



VAX 4000
V96-2.3—10 Feb 1997
DIGITAL Systems and Options Catalog

Product Description

VAX 4000 systems provide commercial systems performance, high availability, and a compact footprint. They support a wide range of applications and options, including FDDI networks and Q-bus peripherals. System enclosure supports internal storage and Q-bus expansion through a B400X expansion cabinet. VAX 4000 systems come in three packages: Desktop Model 106A, Desktop/Deskside Model 108, and Pedestal/Deskside Model 505A/705A

DSSI and Ethernet adapter chips—each driven by a 10-MIP on-chip RISC processor—are tightly integrated on the CPU module with direct access to memory. Digital's DSSI to SCSI HSD10 storage solutions replace DSSI RF36 disk technology in all VAX 4000 systems. Digital's HSD10 DSSI-to-SCSI controller, mounted internally in system cabinet, supports standard RZxx SCSI storage on VAX 4000 systems while still supporting DSSI clustering. External StorageWorks HSD10 controllers are supported.

VAX 4000 Model 106A offers performance of 10-ns NVAX chip. Systems achieve 215 transactions per second (TPS). With internal support for the HSD10, DSSI-to-SCSI controller, VAX 4000 customers can take advantage of low-cost, more flexible and open StorageWorks solutions.

VAX 4000 Model 108 offers identical performance, is compatible with Model 106A, but is housed in a new Desktop/Deskside minitower enclosure. In addition, these systems offer enhancements in the memory and storage capacity, supporting up to 512 MB of standard SIMM memory and six storage devices in the system enclosure.

VAX 4000 Model 505A and 705A offer 12 ns and 9 ns performance, respectively in a Q-bus Pedestal package. Systems achieve 200 and 280 transactions per second (TPS) with the NVAX CPU chip.

A DSSI OpenVMS cluster system provides high data and system availability by joining Q-bus VAX 4000, VAX 6000, and VAX 7000 systems via DSSI. Each system can access and share all disks attached to the DSSI buses; this provides multiple paths to the data. Should one system in a DSSI OpenVMS cluster configuration fail, data is available to serve systems via the other paths, and all I/O operations can resume immediately. No application rewrite is required across high-availability options, and systems can be expanded without disruption to existing operations.

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VAX 4000 Comparison Chart

	Model 106A (BA42B)	Model 108 (MiniTower)	Model 505A (BA440)	Model 705A (BA440)
Minimum version of OpenVMS	5.5-2H4	5.5-2H4	5.5-2H4	5.5-2H4
Performance (TPS) / VUP	215e / 38	215e / 38	200e / 32	280e / 48
Maximum memory	128 MB	512 MB	512 MB	512 MB
Maximum Internal Storage	8.4 GB	19.2 GB	25.2 GB	25.2 GB
Maximum External Storage	327.6 GB	335.4 GB	680.5 GB	680.5 GB
Maximum disk I/O throughput per embedded DSSI bus	1200 I/Os per second 2 standard	1200 I/Os per second 2 standard	1200 I/Os per second 2 standard 2 optional	1200 I/Os per second 2 standard 2 optional
Q-bus slots available	In separate cabinet/enclosure (B400X-B9)	In separate cabinet/enclosure (B400X-B9)	5 HSD10-Jx controller takes up slots 6 & 7- power only)	5 HSD10-Jx controller takes up slots 6 & 7- power only)
Maximum possible Q-bus slots (with B400X expansion cabinet)	11	11	15	15
Maximum Tape Configurations	Internal/External	Internal/External	Internal/External	Internal/External
TLZ09	1 / 2 ¹	2 / 2 ¹	1 / 2 ¹	1 / 2 ¹
TZK11	1 / 2 ¹	2 / 2 ¹	1 / 2 ¹	1 / 2 ¹
TZK20	1 / 2 ¹	2 / 2 ¹	0 / 2 ¹	0 / 2 ¹
TZ88N-TA	0 / 2 ¹	0 / 2 ¹	0 / 2 ¹	0 / 2 ¹

1 Tabletop maximum of two tapes per SCSI bus

Tape and CD-ROM drives that can be used as boot¹ and load² devices

Device	Model 106A	Model 108	Model 505A	Model 705A
InfoServer 150 ³	Load	Load	Load	Load
RRD45	Boot/load	Boot/load	Boot/load	Boot/load
TLZ09	Boot	Boot	Boot	Boot
TZK11	Boot	Boot	N/A	N/A
TZK20	Boot	Boot	Boot	Boot
TZ88	Boot	Boot	Boot	Boot

1. A "boot" device is defined as a device that is supported by both the hardware system's VMB bootstrap facility (console level "BOOT" command) and the OpenVMS operating system STABACKIT utility.
2. A "load" device is defined as a device that supports the media on which DIGITAL distributes software.
3. Attaches directly to the network for simultaneous shared access. OpenVMS V5.5-2H4 supports Initial System Software Load (ISL) for MicroVAX 3xxx, VAX 4000, and VAX 6000 systems.

VAX 4000 Model 106A Systems

Step 1—Model 106A Systems

- VAX 4000 Model 106A systems require OpenVMS V5.5-2H4 or V6.2. To operate systems in an existing cluster environment, the cluster system disk must be updated.
- Systems include factory-installed software* (OpenVMS V6.2). Media and documentation is recommended for the first system on site. Media and documentation for OpenVMS V 5.5-2H4 is included with each system for customers who need to load and run OpenVMS V5.5-2H4.
- Systems includes HSD10-EN DSSI-SCSI Controller with RZ28 2.1 GB SCSI disk, and RRD45 CD-ROM drive.
- Systems include 120 V power cord (220 V/240 V devices require a country-specific power cord; see Step 9)
- Select OpenVMS user licenses if required from Step 8

*FIS is not a substitute for software media and documentation; see Step 8

ADVANTAGE SERVERS include

- CPU with dual DSSI controller, 802.3/Ethernet (ThinWire/thick wire) controller
- BA42B tabletop enclosure with:
 - Mounting slots for 1 HSD10 adapter and 2 SCSI disks
 - Synchronous SCSI controller
 - Two SCSI slots for removable media devices
 - Q-bus port
 - Universal power supply that automatically adjusts to 88–132 Vac or 176–264 Vac
 - Three DEC-423 asynchronous serial lines (MMJ data leads only)
 - H8575-A 25-pin-to-MMJ DEC-423-to-EIA-232 adapter
- 7.6-meter (25-foot) console terminal cable
- 64 MB memory (MS44-DC)
- HSD10-EN Adapter
- RZ28M-EN SCSI disk drive
- CD-ROM RRD45 drive
- OpenVMS base license
- DIGITAL NAS Base Server 200 software license
- *DSSI VMScluster Installation and Troubleshooting Guide* (EK-410AB-MG), hardware documentation
- Three-year hardware warranty
- 90 day software warranty

VAX 4000 Model 106A Advantage Servers

Order Number	Memory	Controllers	DIGITAL NAS	Disk Drive	CD-ROM
DV-416CC-E9	64 MB	Dual-DSSI DSSI-SCSI Controller	Base Server 200	2.1 GB FIS*	RRD45 (600 MB)

Step 2—Memory

Systems include 64 MB of memory. Select additional memory if required; 64 MB systems can be expanded to 80 or 128 MB.

- MS44L-BC 16 MB of memory (4 x 4 MB DSIM modules)
- MS44-DC 64 MB of memory (4 x 16 MB DSIM modules)

Step 3—Storage

Select storage devices if required. Field-installed options require Customer Services installation.

- Single systems support:
 - Seven ISEs per DSSI adapter, where the embedded HSD10 controller uses one of the ISEs on the first DSSI bus.
 - Two-system DSSI VMScluster configurations that support six DSSI nodes, where each node uses one of the eight available nodes, and can be connected between any pair of DSSI adapters (one adapter in each system).

Step 3a—Storage Controllers/Adapters

- .. Four Q-bus storage adapters (two KZQSA and two KFQSA) are supported per system in B400X enclosure
- .. One HSD10-JA/JF is supported per B400X enclosure
- .. HSD10 Field Upgrade Kit (HSD10-EK) includes controller and internal cabling

KFQSA-SE/SG	Q-bus-to-DSSI adapter. Uses one Q-bus slot (in B400X expansion pedestal); factory/field installed.
KZQSA-SA/SF	Q-bus-to-SCSI adapter. Uses one Q-bus slot (in B400X expansion pedestal). Supports two SCSI devices (tape and CD-ROM) in tabletop enclosure.
HSD10-EN/EK	DSSI-SCSI-2 controller embedded in BA42B enclosure, supports up to two SCSI devices; factory/field installed.
HSD10-JA/JF	DSSI-SCSI-2 controller embedded in BA440/BA430/B400X enclosure, supports up to seven SCSI devices; factory/field installed. Requires 2 Q-bus slots for power; no Q-bus load. One per enclosure.
HSD10-AA	DSSI-SCSI-2 controller for StorageWorks BA356 form factor, supports up to seven SCSI devices.

Step 3b—Internal Storage

- .. System enclosure supports up to two 3.5" disk devices on top tray and two 5.25-inch SCSI removable media devices on bottom tray.
- .. Two SCSI hard disk drives are supported in bottom native mode SCSI trays. A maximum of 3 hard SCSI disk drives are supported in BA42B enclosure due to power constraints; Note: A maximum of two hard SCSI disk drives are supported if RZ29B (3.5" x 1.6") disks are selected.
- .. HSD10-EN configured on DSSI bus 0 and will support up to 2 RZ28M-EN/EK on DSSI adapter internal to BA42B; one per system box. HSD10-EN/EK SCSI bus is terminated internal to the BA42B.

SCSI Removable Media Devices

RX26-EN	2.8 MB diskette drive
RRD45-EN	600 MB 4x CD-ROM drive
TLZ09-HF	8.0 GB DAT drive; factory/field installed
TZK11-HF	2.0 GB quarter-inch cartridge (QIC) tape drive; factory/field installed
TZK20-HF	2.3 GB 300 Kbs SCSI QIC tape drive

SCSI Disk Devices

RZ26N-EN	1.05 GB 3.5" x 1" SCSI disk drive 5400 RPM
RZ28M-EN	2.1 GB 3.5" x 1" SCSI disk drive 5400 RPM
RZ28D-EN	2.1 GB 3.5" x 1" SCSI disk drive 7200 RPM
RZ29B-EN	4.3 GB 3.5" x 1.6" SCSI disk drive 7200 RPM

Step 3c—DSSI External Expansion

- .. One Q-bus expansion pedestal (B400X) supported per CPU
- .. One TKxx tape drive supported in a B400X expansion pedestal
- .. Two TZxx/TLZxx/TZxx tape drives supported per DSSI bus
- .. One HSD10-Jx controller per B400X-B9 expansion box

B400X Expansion Pedestals include

- .. Q-bus extender modules and two 2.7-meter (9-foot) cables (B400X only)
- .. 2.7-meter (9-foot) DSSI cable (BC21M-09)
- .. 1.8-meter (6-foot) KZQSA cable (BC06P-06)
- .. 3.0-meter (10-foot) power control cable (BC09F-10), Universal power supply, 120 V power cord

B400X-B9	Provides eleven additional Q-bus slots and supports: One TKxx, TLZXX, or, TZxx tape drive One HSD10-Jx controller and four RZ28x-AA/RZ29B-AA One HSD10-Jx controller and three RZ282-AA/RZ29B-aa disk drives and one RZ28M-xx/RZ29B-AA disk drive or any combination of RZ28M-AA and RZ282-AA, not to exceed 7 drives per HSD10-Jx.
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Step 3c—DSSI External Expansion (continued)**SCSI Storage Devices for B400X**

RRD45-JA 600 MB quad-speed CD-ROM drive. Requires Q-bus-to-SCSI controller (KZQSA-SA/SF) or DSSI-SCSI controller HSD05-JA

OpenVMS V6.2 supports standalone backup. Standalone backup is not supported on OpenVMS V5.5-2H4.

Step 3d—SCSI External Storage**Configuration Rules**

- .. System supports seven SCSI devices per CPU on synchronous SCSI controller, 2 internal and 5 external in a BA356 StorageWorks enclosure. Maximum one BA356 per CPU due to cable restrictions.
- .. Select storage controller if additional external SCSI storage is required.
- .. Maximum SCSI bus length (internal and external) is 6 meters (236 inches). See SCSI cable chart for cable length information.
- .. BA356 deskside expansion unit supports HSD10 DSSI-SCSI controller controllers and up to seven SCSI-2 devices
- .. See StorageWorks Section for qualified list of SCSI devices.

StorageWorks HSD10 Array Controller

- .. StorageWorks BA356 supports HSD10 DSSI-SCSI array controller and up to seven SCSI devices

HSD10-AA StorageWorks HSD10 DSSI-SCSI Array controller with 8 MB cache buffer, supports seven SCSI-2 devices; includes DSSI terminator and tralink adapter; requires BC29R-xx DSSI cable for VAX 4000 to HSD10 connection.

HSD10-AD StorageWorks HSD10 DSSI-SCSI Array controller with 16 MB cache buffer, supports seven SCSI-2 devices; includes DSSI terminator and tralink adapter; requires BC29R-xx DSSI cable for VAX 4000 to HSD10 connection.

HSD10-AF StorageWorks HSD10 DSSI-SCSI Array controller with 32 MB cache buffer, supports seven SCSI-2 devices; includes DSSI terminator and tralink adapter; requires BC29R-xx DSSI cable for VAX 4000 to HSD10 connection.

StorageWorks Expansion Units

- .. StorageWorks BA356 supports HSD10 DSSI-SCSI array controller and up to seven SCSI devices

BA356-KD¹ StorageWorks 16-bit shelf includes dual speed blowers. Supports maximum of seven 3.5" 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" 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" modular storage devices and one fixed CD-ROM, requires BN31V-01 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" x 1" disk drive 5400 RPM in StorageWorks carrier
RZ28M-VA/VW 2.1 GB 3.5" x 1" disk drive 5400 RPM in StorageWorks carrier
RZ28D-VA/VW 2.1 GB 3.5" x 1" disk drive 7200 RPM in StorageWorks carrier
RZ29B-VA/VW 2.1 GB 3.5" x 1.6" disk drive 7200 RPM in StorageWorks carrier
TLZ09-VA 8.0 GB 3.5" half-height 4-mm DAT drive in StorageWorks carrier
TZ88N-VA 20/40 GB SCSI tape drive in StorageWorks carrier

Step 3d—SCSI External Storage (continued)
External SCSI devices

RRD45-FA/DG*	600 MB 4X CD-ROM tabletop drive, requires BC06P-06 1.8 meter (6 foot) SCSI cable, 120 V/240 V
TZ88N-TA	20/40 GB SCSI tabletop tape drive
TZ887-NT	280 GB SCSI tabletop 7 cartridge loader tape subsystem
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)

* -FA variant includes 120 V power cord, order country specific power cord for DG variant

SCSI Cable Chart

SCSI cabling recommendations. Maximum cable length must not exceed 4.3 m (174.4 in.) outside of system enclosure. The following devices include cables except TZ8x, which requires BC06P-xx cable.

Tabletop Enclosure	Internal Cable Length	External Cable Length
RRD45	0.35 m (14 in.)	1.0 m (36 in.)
TLZ09	0.32 m (12.6 in.)	0.91 m (36 in.)
TZ8x	0.32 m (12.6 in.)	0.91 m (36 in.)

Step 4—Networks and Communications

Select communications options as required. See *Network Products Guide* for more information.

- .. Select host-based communications controllers for standalone systems (without LAN connectivity), or for other requirements.
- .. 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 3-meter (10-foot) cable (BC16C-10), 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 1.8-meter (6-foot) external 50-pin to 4-way 25-pin (BC29J-06) 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 3-meter (10-foot) cables (BC16C-10), and two H3104-00 eight-line distribution harmonica; factory or field installed.
DHW42-UP	Upgrades DHW42-AA to DHW42-BA; field installed only.

Synchronous Communications Option

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

DSW42-AA	EIA-232 synchronous controller—provides two lines. Includes synchronous logic module, I/O assembly, and external 0.6-meter (2-foot) EIA-232 adapter cable.
BC19B-02	EIA-422/V.11 0.6-meter (2-foot) adapter cable
BC19E-02	EIA-423/V.10 0.6-meter (2-foot) adapter cable

Note: VAX WAN Device Driver included in OpenVMS Layered Products CD-ROM media; see Step 8 for details. VAX WAN Device Driver V1.2 or higher required.

Step 4—Networks and Communications (*continued*)

VAX 4000 Model 106A systems require a B400X Q-bus expansion cabinet before adding any of the following options

802.3/Ethernet 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). Select one additional controller (maximum two per system)

DESQA-SA/SF 802.3/Ethernet/Q-bus controller, ThinWire / thick wire Uses one Q-bus slot; factory/field installed.

FDDI Communications Controller

DEFQA-SA/SF DEC FDDIcontroller/Q-bus SAS (single attachment station) FDDI Controller. Uses one Q-bus slot. Model 106A systems running OpenVMS V5.5-2H4 require DEC LAN Device drive kit for OpenVMS VAX V.1.0. DEC LAN device driver included in OpenVMS V6.1. Factory/field installed.

DEFQA-DA/DF DEC FDDIcontroller/Q-bus DAS (dual attachment station) FDDI Controller. Uses one Q-bus slot. Model 106A systems running OpenVMS V5.5-2H4 require DEC LAN device driver kit for OpenVMS VAX V1.0. DEC LAN device driver included in OpenVMS V6.1. Factory/field installed.

Both options use the ANSI standard MIC (media interface connector) and support multimode fiber (MMF) up to distances of 2 kilometers between stations. Options require one Q-bus slot (maximum two per system) and a DEC LAN device driver kit.

QA-0PAAA-H5 DEC LAN device driver kit for DEFQA on TK50

QA-0PAAA-HM DEC LAN device driver kit for DEFQA on 9-track 1600-bit/inch magtape

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) or a thick wire 15-pin AUI transceiver cable (e.g., BNE3x) is required. Software media, documentation, and cables are also required. See *Network Products Guide* for ordering information.

InfoServer 1000 Network Storage Server

To provide initial system load (ISL) capabilities to VAX systems, order the InfoServer Local Area compact disk. Other configurations are offered for tape/backup and 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 5—Console Terminal

A console device is necessary for a system to function. Console cable included with system. Order video terminals (e.g., VT520, VT420) for each system unless otherwise available. **Note:** One console terminal required per configuration. A VT330, VT340, VT420 with split screen capability can be used as a shared console terminal.

Step 6—Terminals and Printers

Select terminals and printers as required. Serial printers connect to an asynchronous line. A cable (e.g., BC16E-25) must be ordered unless otherwise available. Maximum two parallel printers per LPV11 controller; maximum two controllers per system which require one Q-bus slot each.

Step 7—CPU Upgrades

In cabinet CPU upgrade for VAX 4000 Models 100, 100A, and 105A systems.

Order Number	From	To	Includes
53XR-BA	VAX 4000 Models 100, 100A, 105A	VAX 4000 Model 106A	OpenVMS VAX base license

Step 7a—Dual-DSSI Adapter Module (field installed)

Select dual-DSSI storage adapter module upgrade for **installed** VAX 4000 Model 100, 100A, 105A or 106A systems. Both options require one additional 9-foot DSSI cable (BC21M-09).

Order Number	From	To	Includes
KFDDA-AF ¹	Model 100A and 105A systems with one high-speed DSSI adapter module	Model 100A/105A systems	High-speed dual-DSSI adapter module, cable assembly, and user documentation
KFDDA-CF ²	Model 100 systems with one high-speed DSSI adapter module	Model 100A system	High-speed dual-DSSI adapter module, DSSI in/out cable, I/O cover panel, OpenVMS and CPU firmware upgrade media kits, and user documentation

1 For VAX 4000 Model 100A systems with serial numbers KA332ABJ46 and higher, or AY33328925 and higher and all Model 105A systems

2 For VAX 4000 Model 100 systems with serial numbers KA332ABJ45 and lower, or AY33328924 and lower

Step 8—Software

Software Processor Code = S

Clusterwide License Rating = 100 (E)

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 a VMScLuster.

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 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 VMScLuster running OpenVMS VAX V6.0 or greater.

Note: OpenVMS VAX Distributed Interactive User licenses are architecture specific and **cannot** be shared across a **mixed** VMScLuster (OpenVMS VAX and OpenVMS AXP 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
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-09SAA-BR	OpenVMS VAX Distributed Interactive 128-user license
QL-09SAB-BR	OpenVMS VAX Distributed Interactive 256-user license

Step 8—Software (*continued*)

OpenVMS Consolidated Software Media (CD-ROM) and documentation—requires CD-ROM reader

Systems include OpenVMS V6.1 base license; order media and documentation separately for OpenVMS V6.1. Systems also include OpenVMS V5.5-2H4 media and documentation

- QA-VWJ8A-A8 OpenVMS layered product binaries on CD-ROM without hardcopy documentation
- QA-VYR8A-G8 OpenVMS extended online documentation and layered product online documentation on CD-ROM; requires DECwindows Bookreader
- QA-A93AA-Hx* PATHWORKS for OpenVMS media and documentation
- QA-GXXAB-Hx* POSIX media without IEEE documentation

* x denotes media type: 5 = TK50; M = Magtape

DIGITAL NAS Base Server Licenses

ADVANTAGE-SERVERS include DIGITAL NAS Base Server 200 license, order media and documentation separately

- QA-MC1AA-Hx* DIGITAL NAS Base Server 200 media and documentation kit (CD-ROM)

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

Step 9—Power Cords

Select for 220/240 V use.

Power Cords for VAX 4000 Model 106A System Enclosure

- BN19A-2E U.K., Ireland
- BN19C-2E Austria, Belgium, France, Germany, Finland, Holland, Norway, Sweden, Portugal, Spain
- BN19E-2E Switzerland
- BN19K-2E Denmark
- BN19M-2E Italy
- BN19U-2E Israel
- BN19H-2E Australia, New Zealand
- BN19S-2E India

Power Cords for B400X and R400X Expansion Pedestals

- BN20B-2E U.S., Canada, Japan
- BN22C-2E Australia, New Zealand
- BN22D-2E Austria, Belgium, France, Germany, Finland, Holland, Norway, Sweden, Portugal, Spain
- BN22E-2E U.K., Ireland
- BN22F-2E Switzerland
- BN22H-2E Denmark
- BN22J-2E Italy
- BN22K-2E India
- BN22L-2E Israel

Step 10—Diagnostics and Documentation

Select optional diagnostics and documentation.

- QZ-K14AA-U5 On TK50 media
- QZ-K32AA-U8 On CD-ROM media

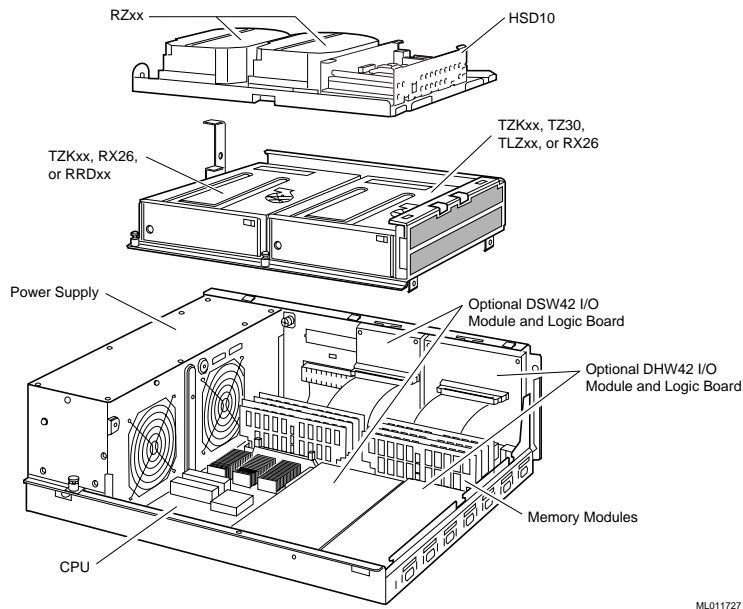
Extended Diagnostics and Documentation

- QX-K19AC-AA Single-use TK50 license
- QZ-K19AA-H5 Media on TK50
- QX-K32AA-AA Single-use CD-ROM license
- QZ-K32AA-H8 Media on CD-ROM
- QZ-K19AA-GZ Hardcopy extended maintenance documentation

Hardware Documentation

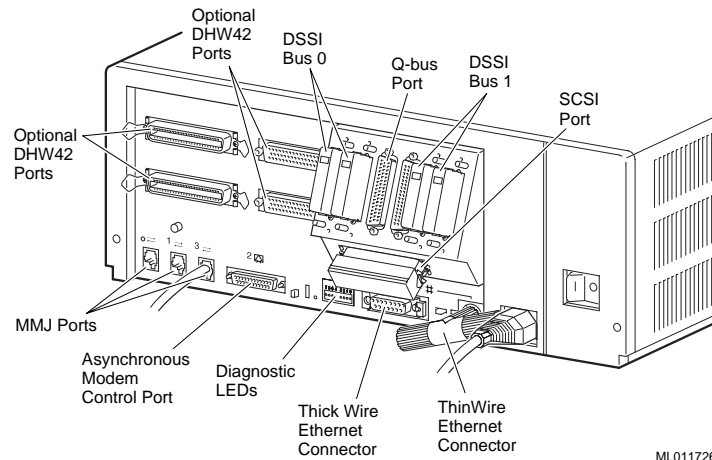
- QZ-K04AB-GZ English language (included with system)

VAX 4000 106A System Diagram



VAX 4000 Model 106A

VAX 4000 Model 106A System Diagram



ML011726

Specifications

Physical Characteristics

Height	14.99 cm (5.90 in.)
Width	46.38 cm (18.26 in.)
Depth	40.00 cm (15.75 in.)
Weight	18.40 kg (40.00 lb)*

Power Requirements

Nominal voltage	120/240 Vrms
Power source phasing	Single
Nominal frequency	50–60 Hz
Voltage range	88–132 Vrms 176–264 Vrms
Line frequency tolerance	47–63 Hz
Typical running current	2.0/1.0 A
Typical power consumption	240 W

Standard Communication

Minimum MMJ lines	Three DEC-423
Modem lines	One EIA-232
Ethernet	Thick wire and ThinWire supported on all models

Communications Options

MMJ lines	Eight DEC-423
MMJ lines	16 DEC-423
Modem lines	Eight EIA-232
Synchronous lines	Two synchronous

Operating Environment

Temperature (sea level)	10°–40° C (50°–90° F)
Relative humidity	10%–90% noncondensing
Maximum operating altitude	2.4 km (8,000 ft)

* Approximate weight with HSD10-EN and two disks

VAX 4000 Model 108 Systems

Step 1—Model 108 Systems

- .. VAX 4000 Model 108 systems require OpenVMS V5.5-2H4, V6.1, or higher. To operate systems in an existing cluster environment, the cluster system disk must be updated.
 - .. Systems include factory-installed software* (OpenVMS V6.2). Media and documentation is recommended for the first system on site. Media and documentation for OpenVMS V 5.5-2H4 is included with each system for customers who need to load and run OpenVMS V5.5-2H4.
 - .. Systems include HSD10-EB DSSI-SCSI controller with RZ28 2.1 GB SCSI disk, and RRD45 CD-ROM drive.
 - .. Systems include 120 V power cord (220 V/240 V devices require a country-specific power cord; see Step 8)
 - .. Select OpenVMS user licenses if required from Step 7.
- * FIS is not a substitute for software media and documentation; see Step 7.

ADVANTAGE SERVERS include

- .. Minitower enclosure with CPU/FPU
- .. DSSI-SCSI controller (HSD10-EB)
- .. DSSI single to Dual Attach Tri-Link
- .. Synchronous SCSI interface for connecting internal and external SCSI devices; external connection via 50-pin high density external SCSI connector
- .. Six Storage bays
- .. Two Memory slots
- .. Q-bus port
- .. 802.3 Ethernet Interface (ThinWire/Thick wire) with terminators
- .. Ethernet kit includes ThinWire T-connector with BNC terminators and 15-pin Thick wire
- .. Universal power supply that automatically adjusts to 88–132 Vac or 176–264 Vac
- .. 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)
- .. 64 MB or 128 MB SIMM memory
- .. One 2.1 GB disk (uses one 3.5” SCSI bay)
- .. One 600 MB CD-ROM drive (uses one 5.25” removable media bay)
- .. OpenVMS base license
- .. DIGITAL NAS Base Server 200 software license
- .. Hardware Documentation EK-VX108-UI
- .. Three-year hardware product warranty
- .. 90-day software warranty

VAX 4000 Model 108 Advantage Servers

Order Number	Memory	Controllers	DIGITAL NAS	Disk Drive	CD-ROM
DV-418CC-E9	64 MB	Single-DSSI DSSI-SCSI Controller	Base Server 200	2.1 GB FIS*	RRD45 (600 MB)
DV-418CC-F9	128 MB	Single-DSSI DSSI-SCSI Controller	Base Server 200	2.1 GB FIS*	RRD45 (600 MB)

Rackmount AVANTAGE SERVERS include 19-inch Rackmount Slide Kit

Rackmount VAX 4000 Model 108 Advantage Servers

Order Number	Memory	Controllers	DIGITAL NAS	Disk Drive	CD-ROM
DV-41RCC-E9	64 MB	Single-DSSI DSSI-SCSI Controller	Base Server 200	2.1 GB FIS*	RRD45 (600 MB)
DV-41RCC-F9	128 MB	Single-DSSI DSSI-SCSI Controller	Base Server 200	2.1 GB FIS*	RRD45 (600 MB)

* 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, supports 64 MB or 128 MB (PB7MA-CC/CD) SIMM memory options

Memory Configuration Chart

Required Memory	1st Memory Board (standard)		2nd Memory Expansion Board (optional)	
	64 MB	128MB	64 MB	128MB
64 MB	1	0	N/A	N/A
128 MB	2 or	1	N/A	N/A
192 MB	1	1	N/A	N/A
256 MB	0	2	N/A	N/A
320 MB	1	1	0	1
384 MB	0	2	0	1
448 MB	0	2	1	1
512 MB	0	2	0	2

Step 3—Storage

- .. Single systems support:
 - Seven DSSI device IDs per DSSI node (controller), when the embedded HSD10 controller uses one device ID on the first DSSI bus.
 - Two-system DSSI VMScluster configurations that support six DSSI nodes (controllers), where each node uses one of the eight available nodes, and can be connected between any pair of DSSI adapters (one controller in each system).

Step 3a—Storage Controller

- .. One KFDDA-BB Single DSSI-SCSI controller included in system, one additional KFDDA-BB supported per system.
- .. Four Q-bus storage adapters (two KZQSA and two KFQSA) are supported per system in B400X Q-bus enclosure.
- .. One HSD10-JA/JF supported per B400X Q-bus enclosure.

KFDDA-BB Single-DSSI-SCSI controller for VAX 4000 Model 108
KZQSA-SA/SF Q-bus-to-SCSI adapter. Uses one Q-bus slot in BA400x enclosure. Supports two SCSI devices (tape and CD-ROM) in tabletop enclosure. Factory/Field installed.
KFQSA-SE/SG Q-bus-to-DSSI adapter. Uses one Q-bus slot in BA400x enclosure, includes 25-foot BC21M-25 cable. Factory/Field installed.

Step 3b—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
- .. RZ28D drive in Advantage Servers 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.
- .. HSD10-EB is configured on KFDDA-BB DSSI bus 0 and supports up to 6 RZ2x internal disks and up to seven RZ2x disks when the external HSD10 SCSI port is used. SCSI bus is terminated on the HSD10 controller side and requires a terminator on the far end of the SCSI bus. One HSD10 supported per system enclosure.
- .. Internal removable media devices are configured on the internal on-board SCSI bus.

Removable Media Devices for Model 108

RRD45-AB	600 MB 4X 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

SCSI Disk Drives

RZ26N-EB	1.0 GB 3.5" x 1" SCSI disk drive 5400 RPM
RZ28M-EB	2.1 GB 3.5" x 1" SCSI disk drive 5400 RPM
RZ28D-EB	2.1 GB 3.5" x 1" SCSI disk drive 7200 RPM
RZ29B-EB	4.3 GB 3.5" x 1.6" SCSI disk drive 7200 RPM

Step 3c—External Storage

Use the following table to calculate external SCSI bus length.

Maximum SCSI Bus Length	Model 108
On-board internal	1.2 m (47.2 inches)
On-board external	4.8 m (189.0 inches)
HSD10 SCSI internal	1.2 m (47.2 inches)
HSD10 SCSI external	4.8 m (189.0 inches)

DSSI External Expansion

- .. StorageWorks Deskside Expansion Units (BA356) support HSD10-Ax for DSSI expansion
- .. One Q-bus expansion cabinet (B400X) supported per system
- .. One TKxx tape drive supported in B400X expansion cabinet
- .. Two TZxx/TLZxx tape drives supported per DSSI bus
- .. One HSD10-Jx DSSI-SCSI controller per BA400X expansion cabinet

StorageWorks HSD10 Array Controller

- .. StorageWorks BA356 supports HSD10 DSSI-SCSI array controller and up to seven SCSI devices

HSD10-AA	StorageWorks HSD10 DSSI-SCSI Array controller with 8 MB cache buffer, supports seven SCSI-2 devices; includes DSSI terminator and tralink adapter; requires BC29R-xx DSSI cable for VAX 4000 to HSD10 connection.
HSD10-AD	StorageWorks HSD10 DSSI-SCSI Array controller with 16 MB cache buffer, supports seven SCSI-2 devices; includes DSSI terminator and tralink adapter; requires BC29R-xx DSSI cable for VAX 4000 to HSD10 connection.
HSD10-AF	StorageWorks HSD10 DSSI-SCSI Array controller with 32 MB cache buffer, supports seven SCSI-2 devices; includes DSSI terminator and tralink adapter; requires BC29R-xx DSSI cable for VAX 4000 to HSD10 connection.

Step 3c—External Storage (continued)**B400X Expansion Cabinet**

- .. B400X includes Q-bus extender modules and two 9-foot (2.7 m) cables
- .. 9-foot (2.7 m) BC21M-09 DSSI cable
- .. 6-foot (1.8 m) BC06P-06 KZQSA cable
- .. 10-foot (3.0 m) BC09F-10 power control cable, Universal power supply, and 120 V power cord

B400X-B9 Q-bus Expansion Cabinet provides eleven additional Q-bus slots and supports:
 One TKxx, TLZxx, or TZxx tape drive
 One HSD10-Jx controller and four RZ28x-AA/RZ29B-AA disk drives
 One HSD10-Jx controller and three RZ282-AA/RZ292-AA disk drives and one RZ28M-xx/RZ29B-AA disk drive in any combination of RZ28M-AA and RZ282-AA, not to exceed 7 drives per HSD10-JA.

SCSI Storage Devices for B400X

RRD45-JA 600 MB 4X CD-ROM drive, requires KZQSA Q-bus-to-SCSI controller or HSD10-JA DSSI-SCSI controller

SCSI External Storage

- .. System supports seven SCSI devices per system on HSD10 DSSI-SCSI controller, up to 6 internal, and up to 7 on external HSD10 SCSI port.
- .. System supports seven SCSI devices per system on the on-board SCSI controller, up to 5 internal, and up to 7 on external SCSI port.
- .. Maximum SCSI bus length, internal and external, is 236-inches (6 meters), see SCSI cable chart

StorageWorks Expansion Units

- .. StorageWorks BA356 supports HSD10 DSSI-SCSI array controller and up to seven SCSI devices

BA356-KD¹ StorageWorks 16-bit shelf includes dual speed blowers. Supports maximum of seven 3.5" 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" 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" modular storage devices and one fixed CD-ROM, requires BN31V-01 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" x 1" half-height disk drive, 5400 RPM
RZ28M-VA/VW 2.1 GB 3.5" x 1" half-height disk drive, 5400 RPM
RZ28D-VA/VW 2.1 GB 3.5" x 1" half-height disk drive, 7200 RPM
RZ29B-VA/VW 2.1 GB 3.5" x 1.6" half-height disk drive, 7200 RPM
TLZ09-VA 8.0 GB 3.5" half-height 4-mm DAT drive
TZ88N-VA 20/40 GB SCSI tape drive in StorageWorks carrier

External SCSI devices

RRD45-FA/DG* 600 MB 4X CD-ROM tabletop drive, requires BC06P-06 1.8 meter (6 foot) SCSI cable, 120 V/240 V
TZ88N-TA 20/40 GB SCSI tabletop tape drive
TZ887-NT 280 GB SCSI tabletop 7 cartridge loader tape subsystem
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)

- * -FA variant includes 120 V power cord, order country specific power cord for DG variant

Step 4—Networks and Communications

Systems support one asynchronous and one synchronous communication option. 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
- .. VAX WAN Device Driver included in OpenVMS layered products CD-ROM media. VAX WAN Device Drive V1.2 or higher is required.

DSW43-AA	EIA-232 synchronous controller provides two lines). Includes synchronous logic module, I/O assembly, and external EIA-232 0.6-m (2-foot) adapter cable
BC19B-02	EIA-422/V.11 0.6-m (2-foot) adapter cable
BC19E-02	EIA-423/V.10 0.6-m (2-foot) adapter cable

802.3/Ethernet 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). Select one additional controller (maximum two per system)

DESQA-SA/SF	802.3/Ethernet/Q-bus controller, ThinWire / thick wire Uses one Q-bus slot; factory/field installed.
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VAX 4000 Model 108 systems require a B400X Q-bus expansion cabinet before adding any of the following options

FDDI Communications Controller

DEFQA-SA/SF	DEC FDDIcontroller/Q-bus SAS (single attachment station) FDDI Controller. Uses one Q-bus slot. Model 106A systems running OpenVMS V5.5-2H4 require DEC LAN Device drive kit for OpenVMS VAX V.1.0. DEC LAN device driver included in OpenVMS V6.1. Factory/field installed.
DEFQA-DA/DF	DEC FDDIcontroller/Q-bus DAS (dual attachment station) FDDI Controller. Uses one Q-bus slot. Model 106A systems running OpenVMS V5.5-2H4 require DEC LAN device driver kit for OpenVMS VAX V1.0. DEC LAN device driver included in OpenVMS V6.1. Factory/field installed.

Both options use the ANSI standard MIC (media interface connector) and support multimode fiber (MMF) up to distances of 2 kilometers between stations. Options require one Q-bus slot (maximum two per system) and a DEC LAN device driver kit.

QA-0PAAA-H5	DEC LAN device driver kit for DEFQA on TK50
QA-0PAAA-HM	DEC LAN device driver kit for DEFQA on 9-track 1600-bit/inch magtape

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.

Step 4—Networks and Communications (*continued*)

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 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. Note: One console terminal required per configuration. VT330, VT340, VT420 with split screen capability can be used as a shared console terminal.

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—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 = S

Clusterwide License Rating = 100 (E)

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

Step 7—Software (*continued*)

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
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-09SAA-BR	OpenVMS VAX Distributed Interactive 128-user license
QL-09SAB-BR	OpenVMS VAX Distributed Interactive 256-user license

OpenVMS Consolidated Software Media (CD-ROM) and Documentation—requires CD-ROM reader

Systems include OpenVMS V6.2 base license; order media and documentation separately for OpenVMS V6.2. Systems also include OpenVMS V5.5-2H4 media and documentation

QA-VWJ8A-A8	OpenVMS layered product binaries on CD-ROM without hardcopy documentation.
QA-VYR8A-G8	OpenVMS extended online documentation and layered product online documentation on CD-ROM; requires DECwindows Bookreader.
QA-A93AA-Hx*	PATHWORKS for OpenVMS media and documentation
QA-GXXAB-Hx*	POSIX media and documentation (without IEEE documentation)

* x denotes media type: 8=CD0ROM, 5=TK50, M=magtape

DIGITAL NAS Base Server 200

Advantage Servers include DIGITAL NAS Base Server 200 license, order media and documentation separately.

QA-MC1AA-Hx*	DIGITAL NAS Base Server 200 media and documentation kit
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* x denotes media type: 8=CD-ROM, 5=TK50, M=magtape

Step 8—Power Cords

- .. Select power cord for 220/240 V use
- .. BN19P-2E power cord is included with North American systems. Select country specific power cord for 240 V use

Power Cords for VAX 4000 Model 108 systems

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

Step 8—Power Cords (*continued*)

Power Cords for B400X and R400X Expansion Pedestals

BN20B-2E	U.S., Canada, Japan
BN22C-2E	Australia, New Zealand
BN22D-2E	Austria, Belgium, France, Germany, Finland, Holland, Norway, Sweden, Portugal, Spain
BN22E-2E	U.K., Ireland
BN22F-2E	Switzerland
BN22H-2E	Denmark
BN22J-2E	Italy
BN22K-2E	India
BN22L-2E	Israel

Step 9—Diagnostics and Documentation

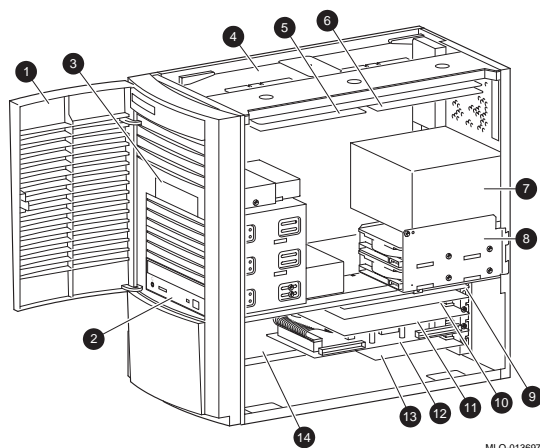
Select optional diagnostics and documentation.

QZ-K14AA-U5	On TK50 media
QZ-K32AA-U8	On CD-ROM media

Extended Diagnostics and Documentation

QX-K19AC-AA	Single-use TK50 license
QZ-K19AA-H5	Media on TK50
QX-K32AA-AA	Single-use CD-ROM license
QZ-K32AA-H8	Media on CD-ROM
QZ-K19AA-GZ	Hardcopy extended maintenance documentation

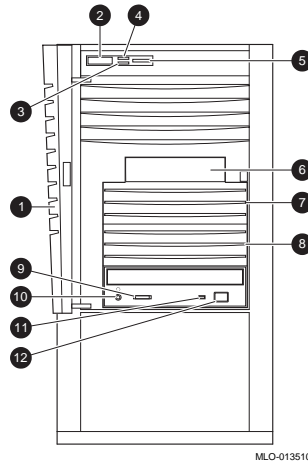
VAX 4000 Model 108 System Diagram



- | | |
|---------------------------------------|-----------------------------|
| 1 Front Door | 8 Rear drive bay |
| 2 CD-ROM | 9 DHW42 Asynchronous option |
| 3 System Disk Drive | 10 DSW43 Synchronous option |
| 4 System board | 11 KFDDA (optional) |
| 5 1st SIMM Board (standard) | 12 HSD10 DSSI-SCSI adapter |
| 6 2nd SIMM Expansion Board (optional) | 13 KFDDA |
| 7 Power Supply | 14 CDAL I/O board |

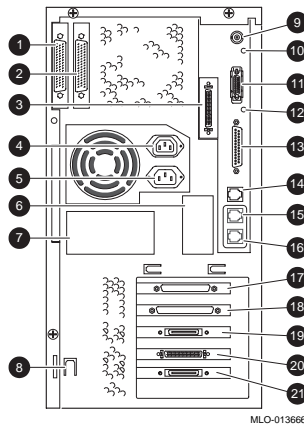
VAX 4000 Model 108

VAX 4000 Model 108 System Diagram



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

VAX 4000 Model 108 System Diagram



- | | |
|--|--|
| 1 Qbus port | 12 Thick wire Ethernet LED |
| 2 Qbus port | 13 Modem port (MMJ adapter provided) |
| 3 SCSI port (terminated when not in use) | 14 MMJ port (for console only) |
| 4 Aux 2A AC power outlet | 15 MMJ port |
| 5 AC power input connector | 16 MMJ port |
| 6 Pre-installed software label | 17 DHW42 Asynchronous communication (optional) |
| 7 System identification label | 18 DSW43 Synchronous communication (optional) |
| 8 Lockdown hasp | 19 KFD DA DSSI port (optional) |
| 9 ThinWire Ethernet | 20 HSD10 SCSI port |
| 10 ThinWire Ethernet LED | 21 KFD DA port (TriLink adapter provided) |
| 11 Thick wire Ethernet | |