



VAXstation 4000 Model 96 Systems V2.0

Digital Systems and Options Catalog

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VAXstation 4000 Model 96 Systems

Product Description

The VAXstation 4000 Model 96 system is a high-performance, 45.6 SPECmark89, OpenVMS VAX workstation offering more than five times the performance of the VAXstation 4000 Model 60 system.

The VAXstation 4000 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 Digital-supported TURBOchannel options, including thick wire Ethernet, additional SCSI, or FDDI controllers.

The VAXstation 4000 Model 96 system enclosure is the same as the VAXstation 4000 Model 60 enclosure; 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 BA353 and BA350 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 computationally demanding applications.

To allow VAXstation 3100 and 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.

Step 1—Systems

120-V Base Systems include a U.S. keyboard and all required power cords. If a 240 V system is selected, the appropriate country kit or keyboard and power cord are required from Step 14.

- 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
- Cache memory: 256 Kbytes
- ThinWire/thick wire Ethernet controller on base system module
- Synchronous SCSI controller on base system module
- 2D color/grayscale 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, DECmessageQ RT, ObjectBroker RT, 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: 1.0 Gbyte	CD-ROM: 600 Mbyte
PV71A-BA/BB	16 MB	Required	72		
PV71A-BC/BD	64 MB	Required	72	Included	Included

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

Step 2—Monitor (Required for Base Systems)

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

- VRT17-HA/H4** 17" (16.0" viewable image size) high-resolution color monitor. Trinitron aperture grille CRT with 0.26mm stripe pitch and anti-reflection, anti-glare, anti static coating. Auto-scanning from VGA to 1280 x 1024 at 75Hz NI refresh rates. MPR-II, Energy Star, DPMS and NUTEK compliant. 120/240V universal power supply. Select -HA for Northern Hemisphere or -H4 for Southern Hemisphere operation..
- VRC21-HA/H4** 21" (19.6" viewable image size) high-resolution color monitor. Diamondtron aperture grille CRT with 0.30mm stripe pitch and anti-reflection, anti-glare, anti static coating. Auto-scanning from VGA to 1280 x 1024 at 75Hz NI refresh rates. MPR-II, Energy Star, DPMS and NUTEK compliant. 120/240V universal power supply. Select -HA for Northern Hemisphere or -H4 for Southern Hemisphere operation..

Note: xA = 120/240 V Northern Hemisphere; x4 = 240V Southern Hemisphere

Step 3—Storage

Select storage devices if required. Factory-installed variants (-EM) include factory-installed software (FIS) which includes OpenVMS and DECwindows MOTIF.

- 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.

Step 3a—Internal Storage (Factory/Field Installed)

Systems have three internal storage cavities.

Slot 1—Removable media (RX26, RRD45, TLZ07, TZK11)

Slot 2—3.5-inch disk RZ26N or RZ28M

Slot 3—3.5-inch disk RZ26N, or RZ28M

Select up to one half-height removable media device.

RX26 -ES/UL	2.8 Mbyte 3.5-inch internal diskette drive
RRD45-JM/JL	600 Mbyte internal, dual speed compact disk drive
TLZ07-GF/GG	8.0 Gbyte 4-mm Digital Audio Tape (DAT)

Select up to two 3.5-inch half-height disk drives. Factory-installed variants (-EM) include factory-installed software (FIS).

RZ26N-EM/EL	1.05-Gbyte internal disk drive
RZ28M-EM/EL	2.1-Gbyte internal disk drive

Step 3b—External Storage (Expansion Box)

TZ87-TA	20-Gbyte SCSI tabletop tape drive
TSZ07-CA	1600/6250-bit/inch 9-track tape drive; requires country kit TSZK7-xx. See <i>Storage Devices</i> for more information.
TZK11-DA	2-Gbyte Quarter-Inch Cartridge (QIC) tape

For StorageWorks BA350 and BA353 modular storage expansion box information, see *Storage Devices*.

Step 3c—Workstands

BA46X-AA	Vertical floor stand for one VAXstation 4000 system.
H9855-AA	Horizontal workstand for one VAXstation 4000 system.

Step 4—Memory

Systems include 16 Mbytes (4 x 4-Mbyte SIMMs) or 32* Mbytes (8 x 4-Mbyte SIMMs). Additional memory may be added in 16-or 64-Mbyte increments if four memory slots are available. Eight SIMM memory slots total; 16-and 64-Mbyte modules may be combined.

MS44L-BC	16 Mbytes parity (4 x 4-Mbyte, 100-ns SIMMs)
MS44-DC	64 Mbytes parity (4 x 16-Mbyte, 100-ns SIMMs)

* Increasing memory in 32-Mbyte systems requires removal of 4 x 4-Mbyte SIMMs.

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).

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.

PMAD-AB	Thick wire Ethernet TURBOchannel option card
PMAZ-AB	Additional SCSI TURBOchannel option card
DEFTA-AA	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.

Step 6—Synchronous Communication Options

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

VAX Wide Area Network (WAN) device driver license is required before adding asynchronous communication controller. Order license, media (TK50 or magtape), and documentation.

QL-VAWA9-AA	VAX WAN V1.2 device driver license
QA-VAWAA-H5	VAX WAN V1.2 device driver media (TK50) and documentation
QA-VAWAA-HM	VAX WAN V1.2 device driver media (magtape) and documentation
QA-VAWAA-GZ	VAX WAN V1.2 device driver documentation

Step 6a—Synchronous Communication Controller (Customer Installable)

DSW21-AA	One-line synchronous communication controller and EIA-232 V.24 synchronous modem cable
DSW21-AB	One-line synchronous communication controller and EIA-423 V.10 synchronous modem cable
DSW21-AC	One-line synchronous communication controller and EIA-422 V.36 synchronous modem cable
DSW21-AD	One-line synchronous communication controller and V.35 synchronous modem cable
DSW21-AE	One-line synchronous communication controller and EIA-530 synchronous modem cable
DSW21-AF	One-line synchronous communication controller and X.21 synchronous modem cable

Step 7—Video and Keyboard/Mouse Extender Cables

Systems include a 9-foot (2.7-meter) color/monochrome video cable; if additional video cable is required, order below.

BC29G-09	Video cable (9-foot) for color/monochrome monitors
VSXXX-KA	10-foot keyboard/mouse extender cable and power cord

Step 8—Networking Cables

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

Note: Right-angle Ethernet cables are not supported.

Step 9—Optional Input/Output Devices

The tablet can be used in place of the mouse. The Lighted Programmable Function Keyboard (LPFK) and Programmable Function Dials (PFD) can be ordered as a pair or separately. The LPFK and PFD packages listed below include a Peripheral Control Module (PCM) which provides multiplexing of both LPFK and PFD into a single EIA-232 port. In addition, each package includes a power supply, cables, and user documentation.

VSXXX-AB	11-inch x 11-inch tablet
VSXXX-GA	Three-button ergonomic rectangular mouse (included with system)
VSXXX-JA	Audio headset
VSX10-A3	Combination LPFK and PFD package, 120 V/240 V
VSX20-A3	LPFK package, 120 V/240 V
VSX30-A3	PFD package, 120 V/240 V

Step 10—Printers

Order printers if required.

Step 11—Hardware Documentation

Information kits ship with every system. Information kits include the following documents: *VAXstation 4000 Model 60 or 90 Quick Installation Card*, *Owners and System Installation Guide*, and *Options Installation Guide*.

Step 12—Graphics Options (Customer Installable)

- Graphics options are listed with compatible monitors.
- Upgrades include video cables.
- Recommended configurations for SPXg/gt are 24--32 Mbytes of memory and 1-Gbyte internal disk.

Note: Model 96 will not support dual-or quad-monitor configurations.

VAXstation 4000 Model 96 Graphics

Order Number	Description	Compatible Monitor	Hz
PV71G-AA	LCSPX 8-plane 2D color/grayscale graphics 1280 x 1024 resolution, 72 Hz	17-inch C VRT17-HA/H4	66/72
		21-inch C VRC21-HA/H4	66/72
PV71G-BA¹	SPXg 8-plane 3D color graphics with 16-bit Z-Buffer, 1280 x 1024 resolution, 72 Hz		
PV71G-CA¹	SPXgt 24-plane 3D color graphics with 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.

Step 13—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-H5	OpenVMS VAX and DECwindows media (TK50) and documentation
QA-09SAA-H8	OpenVMS VAX and DECwindows media (CD-ROM) and documentation
QA-09SAA-GZ	OpenVMS VAX and DECwindows documentation

Step 13—Software Media and Documentation (continued)
Digital NAS Client 150 Software

- QA-36PAA-H5 Digital NAS Client 150 for VAXstations media (TK50) and documentation (CD-ROM)
 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-H5 DEC PHIGS Runtime for OpenVMS VAX media (TK50) and documentation
 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-H5 DEC SoftPC for OpenVMS VAX media (TK50)
 QA-YNWAA-HM DEC SoftPC for OpenVMS VAX media (magtape)
 QA-YNWAA-GZ DEC SoftPC for OpenVMS VAX documentation

Step 14—Country Kits, Power Cords, Keyboards (Not Required for 120 V Systems)

Country Kit	Power Cord	Keyboard	Country	Language
FCP01-AG	BN19C-2E	LK401-AG	Austria	German/Austrian
FCP01-AB	BN19C-2E	LK401-AB	Belgium	Flemish
FCP01-AD	BN19K-2E	LK401-AD	Denmark	Danish
FCP01-AF	BN19C-2E	LK401-AF	Finland	Suomi
FCP01-AP	BN19C-2E	LK401-AP	France	French
FCP01-AG	BN19C-2E	LK401-AG	Germany	German
FCP01-AH	BN19C-2E	LK401-AH	Holland	Dutch
FCP01-AT	BN18L-2E	LK401-AT	Israel	Hebrew
FCP01-AI	BN19Z-2E	LK401-AI	Italy	Italian
FCP01-AN	BN19C-2E	LK401-AN	Norway	Norwegian
FCP01-AV	BN19C-2E	LK401-AV	Portugal	Portuguese
FCP01-AS	BN19C-2E	LK401-AS	Spain	Spanish
FCP01-AM	BN19C-2E	LK401-AM	Sweden	Swedish
FCP01-AK	BN19E-2E	LK401-AK	Switzerland	French
FCP01-AL	BN19E-2E	LK401-AL	Switzerland	German
FCP01-AE	BN19A-2E	LK401-AA	U.K./Ireland	English
	BN19H-2E	LK401-AA	Australia/NZ	English
	BN19P-1K	LK401-AA	U.S./Canada	English
	BN19P-1K	LK401-AC	Canada	French
	BN19S-2E	LK401-AA	India	English
	BN19P-1K	LK401-CA	China	Chinese
		LK401-AJ	Japan	Katakana
		LK402-AA	WPS keyboard	English
		LK402-AQ	WPS keyboard	French

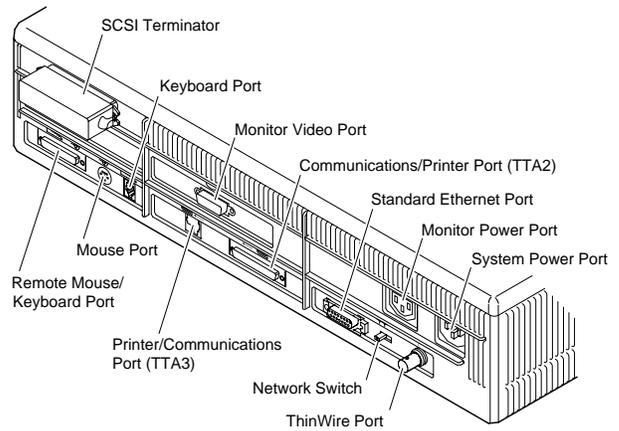
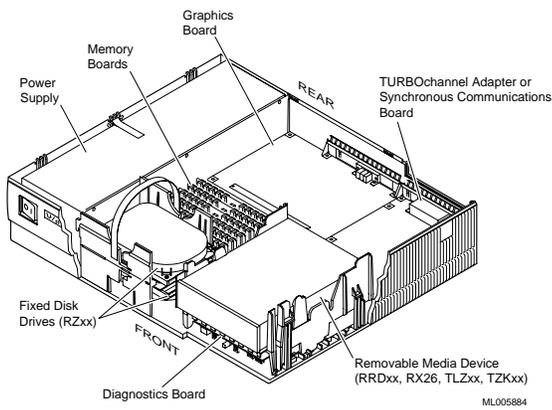
Step 15—VAXstation 4000 Upgrades

Upgrade kits must be installed by Digital Services.

Order Number	From	To	Includes
PV71U-BF[†]	VAXstation 4000 Model 60 2D LCG graphics (66/72 Hz)	VAXstation 4000 Model 96 LCSPX 2D graphics (66/72 Hz)	VAXstation 4000 Model 96 CPU System enclosure and power supply 8-plane color/grayscale graphics board 2.7-m (9-ft) color/monochrome video cable Brackets for three internal SCSI devices (one removable, two fixed disks) ThinWire/thick wire Ethernet DEC-423 serial line EIA-232D serial line with modem control Synchronous SCSI controller OpenVMS base license Digital NAS 150 license Note: 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 LCSPX 2D (66/72 Hz)	VAXstation 4000 Model 96 CPU Digital NAS 150 license Note: Mandatory return of Model 90/90A CPU board

[†] VAXstation Model 96 systems require minimum of 16 Mbytes of main memory; 8-Mbyte memory embedded on Model 60 system board cannot be transferred. See Model 96 memory configurations. 4-Mbyte and 16-Mbyte SIMMs from Model 60 may be transferred to Model 96 in sets of four ONLY (e.g., two MS44L-BA = 4 x 4-Mbyte SIMMs). Model 96 memory modules must be installed in sets of four matching value SIMMs.

VAXstation 4000 Models 60 and 96 Monitor Specifications



Specifications

Power Requirements

Models 60 and 96

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

Operating Environment

Temperature	10 °–40 °C (50 °–104 ° F) or 15 °–32 ° C (59 °–90 ° F) with tape or diskette in system box
Relative humidity	20%–80% noncondensing
Maximum operating altitude	2.4 km (8,000 feet)

Physical Characteristics

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)
