AlphaServer 1000A Pedestal–Rackmount–Cabinet
V96-2.7—14 Mar 1997

DIGITAL Systems and Options Catalog

Product Description

The AlphaServer 1000A is an Alpha microprocessor server, available in 333 MHz and 400 MHz versions, with 2 MB ECC cache, available in three packages, Pedestal, Rackmount, and Cabinet systems.. Customers have a choice of three popular operating systems: DIGITAL UNIX, OpenVMS, and Microsoft Windows NT Server . The AlphaServer 1000A offers the following high-reliability features: heat sensor, fan failure and power supply sensors, and ECC memory. Integrated on system motherboard are fast wide single-ended SCSI-2 controller, diskette controller, two serial ports, one parallel port, and keyboard and mouse controller.

Advanced server management features are provided with all AlphaServer 1000A shipments via the bundled ServerWORKS Manager kit. The kit provides remote management capability through Simple Network Management Protocol agents (SNMP) for Windows NT, DIGITAL UNIX and OpenVMS. The management console software runs on any Windows NT or Windows 95 PC. The SNMP agents required to manage the server ship with the TCP/IP services of the operating system (with the exception of Windows NT which ships with the ServerWORKS kit). The SNMP agents collect critical server information including system status, I/O information, storage and disk information and network status information. Thresholds can be set to monitor key server events and alarms are forwarded to the ServerWORKS console. ServerWORKS Manager V2.0 includes remote pager support for alarm notification. In addition to ServerWORKS, DIGITAL includes key third party software applications including DIGITAL Power Management Software for Alpha provided by EXIDE, and application / database management software through BMC software's PATROL family of products.

The AlphaServer 1000A Pedestal System offers up to 10 internal storage devices including a floppy diskette drive and a CD-ROM, one 5.25-inch bay for an optional removable media drive, and seven hot swap StorageWorks wide or narrow disk drives. The system supports up to 1 GB of memory and over 30 GB of internal storage with seven 4.3 GB disks.

The AlphaServer 1000A Rackmount System offers up to 6 internal storage devices including a floppy diskette drive and a CD-ROM, one 5.25-inch bay for an optional removable media drive, and three wide and/or narrow disk drives. The system supports up to 1 GB of memory and over 12.9 GB of internal storage with three 4.3 GB disks. Cabinet systems are rackmount systems mounted with front facing StorageWorks shelf and two power distribution units into a standard 19” EIA Cabinet.

DIGITAL believes the information in this publication is accurate as of its publication date; such information is subject to change without notice. DIGITAL is not responsible for any inadvertent errors.

DIGITAL conducts its business in a manner that conserves the environment and protects the safety and health of its employees, customers, and the community.

DIGITAL, the DIGITAL logo are trademarks of Digital Equipment Corporation.

Printed in USA. Copyright 1997 Digital Equipment Corporation. All rights reserved.

Step 1—AlphaServer 1000A Pedestal Systems

- Windows NT Packaged and Base systems
  - North American variants include Windows NT Server 4.0 plus 10-client access license, media (CD-ROM) kit North American English
  - Selection of language specific Windows NT license, media (CD-ROM) kit is **mandatory** for all non-North American variants, see Step 9
- DIGITAL UNIX and OpenVMS Packaged and Base systems ordered with a minimum of a 1.05 GB disk include factory installed software.
- Uninterruptable Power Supplies are available; see UPS Information following System Specifications.
- Options ordered will be factory installed unless specified as **spares.**

AlpphaServer 1000A Pedestal Systems include

- Alpha microprocessor 21164
  - 333 MHz CPU with 2 MB ECC onboard cache, or
  - 400 MHz CPU with 2 MB ECC onboard cache
- Pedestal enclosure with:
  - Nine expansion slots: Seven PCI, and two EISA
  - 20 SIMM memory slots support 4 memory options
  - 10 storage slots:
    One floppy diskette drive slot
    One CD-ROM drive slot
    One additional removable media slot
    Seven StorageWorks wide and/or narrow hard drive slots
  - Integral Fast Wide Single-Ended SCSI-2 controller supports wide and narrow devices
  - 450-Watt self-sensing, self-switching (120/240V, 60/50Hz) 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 MB diskette drive in dedicated slot
- 3-button mouse
- North American variants include 120V power cord (North America, Japan). Mandatory selection of country-specific power cord for all non-North American variants.
- English language documentation. Certain language selections are available; see Step 10.
- 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 for DIGITAL UNIX and OpenVMS
  - Warranty on Microsoft's Windows NT Server 4.0 is conformance to the written material accompanying the software for a period of ninety days
- Windows NT Server 4.0 plus 10-client access license, media (CD-ROM) kit **or**†
- DIGITAL UNIX 2-user base license, Internet AlphaServer System Software kit, DIGITAL NAS Base Server 200 license **or**
- OpenVMS base license with System Manager license and DIGITAL NAS Base Server 200 license

* Service upgrades are available; see Step 12, Hardware and Software Supplemental Services
† Windows NT language specific media kit is **mandatory** for non-North American variants

---

Pedestal Packaged Systems include

- PCI-based Fast 100 Ethernet (Twisted Pair) —uses one PCI slot
- 600 MB CD-ROM—uses one removable media slot
- One wide hard disk drive, see below
- One memory option, see below
- North American Windows NT and DIGITAL UNIX variants include a 101-key, PC style U.S. English keyboard.
- North American OpenVMS variants include a 108 key, VT style U.S. English keyboard.
- Select country-specific keyboard for all non-U.S. variants, see Step 10.

Note: Selection of graphics option is **mandatory** for Windows NT systems

5/333 Pedestal Packaged Systems								
Order Number	**Operating System**	**O/S Media**	**Power cord**	**Keyboard**	**Memory**	**Disk**	**Graphics**	**Monitor**
PB76B-AA	Windows NT	Included*	120 V	Included	64 MB	1.05 GB	Mandatory	Required
PB76B-AB	Windows NT	Mandatory	Mandatory	Required	64 MB	1.05 GB	Mandatory	Required
PB76B-AD	Windows NT	Included*	120 V	Included	256 MB	1.05 GB	Mandatory	Required
PB76B-AE	Windows NT	Mandatory	Mandatory	Required	256 MB	1.05 GB	Mandatory	Required

Step 1—AlphaServer 1000A Pedestal Systems *(continued)*

Pedestal Packaged Systems

5/333 Pedestal Packaged Systems								
Order Number	**Operating System**	**O/S Media**	**Power cord**	**Keyboard**	**Memory**	**Disk**	**Graphics**	**Monitor**
PB76B-FA	DIGITAL UNIX	FIS	120 V	Included	64 MB	2.1 GB	Recommended	Recommended
PB76B-FB	DIGITAL UNIX	FIS	Mandatory	Recommended	64 MB	2.1 GB	Recommended	Recommended
PB76B-FC	DIGITAL UNIX	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB76B-FD	DIGITAL UNIX	FIS	Mandatory	Recommended	256 MB	2.1 GB	Recommended	Recommended
PB76B-MA	OpenVMS	FIS	120 V	Included	64 MB	2.1 GB	Recommended	Recommended
PB76B-MB	OpenVMS	FIS	Mandatory	Recommended	64 MB	2.1 GB	Recommended	Recommended
PB76B-MC	OpenVMS	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB76B-MD	OpenVMS	FIS	Mandatory	Recommended	256 MB	2.1 GB	Recommended	Recommended
5/400 Pedestal Packaged Systems								
Order Number	**Operating System**	**O/S Media**	**Power cord**	**Keyboard**	**Memory**	**Disk**	**Graphics**	**Monitor**
PB78B-AA	Windows NT	Included*	120 V	Included	128 MB	2.1 GB	Mandatory	Required
PB78B-AB	Windows NT	Mandatory	Mandatory	Required	128 MB	2.1 GB	Mandatory	Required
PB78B-AC	Windows NT	Included*	120 V	Included	256 MB	2.1 GB	Mandatory	Required
PB78B-AD	Windows NT	Mandatory	Mandatory	Required	256 MB	2.1 GB	Mandatory	Required
PB78B-FA	DIGITAL UNIX	FIS	120 V	Included	128 MB	2.1 GB	Recommended	Recommended
PB78B-FB	DIGITAL UNIX	FIS	Mandatory	Recommended	128 MB	2.1 GB	Recommended	Recommended
PB78B-FC	DIGITAL UNIX	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB78B-FD	DIGITAL UNIX	FIS	Mandatory	Recommended	256 MB	2.1 GB	Recommended	Recommended
PB78B-MA	OpenVMS	FIS	120 V	Included	128 MB	2.1 GB	Recommended	Recommended
PB78B-MB	OpenVMS	FIS	Mandatory	Recommended	128 MB	2.1 GB	Recommended	Recommended
PB78B-MC	OpenVMS	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB78B-MD	OpenVMS	FIS	Mandatory	Recommended	256 MB	2.1 GB	Recommended	Recommended

* Windows NT Server license, media (CD-ROM) kit North American English.

Key: Mandatory items **must** be on purchase order at initial order acceptance.
Required items are essential for full system operation.
Recommended items enhance system functionality.
FIS = Factory Installed Software

Step 1—AlphaServer 1000A Pedestal Systems *(continued)*

Pedestal Base Systems

Selection of graphics option is **mandatory** for Windows NT Pedestal Base Systems

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

5/333 Pedestal Base Systems								
Order Number	**Operating System**	**O/S Media**	**Power cord**	**Keyboard**	**Hard Drive[2] Memory**	**Graphics**	**CD-ROM**	**Monitor**
PB76C-AA	Windows NT	Included[1]	120 V	Required	Mandatory	Mandatory	Required	Required
PB76C-AB	Windows NT	Mandatory	Mandatory	Required	Mandatory	Mandatory	Required	Required
PB76C-FA	DIGITAL UNIX	FIS[2]	120 V	Recommended	Mandatory	Recommended	Recommended	Recommended
PB76C-FB	DIGITAL UNIX	FIS[2]	Mandatory	Recommended	Mandatory	Recommended	Recommended	Recommended
PB76C-MA	Open VMS	FIS[2]	120 V	Recommended	Mandatory	Recommended	Recommended	Recommended
PB76C-MB	Open VMS	FIS[2]	Mandatory	Recommended	Mandatory	Recommended	Recommended	Recommended
5/400 Pedestal Base Systems								
PB78C-AA	Windows NT	Included[1]	120 V	Required	Mandatory	Mandatory	Required	Required
PB78C-AB	Windows NT	Mandatory	Mandatory	Required	Mandatory	Mandatory	Required	Required
PB78C-FA	DIGITAL UNIX	FIS[2]	120 V	Recommended	Mandatory	Recommended	Recommended	Recommended
PB78C-FB	DIGITAL UNIX	FIS[2]	Mandatory	Recommended	Mandatory	Recommended	Recommended	Recommended
PB78C-MA	Open VMS	FIS[2]	120 V	Recommended	Mandatory	Recommended	Recommended	Recommended
PB78C-MB	Open VMS	FIS[2]	Mandatory	Recommended	Mandatory	Recommended	Recommended	Recommended

1. Windows NT Server license, media (CD-ROM) kit North American English.
2. Base systems include factory installed software (FIS) on hard disk drive. **Note:** 4.3 GB hard disk (PBXRZ-NA) is not supported as a system disk on Windows NT servers

Key: Mandatory items **must** be on purchase order at initial order acceptance.
Required items are essential for full system operation.
Recommended items enhance system functionality.
FIS = Factory Installed Software

PCI Option Slot Table

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

Order Number	Description	Max #	Restriction applies to
KZPSC-AA	One-port PCI-based RAID Controller	3	DIGITAL UNIX, OpenVMS, Windows NT
KZPSC-BA	Three port PCI-based RAID Controller	3	Windows NT only
DJ-ML200-BA	4 MB PCI Prestoserve option	1	DIGITAL UNIX
DE500-XA	PCI-based Fast Ethernet network interface card	3	DIGITAL UNIX, OpenVMS, Windows NT

Step 1a—AlphaServer 1000A Rackmount Systems

- Windows NT Packaged and Base systems
  - North American variants include Windows NT Server 4.0 plus 10-client access license, media (CD-ROM) kit North American English
  - Selection of language specific Windows NT license, media (CD-ROM) kit is **mandatory** for all non-North American variants, see Step 9.
- DIGITAL UNIX and OpenVMS Packaged and Base systems ordered with a minimum of a 1.05 GB disk include factory-installed software (FIS).
- Uninterruptable Power Supplies are available; see UPS Information following System Specifications.
- Options ordered will be factory installed unless specified as **spares.**

Note: AlphaServer 1000A rackmount systems do **not** support dual power supply configurations

AlphaServer 1000A Rackmount Systems include

- Alpha microprocessor 21164 333-MHz CPU with 2 MB ECC onboard cache, or
- Alpha microprocessor 21164 400-MHz CPU with 2 MB ECC onboard cache
- Rackmount enclosure with:
  - Seven PCI slots
    Two EISA slots
  - 20 SIMM memory slots support 4 memory options
  - Integral Fast Wide Single-Ended SCSI-2 controller supports wide and narrow devices
  - 6 storage slots:
    One diskette drive slot
    One CD-ROM drive slot
    One additional removable media slot
    Three fixed wide and/or narrow hard disk drive slots
  - 450-Watt self-sensing, self-switching (120/240V, 60/50Hz) 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 MB diskette drive in dedicated slot
- Three-button mouse
- 15-foot power cord (120V/240V as appropriate)
- Rackmount hardware (shelf and rails)
- 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 for DIGITAL UNIX and OpenVMS
  - Warranty on Microsoft's Windows NT Server 4.0 is conformance to the written material accompanying the software for a period of ninety days
- Windows NT Server 4.0 plus 10-client access license, media (CD-ROM) kit **or**†
- DIGITAL UNIX 2-user base license, DIGITAL NAS Base Server 200 license **or**
- OpenVMS base license with System Manager license and DIGITAL NAS Base Server 200 license.

* Service upgrades are available; see Step 12, Hardware and Software Supplemental Services
† Windows NT language specific media kit is **mandatory** for non-North American variants; see Step 9

Rackmount Packaged Systems include

- PCI-based Fast 100 Ethernet (Twisted Pair)—uses one PCI slot
- One wide hard disk drive, see below
- One memory option, see below
- 600 MB CD-ROM—uses one removable media slot
- North American Windows NT and DIGITAL UNIX variants include a 101-key, PC style U.S. English keyboard.
- North American OpenVMS variants include a 108 key, VT style U.S. English keyboard.
- Select country-specific keyboard for non-North American variants, see Step 10.
- Systems include 120V or 240V power cord depending on variant chosen.
- Cabinet enclosure available separately, see Step 11.

Note: Selection of graphics option is **mandatory** for Windows NT systems

5/333 Rackmount Packaged Systems								
Order Number	**Operating System**	**O/S Media**	**Power cord**	**Keyboard**	**Memory**	**Disk**	**Graphics**	**Monitor**
PB76P-AA	Windows NT	Included*	120 V	Included	64 MB	1.05 GB	Mandatory	Required
PB76P-AB	Windows NT	Mandatory	240 V	Required	64 MB	1.05 GB	Mandatory	Required
PB76P-AC	Windows NT	Included*	120 V	Included	256 MB	1.05 GB	Mandatory	Required
PB76P-AD	Windows NT	Mandatory	240 V	Required	256 MB	1.05 GB	Mandatory	Required

Step 1a—AlphaServer 1000A Rackmount Systems *(continued)*

Rackmount Packaged Systems

5/333 Rackmount Packaged Systems								
Order Number	**Operating System**	**O/S Media**	**Power cord**	**Keyboard**	**Memory**	**Disk**	**Graphics**	**Monitor**
PB76P-FA	DIGITAL UNIX	FIS	120 V	Included	64 MB	2.1 GB	Recommended	Recommended
PB76P-FB	DIGITAL UNIX	FIS	240 V	Recommended	64 MB	2.1 GB	Recommended	Recommended
PB76P-FC	DIGITAL UNIX	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB76P-FD	DIGITAL UNIX	FIS	240 V	Recommended	256 MB	2.1 GB	Recommended	Recommended
PB76P-MA	OpenVMS	FIS	120 V	Included	64 MB	2.1 GB	Recommended	Recommended
PB76P-MB	OpenVMS	FIS	240 V	Recommended	64 MB	2.1 GB	Recommended	Recommended
PB76P-MC	OpenVMS	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB76P-MD	OpenVMS	FIS	240 V	Recommended	256 MB	2.1 GB	Recommended	Recommended
5/400 Rackmount Packaged systems								
Order Number	**Operating System**	**O/S Media**	**Power cord**	**Keyboard**	**Memory**	**Disk**	**Graphics**	**Monitor**
PB78P-AA	Windows NT	Included*	120 V	Included	128 MB	2.1 GB	Mandatory	Required
PB78P-AB	Windows NT	Mandatory	240 V	Required	128 MB	2.1 GB	Mandatory	Required
PB78P-AC	Windows NT	Included*	120 V	Included	256 MB	2.1 GB	Mandatory	Required
PB78P-AD	Windows NT	Mandatory	240 V	Required	256 MB	2.1 GB	Mandatory	Required
PB78P-FA	DIGITAL UNIX	FIS	120 V	Included	128 MB	2.1 GB	Recommended	Recommended
PB78P-FB	DIGITAL UNIX	FIS	240 V	Recommended	128 MB	2.1 GB	Recommended	Recommended
PB78P-FC	DIGITAL UNIX	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB78P-FD	DIGITAL UNIX	FIS	240 V	Recommended	256 MB	2.1 GB	Recommended	Recommended
PB78P-MA	OpenVMS	FIS	120 V	Included	128 MB	2.1 GB	Recommended	Recommended
PB78P-MB	OpenVMS	FIS	240 V	Recommended	128 MB	2.1 GB	Recommended	Recommended
PB78P-MC	OpenVMS	FIS	120 V	Included	256 MB	2.1 GB	Recommended	Recommended
PB78P-MD	OpenVMS	FIS	240 V	Recommended	256 MB	2.1 GB	Recommended	Recommended

* Windows NT Server license, media (CD-ROM) kit North American English.

Key: Mandatory items **must** be on purchase order at initial order acceptance.
Required items are essential for full system operation.
Recommended items enhance system functionality.
FIS = Factory Installed Software

Step 1—AlphaServer 1000A Rackmount Systems *(continued)*

Rackmount Base System

- Selection of graphics option is **mandatory** for Windows NT systems
- Base systems include 120V or 240V power cord depending on variant chosen.
- Cabinet enclosure available separately, see Step 11.

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

Order Number	Operating System	O/S Media	Power cord	Keyboard	Hard Drive[2] Memory	Graphics	CD-ROM	Monitor
5/333 Rackmount Base Systems								
PB76S-AA	Windows NT	Included[1]	120 V	Required	Mandatory	Mandatory	Required	Required
PB76S-AB	Windows NT	Mandatory	240 V	Required	Mandatory	Mandatory	Required	Required
PB76S-FA	DIGITAL UNIX	FIS[2]	120 V	Recommended	Mandatory	Recommended	Recommended	Recommended
PB76S-FB	DIGITAL UNIX	FIS[2]	240 V	Recommended	Mandatory	Recommended	Recommended	Recommended
PB76S-MA	OpenVMS	FIS[2]	120 V	Recommended	Mandatory	Recommended	Recommended	Recommended
PB76S-MB	OpenVMS	FIS[2]	240 V	Recommended	Mandatory	Recommended	Recommended	Recommended
5/400 Rackmount Base Systems								
PB78S-AA	Windows NT	Included[1]	120 V	Required	Mandatory	Mandatory	Required	Required
PB78S-AB	Windows NT	Mandatory	240 V	Required	Mandatory	Mandatory	Required	Required
PB78S-FA	DIGITAL UNIX	FIS[2]	120 V	Recommended	Mandatory	Recommended	Recommended	Recommended
PB78S-FB	DIGITAL UNIX	FIS[2]	240 V	Recommended	Mandatory	Recommended	Recommended	Recommended
PB78S-MA	OpenVMS	FIS[2]	120 V	Recommended	Mandatory	Recommended	Recommended	Recommended
PB78S-MB	OpenVMS	FIS[2]	240 V	Recommended	Mandatory	Recommended	Recommended	Recommended

1. Windows NT Server license, media (CD-ROM) kit North American English
2. Base systems include factory installed software (FIS) on hard disk drive. **Note:** 4.3 GB hard disk (PBXRZ-NA) is not supported as a system disk on Windows NT servers

Key: Mandatory items **must** be on purchase order at initial order acceptance.
Required items are essential for full system operation.
Recommended items enhance system functionality.
FIS = Factory Installed Software

PCI Option Slot Table

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

Order Number	Description	Max #	Restriction applies to
KZPSC-AA	One-port PCI-based RAID Controller	3	DIGITAL UNIX, OpenVMS, Windows NT
KZPSC-BA	Three port PCI-based RAID Controller	3	Windows NT only
DJ-ML200-BA	4 MB PCI Prestoserve option	1	DIGITAL UNIX
DE500-XA	PCI-based Fast Ethernet network interface card	3	DIGITAL UNIX, OpenVMS, Windows NT

Step 1b—AlphaServer 1000A Cabinet Systems

Cabinet Packaged Systems include

- AlphaServer 1000A 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)
  - 240 V systems (H7600-DB) = 2 x 16A terminated with NEMA L6-20P (plugs) and require NEMA L6-20R (receptacles)
- H9A10 Cabinet Dimensions
  - Outside: 66.9-inches high, 23.62-inches wide, 33.8-inches deep
  - Usable internal rackmount: 59.5-inches high, 19-inches wide, 30.83-inches deep.

5/333 and 5/400 Cabinet Packaged Systems include

- Cabinet enclosure (H9A10 120 V or 240 V) with AlphaServer 1000A Rackmount Packaged System, **plus**
  - One BA36R-AF front-mounted StorageWorks shelf. **Note:** BA36R-AF StorageWorks wide shelf requires a Fast wide SCSI controller, SCSI disk drive, and SCSI cable, see Step 4b. Select SCSI devices for installation in BA36R-AF StorageWorks shelf from Step 4e.

5/333 Cabinet Packaged Systems	
PB76R-AA*	Windows NT Rackmount Packaged system (PB76P-AA)
PB76R-AC	Windows NT Rackmount Packaged system (PB76P-AB)
PB76R-FA/FC	DIGITAL UNIX Rackmount Packaged system (PB76P-FA/FB)
PB76R-MA/MC	OpenVMS Rackmount Packaged system (PB76P-MA/MB)
5/400 Cabinet Packaged Systems	
PB78R-AA*	Windows NT Rackmount Packaged system (PB78P-AA)
PB78R-AC	Windows NT Rackmount Packaged system (PB78P-AB)
PB78R-FA/FC	DIGITAL UNIX Rackmount Packaged system (PB78P-FA/FB)
PB78R-MA/MC	OpenVMS Rackmount Packaged system (PB78P-MA/MB)

* Windows NT Server license, media (CD-ROM) kit North American English..

Step 2—Memory

- Packaged systems include one 64 MB or one 128 MB memory kit. Selection of memory kit is **manadatory** for Base systems.
- 20 SIMM slots support 4 memory kits for maximum of 1 GB. Memory kits can be mixed
- System maximum of 1 GB can be obtained by selecting a Base System and four PB7MA-CE 256 MB memory kits.

PB7MA-CB	32 MB (4 x 8 MB 70ns SIMMs) memory kit
PB7MA-CC	64 MB (4 x 16 MB 70ns SIMMs) memory kit
PB7MA-CD	128 MB (4 x 32 MB 70ns SIMMs) memory kit
PB7MA-CE	256 MB (4 x 64 MB 70ns SIMMs) memory kit

Step 2a—Prestoserve Non-Volatile Random Access Memory (NVRAM)

- Supported on DIGITAL UNIX systems **only**, maximum one Prestoserve option per system.

DJ-ML200-BA	PCI-based 4 MB PrestoServe I/O performance enhancement option

Step 3—Monitors

- Windows NT systems require a graphics monitor to run **all** functions.
- 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.

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.

VRCX1-WA/W3/W4 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 -WA or -W3 for Northern Hemisphere, -W4 for Southern Hamispherer operation. -WA includes 120V power cord. Select country speicific power cords for -W3 and -W4 variants.

Step 4—Storage

Configuration rules for Pedestal Internal Storage

- Integral Fast Wide Single Ended (FWSE) SCSI-2 controller supports maximum of seven wide and/or narrow devices in any combination of:
  - Two internal narrow 5.25-inch removable media devices
  - Six narrow or wide 3.5-inch hard disk drives in internal storage assembly
  - One external narrow storage device. Maximum external SCSI cable length cannot exceed .5 meters
- Pedestal enclosure supports ten storage devices: one dedicated diskette drive slot, two removable media slots, seven 3.5-inch internal hard disk drives.
- Pedestal system internal storage assembly is configured in single-bus mode and can be reconfigured in split bus mode.
- An additional SCSI-2 controller is required to support internal storage assembly if set for split-bus mode.

Configuration rules for Rackmount Internal Storage

- Integral Fast Wide Single Ended (FWSE) SCSI-2 controller supports maximum of five wide and/or narrow devices:
  - Two internal narrow 5.25-inch removable media devices.
  - Three narrow or wide 3.5-inch internal hard disk drives (each narrow drive ordered requires a wide to narrow SCSI adapter (PBXKP-BA).
- Rackmount enclosure supports six storage devices: one dedicated diskette drive slot, two removable media slots, three 3.5-inch internal hard disk drives.

Step 4a—Internal Storage

All Pedestal and Rackmount systems include 1.44 MB diskette drive in dedicated slot.

- Pedestal and Rackmount Packaged systems include:
  - One CD-ROM drive
  - One 1.05 GB or 2.1 GB wide hard drive (see Step 1)

Removable Media Devices

PBXRD-CA	600 MB 5.25 inch half-height dual-speed CD-ROM drive (RRD45)
PBXTZ-AA	2.0 GB 5.25-inch half-height SCSI QIC tape drive (TZK11)
PBXTL-DA	8.0 GB 5.25-inch x 1.6-inch SCSI 4 mm DAT drive (TLZ09)

Pedestal System Hard Disk Drives

RZ26N-VW	1.05 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
RZ28M-VW	2.1 GB 16-bit wide 5400 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

Pedestal system internal SCSI Cable Kits

PB7HA-AA	Includes 50-pin 8-bit narrow SCSI cable, connects 8-bit narrow SCSI controller to internal storage assembly, SCSI cable from internal storage assembly to external bulkhead, and external terminator.
PB7HA-BA	Includes 68-pin 16-bit wide SCSI cable, connects 16-bit wide SCSI controller to internal storage assembly, SCSI cable from internal storage assembly to external builkhead, jumper cable to convert internal storage assembly to single-bus mode, and external Wide single ended SCSI terminator.
BC25V-1H	Includes one 68-pin 16-bit wide SCSI cable, connects 16-bit wide SCSI controller to wide SCSI external bulkhead.

Rackmount Hard Disk Drives—factory or field installed

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

- Maximum three PCI-based KZPSC-xx SCSI controllers supported per system. KZPSC-xx controllers are supported in PCI slots 0, 1 and 2 only.
- Maximum two EISA-based KZESC-xx SCSI controllers 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.
- KZPSC-xx StorageWorks RAID Array 230 includes PCI backplane RAID controller and StorageWorks RAID Array 230 Subsystem family software and documentation kit for OpenVMS, DIGITAL UNIX and Windows NT.
  - KZPSC-AA one-port controller installed in Pedestal system requires a PB7HA-BA SCSI cable kit for connection to internal StorageWorks shelf, two kits required for split bus mode.
  - KZPSC-BA three-port controller installed in Pedestal system requires one PB7HA-BA SCSI cable kit for connection to internal StorageWorks shelf, split-bus mode requires two SCSI cable kits.
    Note: If all three ports on KZPSC-BA controller are used, third external port blocks an additional PCI bulkhead slot.
- KZESC-xx StorageWorks RAID Array 210 includes EISA backplane RAID controller and StorageWorks RAID Array 210 Subsystem family software and documentation kit for OpenVMS, DIGITAL UNIX and Windows NT.
  - KZESC-AA one-port controller installed in Pedestal system requires one PB7HA-AA SCSI cable kit for connection to internal StorageWorks shelf, split-bus mode requires two SCSI cable kits.
  - KZESC-BA three-port controller installed in Pedestal system requires one PB7HA-AA SCSI cable kit for connection to internal StorageWorks shelf, split-bus mode requires two SCSI cable kits.
    Note: If all three ports on KZESC-BA controller are used for external storage, third external port blocks an additional PCI bulkhead slot.
- KZPSA-BB PCI-based one-port Fast Wide Differential SCSI controller supports externally connected wide disks in BA356/BA36R with DWZZB signal converter, or narrow disks in BA35R with DWZZA signal converter. Internal hard disk drives are not supported on FWD controller.
- SCSI cables are not included and must be ordered separately.
- External DSSI cables are not included and must be ordered separately.

SCSI Controllers

KZPAA-AA	PCI-based one-port high-performance Fast Narrow Single Ended (FNSE) SCSI-2 controller
BN21H-xx	Connects from KZPAA-AA to narrow StorageWorks enclosures and narrow StorageWorks rackmount shelves. Pedestal system requires PB7HA-AA SCSI cable kit for connection to internal 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 StorageWorks enclosures and narrow StorageWorks rackmount shelves, or DWZZB-VW in wide StorageWorks enclosures and wide StorageWorks rackmount shelves
KZPDA-AA	PCI-based one-port Fast Wide Single Ended (FWSE) SCSI controller
BN21K-02	Connects from KZPDA to wide StorageWorks enclosures and wide StorageWorks rackmount shelves.
KZPSC-AA*	One-port PCI backplane RAID Fast Wide Single Ended (FWSE) controller; includes StorageWorks RAID Array 230 Subsystem family software and documentation kit. Pedestal system requires PB7HA-BA SCSI cable kit for connection to internal StorageWorks shelf.
BN31S-1E	Connects from KZPSC-AA to wide StorageWorks enclosures and wide StorageWorks rackmount shelves
BN31L-1E	Connects from KZPSC-AA to narrow StorageWorks enclosures and narrow StorageWorks rackmount shelves
KZPSC-BA*	Three-port PCI backplane RAID (FWSE) controller; includes StorageWorks RAID Array 230 Subsystem family software and documentation kit. Pedestal system requires PB7HA-BA SCSI cable kit for connection to internal StorageWorks shelf.
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 wide StorageWorks enclosures and wide StorageWorks rackmount shelves
BN31L-1E	Connects from KZPSC-BA to narrow StorageWorks enclosures and narrow StorageWorks rackmount shelves

Step 4b—Storage Controllers *(continued)*

SCSI Controllers

KZESC-AA*	One-port EISA backplane RAID (FNSE) controller; includes StorageWorks RAID Array 210 Subsystem family software and documentation kit. Pedestal system requires PB7HA-AA SCSI cable kit for connection to internal StorageWorks shelf
BN21H-02	Connects from KZPAA-AA to narrow StorageWorks enclosures and narrow StorageWorks rackmount shelves
BN21N-02	Connects from KZESC-BA to wide StorageWorks enclosures and wide StorageWorks rackmount shelves
KZESC-BA*	Three-port EISA backplane RAID controller; includes StorageWorks RAID Array 210 Subsystem family software and documentation kit. Pedestal system requires PB7HA-AA SCSI cable kit for connection to internal StorageWorks shelf.
CK-SWXCR-AA	SCSI cable/bulkhead assembly kit for KZESC-BA, required for connecting second and third ports to builkhead slot
BN21H-02	Connects from KZESC-BA to narrow StorageWorks enclosures and wide StorageWorks rackmount shelves
BN21N-02	Connects from KZESC-BA to wide StorageWorks enclosures and wide StorageWorks rackmount shelves
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 SCSI cable
BN21K-xx	Connects from KZPSM-AA bulkhead assembly kit wide StorageWorks enclosures and wide StorageWorks rackmount shelves

* See *Storage Devices* for additional information on StorageWorks RAID Array 2x0 Subsystems

DSSI Controllers

KFPSA-AA	PCI-based single-DSSI controller (OpenVMS systems only). See Step 4f 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 4f DSSI cables.

Step 4c—External Tape Expansion

- Integral Fast Wide Single Ended SCSI-2 controller installed in Pedestal systems can be extended outside the system enclosure for narrow devices only.
  - 0.5 meters when internal narrow device is connected and StorageWorks assembly is configured in single-bus mode in Pedestal enclosure only.
  - 1.0 meters when internal narrow device is connected and StorageWorks assembly is configured in split-bus mode in Pedestal enclosure only.
- External tape drives are also supported on optional PCI-based SCSI controllers.
  - KZPAA-AA—maximum bus length including cable and tape device cannot exceed 3.0 meters.
  - KZPSA-BB—maximum bus length including cable and tape device cannot exceed 25.0 meters.
- External tape drives supported on one- and three-port (KZPSC-xx) SCSI controllers on Windows NT systems **only**.
- External tape drives are **not** supported on one- and three-port (KZESC-xx) Fast-SCSI-2 controllers.
- Each tabletop tape device **requires** high density 50-pin to low density 50-pin SCSI cable (BN23G-0E).

External Tapes supported on Windows NT Servers

TLZ09	4.0/8.0 GB 4 mm DAT tape drive
TLZ7L[1,2]	32.0 GB 4 mm DAT autoloader
TZK11-DA	2.0 GB 5.25-inch tabletop QIC tape drive
TZ87[2]	20 GB, DLT tape drive
TZ875[2]	100 GB, DLT tape autoloader
TZ877[2]	140 GB, DLT tape autoloader
BN23G-0E	3 Foot Molded SCSI Cable, required for each tabletop tape device

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

External Tapes supported on DIGITAL UNIX and OpenVMS servers

TLZ09[3]	4.0/8.0 GB 4 mm DAT tape drive
TLZ7L[1,2,3]	32.0 GB 4 mm DAT autoloader
TZK11-DA[3]	2.0 GB 5.25-inch tabletop QIC tape drive
TKZ60-FA/FC	400 MB IBM 3480/3490 compatible tabletop tape drive
TKZ60-EA[3]	400 MB IBM 3480/3490 compatible tabletop tape drive
TKZ61	400 MB IBM compatible tape autoloader
TKZ61-AC[3]	400 MB IBM compatible tape autoloader
TKZ62	2.4 GB IBM compatible tape autoloader
TKZ62-AC[3]	2.4 GB IBM compatible tape autoloader
TKZ15-TA	10 GB, 8 mm, tabletop tape drive
TKZ15-VA[3,5]	10 GB, 8 mm, tabletop tape drive
TSZ07-CA	40/140 MB, reel/reel, tabletop tape drive
TSZ07-AA[3]	40/140 MB, reel/reel, tabletop tape drive
TZ87[2]	20 GB, DLT tape drive
TZ87-VA[3]	20 GB, DLT tape drive
TZ875[2]	100 GB, DLT tape autoloader
TZ877[2]	140 GB, DLT tape autoloader
TZ88[2]	20/40 GB, DLT tape drive
TZ887-NT	140/280 GB SCSI tape subsystem
TKZ9E-TA[4]	2/5/7/10/14 GB 8 mm helical scan tape drive, tabletop
TKZ9E-VA[3]	2/5/7/10/14 GB 8 mm helical scan tape drive in StorageWorks SBB carrier
BN23G-0E	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.
3. Variants for use in Rackmount systems
4. 8 mm drive requires OpenVMS MK-driver patch when connected to KZPSA controller in OpenVMS system.
5. Windows NT require layered driver software QB-4STAA-SA

Step 4d—External Disk Expansion for Pedestal Systems

- BA353 expansion unit is supported on wide and narrow SCSI controllers. Devices operate in narrow mode when BA353 is connected to a Fast Wide SCSI controller.
- BA362, BA364, BA356 and BA346 expansion units are supported on Fast Wide SCSI controllers.

StorageWorks Modular Storage Options

BA353-AA	StorageWorks 8-bit **Narrow** Desktop expansion unit includes enclosure and 120 V power cord. Supports up to three 3.5” narrow hard disk drives. Not supported with RAID controllers.
BA356-KC	StorageWorks 16-bit **Wide** Pedestal expansion unit includes BA356 basic shelf, BA35X-HA universal ac power supply, pedestal mounting kit, and 120 V power cord. Supports up to seven 3.5” wide or narrow drives; narrow drives operate in narrow mode.
BA346-KB	StorageWorks 16-bit **Wide** Pedestal expansion unit includes BA356 basic shelf, BA35X-HA universal ac power supply, pedestal mounting kit, and 120 V power cord. Supports up to nine devices, two 5.25” narrow and seven 3.5” wide or narrow drives; narrow drives operate in narrow mode.
BA362-AA/AB	StorageWorks desktop expansion unit, supports up to two 3.5” narrow/wide SCSI devices
BA364-AA/AB	StorageWorks desktop expansion unit, supports up to four 3.5” narrow/wide SCSI devices and one fixed CD-ROM
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.
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 or Fast Narrow Single-Ended SCSI-2 on other end.

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

Step 4e—External Disk Expansion for Cabinet Systems

- External BA35R Rackmount StorageWorks shelves are supported on all Fast SCSI-2 controllers.
- External BA36R Rackmount StorageWorks shelves are supported on Fast Wide SCSI controller.
- AlphaServer 1000 Rackmount systems provide four SCSI expansion ports on rear panel of system.
- Order BN21H-02 cable to connect a single BA35R StorageWorks shelf to controllers.
- Order BN31*-xx cable to connect a single BA36R StorageWorks shelf to controllers.

StorageWorks BA35R/BA36R 8-bit and 16-bit Rackmount Shelves

BA36R-AF	Front mount BA356 Rackmount StorageWorks Shelf, BA35R-MH 16-bit I/O module, BA35X-HF power supply
BA36R-AR	Rear mount BA356 Rackmount StorageWorks Shelf, BA35R-MH 16-bit I/O module, BA35X-HF power supply
BA35R-SF	Front Mount BA356 Rackmount StorageWorks Shelf, BA35X-MG 8-bit I/O module, BA35X-HF power supply
BA35R-SR	Rear Mount BA356 Rackmount StorageWorks Shelf, BA35X-MG 8-bit I/O module, BA35X-HF power supply
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.

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

Hard Disk Drives for Rackmount StorageWorks Shelves (External only)

- Wide drives require wide controller to operate in 16-bit wide mode.
- Wide drives are supported in BA36R Rackmount StorageWorks shelves
- 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-VA	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

* Wide drives operate in 8-bit narrow mode when connected to integral Fast Narrow Single Ended SCSI-2 controller

Step 4f—DSSI Cables

- KFESB-AA EISA based DSSI controller cables:
  - 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 requiring 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.
- KFPSA PCI based DSSI controller cables:
  - KFPSA to any external “Pin-Socket” DSSI connection requires BC22Q-xx
  - KFPSA to any external “Micro-Ribbon” DSSI straight connection (all other DSSI systems and storage devices requiring straight connection) requires BC21Q-xx
  - KFPSA 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
  - Order BC29S-09 DSSI cable for HSD10 in BA36R-Ax shelves
  - Order BC29U-02 DSSI cable for HSD10 in adjacent BA36R-Ax shelves
  - Order BC29V-06 DSSI cable for HSD10 in non-adjacent BA36R-Ax shelves

Step 5—Graphics Adapters

Selection of graphics option is **mandatory** for Windows NT systems

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.

PBXGB-AA	PowerStorm 3D30 2D 8-plane graphics accelerator 1280 x 1024 (DIGITAL UNIX, OpenVMS, Windows NT
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

- Packaged systems include PCI-based Fast 100 Ethernet (Twisted Pair) controller (DE500-XA), uses one PCI slot.
- All options use one slot except DEFEA-DA which uses two slots
- Select networking cable for Ethernet controller
  - BN26K-xx for 10BaseT (twisted pair)
- Maximum number of **each** EISA-based network controllers supported per system:
  - Two DE425-AA, Two DEFEA-xA, Two DW300-AA, Two DNSES

DE500-XA	PCI-based Fast Ethernet network interface card (see PCI Option Slot Table)
DE425-AA	EISA-based Ethernet; OpenVMS and DIGITAL UNIX only
DE450-CA	PCI based DIGITAL Etherworks 32-bit network interface card (twisted pair, Thick wire, ThinWire)
DEFPA-AB*	PCI-based DEC FDDIcontroller, Single Attachment; maximum seven on OpenVMS and Windows NT, four on DIGITAL UNIX.
DEFPA-DB*	PCI-based DEC FDDIcontroller, Dual Attachment, maximum seven on OpenVMS and Windows NT, four on DIGITAL UNIX.
DEFPA-UB*	PCI-based DEC FDDI (UTP) controller; maximum seven on OpenVMS and Windows NT, four on DIGITAL UNIX.
DGLPB-AB	PCI-based ATMworks 350 adapter
PBXNP-AA	PCI-based Token Ring adapter, no boot support. DIGITAL UNIX and OpenVMS systems require driver floppy.

* Supported as data device only

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
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 Async MUX Adapter, 16 lines—expandable to 64 lines; Windows NT and DIGITAL UNIX only
CXI01-AD	ISA Async MUX Adapter, 16 lines—expandable to 224 lines; Windows NT and DIGITAL UNIX only
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
DIIAA-AA	ISA-based ISDN terminal adapter (U.S.); Windows NT only
DIIAA-AB	ISA-based ISDN terminal adapter (non-U.S.); Windows NT only

Step 7—Additional Power Supply—Pedestal Systems Only

Note: AlphaServer 1000A Rackmount and Cabinet systems do **not** support dual power supply configurations

- Additional power supply may be added to AlphaServer 1000A Pedestal system for n+1 redundancy.
- Country specific power cord must be ordered separately, see Step 10.

H7290-AA	450-Watt Redundant Power Supply Option

See UPS information following System Specifications.

Step 8—Printers and Remote Console

The KCRCM is an EISA form-factor card that enables a remote user to gain access to the system's console terminal port, and reset, halt, and power cycle the system. It functions independently of the operating system.

KCRCM-AA	Remote System access for 110V North American
KCRCM-BA	Remote System access for 220V Europe
KCRCM-CA	Remote System access for 220V U.K.
KCRCM-DA	Remote System access for 240V Australia/New Zealand

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

Select 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.

Step 9—Software

Windows NT Servers

North American variants of Windows NT Packaged and Base systems include Windows NT Server 4.0 plus 10-client access license, media (CD-ROM) kit North American English. **Note:** Selection of language specific Windows NT media kit is **mandatory** for non North American variants.

Windows NT Server 4.0 plus 10-client access license, media (CD-ROM) kits

QB-23CAA-SB	Windows NT Server license, media kit—North American English
QB-23C8A-SB	Windows NT Server license, media kit—International English
QB-23CPA-SB	Windows NT Server license, media kit—French
QB-23CGA-SB	Windows NT Server license, media kit—German
QB-23CSA-SB	Windows NT Server license, media kit—Spanish
QB-23CUA-SB	Windows NT Server license, media kit—Italian
QB-23CJA-SB	Windows NT Server license, media kit—Japanese
QB-23CMA-SB	Windows NT Server license, media kit—Swedish
QB-23CHA-SB	Windows NT Server license, media kit—Dutch
QB-23CVA-SB	Windows NT Server license, media kit—Portuguese
QB-23C4A-SB	Windows NT Server license, media kit—Korean
QB-23C3A-SB	Windows NT Server license, media kit—Taiwanese
QB-23C2A-SB	Windows NT Server license, media kit—PRC Chinese
QB-23CTA-SB	Windows NT Server license, media kit—Hebrew
QB-23CQA-SB	Windows NT Server license, media kit—Arabic
QB-23C5A-SB	Windows NT Server license, media kit—Thai

Windows NT Server Optional Software

QB-4G45A-AA	Purveyor Web Server Software V1.1 for Process Software Corp.

Step 9—Software *(continued)*

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

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

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 Packaged and Base systems include OpenVMS V6.2-1H2 kit (QA-MT1AG-H8), it must be installed over OpenVMS V6.2 media when reloading operating system.
- 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

Step 9—Software *(continued)*

OpenVMS Media and Documentation—required for first system on site

QA-MT1AA-H8	OpenVMS V6.2 media and on-line documentation CD-ROM
QA-MT1AG-H8	OpenVMS V6.2-1H2 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

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

Pedestal and Monitor Power Cords

- North American variants include BN26J-1K 120 V (North American, Japan) power cord. If an other power cord is selected, both power cords ship with system.

BN26J-1K	North American, Japan, 120 V, 75-inches long
BN19H-2E	Australia, New Zealand, 2.5 meters long
BN19C-2E	Central Europe, 2.5 meters long
BN19A-2E	U.K., Ireland, 2.5 meters long
BN19E-2E	Switzerland, 2.5 meters long
BN19K-2E	Denmark, 2.5 meters long
BN19Z-2E	Italy, 2.5 meters long
BN19S-2E	Egypt, India, South Africa, 2.5 meters long
BN18L-2E	Israel, 2.5 meters long

Rackmount Power Cords

- 120V and 240V 15 foot power cords are included with all systems, variant designates power cord voltage (see Step 1).

Note: AlphaServer 1000A Pedestal system power cords are less then 15-feet long and are **not** supported in cabinet enclosures.

Step 10—Power Cords, Keyboards, and Documentation *(continued)*

Keyboards

- Some variants include a keyboard (see Step 1). For these variants, if an additional keyboard is ordered, both keyboards ship with system.

101 key PC style keyboard		Language	108 key VT style keyboard	
Windows NT	**DIGITAL UNIX**		**OpenVMS**	**DIGITAL UNIX**
LK471-A2	**LK471-A2**	U.S./English	**LK461-A2**	**LK461-A2**
LK471-AB	**LK471-AB**	Belgian	**LK461-AB**	**LK461-AB**
LK471-AC	**LK471-AC ***	Canadian/French	**LK461-AC**	**LK461-AC**
LK471-AD	**LK471-AD**	Danish	**LK461-AD**	**LK461-AD**
LK471-AE	**LK471-AE**	United Kingdom	**LK461-A2**	**LK461-A2**
LK471-AF	**LK471-AF**	Finnish	**LK461-AF**	**LK461-AF**
LK471-AG	**LK471-AG**	German	**LK461-AG**	**LK461-AG**
LK471-AH	**LK471-AH**	Dutch	**LK461-AH**	**LK461-AH**
LK471-AI	**LK471-AI**	Italian	**LK461-AI**	**LK461-AI**
		Swiss/French	**LK461-AK**	**LK461-AK**
		Swiss/German	**LK461-AL**	**LK461-AL**
LK471-AK	**LK471-AK**	Swiss/Generic		
LK471-AF	**LK471-AF**	Swedish	**LK461-AM**	**LK461-AM**
LK471-AN	**LK471-AN**	Norwegian	**LK461-AN**	**LK461-AN**
LK471-AP	**LK471-AP**	French	**LK461-AP**	**LK461-AP**
		Canadian/English		**LK641-AQ ***
LK471-AS	**LK471-AS**	Spanish	**LK461-AS**	**LK461-AS**
LK471-AV	**LK471-AV**	Portuguese	**LK461-AV**	**LK461-AV**

* Requires DIGITAL UNIX V4.0 or higher

Mouse and Extension Cable Kit

PBXWS-AA	3-button mouse (included with all systems, order as spare or replacement)
2T-450KM-AA	Extension cable kit for VGA, PC style keyboard, and mouse, for use with Rackmount systems.

Pedestal Documentation: Customer and Service Kits

- All variants include (QZ-00MAA-GZ) English customer kit documentation. Select other language customer kits if required. If an other customer kit is selected, both will ship.
- Select service kits for all systems if required.

Customer Kit	Service Kit	
QZ-00MAA-GZ	**QA-00MAB-GZ**	Customer and Service kit for AlphaServer 1000A—English
QZ-00MPA-GZ		Customer and Service kit for AlphaServer 1000A—French
QZ-00MSA-GA		Customer and Service kit for AlphaServer 1000A—Spanish
QZ-00MJA-GZ		Customer and Service kit for AlphaServer 1000A—Japanese
QZ-00MUA-GZ		Customer and Service kit for AlphaServer 1000A—Italian
QZ-00MGA-GZ		Customer and Service kit for AlphaServer 1000A—German
AG-Q95HA-BE		Customer and Service kit On-line documentation—English

Step 11—Cabinet Enclosure

Select cabinet enclosure for Packaged and Base AlphaServer 1000A Rackmount systems, if required.

- H9A10 19-inch EIA Cabinet Enclosure Dimensions
  - Outside: 66.9-inches high, 23.62-inches wide, 33.8-inches deep
  - Internal usable rackmountable space: 59.5-inches high, 19-inches wide, 30.83-inches deep

H9A10-CE	120V Retma Cabinet assembly with dual power controller
H9A10-CJ	240V Retma Cabinet assembly with dual power controller
H9A10-CG	120V Retma Cabinet assembly with dual power controller and front door
H9A10-CK	240V Retma Cabinet assembly with dual power controller and front door
H9A10-AB	Retma Cabinet assembly with no power controller
H9A10-AD	Retma Cabinet assembly with front door, with no power controller

H9A10 Cabinets for Europe

Select H9A10-CJ/CK/CT/CU/GG/GH

- Variants denote depth dimensions, as well as door placement (front or rear and lift or swing)
- European geography cabinets contain H7600-DB IEC 309 power distribution unit (200V-240V, 50-60HZ, 16A 12 IEC 320 C13 outlets)

H9A15 Cabinets for U.S.

- For applications requiring additional internal cabinet rackmount space

H9A15-BA/BB	120 V EIA Cabinet 71.75" high x 19” wide x 29.75” deep, with dual power controllers, rear swing door
H9A15-BC/BD	120 V EIA Cabinet 71.87” high x 19” wide x 29.75” deep, with dual power controllers, front and rear swing doors
H9A15-CA/CB	120 V EIA Cabinet 71.75” high x 19” wide x 37-12” deep, with dual power controllers, rear swing door
H9A15-CC/CD	120 V EIA Cabinet 71.75” high x 19” wide x 37-12” deep, with dual power controllers, front and rear swing doors
H9A15-BE	120 V EIA Cabinet 71.87” high x 19” wide x 29.75” deep, with dual power controllers, front and rear swing doors

H9A15 Cabinets for Europe

H9A15-BE	EIA Cabinet 71.87” high x 19” wide x 29.75” deep, requires H7600-DB power controllers, rear swing doors
H9A15-CE	EIA Cabinet 71.75” high x 19” wide x 37-12” deep, requires H7600-DB power controllers, rear swing door
H7600-DB	Power Distribution Unit, 2 pole 16A circuit breaker, 200V-240V, 50-60HZ, 16A for use in 19 inch cabinets, 12 IEC 320 C13 outlets, with EIA/ANSI (RETMA) rails, IEC 309 power plug

Step 12—Hardware and Software Supplemental Support Services

Hardware—Americas and Asia Pacific 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, Onsite
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 only

- Software Warranty:
  - 90-day SPD conformance with advisory telephone support for DIGITAL UNIX and OpenVMS
  - Warranty on Microsoft's Windows NT Server 4.0 is conformance to the written material accompanying the software for a period of ninety days
- 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.
- Software Supplemental Support Service options upgrade 90-day service to time period indicated below.

FM-WNT03-12	12-month Software Supplemental Support for Windows NT AlphaServer 1000A systems
FM-WNT03-36	36-month Software Supplemental Support for Windows NT AlphaServer 1000A systems
FM-WNT03-60	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

Step 12a—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.

AlphaServer 1000A Pedestal System Specifications

Shipping Dimension		
Height	60 cm (23.8 in.)	
Width	43 cm (16.9 in)	
Depth	65 cm (25.6 in)	
Weight	43 kg (95 lb) typical 71 kg (156 lb) maximum	
Installed Dimensions		
Height	46 cm (18.1 in.)	
Width	35.8 cm (14.1 in.)	
Depth	58.6 cm (23.1 in.)	
Weight	39 kg (86 lb) typical 51 kg (113 lb) maximum	
Clearances	**Operating**	**Service**
Front	75 cm (29.5 in.)	75 cm (29.5 in.)
Rear	15 cm (6 in.)	75 cm (29.5 in.)
Sides	None	75 cm (29.5 in.)
Environmental		
Temperature	Operating* Nonoperating Storage (60 days) Rate of change	10–40° C (50–104° F) Not tested -40–66° C (-40–151° F) 11° C/hr (20° F/hr)
Relative humidity	Operating Nonoperating Storage (60 days) Rate of change	20–80% 20–80% 10–95% 20%/hr
Maximum wet bulb temperature	Operating Storage (60 days)	28° C (82° F) 39° C (115°F)
Minimum dew point temperature	Operating Storage (60 days)	12° C (36° F) Not tested
Maximum heat dissipation Single supply Dual supply	Current 2390 Btu/hr 4097 Btu/hr	
Air flow and quality	Intake location Exhaust location Particle size Concentration	Front Rear N/A N/A
Altitude	Operating† Nonoperating	2000 m (6562 ft) 3600 m (12,000 ft)
Mechanical shock	Operating Nonoperating	7.5 G 10 ms 20 G peak 30 ms
Vibration	Operating	10-500 Hz ,1 G peak
Acoustics	 Operating Idle	AverageDeclared 6.2 L^{wA}, B6.5 L^{wAd}, B 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	90-128 Vac	180-256 Vac
Power source phase	Single	Single
Nominal frequency	60 Hz	50 Hz
Frequency range	59-61 Hz	49-51 Hz
Maximum inrush current	50 Amps	50 Amps
RMS current at nominal voltage (steady state) Single power supply Dual power supply	 8.0 Amps 4.6 Amps each supply	 4.0 Amps 2.2 Amps each supply
Power cord	Type Length U.S. plug	IEC 320 C13 190 cm (75 in.) NEMA 5-15

* Maximum operating temperature at Sea Level. Reduce by 1 C (1.8 F) for each 600 m (2000 ft) above Sea Level.

† Higher altitudes are possible if maximum operating temperature is reduced (see Temperature, above); other restrictions may apply, such as maximum permissible altitude for hard drives.

AlphaServer 1000A Pedestal System 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 B Verified CE Class B Verified VCCI Class II ITE
Reviewed to	AS 3260 Australian Standard SS 436 14 50 Swedish Standard NZS 6661:1989 New Zealand Standard EN 60 950: 1992 European Norm IEC 950 (2nd edition)

AlphaServer 1000A Rackmount System Specifications

Shipping Dimension		
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)	
Clearances	**Service**	
Front	124.04 cm (50.0 in)	
Rear	61.0 cm (24.0 in)	
Sides	None	
Environmental		
Temperature		
Operating	10–35° C (50–95° F)	
Nonoperating	Not tested	
Storage (60 days)	-40–66° C (-40–151° F)	
Relative humidity	20–80%	
Operating	20–80%	
Nonoperating	10–95%	
Storage (60 days)	20%/hr	
Rate of change		
Air flow and quality		
Intake location	Front	
Exhaust location	Rear	
Electrical—Power Supplies are universal 120/240 Vac		
Nominal ac voltage	100-120 Vac	220-240 Vac
Operating Voltage range	90-128 Vac	180-256 Vac
Power source phase	Single	Single
Nominal frequency	60 Hz	50 Hz
Frequency range	59-61 Hz	49-51 Hz
Maximum inrush current	50 Amps	50 Amps
RMS current at nominal voltage (steady state)		
Single power supply	8.0 Amps	4.0 Amps
Power cord	Type	IEC 320 C13
	Length	4.57 m (15 ft.)
	U.S. plug	NEMA 5-15
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 EMCO-TSE (74-SEC), Summary of Nordic deviations FCC 15J Part 15 Class A verified CE Class A verified VCCI Class II ITE	
Reviewed to	AD 3260 Australian Standard AS/NZS 3260:1963, Australian/New Zealand Standard EN 60 950: January 1993 European Norm IEC 950 (2nd edition)	

AlphaServer 1000A System Specifications *(continued*

Prestige 1250EXT

UPS offerings include EIA232 port for local or network monitoring. For complete protection, UPS products should be used with data line surge protectors and UPS monitoring software.

4N-AEABF-AA	Prestige 1250EXT, 1250 VA/900W, 1 phase, 60 Hz, 120V 6-foot cord with 5-15P plug, (4) 5-15R receptacle, 9 minutes battery at full UPS load.
4N-AEABF-BF	Prestige 1250EXT, 1250 VA/900W, 1 phase, 50 Hz, 200-240V in/out selectable. Uses system power cord for detachable IEC320 input connection at UPS. Includes (3) IEC320 10A output receptacles, (2) output jumpers with IEC320 connectors to system.
4N-AEAEO-PA	Hot-swap Power-Pass Module for 60 Hz UPS with (7) 5-15R Surge Protected outlets.
4N-AEAEO-PB	Hot-swap Power-Pass Module for 50 Hz UPS with (6) IEC320, 10A surge protected outlets.
4N-AEWAR-G1	Prestige 5 year on-site exchange warranty upgrade (U.S. only).

Data Surge Protection

4N-GA249-AB*	Surge protector, modem connection, wall plug-in
4N-GA249-CA*	Surge protector, 10BaseT connection, wall plug-in
4N-GA510-BF	Surge Protector, ThinWire connection, device port
4N-GA245-xx	Surge Protector, multi-port connection, din rail/rackmount

* Additional plug-in data modules (4N-GA240-xx) available.

Monitoring and Unattended Shutdown Software for above UPS systems only (Include cables, media and documentation)

4N-AEAES-AA	Single system shutdown for Windows NT
4N-AEAES-BA	NW management and multi system shutdown for Windows NT*
4N-AEAES-AK	Single system shutdown for DIGITAL UNIX
4N-AEAES-BK	NW management and multi system shutdown for DIGITAL UNIX*
4N-AEAES-EM	Single system shutdown for OpenVMS

* Require network adapters: 4N-AEAEO-DA/DC for 120V 60 Hz; or 4N-AEAEO-DB/DD for 220V 50 Hz
-DA and -DB = Twisted Pair; -DC and -DD = ThinWire