MicroVAX 3100
V96-2.2—16 Jan 1997
DIGITAL Systems and Options Catalog

Product Description

MicroVAX 3100 systems offer enhanced distributed computing capabilities and flexibility. They support more than 10,000 commercial and technical applications across local or wide area networks.

MicroVAX 3100 systems support add-on synchronous options for wide area communications and asynchronous options, including modem options for terminal and printer connections. Networking allows communications in a variety of environments, including DECnet, TCP/IP, OSI, SNA, and X.25.

PC clients based on MS-DOS, OS/2, and Macintosh can be connected to the MicroVAX 3100 system, enabling the entire business to share information. DIGITAL'S advanced client/server computing, based on NAS (Network Application Support), delivers a wide range of solutions to help integrate desktop workstations and PCs.

MicroVAX 3100 Model 40 system supports a broad range of computing needs and a large number of users. Additional internal SCSI storage can be added to meet future application needs. The MicroVAX 3100 Model 40 system is board upgradable to MicroVAX 3100 Model 85 and 96 systems.

MicroVAX 3100 Model 85 and 96 systems offer enhanced Ethernet performance, and twice the storage capacity of the Model 40 on optional SCSI-2 card for external SCSI devices. ECC memory can be expanded to 512 MB.

MicroVAX 3100 Model 88 and 98 systems offer similar performance, are compatible with Model 85 and 96, but are housed in a new desktop mini-tower enclosure. In addition these systems offer enhancements in memory, support for up to 512 MB using low cost SIMM memory, and six internal storage devices are supported in system enclosure.

All MicroVAX 3100 Models are available as Rackmount Systems from CSS (Computer Special Systems).

MicroVAX 3100 systems are designed for sustained reliability and ease of serviceability. Their compact size provides mid-range systems performance at entry-level system prices.

MicroVAX 3100 Comparison Chart

<table>
<thead>
<tr>
<th></th>
<th>Model 40</th>
<th>Model 85</th>
<th>Model 96</th>
<th>Model 88</th>
<th>Model 98</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance (TPS/VUPS)</td>
<td>39e / 5</td>
<td>110e / 16</td>
<td>200e / 38</td>
<td>110e / 16</td>
<td>200e / 38</td>
</tr>
<tr>
<td>Enclosures</td>
<td>BA42-B</td>
<td>BA42-B</td>
<td>BA42-B</td>
<td>MiniTower</td>
<td>MiniTower</td>
</tr>
<tr>
<td>Mbytes of memory: Included</td>
<td>8</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64 / 128</td>
</tr>
<tr>
<td>Mbytes of memory: Maximum</td>
<td>32</td>
<td>128</td>
<td>128</td>
<td>512</td>
<td>512</td>
</tr>
<tr>
<td>Storage Devices (internal maximum)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Storage Devices (total internal and external)</td>
<td>7</td>
<td>14³</td>
<td>14³</td>
<td>14³</td>
<td>14³</td>
</tr>
<tr>
<td>Storage Capacity (total internal and external)</td>
<td>14.8 GB/</td>
<td>14.8 GB/</td>
<td>14.8 GB/</td>
<td>19.2 GB/</td>
<td>19.2 GB/</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>27.3 GB</td>
<td>56.7 GB</td>
<td>56.7 GB</td>
<td>60.2 GB</td>
<td>60.2 GB</td>
</tr>
</tbody>
</table>

¹ SCSI controller option (KZDDA-xx) supports seven additional external SCSI devices.

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MicroVAX 3100 Models 40, 85 and 96

Step 1—Systems

Select user licenses are required.

MicroVAX 3100 Model 40, 85, and 96 Systems include

- BA42 large enclosure with CPU/FPU
- *Model 40*
  - 8 MB base memory on CPU, maximum 32 MB parity memory
    DIGITAL NAS Base Server 200
- *Models 85 and 96*
  - 64 MB memory in DSIM slot, maximum 128 MB ECC memory
    DIGITAL NAS Base Server 200
  - 802.3/Ethernet interface (ThinWire/Thick wire) with terminators
  - Ethernet kit; includes ThinWire T-connector with BNC terminators and 15-pin thick wire terminator
  - Synchronous SCSI-2 interface for connecting internal and external SCSI devices; external connection via a 50-pin external SCSI-2 connector
  - Three DEC-423 asynchronous serial lines (MMJ data leads only)
  - EIA-232 asynchronous serial line with modem control (25-pin D-subminiature connector)
  - H8575-A 25-pin-to-MMJ DEC-423 to EIA-232 adapter
  - 7.6-meter (25-foot) console terminal cable
  - 120 V power cord (country-specific power cord required for 240 V use; see Step 9)
  - Universal power supply that automatically adjusts to 88–132 Vac or 176–264Vac
  - Hardware documentation (QZ-K44AB-GZ for Model 40; QZ-A05AA-GZ for Model 85; QZ-001AA-GZ for Model 96)
  - OpenVMS base license (with POSIX)
  - Factory-installed software
  - Three-year hardware product warranty
  - 90-day software warranty

1. Delivery of software on a system disk is not warrantied. It is provided as a convenience to the customer. Customers are encouraged to purchase the necessary media and documentation kits that include complete installation instructions. See Step 8 for details.

MicroVAX 3100 Model 40, 85, and 96 Advantage Servers

<table>
<thead>
<tr>
<th>Order Number</th>
<th>MicroVAX 3100</th>
<th>Memory</th>
<th>DIGITAL NAS</th>
<th>Disk Drive</th>
<th>CD-ROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV-31GCB-CA</td>
<td>Model 40</td>
<td>16 MB</td>
<td>Base Server 200</td>
<td>1.05 GB FIS*</td>
<td>RRD45 (600 MB)</td>
</tr>
<tr>
<td>DV-31JCB-EA</td>
<td>Model 85</td>
<td>64 MB</td>
<td>Base Server 200</td>
<td>1.05 GB FIS*</td>
<td>RRD45 (600 MB)</td>
</tr>
<tr>
<td>DV-31SCA-CA</td>
<td>Model 96</td>
<td>64 MB</td>
<td>Base Server 200</td>
<td>1.05 GB FIS*</td>
<td>RRD45 (600 MB)</td>
</tr>
</tbody>
</table>

* Disk drive in Advantage Server systems include Factory Installed Software (FIS)

MicroVAX 3100 Model 40 Base Server

<table>
<thead>
<tr>
<th>Order Number</th>
<th>MicroVAX 3100</th>
<th>Memory</th>
<th>DIGITAL NAS</th>
<th>Disk Drive</th>
<th>CD-ROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV-31GAB-B9</td>
<td>Model 40</td>
<td>8 MB</td>
<td>Base Server 200</td>
<td>Required</td>
<td>Required</td>
</tr>
</tbody>
</table>

Note: Hard disk, CD-ROM, and tape drive are not included with Model 40 Base Server, they must be ordered separately.

Step 2—Memory

Model 40

Systems include 8 MB of base memory on CPU; systems support maximum 32 MB parity memory.

MS44L-BA 8 MB parity memory modules for Model 40

Model 85 and 96

Systems include 64 MB base memory in first DSIM slot; systems support maximum 128 MB of ECC memory.

MS44L-BC 16 MB ECC memory modules for Models 85 and 96
MS44-DC 64 MB ECC memory modules for Models 85 and 96
Step 2—Memory (continued)

Memory Configuration Chart for Models 40, 85, and 96

<table>
<thead>
<tr>
<th>Required Memory</th>
<th>Model 40 (8 MB systems)</th>
<th>Models 85 and 96 (64 MB systems)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 MB</td>
<td>1 x MS44L-BA</td>
<td>N/A</td>
</tr>
<tr>
<td>24 MB</td>
<td>2 x MS44L-BA</td>
<td>N/A</td>
</tr>
<tr>
<td>32 MB</td>
<td>3 x MS44L-BA</td>
<td>N/A</td>
</tr>
<tr>
<td>40 MB</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>48 MB</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>72 MB</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>80 MB</td>
<td>N/A</td>
<td>1 x MS44L-BC</td>
</tr>
<tr>
<td>128 MB</td>
<td>N/A</td>
<td>1 x MS44-DC</td>
</tr>
</tbody>
</table>

Step 3—Storage

Select storage devices as required. See *Storage Devices* for further details.

Step 3a—Internal Storage

- System supports maximum of five internal drives in any of the following combinations:
  - Five RZ2x half-height disk drives, or
  - Four RZ2x half-height disk drives and one removable media device
  - Maximum of two RZ29B disk drives
  - Three RZ2x half-height disk drives and two removable media devices (RX26, RRD45, TLZ09, TZK11, or TZK20)
- RZ26N disk drive in Advantage Server systems include Factory Installed Software (FIS)
- Base Systems ordered with one hard disk drive include FIS
- Order a load device (TLZ09) if necessary
- OpenVMS Cluster satellite members or systems being loaded over the network do not require a load device.

Field-installed options require Customer Services installation. Removable Media Devices for Models 40, 85, and 96 systems

**RRD45-EN** 600 MB CD-ROM drive  
**RX26-EN/EL** 2.8 MB diskette drive; factory/field installed  
**TLZ09-HF** 8.0 GB 4-mm 3.5-inch DAT drive  
**TZK11-HF** 2.1 GB cartridge (QIC) tape drive  
**TZK20-HF** 2.3 GB 300 Kbs SCSI (QIC) tape drive

Fixed Disk Drives for Models 40, 85, and 96 systems

**RZ26N-EN** 1.0 GB 3.5-inch SCSI disk drive 5400 RPM  
**RZ28M-EN** 2.1 GB 3.5-inch SCSI disk drive 5400 RPM  
**RZ28D-EN** 2.1 GB 3.5-inch SCSI disk drive 7200 RPM  
**RZ29B-EN** 4.3 GB 3.5-inch SCSI disk drive 7200 RPM
Step 3b—External Storage

- Model 40:
  - Maximum seven SCSI-2 devices
  - Maximum two BA353 expansion boxes or one BA356 StorageWorks expansion shelf
- Models 85 and 96:
  - Maximum 14 SCSI devices with additional SCSI card option.

Use the following table to calculate external SCSI bus length.

<table>
<thead>
<tr>
<th>Maximum SCSI Bus Length</th>
<th>Model 40</th>
<th>Models 85 and 96</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>2 m (78.7 inches)</td>
<td>2.25 m (88.6 inches)</td>
</tr>
<tr>
<td>External</td>
<td>4 m (157.4 inches)</td>
<td>3.75 m (148.0 inches)</td>
</tr>
<tr>
<td>KZDDA internal</td>
<td>N/A</td>
<td>0.73 m (29.0 inches)</td>
</tr>
<tr>
<td>KZDDA external</td>
<td>N/A</td>
<td>5.27 m (207.5 inches)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External Enclosure</th>
<th>External Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRD45</td>
<td>0.45 m (18 inches)</td>
</tr>
<tr>
<td>TLZ09</td>
<td>0.91 m (36 inches)</td>
</tr>
<tr>
<td>TZ88N</td>
<td>0.28 m (11 inches)</td>
</tr>
<tr>
<td>TLZ9L</td>
<td>0.91 m (36 inches) or 1.82 m (72 inches)</td>
</tr>
<tr>
<td>BA353</td>
<td>1.82 m (72 inches)</td>
</tr>
<tr>
<td>BA356</td>
<td>1.82 m (72 inches)</td>
</tr>
</tbody>
</table>

SCSI Controller and Tabletop Storage

KZDDA-AA/AF
SCSI controller card supports seven additional external SCSI devices, factory/field installed (Models 85 and 96 only)

RRD45-FA/DG*
600 MB tabletop CD-ROM drive; 120 V/240 V, requires 1.8 meter (6 foot) SCSI cable BC06P-06

TLZ90-DA/DG*
8.0 GB tabletop DAT tape drive with universal power supply; includes 120 V power cord

TLZ9L-DB
32/64 GB tabletop DAT tape loader

TZ88N-DA/DG*
40 GB SCSI tabletop tape drive

TZ877-NT
280 GB SCSI tape subsystem, 7 cartridge loader in tabletop enclosure

BC06P-2F
TZ8x cable, 2.5 ft (0.8 m)

BC06P-06
TZ8x cable, 6 ft (1.8 m)

BC06P-09
TZ8x cable, 9 ft (2.7 m)

* Country-specific power cord required for 240 V use.

StorageWorks Expansion Units

BA353-AA
StorageWorks desktop expansion box supports three 3.5-inch half-height, or two 3.5-inch half-height and one 5.25-inch half height drive. 120 V power cord included, Requires SCSI cable BC09D-xx.

BA356-KD
StorageWorks 16-bit shelf includes dual speed blowers. Supports maximum of seven 3.5-inch devices (8 or 16-bit), requires BA35X-MG 8-bit I/O module, and BN21H-xx SCSI cable

BA362-AA/AB
Office expansion unit, supports up to two 3.5-inch modular storage devices

BA364-AA/AB
Office expansion unit, supports up to four 3.5-inch modular storage devices and one fixed CD-ROM

2. One BA356 expansion unit is supported per single ended SCSI bus; no other external device can be connected to system with BA356 unit.

SCSI devices supported in StorageWorks Expansion Units

<table>
<thead>
<tr>
<th>Device Name</th>
<th>Capacity</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>RZ26N-VA/VW</td>
<td>1.05 GB</td>
<td>3.5-inch half-height disk drive, 5400 RPM</td>
</tr>
<tr>
<td>RZ28M-VA/VW</td>
<td>2.1 GB</td>
<td>3.5-inch half-height disk drive, 5400 RPM</td>
</tr>
<tr>
<td>RZ28D-VA/VW</td>
<td>2.1 GB</td>
<td>3.5-inch half-height disk drive, 7200 RPM</td>
</tr>
<tr>
<td>RZ29B-VA/VW</td>
<td>4.3 GB</td>
<td>3.5-inch half-height disk drive, 7200 RPM</td>
</tr>
<tr>
<td>TLZ90-VA</td>
<td>8.0 GB</td>
<td>3.5-inch half-height 4-mm DAT drive</td>
</tr>
<tr>
<td>TLZ91-VA</td>
<td>32/64 GB</td>
<td>DAT tape loader in StorageWorks carrier</td>
</tr>
<tr>
<td>TZ88N-VA</td>
<td>20/40 GB</td>
<td>SCSI tape drive in StorageWorks carrier</td>
</tr>
<tr>
<td>TZK11-VA</td>
<td>2.0 GB</td>
<td>5.25-inch QIC tape in StorageWorks carrier</td>
</tr>
</tbody>
</table>
Step 4—Networks and Communications

- Systems support one asynchronous and one synchronous communication option
- An 8-line DEC-423 to 16-line DEC-423 upgrade option is available for the MicroVAX 3100 Models 40/85/96, see Network Products Guide for more information.

Host-Based Communications Controllers

Select host-based communications controllers for standalone systems (without LAN connectivity), or for other requirements.

Asynchronous Multiplexer Options

Select one asynchronous multiplexer for communications expansion

**DHW42-AA**

Provides eight DEC-423 lines for a system total of 12 asynchronous lines (11 data only and one with modem control). Includes internal logic module with cable, DEC-423 I/O assembly, external 36-pin BC16C-10 3-m (10-ft) cable, and H3104-00 eight-line distribution harmonica; factory or field installed.

**DHW42-CA**

Provides eight EIA-232 lines for a system total of 12 asynchronous lines (three data only and nine with modem control). Includes internal logic module with cable, EIA-232 I/O assembly, and two external 50-pin to 4-way 25-pin BC29J-06 1.8-m (6-ft) cables; factory or field installed.

**DHW42-BA**

Provides 16 DEC-423 lines for a system total of 20 asynchronous lines (19 data only and one with modem control). Includes internal logic module with cable, DEC-423 I/O assembly, two external 36-pin BC16C-10 3-m (10-ft) cables, and two H3104-00 eight-line distribution harmonica; factory or field installed.

**DHW42-UP**

Upgrades DHW42-AA to DHW42-BA; field installed only.

Note: Addition of DHW4x options increases number of users; an OpenVMS license upgrade may be required.

Synchronous Communications Options

- Select one synchronous option
- EIA-232/V.24 cable (BC19D-02) is included—select alternate cables for EIA-423/V.10 and EIA-422/V.11 connection
- Synchronous communication option requires VAX WAN Device Driver V1.2 or higher required. VAX WAN Device Driver media included in OpenVMS Consolidated Software Disk CD-ROM media. See Step 8 for details.

**DSW42-AA**

EIA-232 synchronous controller provides two lines). Includes synchronous logic module, I/O assembly, and external EIA-232 0.6-m (2-ft) adapter cable

**BC19B-02**

EIA-422/V.11 0.6-m (2-ft) adapter cable

**BC19E-02**

EIA-423/V.10 0.6-m (2-ft) adapter cable

LAN Communications Controller

802.3/Ethernet Interface (ThinWire/Thick wire selectable) included with system. Connection of system to Ethernet requires a ThinWire BNC connection (e.g., BC16M cable) or a thick wire 15-pin AUI transceiver cable (e.g., BNE3x).

Local and Wide Area Communications Servers

Each communications server requires an 802.3/Ethernet connection. Depending on the server selected, either a ThinWire BNC connection (e.g., BC16M cable) or a thick wire 15-pin AUI transceiver cable is required (e.g., BNE3x). Software media and documentation and cables are also required. See Network Products Guide.

**DECserver 90M, 90TL, 900TM, 90L+, 700, and MUXserver 90, 320, 380 Communications and Printer Servers**

Select a terminal or printer server to provide users with multiple session access to systems on a LAN, to minimize on a LAN, to minimize cabling complexity and costs, and to conserve host resources such as backplane slots.

**DEC WANrouter 90, 250, DECbrouter 90; and DECnis 500, 600 MultiProtocol Routers**

Select a router to cost-effectively link a LAN to a remote system or another LAN and to offload routing overhead from the application host system.

**InfoServer 1000 Network Storage Server**

To provide initial system load (ISL) capabilities order InfoServer Local Area Compact Disk. Other configurations are offered for tape/backup and for serving more CD-ROMs. InfoServer systems support CD-ROM, hard drives, magneto-optical and tape drives. InfoServer 1000 systems can serve up to seven SCSI devices. See Storage Devices for ordering information.
Step 4—Networks and Communications (continued)

Network Connectivity Products

See the Network Products Guide.

Step 5—Console Terminal

A console device is necessary for a system to function. Console cable included with system. Order video terminals (e.g., VT520) for each system unless otherwise available. If logging is required, a combination of video terminal and LA75 is recommended.

Step 6—Terminals and Printers

Select terminals and serial printers as required. Serial printers connect to an asynchronous line. A cable (e.g., BC16E-25) must be ordered with each unless otherwise provided.

Step 7—CPU Upgrades

Note: A non-return charge will be assessed if old CPU board is not returned to DIGITAL

<table>
<thead>
<tr>
<th>Order Number</th>
<th>From</th>
<th>To</th>
<th>Includes</th>
</tr>
</thead>
</table>
| 31JXR-AA     | MicroVAX 3100 Model 40  
              | MicroVAX 3100 Model 80 | MicroVAX 3100 Model 85 Server   
              |                              | MicroVAX 3100 Model 85 Server CPU  
              |                              | 64 MB of memory               
              |                              | OpenVMS base license          |
| 49GAX-E9     | MicroVAX 3100 Model 40  
              | MicroVAX 3100 Model 80 | MicroVAX 3100 Model 96 Server   
              |                              | MicroVAX 3100 Model 96 Server CPU  
              |                              | 64 MB of memory               
              |                              | OpenVMS base license          |
| 49JAX-E9     | MicroVAX 3100 Model 85  
              | MicroVAX 3100 Model 90  
              | MicroVAX 3100 Model 95  | MicroVAX 3100 Model 96 Server   
              |                              | MicroVAX 3100 Model 96 Server CPU  
              |                              | 64 MB of memory               
              |                              | OpenVMS base license          |
| 49XR-AA      | MicroVAX 3100 Model 90  
              | MicroVAX 3100 Model 95  | MicroVAX 3100 Model 96 Server   
              |                              | MicroVAX 3100 Model 96 Server CPU  
              |                              | OpenVMS base license          |

Step 8—Software

Licenses required to support additional users beyond those included in base systems.

Operating System support for Model 40 requires V5.5 or higher; Model 85 and 96 require V5.5-2H4 or higher

Software Processor Code = B
Clusterwide License Rating = 20 (C)

OpenVMS VAX Concurrent Use Licenses

OpenVMS VAX Concurrent Use licenses are for customers running OpenVMS VAX V6.2 or greater.

OpenVMS VAX Concurrent Use license provides the right to interactively use the operating system by the specified number of concurrent users on a designated OpenVMS system. OpenVMS Concurrent Use licenses can be moved from one OpenVMS system to another OpenVMS system at user discretion and can be shared in a mixed OpenVMS VAX and OpenVMS Alpha Cluster.

<table>
<thead>
<tr>
<th>License Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QL-MT3A-3B</td>
<td>OpenVMS Concurrent Use 1-user license</td>
</tr>
<tr>
<td>QL-MT3A-3C</td>
<td>OpenVMS Concurrent Use 2-user license</td>
</tr>
<tr>
<td>QL-MT3A-3D</td>
<td>OpenVMS Concurrent Use 4-user license</td>
</tr>
<tr>
<td>QL-MT3A-3E</td>
<td>OpenVMS Concurrent Use 8-user license</td>
</tr>
<tr>
<td>QL-MT3A-3F</td>
<td>OpenVMS Concurrent Use 16-user license</td>
</tr>
</tbody>
</table>
Step 8—Software (continued)

QL-MT3AA-3G  OpenVMS Concurrent Use 32-user license
QL-MT3AA-3H  OpenVMS Concurrent Use 64-user license
QL-MT3AA-3J  OpenVMS Concurrent Use 128-user license
QL-MT3AA-3K  OpenVMS Concurrent Use 256-user license
QL-XULA5-AA  OpenVMS VAX Traditional unlimited user license

OpenVMS VAX Interactive User Licenses

OpenVMS VAX Interactive User licenses are for customers running OpenVMS VAX V5.5 or greater. OpenVMS VAX Interactive User licenses are specific to a single system and cannot be shared across an OpenVMS Cluster.

QL-XULA9-BB  OpenVMS VAX Interactive 1-user license
QL-XULA9-BC  OpenVMS VAX Interactive 2-user license
QL-XULA9-BD  OpenVMS VAX Interactive 4-user license
QL-XULA9-BE  OpenVMS VAX Interactive 8-user license
QL-XULA9-BF  OpenVMS VAX Interactive 16-user license
QL-XULA9-BG  OpenVMS VAX Interactive 32-user license

OpenVMS VAX Interactive User Licenses

QL-XULA9-BH  OpenVMS VAX Interactive 64-user license
QL-XULAA-BR  OpenVMS VAX Interactive 128-user license
QL-XULAB-BR  OpenVMS VAX Interactive 256-user license

OpenVMS VAX Distributed Interactive User Licenses

OpenVMS VAX Distributed Interactive User licenses are for customers running OpenVMS VAX Version 6.0 or greater. OpenVMS VAX Distributed Interactive User licenses are not specific to a single system and can be moved between systems at user discretion. OpenVMS VAX Distributed Interactive User licenses can also be shared across an entire OpenVMS Cluster running OpenVMS VAX V6.0 or greater.

Note: OpenVMS VAX Distributed Interactive User licenses are architecture specific and cannot be shared across a mixed OpenVMS Cluster (OpenVMS VAX and OpenVMS Alpha systems).

QL-09SA9-BB  OpenVMS VAX Distributed Interactive 1-user license
QL-09SA9-BC  OpenVMS VAX Distributed Interactive 2-user license
QL-09SA9-BD  OpenVMS VAX Distributed Interactive 4-user license
QL-09SA9-BE  OpenVMS VAX Distributed Interactive 8-user license

OpenVMS VAX Distributed Interactive User Licenses

QL-09SA9-BF  OpenVMS VAX Distributed Interactive 16-user license
QL-09SA9-BG  OpenVMS VAX Distributed Interactive 32-user license
QL-09SA9-BH  OpenVMS VAX Distributed Interactive 64-user license
QL-09SA9-BR  OpenVMS VAX Distributed Interactive 128-user license
QL-09SAB-BR  OpenVMS VAX Distributed Interactive 256-user license
QL-VBRAP-AA  VAXcluster license for multiuser systems

OpenVMS VAX Media and Documentation

Choose operating system media and documentation. Recommended for first system on site. Operating System support for Model 40 requires V5.5 or higher; Model 85 and 96 require V5.5-2H4 or higher.

QA-001AA-Hx*  OpenVMS media with extended documentation.
QA-09SAA-Hx*  OpenVMS media with base documentation.

*  x denotes the media type: 5 = TK50, 8 = CD-ROM
Step 8—Software (continued)

OpenVMS Consolidated Software Media and Documentation

Choose as an alternative to the above OpenVMS kits. Requires RRD45 CD-ROM.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QA-VWJ8A-A8</td>
<td>OpenVMS and layered product binaries on CD-ROM without hardcopy documentation.</td>
</tr>
<tr>
<td>QA-VYR8A-G8</td>
<td>OpenVMS extended online documentation and layered product online documentation on CD-ROM; requires DECwindows Bookreader.</td>
</tr>
<tr>
<td>QA-GXXAB-Hx</td>
<td>POSIX media and documentation (without IEEE documentation)</td>
</tr>
</tbody>
</table>

DIGITAL NAS Base Server 200

DIGITAL NAS packaged products do not include hardcopy documentation, (documentation is CD-ROM only).

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QL-MC1AB-AA</td>
<td>DIGITAL NAS Base Server 200 license for OpenVMS VAX systems</td>
</tr>
<tr>
<td>QA-MC1AA-Hx*</td>
<td>DIGITAL NAS Base Server 200 media and documentation kit</td>
</tr>
</tbody>
</table>

* x denotes media type: 8 = CD-ROM, 5 = TK50, M = magtape

Step 9—Power Cords

Select for 220/240 V systems.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN19A-2E</td>
<td>U.K./Ireland</td>
</tr>
<tr>
<td>BN19C-2E</td>
<td>Austria, Belgium, France, Germany, Finland, Holland, Norway, Sweden, Portugal, Spain, and Chile</td>
</tr>
<tr>
<td>BN19E-2E</td>
<td>Switzerland</td>
</tr>
<tr>
<td>BN19K-2E</td>
<td>Denmark</td>
</tr>
<tr>
<td>BN19M-2E</td>
<td>Italy</td>
</tr>
<tr>
<td>BN19U-2E</td>
<td>Israel</td>
</tr>
<tr>
<td>BN19S-2E</td>
<td>India</td>
</tr>
<tr>
<td>BN19H-2E</td>
<td>Australia, New Zealand</td>
</tr>
</tbody>
</table>
MicroVAX 3100 System Diagram

MicroVAX 3100 Model 40, 85, and 96

MicroVAX 3100 System Diagram

[Diagram of MicroVAX 3100 System]

- RZxx
- TZKxx, RZxx, RX26, TLZxx
- Power Supply
- CPU
- Optional DSW42 I/O Module and Logic Board
- Optional DHW42 I/O Module and Logic Board
- Memory Modules
- On/Off Switch
- System Ac Power Connector
- External SCSI Port
- Optional DSW42 Ports
- Optional DHW42 Ports
- MMJ Ports
- Asynchronous Modem Control Port
- Thick wire Ethernet Connector
- ThinWire Ethernet Connector

3.16 VAX Systems
## Specifications

<table>
<thead>
<tr>
<th>Physical Characteristics</th>
<th>Models 40, 85, 96</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>14.99 cm (5.90 inches)</td>
</tr>
<tr>
<td>Width</td>
<td>46.38 cm (18.26 inches)</td>
</tr>
<tr>
<td>Depth</td>
<td>40.00 cm (15.75 inches)</td>
</tr>
<tr>
<td>Weight</td>
<td>16.0 kg (36.85 lb)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power Requirements</th>
<th>Model 40</th>
<th>Models 85/96</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>120/240 Vrms</td>
<td>120/240 Vrms</td>
</tr>
<tr>
<td>Power source phasing</td>
<td>Single</td>
<td>Single</td>
</tr>
<tr>
<td>Nominal frequency</td>
<td>50–60 Hz</td>
<td>50–60 Hz</td>
</tr>
<tr>
<td>Voltage range</td>
<td>88–132 Vrms</td>
<td>88–132 Vrms</td>
</tr>
<tr>
<td>Line frequency tolerance</td>
<td>47–63 Hz</td>
<td>47–63 Hz</td>
</tr>
<tr>
<td>Typical running current</td>
<td>1.1/0.6 A</td>
<td>1.5/0.75 A</td>
</tr>
<tr>
<td>Typical power consumption (Watts)</td>
<td>132/144</td>
<td>180/40</td>
</tr>
</tbody>
</table>

### Standard Communication

| Minimum MMJ lines | 3 DEC-423 | 3 DEC-423 |
| Modem lines       | 1 EIA-232 | 1 EIA-232 |
| Ethernet          | Thick wire and ThinWire supported on all models |

<table>
<thead>
<tr>
<th>Communications Options¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMJ lines</td>
</tr>
<tr>
<td>MMJ lines</td>
</tr>
<tr>
<td>Modem lines</td>
</tr>
<tr>
<td>Synchronous lines</td>
</tr>
</tbody>
</table>

### Operating Environment

Temperature (sea level) 10–40°C (50–90°F) Relative humidity 10%–80% noncondensing; 20% to 80% if tape drive is present. Maximum operating altitude 2.4 km (8,000 ft)

¹ DEC-423, EIA-232 and synchronous lines can be ordered separately. The DEC-423 and EIA-232 options cannot be configured together in the same system. An 8-line DEC-423 to 16-line DEC-423 upgrade option is available for the MicroVAX 3100 Model 40.
MicroVAX 3100 Model 88 and 98

Step 1—Systems

MicroVAX 3100 Model 88 and 98 Systems include

- Minitower enclosure with CPU/FPU
- 64 MB or 128 MB SIMM memory
- DIGITAL NAS Base Server 200
- 802.3/Ethernet interface (ThinWire/Thick wire) with terminators
- Ethernet kit; includes ThinWire T-connector with BNC terminators and 15-pin thick wire terminator
- Synchronous SCSI-2 interface for connecting internal and external SCSI devices; external connection via a 50-pin external SCSI-2 connector
- Three DEC-423 asynchronous serial lines (MMJ data leads only)
- EIA-232 asynchronous serial line with modem control (25-pin D-subminiature connector)
- H8575-A 25-pin-to-MMJ DEC-423 to EIA-232 adapter
- 7.6-meter (25-foot) console terminal cable
- 120 V power cord (country-specific power cord required for 240 V use; see Step 9)
- Universal power supply that automatically adjusts to 88–132 Vac or 176–264Vac
- Hardware documentation (EK-MV489-UI for Model 88 and 98
- 1.05 GB RZ26N disk (Uses one 3.5” half-height SCSI bay)
- 600 MB CD-ROM (Uses one 5.25” removable media bay)
- OpenVMS base license (with POSIX)
- Factory-installed software
- Three-year hardware product warranty
- 90-day software warranty

1. Delivery of software on a system disk is not warranted. It is provided as a convenience to the customer. Customers are encouraged to purchase the necessary media and documentation kits that include complete installation instructions. See Step 8 for details.

MicroVAX 3100 Model 88 and 98 Advantage Servers

<table>
<thead>
<tr>
<th>Order Number</th>
<th>MicroVAX 3100</th>
<th>Memory</th>
<th>DIGITAL NAS</th>
<th>Disk Drive</th>
<th>CD-ROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV-31JCC-EA</td>
<td>Model 88</td>
<td>64 MB</td>
<td>Base Server</td>
<td>1.05 GB FIS</td>
<td>RRD45 (600 MB)</td>
</tr>
<tr>
<td>DV-31SCC-EA</td>
<td>Model 98</td>
<td>64 MB</td>
<td>Base Server</td>
<td>1.05 GB FIS</td>
<td>RRD45 (600 MB)</td>
</tr>
<tr>
<td>DV-31SCC-FA</td>
<td>Model 98</td>
<td>128 MB</td>
<td>Base Server</td>
<td>1.05 GB FIS</td>
<td>RRD45 (600 MB)</td>
</tr>
</tbody>
</table>

* Disk drive includes Factory Installed Software (FIS)

Step 2—Memory

- Systems with 64 MB memory include one PB7MA-CC memory option, select one additional memory option 64 MB or 128 MB for system total of 128 or 192 MB.
- Systems with 128 MB memory include one PB7MA-CD memory option, select one additional memory option 64 MB or 128 MB for system total of 192 or 256 MB.
- To expand beyond 256 MB see Memory Configuration Chart below.

PB7MA-CC 64 MB SIMM memory
PB7MA-CD 128 MB SIMM memory
MS45-DA 128 MB SIMM memory expansion option includes 128 MB, and supports one additional 64 MB or 128 MB (PB7MA-CC/CD) SIMM memory option.

Memory Configuration Chart

<table>
<thead>
<tr>
<th>Required Memory</th>
<th>1st Memory Board (standard)</th>
<th>2nd Memory Expansion Board (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>64 MB</td>
<td>128 MB</td>
</tr>
<tr>
<td>64 MB</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>128 MB</td>
<td>2 or 1</td>
<td>1</td>
</tr>
<tr>
<td>192 MB</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>256 MB</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>320 MB</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>384 MB</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>448 MB</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>512 MB</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>
Step 3—Storage
Select storage devices as required. See Storage Devices for further details.

Step 3a—Internal Storage
- System supports maximum of six internal devices in any of the following combinations:
  - Six RZ26 or RZ28 half-height disk drives, or
  - Five RZ26 or RZ28 disk drives and one removable media device
  - Three RZ26 or RZ28 half-height disk drives and three removable media devices
  - Maximum of three RZ29B disk drives supported, must be installed in removable media device bays
- RZ26N disk drive in Advantage Server systems include Factory Installed Software (FIS)
- Order a load device (TLZ09) if necessary
- OpenVMS Cluster satellite members or systems being loaded over the network do not require a load device.
- Field-installed options require Customer Services installation.

Removable Media Devices for Models 88 and 98
- RRD45-AB 600 MB CD-ROM drive
- TLZ09-LK 8.0 GB 4-mm DAT drive
- TZK11-LG 2.1 GB cartridge QIC tape drive
- TZK20-LK 2.3 GB 300 Kbs SCSI QIC tape drive

Fixed Disk Drives
- RZ26N-EB 1.0 GB 3.5-inch SCSI disk drive 5400 RPM
- RZ28M-EB 2.1 GB 3.5-inch SCSI disk drive 5400 RPM
- RZ28D-EB 2.1 GB 3.5-inch SCSI disk drive 7200 RPM
- RZ29B-EB 4.3 GB 3.5-inch SCSI disk drive 7200 RPM

Step 3b—External Storage
- Model 88 and 98:
  - Maximum 14 SCSI devices with additional SCSI card option.
Use the following table to calculate external SCSI bus length.

<table>
<thead>
<tr>
<th>Maximum SCSI Bus Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
</tr>
<tr>
<td>1.2 m (47.2 inches)</td>
</tr>
<tr>
<td>External</td>
</tr>
<tr>
<td>4.8 m (189.0 inches)</td>
</tr>
<tr>
<td>KZDDA internal</td>
</tr>
<tr>
<td>0.1 m (3.9 inches)</td>
</tr>
<tr>
<td>KZDDA external</td>
</tr>
<tr>
<td>5.9 m (232.0 inches)</td>
</tr>
</tbody>
</table>

SCSI Controller and Tabletop Storage
- KZDDA-AB SCSI controller card supports seven additional external SCSI devices (one per system supported)
- RRD45-FA/DG* 600 MB tabletop CD-ROM drive; 120 V/240 V, requires 1.8 meter (6 foot) SCSI cable BC06P-06
- TLZ09-DD* 8.0 GB tabletop DAT drive with universal power supply; includes 120 V power cord
- TZ88N-TA* 40 GB SCSI tabletop tape drive
- TZ887-NT 280 GB SCSI tape subsystem, 7 cartridge loader in tabletop enclosure
- BC09D-03 TZ8x cable, 3 foot (0.9 m)
- BC09D-06 TZ8x cable, 6 ft (1.8 m)
- BC09D-09 TZ8x cable, 9 ft (2.7 m)

* Country-specific power cord required for 240 V use.
Step 3b—External Storage (continued)

StorageWorks Expansion Units

**BA356-KD**
- StorageWorks 16-bit shelf includes dual speed blowers. Supports maximum of seven 3.5-inch devices (8 or 16-bit), requires BA35X-MG 8-bit I/O module, and BN21H-xx SCSI cable

**BA362-AA/AB**
- Office expansion unit, supports up to two 3.5-inch modular storage devices, requires BN31V-01 3.2 feet (1.0 m) SCSI cable

**BA364-AA/AB**
- Office expansion unit, supports up to four 3.5-inch modular storage devices and one fixed CD-ROM, requires 3.2 feet (1.0 m) SCSI cable

1. One BA356 expansion unit is supported per single ended SCSI bus; no other external device can be connected to system with BA356 unit.

SCSI devices supported in StorageWorks Expansion Units

**RZ26N-VA/VW**
- 1.0 GB, 3.5-inch, half-height disk drive, 5400 RPM

**RZ28M-VA/VW**
- 2.1 GB, 3.5-inch, half-height disk drive, 5400 RPM

**RZ28D-VA/VW**
- 2.1 GB, 3.5-inch, half-height disk drive, 7200 RPM

**RZ29B-VA/VW**
- 2.1 GB, 3.5-inch, half-height disk drive, 7200 RPM

**TLZ09-VA**
- 8.0 GB, 3.5-inch, half-height 4-mm DAT drive

**TZK11-VA**
- 20/40 GB SCSI tape drive in StorageWorks carrier

**TZ88N-VA**
- 2.0 GB 5.25-inch QIC tape in StorageWorks carrier

Step 4—Networks and Communications

- Systems support one asynchronous and one synchronous communication option

- An 8-line DEC-423 to 16-line DEC-423 upgrade option is available for the MicroVAX 3100, see Network Products Guide for more information.

Host-Based Communications Controllers

Select host-based communications controllers for standalone systems (without LAN connectivity), or for other requirements.

Asynchronous Multiplexer Options

Select one asynchronous multiplexer for communications expansion

**DHW42-CB**
- Provides eight EIA-232 lines for a system total of 12 asynchronous lines (three data only and nine with modem control). Includes internal logic module with cable, EIA-232 I/O assembly, and two external 50-pin to 4-way 25-pin BC29J-06 1.8-m (6-ft) cables; factory or field installed.

**DHW42-BB**
- Provides 16 DEC-423 lines for a system total of 20 asynchronous lines (19 data only and one with modem control). Includes internal logic module with cable, DEC-423 I/O assembly, two external 36-pin BC16C-10 3-m (10-ft) cables, and two H3104-00 eight-line distribution harmonica; factory or field installed.

Note: Addition of DHW42 xB options increases number of users; an OpenVMS license upgrade may be required.

Synchronous Communications Options

- Select one synchronous option

- EIA-232/V.24 cable (BC19D-02) is included—select alternate cables for EIA-423/V.10 and EIA-422/V.11 connection

- Synchronous communication option requires VAX WAN Device Driver V1.2 or higher required. VAX WAN Device Driver media included in OpenVMS Consolidated Software Disk CD-ROM media. See Step 8 for details.

**DSW43-AA**
- EIA-232 synchronous controller provides two lines). Includes synchronous logic module, I/O assembly, and external EIA-232 0.6-m (2-ft) adapter cable

**BC19B-02**
- EIA-422/V.11 0.6-m (2-ft) adapter cable

**BC19E-02**
- EIA-423/V.10 0.6-m (2-ft) adapter cable
Step 4—Networks and Communications (continued)

LAN Communications Controller
802.3/Ethernet Interface (ThinWire/Thick wire selectable) included with system. Connection of system to Ethernet requires a ThinWire BNC connection (e.g., BC16M cable) or a thick wire 15-pin AUI transceiver cable (e.g., BNE3x).

Local and Wide Area Communications Servers
Each communications server requires an 802.3/Ethernet connection. Depending on the server selected, either a ThinWire BNC connection (e.g., BC16M cable) or a thick wire 15-pin AUI transceiver cable is required (e.g., BNE3x). Software media and documentation and cables are also required. See Network Products Guide.

DECserver 90M, 90TL, 900TM, 90L+, 700, and MUXserver 90, 320, 380 Communications and Printer Servers
Select a terminal or printer server to provide users with multiple session access to systems on a LAN, to minimize on a LAN, to minimize cabling complexity and costs, and to conserve host resources such as backplane slots.

DEC WANrouter 90, 250, DECbrouter 90; and DECNis 500, 600 MultiProtocol Routers
Select a router to cost-effectively link a LAN to a remote system or another LAN and to offload routing overhead from the application host system.

InfoServer 1000 Network Storage Server
To provide initial system load (ISL) capabilities order InfoServer Local Area Compact Disk. Other configurations are offered for tape/backup and for serving more CD-ROMs. InfoServer systems support CD-ROM, hard drives, magneto-optical and tape drives. InfoServer 1000 systems can serve up to seven SCSI devices. See Storage Devices for ordering information.

Network Connectivity Products
See the Network Products Guide.

Step 5—Console Terminal
A console device is necessary for a system to function. Console cable included with system. Order video terminals (e.g., VT520) for each system unless otherwise available. If logging is required, a combination of video terminal and LAxx is recommended.

Step 6—Terminals and Printers
Select terminals and serial printers as required. Serial printers connect to an asynchronous line. A cable (e.g., BC16E-25) must be ordered with each unless otherwise provided.

Step 7—CPU Upgrades
Note: A non-return charge will be assessed if old CPU board is not returned to DIGITAL.

<table>
<thead>
<tr>
<th>Order Number</th>
<th>From</th>
<th>To</th>
<th>Includes</th>
</tr>
</thead>
<tbody>
<tr>
<td>49JAC-AA</td>
<td>MicroVAX 3100 Model 88</td>
<td>MicroVAX 3100 Model 98</td>
<td>MicroVAX 3100 Model 98 Server CPU OpenVMS base license</td>
</tr>
</tbody>
</table>
Step 8—Software

Licenses required to support additional users beyond those included in base systems.

Operating System support requires V5.5-2H4, V6.2 or higher

Software Processor Code = B
Clusterwide License Rating = 20 (C)

OpenVMS VAX Concurrent Use Licenses

OpenVMS VAX Concurrent Use licenses are for customers running OpenVMS VAX V6.2 or greater.

OpenVMS VAX Concurrent Use license provides the right to interactively use the operating system by the specified number of concurrent users on a designated OpenVMS system. OpenVMS Concurrent Use licenses can be moved from one OpenVMS system to another OpenVMS system at user discretion and can be shared in a mixed OpenVMS VAX and OpenVMS Alpha Cluster.

QL-MT3AA-3B  OpenVMS Concurrent Use 1-user license
QL-MT3AA-3C  OpenVMS Concurrent Use 2-user license
QL-MT3AA-3D  OpenVMS Concurrent Use 4-user license
QL-MT3AA-3E  OpenVMS Concurrent Use 8-user license
QL-MT3AA-3F  OpenVMS Concurrent Use 16-user license
QL-MT3AA-3G  OpenVMS Concurrent Use 32-user license
QL-MT3AA-3H  OpenVMS Concurrent Use 64-user license
QL-MT3AA-3J  OpenVMS Concurrent Use 128-user license
QL-MT3AA-3K  OpenVMS Concurrent Use 256-user license
QL-XULA5-AA  OpenVMS VAX Traditional unlimited user license

OpenVMS VAX Interactive User Licenses

OpenVMS VAX Interactive User licenses are for customers running OpenVMS VAX V5.5 or greater. OpenVMS VAX Interactive User licenses are specific to a single system and cannot be shared across an OpenVMS Cluster.

QL-XULA9-BB  OpenVMS VAX Interactive 1-user license
QL-XULA9-BC  OpenVMS VAX Interactive 2-user license
QL-XULA9-BD  OpenVMS VAX Interactive 4-user license
QL-XULA9-BE  OpenVMS VAX Interactive 8-user license
QL-XULA9-BF  OpenVMS VAX Interactive 16-user license
QL-XULA9-RG  OpenVMS VAX Interactive 32-user license
QL-XULA9-BH  OpenVMS VAX Interactive 64-user license
QL-XULAA-BR  OpenVMS VAX Interactive 128-user license
QL-XULAB-BR  OpenVMS VAX Interactive 256-user license

OpenVMS VAX Distributed Interactive User Licenses

OpenVMS VAX Distributed Interactive User licenses are for customers running OpenVMS VAX Version 6.0 or greater. OpenVMS VAX Distributed Interactive User licenses are not specific to a single system and can be moved between systems at user discretion. OpenVMS VAX Distributed Interactive User licenses can also be shared across an entire OpenVMS Cluster running OpenVMS VAX V6.0 or greater.

Note: OpenVMS VAX Distributed Interactive User licenses are architecture specific and cannot be shared across a mixed OpenVMS Cluster (OpenVMS VAX and OpenVMS Alpha systems).

QL-09SA9-BB  OpenVMS VAX Distributed Interactive 1-user license
QL-09SA9-BC  OpenVMS VAX Distributed Interactive 2-user license
QL-09SA9-BD  OpenVMS VAX Distributed Interactive 4-user license
QL-09SA9-BE  OpenVMS VAX Distributed Interactive 8-user license
Step 8—Software (continued)

OpenVMS VAX Distributed Interactive User Licenses

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QL-09SA9-BF</td>
<td>OpenVMS VAX Distributed Interactive 16-user license</td>
</tr>
<tr>
<td>QL-09SA9-BG</td>
<td>OpenVMS VAX Distributed Interactive 32-user license</td>
</tr>
<tr>
<td>QL-09SA9-BH</td>
<td>OpenVMS VAX Distributed Interactive 64-user license</td>
</tr>
<tr>
<td>QL-09SA9-BR</td>
<td>OpenVMS VAX Distributed Interactive 128-user license</td>
</tr>
<tr>
<td>QL-09SAB-BR</td>
<td>OpenVMS VAX Distributed Interactive 256-user license</td>
</tr>
<tr>
<td>QL-VBRAP-AA</td>
<td>VAXcluster license for multiuser systems</td>
</tr>
</tbody>
</table>

OpenVMS VAX Media and Documentation

Choose operating system media and documentation. Recommended for first system on site. Operating System support for Models 88 and 98 require V5.5-2H4 or higher.

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QA-001AA-Hx*</td>
<td>OpenVMS media with extended documentation.</td>
</tr>
<tr>
<td>QA-09SAA-Hx*</td>
<td>OpenVMS media with base documentation.</td>
</tr>
</tbody>
</table>

* x denotes the media type: 5 = TK50, 8 = CD-ROM

OpenVMS Consolidated Software Media and Documentation

Choose as an alternative to the above OpenVMS kits. Requires RRD45 CD-ROM.

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QA-VWJ8A-A8</td>
<td>OpenVMS and layered product binaries on CD-ROM without hardcopy documentation.</td>
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<tr>
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<tr>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QA-GXXAB-Hx*</td>
<td>POSIX media and documentation (without IEEE documentation)</td>
</tr>
</tbody>
</table>

* x denotes the media type: 5 = TK50, 8 = CD-ROM

DIGITAL NAS Base Server 200

DIGITAL NAS packaged products do not include hardcopy documentation, (documentation is CD-ROM only).

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QL-MC1AB-AA</td>
<td>DIGITAL NAS Base Server 200 license for OpenVMS VAX systems</td>
</tr>
<tr>
<td>QA-MC1AA-Hx*</td>
<td>DIGITAL NAS Base Server 200 media and documentation kit</td>
</tr>
</tbody>
</table>

* x denotes media type: 8 = CD-ROM, 5 = TK50, M = magtape

Step 9—Power Cords

BN19P-2E power cord is included with North American systems. Select country specific power cord for 240 V use.

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Country/Voltage</th>
<th>Amps</th>
<th>Plug</th>
<th>Meters (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN19P-2E</td>
<td>U.S./Japan 125 V</td>
<td>10</td>
<td>NEMA 5-15</td>
<td>1.9 (6.2)</td>
</tr>
<tr>
<td>BN19H-2E</td>
<td>Australia/New Zealand 125 V</td>
<td>10</td>
<td>AS 3112-1981</td>
<td>2.5 (8.2)</td>
</tr>
<tr>
<td>BN19C-2E</td>
<td>Central Europe, 250 V</td>
<td>10</td>
<td>CEE 7/7 (Schuko)</td>
<td>2.5 (8.2)</td>
</tr>
<tr>
<td>BN19A-2E</td>
<td>U.K./Ireland, 250 V</td>
<td>10</td>
<td>BS 1363</td>
<td>2.5 (8.2)</td>
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<tr>
<td>BN19E-2E</td>
<td>Switzerland, 250 V</td>
<td>10</td>
<td>SEV 1011</td>
<td>2.5 (8.2)</td>
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<tr>
<td>BN19K-2E</td>
<td>Denmark, 250 V</td>
<td>10</td>
<td>Afsnit 107</td>
<td>2.5 (8.2)</td>
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<tr>
<td>BN24X-2E</td>
<td>Italy, 250 V</td>
<td>10</td>
<td>CEI 23-16 / VII</td>
<td>2.5 (8.2)</td>
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<tr>
<td>BN19S-2E</td>
<td>India/South Africa, 250 V</td>
<td>10</td>
<td>BS 546</td>
<td>2.5 (8.2)</td>
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<tr>
<td>BN18L-2E</td>
<td>Israel, 250 V</td>
<td>10</td>
<td>SI 32</td>
<td>2.5 (8.2)</td>
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</tbody>
</table>
Model 88 and 98 System Diagram

1. Front Door
2. CD-ROM
3. System Disk Drive
4. System board
5. 1st SIMM board (standard)
6. 2nd SIMM board (optional)
7. Power Supply
8. Rear drive bay
9. DHW42 Asynchronous option
10. DSW43 synchronous option

1. Front door
2. Power switch
3. Disk drive LED
4. Power LED
5. Halt switch; halts system and returns it from operating system to console mode
6. RZ2x SCSI disk (non-accessible)
7. Accessible/non-accessible bay for 3.5" or 5.25" device
8. Accessible/non-accessible bay for 3.5" or 5.25" device
9. CD-ROM volume switch
10. CD-ROM headphone jack
11. CD-ROM activity light
12. CD-ROM eject button
Model 88 and 98 System Diagram

1. SCSI port (terminated required)
2. 2A AC power outlet connection
3. AC power input connector
4. Pre-installed software label
5. System identification label
6. Lockdown hasp
7. ThinWire Ethernet
8. ThinWire Ethernet LED
9. Thick wire Ethernet
10. Thick wire Ethernet LED
11. Modem port (with adapter)
12. MMJ port (for console only)
13. MMJ port
14. MMJ port
15. DHW42 Asynchronous communication (optional)
16. DSW43 Synchronous communication (optional)
17. KZDDA SCSI port (optional)

Specifications

<table>
<thead>
<tr>
<th>Physical Characteristics</th>
<th>Models 88, 98</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>40.64 cm (16.0 inches)</td>
</tr>
<tr>
<td>Width</td>
<td>22.1 cm (8.7 inches)</td>
</tr>
<tr>
<td>Depth</td>
<td>47.5 cm (18.7 inches)</td>
</tr>
<tr>
<td>Weight</td>
<td>16.0 kg (35.0 lb)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power Requirements</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>120/240 Vrms</td>
</tr>
<tr>
<td>Power source phasing</td>
<td>Single</td>
</tr>
<tr>
<td>Nominal frequency</td>
<td>50–60 Hz</td>
</tr>
<tr>
<td>Voltage range</td>
<td>88–132 Vrms</td>
</tr>
<tr>
<td></td>
<td>176–264 Vrms</td>
</tr>
<tr>
<td>Line frequency tolerance</td>
<td>47–63 Hz</td>
</tr>
<tr>
<td>Typical running current</td>
<td>2.3/1.3 A</td>
</tr>
<tr>
<td>Typical power consumption</td>
<td>170W</td>
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</table>

<table>
<thead>
<tr>
<th>Standard Communication</th>
<th></th>
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<tbody>
<tr>
<td>Minimum MMJ lines</td>
<td>3 DEC-423</td>
</tr>
<tr>
<td>Modem lines</td>
<td>1 EIA-232</td>
</tr>
<tr>
<td>Synchronous lines</td>
<td>Thick wire and ThinWire supported on all models</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communications Options¹</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MMJ lines</td>
<td>16 DEC-423</td>
</tr>
<tr>
<td>Modem lines</td>
<td>8 EIA-232</td>
</tr>
<tr>
<td>Synchronous lines</td>
<td>2 synchronous</td>
</tr>
<tr>
<td>Operating Environment</td>
<td>Temperature (sea level) 10–40°C (50-90°F) Relative humidity 10%–80% noncondensing; 20% to 80% if tape drive is present. Maximum operating altitude 3.5 km (10,000 ft)</td>
</tr>
</tbody>
</table>

¹ DEC-423, EIA-232 and synchronous lines can be ordered separately. The DEC-423 and EIA-232 options cannot be configured together in the same system.