,321.87 tpmC®**

| <b>Response Times (in seconds)</b> | <b>90th %-ile</b> | <b>Maximum</b> | <b>Average</b> |
|------------------------------------|-------------------|----------------|----------------|
| New-Order                          | 1.64              | 78.31          | 0.78           |
| Payment                            | 1.60              | 69.16          | 0.73           |
| Order-Status                       | 1.61              | 28.35          | 0.81           |
| Delivery (interactive portion)     | 0.97              | 22.06          | 0.44           |
| Delivery (deferred portion)        | 1.65              | 8.87           | 1.01           |
| Stock-Level                        | 4.11              | 32.61          | 1.96           |
| Menu                               | -                 | 69.32          | 0.10           |

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

|              |        |
|--------------|--------|
| New-Order    | 44.81% |
| Payment      | 43.05% |
| Order-Status | 4.05%  |
| Delivery     | 4.05%  |
| Stock-Level  | 4.04%  |

| <b>Keying/Think Times (in seconds)</b> | <b>Keying Time</b> |             |             | <b>Think Time</b> |             |             |
|----------------------------------------|--------------------|-------------|-------------|-------------------|-------------|-------------|
|                                        | <b>Min.</b>        | <b>Avg.</b> | <b>Max.</b> | <b>Min.</b>       | <b>Avg.</b> | <b>Max.</b> |
| New-Order                              | 18.02              | 18.03       | 18.06       | 0.02              | 12.16       | 156.82      |
| Payment                                | 3.02               | 3.03        | 3.06        | 0.02              | 12.08       | 145.61      |
| Order-Status                           | 2.02               | 2.03        | 2.05        | 0.02              | 10.11       | 111.69      |
| Delivery (interactive)                 | 2.02               | 2.03        | 2.04        | 0.02              | 5.03        | 52.99       |
| Stock-Level                            | 2.02               | 2.03        | 2.05        | 0.02              | 5.09        | 55.18       |