

**VAXstation 4000 Model 96**  
**V2.5—25 January 1999**  
Systems and Options Catalog**Product Description**

The VAXstation 4000 Model 96 system is a high performance, OpenVMS VAX workstation. The Model 96 system supports three graphic options: LCSPX (accelerated 2D); SPXg (8 plane 3D with 16-bit Z-Buffer); and SPXgt (24 plane 3D with 24-bit Z-Buffer). SPXg graphics provide hardware acceleration for 2D and 3D vectors and solid fill. SPXgt is most useful in accelerating the performance of applications that make extensive use of smooth shaded graphics and true color imaging.

Main memory can be configured at 16, 32, 64, 80, or 128 Mbytes, and the system includes 256 Kbytes of writeback cache. A TURBOchannel adapter option provides direct connectivity to supported TURBOchannel options. Although manufacturing for new builds of these options has gone End of Life, software support exists for thick wire Ethernet, additional SCSI, or FDDI controllers. These may be purchased from DUSERS or third party resellers.

VAXstation 4000 Model 96 memory modules, internal storage devices, and graphics option upgrades are customer installable. Internal storage permits a maximum of two 3.5-inch hard disks and one removable media device (diskette, compact disc, or tape drive). External expansion is supported in StorageWorks BA356 modular storage units.

VAXstation 4000 Model 96 Base system software licenses include the OpenVMS operating system and Network Application Support (NAS 150) for VAXstations. Systems ordered with a factory installed disk will have OpenVMS and DECwindows Motif factory installed.

The VAXstation 4000 Model 96 system is ideal for applications such as CAD/CAM/CAE, medical and other forms of imaging, econometrics, process control/CIM, mapping, geophysical analysis, scientific visualization, and is suitable as a trader workstation. It provides a level of VAXstation performance that enables users to run the most demanding applications. To allow VAXstation 4000 Model 60 users to take full advantage of the processing performance of the VAXstation 4000 Model 96 system, upgrade kits are available. To provide investment protection, SPXg and SPXgt color graphics cards and monitors can be transferred from a VAXstation 4000 Model 60 system to an upgraded VAXstation 4000 Model 96 system.

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### Step 1—Systems

120 V Base Systems include a U.S. keyboard and required power cords. If a 240 V system is selected, the appropriate country kit or keyboard and power cord are required.

- Graphics, TURBOchannel, and synchronous communication options are customer installable and will ship as spares.
- Other options ordered with Base Systems will be factory installed unless specified as spares.

#### VAXstation 4000 Model 96 Base Systems include

- Base module
- Memory—eight SIMM connectors.
- 256 Kbytes cache memory.
- Onboard ThinWire/thick wire Ethernet controller.
- Onboard Synchronous SCSI controller.
- 2D color/gray scale graphics board (LCSPX).
- U.S. keyboard (120 V only).
- Three-button mouse.
- One DEC-423 serial line.
- One EIA-232D serial line with modem control.
- 2.7 meter (9 foot) color/monochrome video cable.
- 1.8 meter (6 foot) power cord (120-V systems only).
- 0.9 meter (3 foot) monitor power cord (monitor to system box).
- Universal power supply that automatically adjusts to 88–132 Vac or 176–264 Vac.
- Software licenses: OpenVMS VAX and DIGITAL NAS Client 150 for VAXstations  
DECwindows Motif, DECnet End Node, DECnet/OSI End System, DEC TCP/IP Client, VMScluster Client.
- English language user documentation.

**Note:** Base Systems ordered with a factory installed disk include factory installed software (FIS).

Order Number	Memory	Monitor	Hz	Hard Disk Drive	CD-ROM
PV71A-BA/BB	16 MB	Required	72		
PV71A-BC/BD	64 MB	Required	72	1.0 GB Included	600 MB Included

**Note:** BA, BC = 120/240 V Northern Hemisphere; BB, BD = 240 V Southern Hemisphere.

### Step 2—Memory

- Base systems include 16 MB (4 x 4 MB SIMMs) or 64 MB (4 x 16 MB SIMMs).
- Select additional memory if required, four SIMM memory slots available, eight SIMM memory slots total.
- System supports maximum of 128 MB (two MS44-DC options).

MS44-CA	16 MB parity (1 x 16 MB, 100 ns SIMMs)
MS44-DC	64 MB parity (4 x 16 MB, 100 ns SIMMs)
MS44L-EA	4 MB parity (1 x 4 MB, 60 ns SIMMs)
MS44L-FA	16 MB parity (4 x 4MB, 60 ns SIMMs)

### Step 3—Monitors (Required for Base Systems)

**Note:** VAXstation 4000 Model 96 does not support dual and quad monitor configurations.

SN-VRQP7-24/23	17" (16.0" viewable image size) professional series auto-scanning color monitor, Trinitron CRT, 0.25 mm aperture grill pitch, VGA to 1280 x 1024 at 75 Hz, TCO 95, MPR-II, Energy Star, attached 1.8 meter video cable. -24 = Northern Hemisphere without power cord. -23 = Southern Hemisphere without power cord..
SN-VRQP1-24/23	21" (19.6" viewable image size) auto-scanning color monitor, Trinitron CRT, 0.25 mm aperture grill pitch, VGA to 1600 x 1200 at 75 Hz NI, TCO 95, Energy Star, includes a 1.8 meter video cable. -24 = Northern Hemisphere without power cord. -23 = Southern Hemisphere without power cord.

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**Step 3a—Graphics Options (Customer Installable)**

- Graphics options are listed with compatible monitors.
- Upgrades include video cables.
- Recommended configurations for SPXg/gt are 32 MB of memory and 1 GB internal disk.

**Note:** Model 96 do not support dual- or quad-monitor configurations. See Step 3 for information on compatible monitors.

<b>PV71G-AA</b>	LCSPX 8-plane 2D color/gray scale graphics 1280 x 1024 resolution, 72 Hz
<b>PV71G-BA<sup>1</sup></b>	SPXg 8-plane 3D color graphics 16-bit Z-Buffer 1280 x 1024 resolution 72 Hz
<b>PV71G-CA<sup>1</sup></b>	SPXgt 24-plane 3D color graphics 24-bit Z-Buffer 1280 x 1024 resolution 72 Hz

1. SPXg and SPXgt options include DEC PHIGS Runtime license and require DECwindows Motif V1.1 media.
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**Step 4—Storage**

Select storage devices if required. Base systems ordered with a factory installed disk include factory installed software (FIS).

- System disk must be ordered if the system is not being booted over the network by a server.
- Maximum of seven SCSI devices, not to exceed two internal hard drives, one removable media device, and four external devices; or up to six external SCSI devices (with only one internal drive).

**Note:** FIS is not a substitute for a software load device; media and documentation are required for first system on site.

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**Step 4a—Internal Storage**

- System has three internal storage slots
  - Slot 1—Removable media (RX23L, RRD47, TLZ10, TZK11)
  - Slot 2—3.5 inch disk SCSI hard disk drive
  - Slot 3—3.5 inch disk SCSI hard disk drive

Select up to one half-height removable media device.

<b>RRD47-EN</b>	600 MB 32X CD-ROM
<b>TLZ10-HF</b>	8.0 GB 4 mm DAT drive
<b>TZK20-HF</b>	2.3 GB QIC tape drive

Select up to two 3.5-inch half-height hard disk drives

<b>RZ29L-EN</b>	4.3 GB 8-bit narrow 7200 RPM SCSI disk drive, 50-Pin
<b>RZ40-EN<sup>1</sup></b>	9.1 GB 8-bit narrow 7200 RPM SCSI disk drive, 50-Pin
<b>RZ1EF-EN<sup>1</sup></b>	18.2 GB 8-bit narrow 7200 RPM SCSI disk drive, 50-Pin

1. Only one supported per enclosure. RZ40/RZ1EF require OpenVMS V6.0 or later.
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**Step 4b—External Storage****Tabletop Expansion**

<b>DS-TLZ10-DB</b>	4/8 GB 4 mm DAT tabletop tape drive
<b>TZK20-DB</b>	2.3 GB QIC tabletop tape drive
<b>DS-TZ89N-TA</b>	35/70 GB DLT single-ended tabletop tape drive
<b>TLZ9L-DB</b>	32/64 GB DAT tabletop tape loader

**StorageWorks Expansion Unit**

<b>BA356-KD<sup>1,2</sup></b>	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
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1. One BA356 supported per single-ended SCSI bus; no other external device can be connected to system with BA356 unit.
2. Country-specific power cord required for 240 V use.

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**Step 4b—External Storage (continued)****SCSI devices supported in StorageWorks Expansion Units**

<b>DS-RZ29L-VA</b>	4.3 GB 8-bit narrow 7200 RPM SCSI disk drive
<b>DS-RZ1CF-VA</b>	4.3 GB 8-bit narrow 7200 RPM SCSI disk drive
<b>DS-RZ1DF-VA</b>	9.1 GB 8-bit narrow 7200 RPM SCSI disk drive
<b>DS-RZ1EF-VA</b>	18.2 GB 8-bit narrow 7200 RPM SCSI disk drive
<b>DS-RZ1CF-VW</b>	4.3 GB 16-bit wide 7200 RPM SCSI disk drive
<b>DS-RZ1DF-VW</b>	9.1 GB 16-bit wide 7200 RPM SCSI disk drive
<b>DS-RZ1EF-VW</b>	18.2 GB 16-bit wide 7200 RPM SCSI disk drive
<b>DS-TLZ10-VA</b>	4/8 GB 4 mm DAT drive in 3.5-inch half-height StorageWorks carrier
<b>TLZ9L-VA</b>	32/64 GB DAT tape loader in StorageWorks carrier
<b>TZ89N-VA</b>	35/70 GB DLT tape drive single-ended in 5.25-inch StorageWorks carrier
<b>TZK11-VA</b>	2.0 GB QIC tape in 5.25-inch in StorageWorks carrier

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**Step 5—TURBOchannel Adapter (Customer Installable)**

- TURBOchannel adapter provides one single width bus slot for Digital or third party options.
- Adapter requires OpenVMS VAX V5.5-2HW or higher.
- Required for TURBOchannel options (Step 5a).

**Note:** DWCTX-BX is available from DUSERS and third party resellers only.

**DWCTX-BX**           TURBOchannel adapter module

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**Step 5a—TURBOchannel Options (Customer Installable)**

- Requires a TURBOchannel adapter.
- Each option requires one TURBOchannel slot.
- The following TURBOchannel options have OpenVMS VAX/driver support.

**Note:** DEFTA-AA is available from DUSERS and third party resellers only.

<b>DEFTA-AA</b>	DEC FDDI controller 700 (fiber optic) option card. Requires DEC LAN device driver kit V1.0 (QA-0PAAA-H5/H8) with OpenVMS VAX V5.5-2
<b>DEFTA-DA</b>	DEC FDDI controller 700 (fiber optic) option card. DAS-MMF variant. Requires DEC LAN device driver kit V1.0 (QA-0PAAA-H5/H8) with OpenVMS VAX V5.5-2.
<b>DEFTA-UA</b>	DEC FDDI controller 700 (fiber optic) option card. SAS-UTP variant. Requires DEC LAN device driver kit V1.0 (QA-0PAAA-H5/H8) with OpenVMS VAX V5.5-2.

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**Step 6—Synchronous Communication Options**

Select synchronous communication option if TURBOchannel adapter was not selected from Step 5.

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**Step 6a—Synchronous Communication Controller (Customer Installable)**

**DSW21-AD**           One line synchronous communication controller and V.35 synchronous modem cable

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**Step 7—Networking Cables**

<b>BC16M-xx</b>	ThinWire Ethernet cable (xx = 06/15/30 feet in length)
<b>BNE3H-xx</b>	Thick wire transceiver cable with straight connector (PVC)(xx = 05/10/20/40 meters in length)
<b>BNE3L-xx</b>	Thick wire transceiver cable with straight connector (Teflon)(xx = 05/10/20/40 meters in length)

**Note:** Right angle Ethernet cables are not supported.

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**Step 8—Printers**

Order printers if required.

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**Step 9—Hardware Documentation**

Information kits ship with every system. Information kits include: *VAXstation 4000 Model 90 Quick Installation Card*, *Owners and System Installation Guide*, and *Options Installation Guide*.

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**Step 10—Software Media and Documentation**

VAXstation 4000 Model 96 systems require OpenVMS VAX V5.5-2HW or higher; a media and documentation kit is recommended for the first system on site.

- VAXstation 4000 Model 96 systems include the following Base System license PAKs: OpenVMS VAX operating system and DIGITAL NAS Client 150 for VAXstations (DECwindows Motif, DECmessageQ RT, ObjectBroker RT, DECnet End Node, DECnet/OSI End System, DEC TCP/IP Client, VMScluster Client).

**OpenVMS VAX and DECwindows Media and Documentation**

**QA-09SAA-H8** OpenVMS VAX and DECwindows media (CD-ROM) and documentation  
**QA-09SAA-GZ** OpenVMS VAX and DECwindows documentation

**DIGITAL NAS Client 150 Software**

**QA-36PAA-H8** DIGITAL NAS Client 150 for VAXstations media and documentation on CD-ROM

**DEC PHIGS Runtime License**

Included with SPXg and SPXgt options. Order media and documentation separately.

**QA-VK1AA-HM** DEC PHIGS Runtime for OpenVMS VAX media (magtape) and documentation NAS 150 for VAXstations media (magtape) and documentation (CD-ROM)

**DEC SoftPC**

DEC SoftPC, an optional layered product, allows a VAXstation 4000 system to run MS-DOS programs with no added hardware. Order license, media, and documentation.

**QL-YNWAA-3B** DEC SoftPC for OpenVMS VAX single user license  
**QA-YNWAA-HM** DEC SoftPC for OpenVMS VAX media (magtape)  
**QA-YNWAA-GZ** DEC SoftPC for OpenVMS VAX documentation

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**Step 11—Country Kits, Power Cords, Keyboards (Not Required for 120 V Systems)**

Country Kit	Power Cord	Keyboard	Country	Language
FCP01-AG	BN19C-2E	LK40W-AG	Austria	German/Austrian
FCP01-AP	BN19C-2E	LK40W-AP	France	French
FCP01-AG	BN19C-2E	LK40W-AG	Germany	German
FCP01-AT	BN18L-2E	LK40W-AT	Israel	Hebrew
FCP01-AS	BN19C-2E	LK40W-AS	Spain	Spanish
FCP01-AM	BN19C-2E	LK40W-AM	Sweden	Swedish
FCP01-AE	BN19A-2E	LK40W-AA	U.K./Ireland	English
	BN19H-2E	LK40W-AA	Australia/NZ	English
	BN19P-1K	LK40W-AA	U.S./Canada	English
	BN19S-2E	LK40W-AA	India	English
		LK40W-AJ	Japan	Katakana

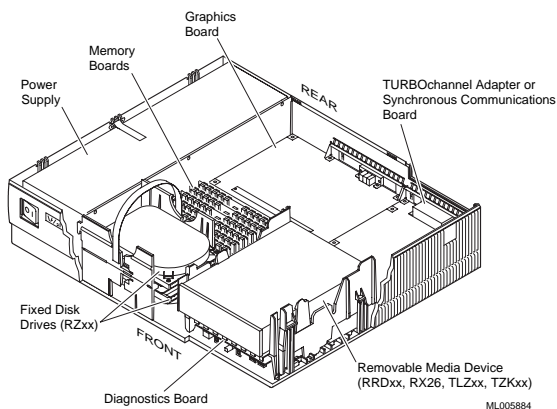
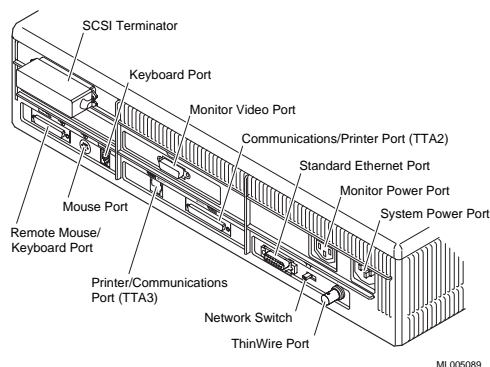
## Step 12—VAXstation 4000 Upgrades

Upgrade kits must be installed by Compaq Services.

Order Number	From	To	Includes
PV71U-BF <sup>1</sup>	VAXstation 4000 Model 60 2D LCG graphics (66/72 Hz)	VAXstation 4000 Model 96 2D LCSPX graphics (66/72 Hz)	VAXstation 4000 Model 96 CPU <b>OpenVMS</b> base license DIGITAL NAS 150 license <b>Note:</b> Mandatory return of Model 60 CPU board and LCG graphics card
PV71U-BH	VAXstation 4000 Model 90/90A 2D LCSPX graphics (66/72Hz)	VAXstation 4000 Model 96 2D LCSPX graphics (66/72 Hz)	VAXstation 4000 Model 96 CPU <b>OpenVMS</b> base license <b>not</b> included DIGITAL NAS 150 license <b>Note:</b> Mandatory return of Model 90/90A CPU board

- VAXstation Model 96 systems require minimum of 16 MB of memory. See Model 96 memory configurations. 4 MB and 16 MB SIMMs from Model 60 may be transferred to Model 96 in sets of four **only**. Model 96 memory modules must be installed in sets of four matching value SIMMs.

### System Diagram



Specifications

<b>Power Requirements</b>	<b>Model 96</b>
SPECmark89	12.0/45.6
Line voltage	120/240 VAC
Voltage tolerance—RMS	88-132/176-264 VAC
Frequency/single phase	50/60 Hz
Frequency tolerance	47-65 Hz
Maximum running current	6.2 A/3.1 A
Maximum power consumption	465 W
<b>Operating Environment</b>	
Temperature	10 °–40 °C (50 °–104 ° F) or 15 °–32 ° C (59 °–90 ° F) with tape/CD-ROM/diskette or RZ40/RZ1EF in system box
Relative humidity	20%–80% noncondensing
Maximum operating altitude	2.4 km (8,000 feet)
<b>Physical Characteristics</b>	
Height	11.3 cm (4.4 in.)
Width	48.2 cm (19.0 in.)
Depth	40.0 cm (15.5 in.)
Weight (diskless)	4.5 kg (10 lb)