



AlphaServer 1000A Rackmount V96-1

Digital Systems and Options Catalog

Product Description

The AlphaServer 1000A Rackmount is an Alpha microprocessor server, available in both 233-MHz and 266-MHz versions, with 2 Mbyte ECC cache packaged in a rackmountable enclosure, offering a choice of three operating systems: Digital UNIX, OpenVMS and Windows NT Server. The AlphaServer 1000A Rackmount offers the same high-reliability features as the AlphaServer 1000 Rackmount—heat sensor, fan failure and power supply sensors, internal RAID, dual Fast Narrow/Wide SCSI backplane and ECC memory. The AlphaServer 1000A Rackmount server is available in three flexible offerings, each configuration contains the rackmount hardware required to install into a 19" RETMA cabinet enclosure.

- **Base System**—allow the greatest flexibility by allowing memory, disks, and cabinet enclosure to be selected to meet specific application needs.
- **Packaged Systems**—are configured with memory and disk, a cabinet enclosure is required.
- **Cabinet Packaged Systems**—are integrated at the factory prior to shipment in H9A10 RETMA cabinets.

AlphaServer 1000A Rackmount servers include advanced server management features with the ServerWORKS Manager kit. The kit includes Simple Network Management Protocol (SNMP) agents for Windows NT V3.51 and Digital UNIX V3.2D. The SNMP agents for OpenVMS will be available with the next release of OpenVMS. The management console software, which includes ManageWORKS Workgroup Administrator and the ServerWORKS application, runs on a Windows PC and the SNMP agents are installed on the AlphaServer. The SNMP agents collect critical server information including system status, I/O, storage and disk, and network status information. Thresholds can be set to monitor key server events and alarms are forwarded to the ManageWORKS console. Additionally, remote management can be handled via a simple serial link.

AlphaServer 1000A Rackmount servers offer up to 6 internal storage devices including, a floppy diskette drive, a CD-ROM, one 5.25-inch bay for an optional removable media device, and three wide and/or narrow disk drive bays. The system supports up to 1 Gbyte of memory and over 12.9 Gbytes of internal storage with three 4.3 Gbyte disks. Additional storage is achieved through external rackmounted StorageWorks shelves within the same cabinet enclosure.

The following are Integrated on the system motherboard: Fast Wide Single-Ended SCSI-2 controller, diskette controller, SVGA controller, two serial ports, one parallel port, keyboard, and mouse port.

High reliability features, combined with simple management features, make the AlphaServer 1000A ideal for organizations with little or no MIS support. Business-critical applications can run unattended and the management features provide early indications of potential system failures.

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Step 1—Systems

- Windows NT systems include Windows NT Server plus 5-client access, V3.51 media (CD-ROM) and license in shrink-wrapped package.
 - Digital UNIX and OpenVMS Packaged systems and Base systems ordered with a minimum of a 1.05 Gbyte disk, include factory installed software.
 - Uninterruptable Power Supplies are available; see UPS Information following System Specifications.
 - Options ordered that are factory installable, will be factory installed unless they are specified as **spares**.
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AlphaServer 1000A Rackmount Systems include

- Alpha microprocessor 21064A 233-MHz CPU or 266-MHz CPU with 2 Mbyte ECC onboard cache
- Rackmount enclosure with:
 - Seven PCI slots
 - Two EISA slots
 - Integrated PCI-based Fast Wide Single-Ended SCSI-2 controller that supports both wide and narrow devices
 - Integrated SVGA graphics controller
 - 20 SIMM memory slots
 - 6 storage slots:
 - One diskette drive slot
 - One CD-ROM drive slot
 - One additional removable media slot
 - Three StorageWorks hard disk drive slots (wide and/or narrow)
 - 450-Watt power supply
 - Two serial ports, support full duplex asynchronous modem control
- One bi-directional enhanced parallel port
- PS/2 style keyboard port and mouse port
- 1.44 Mbyte diskette drive in dedicated slot
- 3-button mouse
- English language documentation kit
- EISA Configuration Utility (ECU)
- Integrated Advanced Server Management features, including ServerWorks Manager kit
- Hardware Warranty: Three-year on-site*
- Software Warranty: 90-day SPD conformance with advisory telephone support*
- Windows NT Server plus 5-client access, V3.51 media kit **or**
- Digital UNIX 2-user base license, Digital NAS 200 license **or**
- OpenVMS base license with System Manager license and Digital NAS 200 license

* Service upgrades are available; see Hardware and Software Supplemental Services.

Packaged Systems

- Packaged systems include 120V or 240V rackmount power cord. Select country specific rackmount power cord for all Packaged systems ordered in Europe.
- Select hardware documentation for all Packaged systems ordered in Europe. All packaged systems include English hardware documentation. Select country specific documentation if required.
- Packaged systems include high-performance PCI-based Ethernet—uses one PCI slot
- Packaged systems include 600 Mbyte CD-ROM—uses one removable media slot
- Select country specific keyboard for all Packaged Systems.

AlphaServer 1000A Rackmount 4/233 MHz

Order Number	Operating System	Memory	Storage	Monitor	Ethernet
PB73P-FA/FB	Digital UNIX	32 MB	1 x 1.05 GB	Recommended	Included
PB73P-MA/MB	OpenVMS	32 MB	1 x 1.05 GB	Recommended	Included

AlphaServer 1000A Rackmount 4/266 MHz

Order Number	Operating System	Memory	Storage	Monitor	Ethernet
PB74P-FA/FB	Digital UNIX	64 MB	1 x 2.1 GB	Recommended	Included
PB74P-MA/MB	OpenVMS	64 MB	1 x 2.1 GB	Recommended	Included

Step 1—Systems (continued)
Base System

- **Digital UNIX and OpenVMS Base Systems require:**
 - Minimum of 32 Mbytes memory
 - One 1.05 Gbyte hard disk drive
- Graphics option, monitor, and keyboard for Digital UNIX and OpenVMS base systems are available as options if required.
- **Windows NT Base Systems require:**
 - Minimum of 32 Mbytes memory
 - One 1.05 Gbyte hard disk drive
 - CD-ROM disk drive
 - Graphics monitor
- Windows NT Base systems ordered in Americas and APA include U.S. keyboard. Select country specific keyboard for all Base systems ordered in Europe.

Note: Mandatory items **must** be on purchase order at initial order acceptance.

AlphaServer 1000A Rackmount 4/233 MHz

Order Number	Operating System	Memory	Monitor	Hard Drive	600 MB CD-ROM	Ethernet
PB73S-AA/AB	Windows NT Server	Mandatory	Required	Mandatory	Mandatory	Recommended
PB73S-FA/FB	Digital UNIX	Mandatory	Recommended	Mandatory	Recommended	Recommended
PB73S-MA/MB	OpenVMS	Mandatory	Recommended	Mandatory	Recommended	Recommended

AlphaServer 1000A Rackmount 4/266 MHz

Order Number	Operating System	Memory	Monitor	Hard Drive	600 MB CD-ROM	Ethernet
PB74S-AA/AB	Windows NT Server	Mandatory	Required	Mandatory	Mandatory	Recommended
PB74S-FA/FB	Digital UNIX	Mandatory	Recommended	Mandatory	Recommended	Recommended
PB74S-MA/MB	OpenVMS	Mandatory	Recommended	Mandatory	Recommended	Recommended

AlphaServer 1000A Packaged Cabinet Systems include

- Cabinet enclosure (H9A10-CE/-CF, 120 V or 240 V)
- AlphaServer 1000A Packaged Rackmount System
- PCI-based Fast Narrow Single Ended SCSI-2 (KZPAA-AA) controller
- BA35R-SF front-mounted StorageWorks shelf with one RZ28-VA 2.1 GB 3.5-inch disk drive installed
- BN21H-02 external cable connection to BA35R.
- AlphaServer 1000A Rackmount Cabinet Systems ship with dual (2) H7600-xx cabinet power distribution units and the following power cords.
 - 120 V systems (H7600-AA) = 2 x 24A terminated with NEMA L5-30P (plugs) and require NEMA L6-20R (receptacles)
- H9A10-CE/-CF Cabinet Dimensions
 - Outside: 66.9-inches high, 23.62-inches wide, 33.8-inches deep
 - Usable internal rackmount: 56-inches high, 19-inches wide, 32.2-inches deep

AlphaServer 1000A 4/233 Cabinet Systems

PB73R-FA/FB	Digital UNIX Packaged Cabinet rackmount system (PB73P-FA/FB), with KZPAA-AA controller, BA35R-SF StorageWorks shelf, and one 2.1 GB disk drive, H9A10-CE/CF
PB73R-MA/MB	OpenVMS Packaged rackmount system (PB73P-MA/MB), with KZPAA-AA controller, BA35R-SF StorageWorks shelf, and one 2.1 GB disk drive, H9A10-CE/CF

AlphaServer 1000A 4/266 Cabinet Systems

PB74R-FA/FB	Digital UNIX Packaged Cabinet rackmount system (PB74P-FA/FB), with KZPAA-AA controller, BA35R-SF StorageWorks shelf, and one 2.1 GB disk drive, H9A10-CE/CF
PB74R-MA/MB	OpenVMS Packaged Cabinet rackmount system (PB74P-MA/MB), with KZPAA-AA controller, BA35R-SF StorageWorks shelf, and one 2.1 GB disk drive, H9A10-CE/CF

Step 1—Systems (*continued*)

PCI Option Slot Table

- Use table for options restricted to slots **0, 1 and 2 only**..

Order Number	Description	Max. #	Supported in PCI slots	
KZPSC-AA	One-port PCI-based RAID Controller	3	0, 1, 2	
KZPSC-BA	Three port PCI-based RAID Controller	3	0, 1, 2	Windows NT only
DJ-ML200-BA	4 MB PCI Prestoserve option	1	0, 1, 2	
DE500-XA	PCI-based Fast Ethernet network interface card	2	0, 1, 2	
PBXGA-JB	PCI-based S3 TRIO graphics adapter	1	0, 1, 2	OpenVMS only

Step 2—Memory

- Packaged Systems include either 32 MB (PB7MA-AB) or 64 MB (PB7MA-AC) memory kit.
- System supports four memory kits (each kit includes four industry-standard SIMMs and an ECC SIMM for ECC support).
- System maximum of 1 GB can be obtained by selecting a Base System and four PB7MA-AE 256 Mbyte memory kits.

PB7MA-AA	16 MB 70ns (5 x 4 MB SIMMs) memory kit
PB7MA-AB	32 MB 70ns (5 x 8 MB SIMMs) memory kit
PB7MA-AC	64 MB 70ns (5 x 16 MB SIMMs) memory kit
PB7MA-AD	128 MB 70ns (5 x 32 MB SIMMs) memory kit
PB7MA-AE	256 MB 70ns (5 x 64 MB SIMMs) memory kit
DJ-ML200-BA	PCI-based 4 MB PrestoServe I/O Performance Enhancement Option; 1 per system only .

Step 3—Monitors

- Windows NT systems require a graphics monitor to run **all** functions.
 - OpenVMS supports 640 x 480 x 256 @ 60Hz, 800 x 600 x 256 @ 60Hz
- EISA Configuration Utility (ECU) is accessible via the console port for Digital UNIX and OpenVMS systems. Optional graphics capability is available. Select graphics adapter, monitor, and country specific keyboard for Digital UNIX and OpenVMS systems if required.
 - Digital UNIX supports 640 x 480 x 256 @ 60Hz, 800 x 600 x 256 @ 60Hz
 - Windows NT supports 640 x 480 x 256 @ 60Hz, 640 x 480 x 256 @ 72 Hz, 800 x 600 x 256 @ 56 Hz, 800 x 600 x 256 @ 60 Hz, 800 x 600 x 256 @ 72 Hz.
- Graphics monitors other than those listed below can be used if compatible with graphics adapter included with system.

Note: Higher resolution available with optional EISA or PCI graphics adapters (see Step 5).

Note: Order 2T-450KM-AA if monitor extension cable is required.

VRC15-KA/K4	15" (13.9" viewable image size) high-resolution color monitor with Light Gray enclosure. Flat-square CRT with 0.28 mm dot pitch and anti-reflection, anti-glare, anti static coating. Auto-scanning from VGA to 1024 x 768 at 75Hz NI refresh rates. MPR-II, Energy Star, DPMS and NUTEK compliant. 120/240V universal power supply. Includes 1.4 meter HD15 male to male video cable. Select -KA for Northern Hemisphere or -K4 for Southern Hemisphere operation. If purchased in North America, -KA includes 120V power cord, otherwise power cords for -KA and -K4 must be ordered separately.
VRT17-PA/P4	17" (16.0" viewable image size) high-resolution color monitor with Light Gray enclosure. 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. Includes 3.0 meter HD15 male to BNC video cable. Select -PA for Northern Hemisphere or -P4 for Southern Hemisphere operation. If purchased in North American, -PA includes 120V power cord, otherwise power cords for -PA and -P4 must be ordered separately.

Step 3—Monitors (*continued*)

- VRC21-LA/L4** 21" (19.6" viewable image size) ultra high-resolution color monitor with Light Gray enclosure. Diamondtron aperture grille CRT with 0.30 mm stripe pitch and anti-reflection, anti-glare, anti static coating. Auto-scanning from VGA to 1600 x 1200 at 75Hz NI refresh rates. On Screen display (OSD). Stereo viewing compatible. MPR-II, Energy Star, DPMS and NUTEK compliant. 120/240V universal power supply. Includes 3.0 meter HD15 male to BNC video cable. Select -LA for Northern Hemisphere, or -L4 for Southern Hemisphere operation. If purchased in North America, -LA includes 120V power cord, otherwise power cords for -LA and -L4 must be ordered separately.

Step 4—Storage

- System enclosure supports six storage devices: one dedicated diskette drive slot, two removable media slots, and three 3.5-inch disk drives in internal storage assembly.
- Integral Fast Wide Single-Ended SCSI-2 controller supports wide and narrow devices. Maximum of seven devices:
 - Two internal narrow 5.25-inch removable media devices
 - Three narrow or wide 3.5-inch internal disk drives
- Internal SCSI bus length cannot exceed 3 meters
 - 50-pin narrow connector included supports CD-ROM and second optional 5.25-inch removable device; from 50 pin connector to controllers.
 - 68-pin wide connector included supports both wide and narrow hard drives residing in the internal storage assembly.

Step 4a—Internal Storage

- **Packaged Systems include:**
 - One 1.44 Mbyte diskette drive
 - One CD-ROM drive
- **Base Systems include**
 - One 1.44 Mbyte diskette drive

Removable Media Devices

- PBXR-CA** 600 MB 5.25 inch half-height quad-speed CD-ROM drive (RRD45)
PBXTZ-AA 2.0 GB 5.25-inch half-height SCSI QIC tape drive (TZK11)
PBXTL-CA 8.0 GB 3.5-inch half-height SCSI 4-mm DAT drive (TLZ07)

Hard Disk Drives

- Order -EJ variants when configuring initial order
- Order PBXR*-xx variants when ordering as **spares** and/or for field installation
- Order -VA and -VW variants when adding external storage to Rackmount StorageWorks shelves
- To add a narrow drive, order PBXKP-BA (wide to narrow SCSI adapter); one adapter required for each additional drive

8-bit Narrow Hard Disk Drives (Internal only)

- RZ26N-EJ** 1.05 GB 8-bit narrow 5400 RPM 3.5-inch half-height disk drive (PBXRZ-EB for field installation)
RZ28M-EJ 2.1 GB 8-bit narrow 5400 RPM 3.5-inch half-height disk drive (PBXRZ-HB for field installation)
RZ28D-EJ 2.1 GB 8-bit narrow 7200 RPM 3.5-inch half-height disk drive (PBXRZ-JB for field installation)
RZ29B-EJ 4.3 GB 8-bit narrow 7200 RPM 3.5-inch half-height disk drive (PBXRZ-NA for field installation)

16-bit Wide Hard Disk Drives (Internal only)

- PBXRW-EB** 1.05 GB 16-bit wide 5400 RPM 3.5-inch, half-height disk drive
PBXRW-HB 2.1 GB 16-bit wide 5400 RPM 3.5-inch, half-height disk drive
PBXRW-JB 2.1 GB 16-bit wide 7200 RPM 3.5-inch, half-height disk drive
PBXRW-NA 4.3 GB 16-bit wide 7200 RPM 3.5-inch half-height disk drive

Step 4b—Storage Controllers

- StorageWorks RAID Array 230 (KZPSC-xx) includes PCI backplane, RAID controller and StorageWorks RAID Array 230 Subsystem family software and documentation kit for OpenVMS, Digital UNIX and Windows NT
- Maximum three PCI based one- and three-port KZPSC-xx RAID controllers supported per system. KZPSC-xx RAID controllers supported in PCI slots 0, 1 and 2 **only**
- Maximum number of PCI based SCSI controllers per system is three. Note: Packaged systems have two PCI slots available due to installed PCI based Ethernet controller
- StorageWorks RAID Array 210 (KZESC-xx) includes EISA backplane RAID controller and StorageWorks RAID Array 210 Subsystem family software and documentation kit for OpenVMS, Digital UNIX and Windows NT
- Maximum number of EISA-based storage controllers supported per system:
 - Two KZESC-xx (One- and three-port controllers) or
 - One KFESB DSSI controller (requires two EISA slots)
- Each controller requires one bus slot, except KFESB which requires two if system is middle node in OpenVMS cluster, then one KFESB is supported per system.
- Maximum number of EISA based controllers of all types is limited by the total number of available EISA slots and available IRQs
 - KZPSA-BB PCI-based one port Fast Wide Differential SCSI controller supports externally connected wide disks in BA36R with DWZZB signal converter. Internal storage assembly hard drives are not supported on fast wide differential controller
- SCSI cables are not included and must be ordered separately
- External DSSI cables are not included and must be ordered separately, see Step 4d

Note: Rackmount Cabinet systems include KZPAA controller and one BN21H-02 narrow SCSI cable for connection to BA35R-SF

SCSI controllers

KZPAA-AA	PCI based one-port high-performance Fast Narrow Single Ended (FNSE) SCSI-2 controller
BN21H-02	Connects from KZPAA-AA to BA35R narrow StorageWorks shelf
KZPSA-BB	PCI based one-port high-performance Fast Wide Differential (FWD) SCSI controller. Supports external disks only
BN21K-01	Connects from KZPSA to DWZZA-VA in narrow BA35R, or DWZZB-VW in BA36R wide StorageWorks shelf
KZPSC-AA*	One-port PCI backplane RAID Fast Wide Single Ended (FWSE) controller; includes StorageWorks RAID Array 230 Subsystem family software and documentation kit
BN31S-1E	Connects from KZPSC-AA to BA36R wide StorageWorks shelf
BN31L-1E	Connects from KZPSC-AA to BA35R narrow storage enclosure
KZPSC-BA*	Three-port PCI backplane RAID (FWSE) controller; includes StorageWorks RAID Array 230 Subsystem family software and documentation kit
BN31K-0E	SCSI cable/bulkhead assembly kit for KZPSC-BA; required for connection to third port; uses one PCI bulkhead slot.
BN31S-1E	Connects from KZPSC-BA to BA36R wide StorageWorks shelf
BN31L-1E	Connects from KZPSC-BA to BA35R narrow StorageWorks shelf
KZESC-AA*	One-port EISA backplane RAID (FNSE) controller; includes StorageWorks RAID Array 210 Subsystem family software and documentation kit
BN21H-02	Connects from KZESC-AA to BA35R narrow StorageWorks shelf
BN21N-02	Connects from KZESC-AA to BA36R wide StorageWorks shelf
KZESC-BA*	Three-port EISA backplane RAID controller; includes StorageWorks RAID Array 210 Subsystem family software and documentation kit
CK-SWXCR-AA	SCSI cable/bulkhead assembly kit for KZESC-BA, required for connecting second and third ports to bulkhead slot
BN21H-02	Connects from KZESC-BA to BA35R narrow StorageWorks shelf
BN21N-02	Connects from KZESC-BA to BA36R wide StorageWorks shelf
KZPSM-AA	PCI-based SCSI Ethernet combination controller. (FWSE) SCSI controller, 10 Mbit Ethernet.
BC25V-1A	SCSI cable/bulkhead assembly kit for KZPSM-AA; connects from KZPSM-AA to bulkhead for external storage; requires BN21K-xx
BN21K-xx	Connects from KZPSM-AA bulkhead assembly kit to BA36R wide StorageWorks shelf

Step 4b—Storage Controllers (continued)**DSSI Controllers**

KFPSA-AA	PCI-based single-DSSI controller (OpenVMS systems only). See Step 4d DSSI cables.
KFESB-AA	EISA-based single-DSSI controller (OpenVMS systems only). Uses one EISA slot if system is end node in OpenVMS cluster, or two slots if system is middle node in OpenVMS cluster. Maximum two (if end node in cluster) or maximum of one (if middle node in cluster). See Step 4d DSSI cables.

* See *Storage Devices* for additional information on StorageWorks RAID Array Controllers.

Step 4c—External Expansion

- Integral Fast Narrow SCSI-2 controller can be extended outside the system enclosure for **narrow** devices only.
- Note the following cable length guidelines from back of system cabinet to SCSI device.
 - Maximum external bus length including cable and device cannot exceed 1.5 meter
- External tape drives are also supported on optional PCI based high-performance fast SCSI-2 narrow controllers:
 - KZPAA-AA—maximum external bus length included cable and tape device cannot exceed 6.0 meters
 - KZPSA-BB—Fast Wide Differential (FWD) SCSI controller, maximum external bus length included cable and tape device cannot exceed 25.0 meters
- External tape drives are not support on one and three port (KZESC-xx and KZPSC-xx) high performance fast SCSI-2 controllers on Digital UNIX and OpenVMS systems.
- External tape drives are supported on one and three port (KZPSC-xx) high performance Fast SCSI-2 controllers on Windows NT systems **only**.
- Tabletop version of these tapes are also supported on rackmount systems.
- Each tabletop tape device **requires** a three foot high density 50-pin to low density 50-pin SCSI cable BN23G-xx.

External Tapes supported on Windows NT servers

TLZ07-VA	8.0 GB 4 mm DAT rackmountable tape drive
TLZ7L-VA *†	32.0 GB 4-mm DAT rackmountable autoloader
TZK11-VA	2.0 GB 5.25-inch rackmountable tabletop QIC tape drive
TZ87-VA †	20 GB, DLT rackmountable tape drive
TZ875-TA †	100 GB, DLT tape autoloader
TZ877-VA †	140 GB, DLT tape autoloader
BN23G-xx	3 foot Molded SCSI Cable, required for each tabletop tape device

External Tapes supported on Digital UNIX and OpenVMS servers

TLZ07-VA	8.0 GB 4 mm DAT rackmountable tape drive
TLZ7L-VA ¹²	32.0 GB 4-mm DAT rackmountable autoloader
TZK11-VA	2.0 GB 5.25-inch tabletop QIC rackmountable tape drive
TSZ07-AA	40/140 MB reel/reel, rackmountable tape drive
TSZ07-CA	40/140 MB reel/reel, tabletop tape drive
TZ87-VA ²	20 GB, DLT rackmountable tape drive
TZ875-TA ²	100 GB, DLT tabletop autoloader
TZ877-TA ²	140 GB, DLT tabletop autoloader
TZ88N-TA ²	20/40 GB, DLT tabletop drive
2T-TZ877-AA	140 GB rackmount tape loader, requires SCSI controller and cable
TKZ61-AA	4 GB auto loader, IBM 3480/3490 compatible tape drive
TZK62-AA	24 GB auto loader, IBM 3480/3490 compatible tape drive
BN23G-xx	3 Foot Molded SCSI Cable, required for each tabletop tape device.

1 Includes four cartridge loader. Larger magazines are supported.

2 Base operating systems support sequential back-up mode only; additional software is required for random access backup. See *Storage Devices* for details.

Step 4c—External Expansion (continued)**External Disk Expansion**

- External BA35R rackmount StorageWorks shelves are supported on all 8-bit Narrow and 16-bit Wide SCSI controllers. Devices operate in narrow mode when BA35R is connected to a Fast Wide SCSI controller.
- External BA36R rackmount StorageWorks shelves are supported on 16-bit Wide SCSI controllers.
- Order BN21H-02 cable to connect a single BA35R rackmount StorageWorks shelf to controller.
- Order BN21K-** cable (limit 25 meters) to connect single BA36R rackmount StorageWorks shelf to controller.

Rackmount StorageWorks Shelves

BA35R-SF	Rackmount BA350 front mounted StorageWorks shelf for narrow SCSI disks
BA35R-SR	Rackmount BA350 rear mounted StorageWorks shelf for narrow SCSI disks
BA36R-AF	Rackmount BA356 front mounted StorageWorks shelf for wide SCSI disks
BA36R-AR	Rackmount BA356 rear mounted StorageWorks shelf for wide SCSI disks

StorageWorks Modular Storage Options

DWZZA-VA	Bi-directional SCSI signal converter and bus extender kit. 16 bit Fast Wide Differential SCSI-2 on one end and 8 bit Fast Narrow Single-Ended SCSI-2 on other end. Requires BN21K-** cable.
DWZZB-VW	Bi-directional SCSI signal converter and bus extender kit. 16 bit Fast Wide Differential SCSI-2 on one end and 8 or 16 bit Fast Wide Single-Ended SCSI-2 on other end. Requires BN21K-** cable.

Hard Disk Drives (External only)

- Wide drives require wide controller to operate in 16-bit wide mode
- Wide drives are supported in BA36R Rackmount StorageWorks shelves
- Wide drives operate in 8-bit narrow mode when connected to integral Fast Narrow Single Ended (FNSE) SCSI-2 controller
- Narrow drives are supported in BA35R Rackmount StorageWorks shelves

RZ26N-VA	1.05 GB 8-bit narrow 5400 RPM 3.5 x 1" SCSI hard disk drive
RZ28M-VA	2.1 GB 8-bit narrow 5400 RPM 3.5 x 1" SCSI hard disk drive
RZ28D-VA	2.1 GB 8-bit narrow 7200 RPM 3.5 x 1" SCSI hard disk drive
RZ29B-VW	4.3 GB 8-bit narrow 7200 RPM 3.5 x 1.6" SCSI hard disk drive
RZ26N-VW	1.05 GB 16-bit wide 5400 RPM 3.5 x 1" SCSI hard disk drive
RZ28M-VW	2.1 GB 16-bit wide 5400 RPM 3.5 x 1" SCSI hard disk drive
RZ28D-VW	2.1 GB 16-bit wide 7200 RPM 3.5 x 1" SCSI hard disk drive
RZ29B-VW	4.3 GB 16-bit wide 7200 RPM 3.5 x 1.6" SCSI hard disk drive

See *Storage Devices* for additional ordering information for StorageWorks modular storage expansion and supported devices.

Step 4d DSSI Cables**DSSI**

- EISA-based DSSI controller (KFESB-AA) uses "Micro-Ribbon" connection.
- KFESB to any external "Pin-Socket" DSSI connection (VAX 4000s, R400X) requires BC22Q-xx DSSI cable.
- KFESB to any external "Micro-Ribbon" DSSI straight connection (all other DSSI systems and storage devices require straight connection) requires BC21Q-xx DSSI cable.
- KFESB to any external "Micro-Ribbon" DSSI right-angle connection (all other DSSI systems and storage devices requiring right-angle connection) requires BC29S-xx DSSI cable.

Step 5—Graphics Adapters

- Integrated SVGA graphics controller supports the following monitors:
 - Digital UNIX supports 640 x 480 x 256 @ 60 Hz monitors, 800 x 600 x 256 @ 60 Hz monitors
 - OpenVMS supports 640 x 480 x 256 @ 60 Hz monitors, 800 x 600 x 256 @ 60 Hz monitors
 - Windows NT supports 640 x 480 x 256 @ 60 Hz, 640 x 480 x 256 @ 72 Hz, 800 x 600 x 256 @ 56 Hz, 800 x 600 x 256 @ 60 Hz, 800 x 600 x 256 @ 72 Hz
- EISA Configuration Utility (ECU) is accessible via the console port for Digital UNIX and OpenVMS systems. Optional graphics capability is available. Select graphics adapter, monitor, and country specific keyboard for Digital UNIX and OpenVMS systems if required.

PB2GA-FB	ISA-based VGA ATI Mach 64 1024 x 768 graphics adapter (Windows NT, Digital UNIX, OpenVMS systems)
PBXGA-AA	PCI-based ZPXP-E1 8-plane 1024 x 768 graphics adapter (Digital UNIX)
PBXGA-AN	PCI-based ZPXP-E1 8-plane 1024 x 768 graphics adapter (Windows NT)
PBXGA-BA	PCI-based ZPXP-E2 24-plane 1024 x 768 graphics adapter (Digital UNIX)
PBXGA-BN	PCI-based ZPXP-E2 24-plane 1024 x 768 graphics adapter (Windows NT)

Step 6—Networks and Communications

- Systems include PCI-based Ethernet controller (DE435-AA); uses one PCI slot, two additional PCI-based controllers supported per system.
- Select networking cable for DE435-AA:
 - BNE4G-02 for AUI
 - BN26K-xx for 10BaseT (twisted pair)
 - BC16M-xx for ThinWire
- Maximum number of **each** EISA-based network controllers supported per system:
 - Two DE425-AA
 - Two DEFEA-xA
 - Two DW300-AA
 - Two DNSES

DE435-AA	PCI-based Digital Etherworks 32-bit high-performance network interface card
DE425-AA	EISA-based Ethernet (OpenVMS and Digital UNIX only)
DE500-XA	PCI-based Fast Ethernet network interface card (see PCI Option Slot Table)
DEFEA-AA	EISA-based DEC FDDIcontroller, Single Attachment
DEFEA-DA	EISA-based DEC FDDIcontroller, Dual Attachment (requires two slots)
DEFEA-UA	EISA-based DEC FDDI (UTP) controller
DEFPA-AA*	PCI-based DEC FDDIcontroller, Single Attachment; maximum seven supported on OpenVMS and Windows NT, four supported on Digital UNIX.
DEFPA-DA*	PCI-based DEC FDDIcontroller, Dual Attachment (requires two slots); maximum seven supported on OpenVMS and Windows NT, four supported on Digital UNIX.
DEFPA-UA*	PCI-based DEC FDDI (UTP) controller; maximum seven supported on OpenVMS and Windows NT, four supported on Digital UNIX.
DW300-AA	EISA-based Token-Ring adapter includes NetWare V2.15 driver, LAN Manager Driver, and documentation (Not supported by DECnet/OSI for OpenVMS)
DNSES-AA	EISA-based synchronous communications controller, Digital UNIX and OpenVMS systems only
CXI01-AA	ISA Asynchronous MUX Adapter, 16 lines. Expandable to 64 lines. Supported on Windows NT and Digital UNIX only .
CXI01-AD	ISA Asynchronous MUX Adapter, 16 lines. Expandable to 224 lines. Supported on Windows NT and Digital UNIX only .
DGLPB-AB	PCI-based ATMworks 350 adapter. Supported on Windows NT and Digital UNIX only
PBXNP-AA	PCI-based Token Ring adapter.
PBXDI-AA	ISA-based Two Port Synchronous Communications controller with interface support for EIA-232/V.24/V.28 (Windows NT only)
PBXDI-AB	ISA-based Two Port Synchronous Communications controller with interface support for V.35 (Windows NT only)
PBXDI-AC	ISA-based Two Port Synchronous Communications controller with interface support for X.21 and EIA-530 (Windows NT only)

* Supported as data device only.
See the *Network Products Guide* for more information.

Step 7—Terminals and Printers

Systems include two EIA-232 asynchronous serial ports with 9-pin D-subminiature connectors.

Select terminals and serial printers as required. A 9-pin to MMJ adapter (H8571-J) is required for each connection. A cable must be ordered unless otherwise provided.

Note: Order 2T-450KM-AA if additional monitor cable length is required.

Step 9—Software

- Windows NT Packaged and Base systems include Windows NT Server plus 5-client access V3.5 media (CD-ROM) and license in shrink-wrapped package. Order documentation kit if required.

Windows NT Servers

QA-23CAA-GZ	Windows NT Server documentation kit
QA-23C8A-GZ	Windows NT International Server documentation kit
QB-4G45A-AA	Purveyor Web Server Software V1.1 for Process Software Corp.

Digital UNIX Concurrent Use Licenses

Software Processor Code = E

- Digital UNIX Packaged and Base systems **require** operating system media and documentation for **first** system on site.
- Digital UNIX Concurrent Use Licenses are **not** specific to a single system and can be moved from one system to another at user discretion.

QL-MT7AM-3B	Digital UNIX Concurrent Use 1-user license
QL-MT7AM-3C	Digital UNIX Concurrent Use 2-user license
QL-MT7AM-3D	Digital UNIX Concurrent Use 4-user license
QL-MT7AM-3E	Digital UNIX Concurrent Use 8-user license
QL-MT7AM-3F	Digital UNIX Concurrent Use 16-user license
QL-MT7AE-AA	Digital UNIX Traditional unlimited user license
QL-MT5AE-AA	Digital UNIX developer's extension license

Digital UNIX Media and Documentation—required for first system on site

QA-MT4AA-H8	Digital UNIX media and on-line documentation on CD-ROM
QA-MT4AA-GZ	Digital UNIX full hardcopy documentation

Digital UNIX Layered Products CD-ROM

QA-054AA-H8	Layered products media and documentation for Digital UNIX on CD-ROM
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DECnet for Digital UNIX

QL-MTJAE-AA	DECnet/OSI end-system license for Digital UNIX
QL-MTKAE-AA	DECnet/OSI extended function license for Digital UNIX

Step 9—Software (*continued*)
OpenVMS Concurrent Use Licenses**Software Processor Code = E**

- OpenVMS Packaged and Base systems **require** operating system media and documentation for **first** system on site.
- OpenVMS Concurrent Use Licenses are **not** specific to a single system and can be moved between systems at user discretion. OpenVMS Concurrent Use Licenses can also 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-MT2AE-AA	OpenVMS Traditional unlimited user license

OpenVMS Media and Documentation—required for first system on site

OpenVMS AlphaServer 1000A systems require media and documentation (QA-MT1AA-H8) for first system on site.

QA-MT1AA-H8	OpenVMS media and on-line documentation CD-ROM
QA-001AA-GZ	OpenVMS hardcopy documentation

OpenVMS Layered Products CD-ROM

QA-03XAA-H8	Layered products media and documentation for OpenVMS on CD-ROM
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DECnet for OpenVMS

QL-MTGAE-AA	DECnet extended function license for OpenVMS
QL-MTHAE-AA	DECnet end-system to extended function upgrade license for OpenVMS

DSSI Information

EK-410AB-MG	DSSI VMScluster Installation Guide
EK-D4AXP-TS	DSSI VMScluster Troubleshooting Guide

Step 10—Power Cords, Keyboards, and Documentation

- All systems ship with either a 120 V **or** a 240 V rackmount power cord. Select country specific rackmount power cord for all systems ordered in Europe
- Digital UNIX and OpenVMS ordered in Americas, AP and Europe with graphics option and monitor require a country specific keyboard. Keyboard is not required if terminal is selected.

Keyboards

LK461/471-AA*	North American, Japan (English)
LK461/471-AB	Belgian
LK461/471-AD	Danish
LK461/471-AE	United Kingdom (English)
LK461/471-AG	German
LK461/471-AI	Italian
LK461/471-AK	Swiss/French
LK461/471-AN	Norwegian
LK461/471-AP	French
LK461/471-AS	Spanish
LK461/471-AV	Portuguese
LK461/471-AQ	Canadian/English
LK461/471-AC	Canadian/French
LK461/471-AL	Swiss/German
LK461/471-AM	Swedish

* If alternate keyboard is selected, and a keyboard is already included in system offering, both keyboards will ship

Power Cords for Rackmount systems

BN20Q-4E	15 feet 50 HZ power cord connects system to power distribution unit located inside cabinet enclosure
BN20Z-4E	15 feet 60 HZ power cord connects system to power distribution unit located inside cabinet enclosure

Note: AlphaServer 1000A deskside system power cords are less than 15-feet long and are not supported in Rackmount cabinet enclosure

* If alternate power cord is selected, and a power cord is included in system offering, both power cords will ship

Extension cable kit for video, keyboard, mouse

2T-450KM-AA	Video, keyboard, mouse extension cables
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Mouse

PBXWS-AA	3-button Mouse (included in Digital UNIX and OpenVMS Systems)
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Documentation: Customer and Service Kit

Customer Kit	Service Kit	
QZ-00MAA-GZ	QA-00MAB-GZ	Customer and Service kit for AlphaServer 1000A—English
QZ-00MPA-GZ	QA-00MPB-GZ	Customer and Service kit for AlphaServer 1000A—French
QZ-00MSA-GA	QZ-00MSB-GZ	Customer and Service kit for AlphaServer 1000A—Spanish
QZ-00MJA-GZ	QZ-00MJB-GZ	Customer and Service kit for AlphaServer 1000A—Japanese
QZ-00MUA-GZ	QZ-00MUB-GZ	Customer and Service kit for AlphaServer 1000A—Italian
QZ-00MGA-GZ	QZ-00MGB-GZ	Customer and Service kit for AlphaServer 1000A—German

Documentation: Customer Kit and Service Kit

AG-Q95HA-BE	On-line documentation
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Step 11—Cabinet Enclosures

- Select cabinet enclosure for Packaged and Base AlphaServer 1000A Rackmount systems if required
- H9A10 dimensions
 - Outside: 66.93" high x 123.62" wide X 33.86" deep
 - Inside: 59.5" high X 19" wide X 30.8" deep

H9A10-CE/CF 120V/240V RETMA cabinet enclosure with dual power supply

H9A10-CG/CH 120V/240V RETMA cabinet enclosure with dual power controller and front door

H9A10-AB RETMA cabinet enclosure with no power controller

H9A10-AD RETMA cabinet enclosure with front door, with no power controller

Additional Cabinets supported:

- H9A11 dimensions
 - Inside: 36.75" high X 19" wide X 30.8" deep
- H9A15 dimensions
 - Inside: 71.75" high X 19" wide X 29.75" deep

Step 12—Hardware and Software Supplemental Support Services

Step 12a—Hardware and Software Supplemental Support Services

Hardware—Americas and Asia Pacific Area only

- Systems include three-year hardware warranty, on-site with 5 x 9, 24-hour response time.
- Select optional Hardware Supplemental Support Services if required.

FM-MK4HR-36 5 x 9, 4-hour response time

FM-MK512-36 5 x 12, 4-hour response time

FM-MK616-36 6 x 16, 4-hour response time

FM-MK724-36 7 x 24, 4-hour response time

FM-MKXHW-60 Years 1-5, Next day, On-site

FM-MK4HR-60 Years 1-5, 5x9, 4-hour response time

FM-MK512-60 Years 1-5, 5x12, 4-hour response time

FM-MK616-60 Years 1-5, 6x16, 4-hour response time

FM-MK724-60 Years 1-5, 7x24, 4-hour response time

Software—Americas and Asia Pacific Area only

- Systems include 90-day Conformance to SPD and Telephone Advisory Support. Select optional Software Supplemental Support Services, if required.
- Software service upgrades for Windows NT include advisory and remedial software support for the time period indicated.
- Software service upgrades for Digital UNIX and OpenVMS include advisory and remedial software support with new version license rights for operating system and Digital NAS 200 for the time period indicated.

FM-MKNTS-12 12-month Software Supplemental Support for **Windows NT** AlphaServer 1000A systems

FM-MKNTS-36 36-month Software Supplemental Support for **Windows NT** AlphaServer 1000A systems

FM-MKNTS-60 60-month Software Supplemental Support for **Windows NT** AlphaServer 1000A systems

FM-MKOSF-12 12-month Software Supplemental Support for **Digital UNIX** AlphaServer 1000A systems

FM-MKOSF-36 36-month Software Supplemental Support for **Digital UNIX** AlphaServer 1000A systems

FM-MKOSF-60 60-month Software Supplemental Support for **Digital UNIX** AlphaServer 1000A systems

FM-MKVMS-12 12-month Software Supplemental Support for **OpenVMS** AlphaServer 1000A systems

FM-MKVMS-36 36-month Software Supplemental Support for **OpenVMS** AlphaServer 1000A systems

FM-MKVMS-60 60-month Software Supplemental Support for **OpenVMS** AlphaServer 1000A systems

AlphaServer 1000A Rackmount

Step 12b—Hardware and Software Supplemental Support Services—Europe only

Europe does **not** have specific part numbers for Hardware and Software Supplemental Support Services. Prices can be quoted using the Excelerator tool; contact MCS Sales in your country for information on Hardware and Software Supplemental Support Services.

Specifications

Physical Characteristics			
Height	26.7 cm (10.5 in.)		
Width	48.2 cm (19.0 in.)		
Depth	63.5 cm (25.0 in.) system chassis 73.7 cm (29.0 in.) system chassis & rackmount hardware		
Weight	29 kg (65 lb) typical		
Clearances		Service	
Front	124.04 cm (50.0 in.)		
Rear	61.00 cm (24.0 in.)		
Environmental			
Temperature	Operating	10–35° C (50–95° F)	
	Nonoperating	Not tested	
	Storage (60 days)	-40–66° C (-40–151° F)	
	Rate of change	11° C/hr (20° F/hr)	
Relative humidity	Operating	20–80%	
	Nonoperating	20–80%	
	Storage (60 days)	10–95%	
	Rate of change	20%/hr	
Maximum wet bulb temperature	Operating	28° C (82° F)	
	Storage (60 days)	39° C (115° F)	
Minimum dew point temperature	Operating	12° C (36° F)	
	Storage (60 days)	Not tested	
Maximum heat dissipation	Current		
	Dual supply	4097 Btu/hr	
Air flow and quality	Intake location	Front	
	Exhaust location	Rear	
	Particle size	N/A	
	Concentration	N/A	
Altitude	Operating [†]	2000 m (6562 ft)	
	Nonoperating	3600 m (12,000 ft)	
Mechanical shock	Operating	7.5 G 10 ms	
	Nonoperating	20 G peak 30 ms	
Vibration	Operating	10-500 Hz .1 G peak	
Acoustics	Operating	Average Declared 6.2 L ^{wA} , B6.5 L ^{wAd} , B	
	Idle	6.0 L ^{wA} , B6.3 L ^{wAd} , B	
Electrical—Power Supplies are universal 120/240 Vac			
Nominal ac voltage	100-120 Vac	220-240 Vac	
Operating Voltage range	90-132 Vac	180-264 Vac	
Power source phase	Single	Single	
Nominal frequency	60 Hz	50 Hz	
Frequency range	57-63 Hz	47-53 Hz	
Maximum inrush current	50 Amps	50 Amps	
RMS current at nominal voltage (steady state)			
	Single power supply	8.0 Amps	4.0 Amps
	Dual power supply	4.6 Amps each supply	2.2 Amps each supply
Power cord	Length	4.57 cm (15 ft)	
	U.S.(120V) plug	NEMA L5-30P socket NEMA L5-30R	
	240 V plug	NEMA L6-20P, socket NEMA L6-20R	

AlphaServer 1000A Rackmount

Specifications (continued)

Regulatory

Agency approvals	UL Listed to UL1950 (2nd edition) CSA Certified to CAN/CSA-C22.2 No. 950-M89 TUV EN 60950 VDE 0805 GS marked ZH1/618 FCC 15J Part 15 Class A Verified CE Class A Verified VCCI Class II ITE
Reviewed to	AS 3260 Australian Standard AS/NZS 3260:1963 New Zealand Standard EN 60 950: 1992 European Norm IEC 950 (2nd edition)

Recommended UPS for AlphaServer 1000A Rackmount systems

For complete protection, UPS products should be used with data line surge protectors.

4N-AEABF-CA	1.5kva Rackmount 120V UPS, rackmount hardware included for mounting dimensions: 6.17" high x 17" wide x 24" deep, weight: 81 lbs
4N-AEABF-BG*	1.5kva 240V UPS; dimensions: 9.6: high x 5.6" wide x 15.8" deep, weight: 33 lbs

* Requires Rackmount kit. Select 4N-AEAE0-RA (22-27" deep) or 4N-AEAE0-RB (28-34" deep)

Monitoring and Unattended Shutdown Software for above UPS systems only

- Include cables, media and documentation.
- SNMP Network connectivity adapters (4N-AEAE0-DA/DC) Twisted Pair/ThinWire are available.

4N-AEAES-AA/AB	Windows NT for Alpha and Intel x86, includes cables, media and documentation
4N-AEAES-AK	Digital UNIX, includes cables, media and documentation
4N-AEAES-EM	OpenVMS, includes cables, media and documentation
