



AlphaServer 4100/4000
V2.1—19 January 1998
DIGITAL Systems and Options Catalog

Product Description

EV6-ready AlphaServer 4000/4100 family of servers support 5/533 MHz, 5/466 MHz, and 5/400 MHz processing power, each with 4 MB of on-board cache. CPU board and SMP upgrades for 5/533MHz servers are also orderable. AlphaServer 4x00 enhancements include support for UltraSCSI adapters, controllers, shelves, disks, and cables, all color-coded in top gun blue to distinguish them from Fast-10 SCSI-2 components.

Systems include an Ultra SCSI embedded adapter and UltraSCSI cables for high density connectors (HD68) and very high density connections VHDCI. Configuration information is available for Pedestal, Cabinet, and System Drawer to support the implementation of UltraSCSI technology. Select a single-bus or split-bus shelf and an initial 4.3 GB UltraSCSI disk.

Enhanced operating system software includes Digital UNIX V4.0B with UltraSCSI backwards compatibility support to V3.2G, Windows NT V4.0 with UltraSCSI backwards compatibility support to V3.51, and OpenVMS V7.1-1H1 with UltraSCSI support and DIGITAL Enterprise Integration Package V2.0. There is No UltraSCSI backwards compatibility to V6.2-1H3 at this time.

Now 128 MB Windows NT packaged systems are available on AlphaServer 4100 systems.

The AlphaServer 4000 System Drawer comes standard with eight active PCI slots. Eight additional PCI slots can be activated by ordering the PCI I/O expansion option. This option provides AlphaServer 4000 users with the ability to double the I/O capacity and bandwidth. PCI I/O option upgrades the AlphaServer 4000 to 4 active independent 64-bit PCI I/O channels with 16 slots, increasing the I/O bandwidth from 500 MB/s to 1 GB/s—enough power to drive large media server applications or complex cluster configurations.

ServerWORKS Manager provides advanced server and network management capabilities and is supplied with all AlphaServer systems. Simple Network Management Protocol (SNMP) enables information to pass from the managed system to the console for DIGITAL UNIX, Windows NT, and OpenVMS systems. Detailed server information is viewable, including system, network, storage, and environmental information. For more information, see the StorageWorks Software section of this catalog.

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Step 1—AlphaServer 4100/4000 Systems

- Configuration menus require the selection of:
 - A System Drawer
 - A Pedestal or Cabinet enclosure
 - An UltraSCSI Shelf (split-bus or single-bus)
 - An UltraSCSI 4.3 GB disk

See Step 1b for UltraSCSI shelf configuration rules.

Step 1a—AlphaServer System Drawer

- Selection of one System Drawer for installation in a Pedestal or Cabinet enclosure selected from Step 1b is required.
 - AlphaServer 4100 System Drawer supports up to four CPUs and up to four memory options.
 - AlphaServer 4000 System Drawer supports up to two CPUs and up to two memory options.
- A System Drawer Mounting Kit is mandatory for each System Drawer ordered for mounting in a Cabinet enclosure.

System Drawer includes

- AlphaServer 4100 System Drawer with Alpha microprocessor 21164
5/400 MHz CPU, 4 MB secondary cache, or
5/466 MHz CPU, 4 MB secondary cache, or
5/533 MHz CPU, 4 MB secondary cache
 - Eight PCI slots (five available)
 - AlphaServer 4000 System Drawer with Alpha microprocessor 21164
5/400 MHz CPU, 4 MB secondary cache, or
5/466 MHz CPU, 4 MB secondary cache, or
5/533 MHz CPU, 4 MB secondary cache
 - Eight PCI slots (five available), or 16 PCI slots (13 available) with PCI slot expansion option installed
 - Integral (internal-only SCSI bus) to support removable media (CD-ROMs and tapes)
 - Integral CD-ROM drive (standard)
 - 1.44 MB diskette drive (standard)
 - Two EIA-232 asynchronous serial ports, 9-pin D-subminiature connectors
 - One parallel port, 25-pin D-subminiature connectors
 - Keyboard and mouse ports
 - 450 W auto sensing power supply
 - Memory (included memory uses one memory slot)
 - Ethernet (10/100 Mbit) Controller (uses one PCI slot)
 - One-port single-ended UltraSCSI Controller (uses one PCI slot)
 - S3 TRIO 1 MB RAM graphics adapter (uses one PCI slot)
 - 3-button mouse
 - Keyboard (Americas and Asia Pacific orders only). Select country specific keyboard for all systems ordered in other countries.
 - Integral remote system console
 - Operating system license
 - Customer documentation
 - Hardware warranty¹
 - Software warranty¹

1. For Warranty description and available service upgrades, see Step 12 in this section.

Step 1a—AlphaServer 4100 Systems
AlphaServer 4100 Windows NT System Drawer—Selection of one System Drawer required

- .. DIGITAL OEM license agreement for Windows NT mandates compliance with specific configuration rules:
- .. **Windows NT Language Configuration**
 - North American variants include pre-installed Windows NT Server 4.0, plus 10-client access license/North American English media (CD-ROM) kit.
 - For all non-North American variants, selection of language-specific Windows NT Server 4.0 license/media (CD-ROM) kit is mandatory, see Step 11.
- .. **Windows NT Disk Configuration**
 - For first System Drawer ordered for factory-installed systems, Windows NT is pre-installed on mandatory DS-RZ1CB-VW disk; see Step 1b in this section. An UltraSCSI StorageWorks shelf (split-bus or single-bus), and a System Drawer mounting kit are also mandatory.
 - For each additional system drawer ordered for field-installed Cabinet systems, a DS-RZ1CB-NT disk drive, an UltraSCSI StorageWorks shelf and a System Drawer mounting kit are mandatory. UltraSCSI StorageWORKS shelf need not be ordered if existing shelf is configured in split-bus mode.
- .. A video monitor is required for system management; order separately if not available at customer site.

Windows NT North American Variants

Order Number	O/S Media	CPU	Cache	Memory	Available Slots
DN-51KAC-CA	Included	5/533	4 MB	128 MB	5 PCI
DN-51KAC-EB	Included	5/533	4 MB	512 MB	5 PCI
DN-51KAC-FB	Included	5/533	4 MB	1 GB	5 PCI
DN-51KAC-GB	Included	5/533	4 MB	2 GB	5 PCI
DN-51JAC-CA	Included	5/466	4 MB	128 MB	5 PCI
DN-51JAC-EB	Included	5/466	4 MB	512 MB	5 PCI
DN-51JAC-FB	Included	5/466	4 MB	1 GB	5 PCI
DN-51JAC-GB	Included	5/466	4 MB	2 GB	5 PCI
DN-51HAC-CA	Included	5/400	4 MB	128 MB	5 PCI
DN-51HAC-EB	Included	5/400	4 MB	512 MB	5 PCI
DN-51HAC-FB	Included	5/400	4 MB	1 GB	5 PCI
DN-51HAC-GB	Included	5/400	4 MB	2 GB	5 PCI

Windows NT Non-North American Variants

Order Number	O/S Media	CPU	Cache	Memory	Available Slots
DN-51KAC-CB	Mandatory	5/533	4 MB	128 MB	5 PCI
DN-51KAC-EC	Mandatory	5/533	4 MB	512 MB	5 PCI
DN-51KAC-FC	Mandatory	5/533	4 MB	1 GB	5 PCI
DN-51KAC-GC	Mandatory	5/533	4 MB	2 GB	5 PCI
DN-51JAC-CB	Mandatory	5/466	4 MB	128 MB	5 PCI
DN-51JAC-EC	Mandatory	5/466	4 MB	512 MB	5 PCI
DN-51JAC-FC	Mandatory	5/466	4 MB	1 GB	5 PCI
DN-51JAC-GC	Mandatory	5/466	4 MB	2 GB	5 PCI
DN-51HAC-CB	Mandatory	5/400	4 MB	128 MB	5 PCI
DN-51HAC-EC	Mandatory	5/400	4 MB	512 MB	5 PCI
DN-51HAC-FC	Mandatory	5/400	4 MB	1 GB	5 PCI
DN-51HAC-GC	Mandatory	5/400	4 MB	2 GB	5 PCI

Step 1a—AlphaServer 4100 Systems (continued)**AlphaServer 4100 DIGITAL UNIX System Drawer—Selection of one System Drawer required**

Systems include pre-installed DIGITAL UNIX, Base license, Unlimited User license, Server Extension license, and Internet Access Software license. Order media and documentation separately.

Order Number	CPU	Cache	Memory	Available Slots
DA-51KAC-EB	5/533	4 MB	512 MB	5 PCI
DA-51KAC-FB	5/533	4 MB	1 GB	5 PCI
DA-51KAC-GB	5/533	4 MB	2 GB	5 PCI
DA-51JAC-EB	5/466	4 MB	512 MB	5 PCI
DA-51JAC-FB	5/466	4 MB	1 GB	5 PCI
DA-51JAB-GB	5/466	4 MB	2 GB	5 PCI
DA-51HAC-CA	5/400	4 MB	128 MB	5 PCI
DA-51HAC-EB	5/400	4 MB	512 MB	5 PCI
DA-51HAC-FB	5/400	4 MB	1 GB	5 PCI
DA-51HAC-GB	5/400	4 MB	2 GB	5 PCI

AlphaServer 4100 OpenVMS System Drawer—Selection of one System Drawer required

Systems include pre-installed OpenVMS, Base license, and DIGITAL Enterprise Integration Package V2.0. Order media and documentation separately. See Step 11.

Order Number	CPU	Cache	Memory	Available Slots
DY-51KAC-EB	5/533	4 MB	512 MB	5 PCI
DY-51KAC-FB	5/533	4 MB	1 GB	5 PCI
DY-51KAC-GB	5/533	4 MB	2 GB	5 PCI
DY-51JAC-EB	5/466	4 MB	512 MB	5 PCI
DY-51JAC-FB	5/466	4 MB	1 GB	5 PCI
DY-51JAC-GB	5/466	4 MB	2 GB	5 PCI
DY-51HAC-CA	5/400	4 MB	128 MB	5 PCI
DY-51HAC-EB	5/400	4 MB	512 MB	5 PCI
DY-51HAC-FB	5/400	4 MB	1 GB	5 PCI
DY-51HAC-GB	5/400	4 MB	2 GB	5 PCI

Step 1a—AlphaServer 4000 Systems**AlphaServer 4000 Windows NT System Drawer—Selection of one System Drawer is required**

DIGITAL OEM license agreement for Windows NT mandates compliance with specific configuration rules:

.. Windows NT Language Configuration

- North American variants include pre-installed Windows NT Server 4.0, plus 10-client access license/North American English media (CD-ROM) kit.
- For all non-North American variants, selection of language-specific Windows NT Server 4.0 license/media (CD-ROM) kit is mandatory, see Step 11 in this section.

.. Windows NT Disk Configuration

- For first System Drawer ordered for factory-installed systems, Windows NT is pre-installed on mandatory DS-RZ1CB-VW disk; see Step 1b in this section. An UltraSCSI StorageWorks shelf (split-bus or single-bus), and a System Drawer mounting kit are also mandatory.
- For each additional system drawer ordered for field-installed Cabinet systems, a DS-RZ1CB-NT disk drive, an UltraSCSI StorageWorks shelf (split-bus or single-bus) and a System Drawer mounting kit are mandatory. UltraSCSI StorageWORKS shelf need not be ordered if existing shelf is configured in split-bus mode.

- .. A video monitor is required for system management; order separately if not available at customer site.

Windows NT North American Variants

Order Number	O/S Media	CPU	Cache	Memory	Available Slots
DN-53KEC-CA	Included	5/533	4 MB	128 MB	5 PCI ¹
DN-53KEC-EA	Included	5/533	4 MB	512 MB	5 PCI ¹
DN-53KEC-FA	Included	5/533	4 MB	1 GB	5 PCI ¹
DN-53KEC-GA	Included	5/533	4 MB	2 GB	5 PCI ¹
DN-53JEC-CA	Included	5/466	4 MB	128 MB	5 PCI ¹
DN-53JEC-EA	Included	5/466	4 MB	512 MB	5 PCI ¹
DN-53JEC-FA	Included	5/466	4 MB	1 GB	5 PCI ¹
DN-53JEC-GA	Included	5/466	4 MB	2 GB	5 PCI ¹
DN-53HEC-CB	Included	5/400	4 MB	128 MB	5 PCI ¹
DN-53HEC-EA	Included	5/400	4 MB	512 MB	5 PCI ¹
DN-53HEC-FA	Included	5/400	4 MB	1 GB	5 PCI ¹
DN-53HEC-GA	Included	5/400	4 MB	2 GB	5 PCI ¹

1. 13 available PCI slots with PCI I/O Expansion Option (H7150-AA).

Windows NT Non-North American Variants

Order Number	O/S Media	CPU	Cache	Memory	Available Slots
DN-53KEC-CB	Mandatory	5/533	4 MB	128 MB	5 PCI ¹
DN-53KEC-EB	Mandatory	5/533	4 MB	512 MB	5 PCI ¹
DN-53KEC-FB	Mandatory	5/533	4 MB	1 GB	5 PCI ¹
DN-53KEC-GB	Mandatory	5/533	4 MB	2 GB	5 PCI ¹
DN-53JEC-CB	Mandatory	5/466	4 MB	128 MB	5 PCI ¹
DN-53JEC-EB	Mandatory	5/466	4 MB	512 MB	5 PCI ¹
DN-53JEC-FB	Mandatory	5/466	4 MB	1 GB	5 PCI ¹
DN-53JEC-GB	Mandatory	5/466	4 MB	2 GB	5 PCI ¹
DN-53HEC-CB	Mandatory	5/400	4 MB	128 MB	5 PCI ¹
DN-53HEC-EB	Mandatory	5/400	4 MB	512 MB	5 PCI ¹
DN-53HEC-FB	Mandatory	5/400	4 MB	1 GB	5 PCI ¹
DN-53HEC-GB	Mandatory	5/400	4 MB	2 GB	5 PCI ¹

1. 13 available PCI slots with PCI I/O Expansion Option (H7150-AA).

Step 1a—AlphaServer 4000 Systems (continued)**AlphaServer 4000 DIGITAL UNIX System Drawer—Selection of one System Drawer is required**

Systems include pre-installed DIGITAL UNIX, Base license, Unlimited User license, Server Extension license, and Internet Access Software license. Order media and documentation separately.

Order Number	CPU	Cache	Memory	Available Slots
DA-53KEC-EA	5/533	4 MB	512 MB	5 PCI ¹
DA-53KEC-FA	5/533	4 MB	1 GB	5 PCI ¹
DA-53KEC-GA	5/533	4 MB	2 GB	5 PCI ¹
DA-53JEC-EA	5/466	4 MB	512 MB	5 PCI ¹
DA-53JEC-FA	5/466	4 MB	1 GB	5 PCI ¹
DA-53JEC-GA	5/466	4 MB	2 GB	5 PCI ¹
DA-53HEC-CA	5/400	4 MB	128 MB	5 PCI ¹
DA-53HEC-EA	5/400	4 MB	512 MB	5 PCI ¹
DA-53HEC-FA	5/400	4 MB	1 GB	5 PCI ¹
DA-53HEC-GA	5/400	4 MB	2 GB	5 PCI ¹

1. 13 available PCI slots with PCI I/O Expansion Option (H7150-AA).

AlphaServer 4000 OpenVMS System Drawer—Selection of one System Drawer is required

Systems include pre-installed OpenVMS, Base license, and DIGITAL Enterprise Integration Package V2.0. Order media and documentation separately. See Step 11.

Order Number	CPU	Cache	Memory	Available Slots
DY-53KEC-EA	5/533	4 MB	512 MB	5 PCI ¹
DY-53KEC-FA	5/533	4 MB	1 GB	5 PCI ¹
DY-53KEC-GA	5/533	4 MB	2 GB	5 PCI ¹
DY-53JEC-EA	5/466	4 MB	512 MB	5 PCI ¹
DY-53JEC-FA	5/466	4 MB	1 GB	5 PCI ¹
DY-53JEC-GA	5/466	4 MB	2 GB	5 PCI ¹
DY-53HEC-CA	5/400	4 MB	128 MB	5 PCI ¹
DY-53HEC-EA	5/400	4 MB	512 MB	5 PCI ¹
DY-53HEC-FA	5/400	4 MB	1 GB	5 PCI ¹
DY-53HEC-GA	5/400	4 MB	2 GB	5 PCI ¹

1. 13 available PCI slots with PCI I/O Expansion Option (H7150-AA).

Step 1b—Enclosures and Cabinet Accessories**Pedestal Enclosure**

Pedestal enclosure supports one System Drawer and up to three UltraSCSI StorageWorks shelves.

BA30P-AA 120 V Americas, Asia Pacific

BA30P-BA 240 V Europe; order two country-specific power cords from Step 8.

StorageWorks Shelf

Selection of first UltraSCSI StorageWorks shelf and 4.3 GB UltraSCSI disk (DS-RZ1CB-VW) is mandatory.

BA36R-SD Single-bus UltraSCSI StorageWorks shelf for Pedestal

BA-36R-SE Split-bus UltraSCSI StorageWorks shelf for Pedestal

DS-RZ1CB-VW UltraSCSI StorageWorks 4.3 GB disk drive

Step 1b—Enclosures and Cabinet Accessories (*continued*)**Cabinet Enclosure**

Cabinet enclosure supports up to 3 System Drawers and up to 8 UltraSCSI StorageWorks shelves.

- H9A10-EF** 120 V dual 24 A controller, each with 10 NEMA 5-15R outlets, Americas, ASIA PACIFIC
H9A10-EH 240 V dual 16 A controller, each with 12 IEC C13 outlets, Europe

StorageWorks Shelf

Selection of first UltraSCSI StorageWorks shelf and 4.3 GB UltraSCSI disk (DS-RZ1CB-VW) is mandatory.

- BA36R-RC** Single-bus UltraSCSI StorageWorks shelf for RETMA cabinet
BA-36R-RD Split-bus UltraSCSI StorageWorks shelf for RETMA cabinet
DS-RZ1CB-VW UltraSCSI StorageWorks 4.3 GB disk drive

System Drawer Mounting Kit

- .. System Drawer mounting kit (CK-BA30A-BA/BB) is mandatory for each System Drawer ordered for a Cabinet enclosure.
- .. System Drawer mounting kit includes two 6-foot extender cables for mouse and keyboard, one 10-foot video cable, and appropriate power cords.

Note: Mounting kits for each System Drawer installed in a Cabinet Enclosure must be the same type. For example, a front access kit (CK-BA30A-BA) cannot be installed with a front/rear access kit (CK-BA30A-AA) in the same cabinet.

- CK-BA30A-BA** Full extension, ball-bearing slide rail, provides front access, Americas, ASIA PACIFIC
CK-BA30A-BB Full extension, ball-bearing slide rail, provides front access, Europe

Cabinet Configuration Chart

Cabinet	Mounting Kit	Access	Vertical Drawer Space		Drawers	Shelves
			14 in	8U		
H9A10-EF	CK-BA30A-BA	Front			1	8
					2	6
					3	2
H9A10-EH	CK-BA30A-BB	Front			1	8
					2	6
					3	2

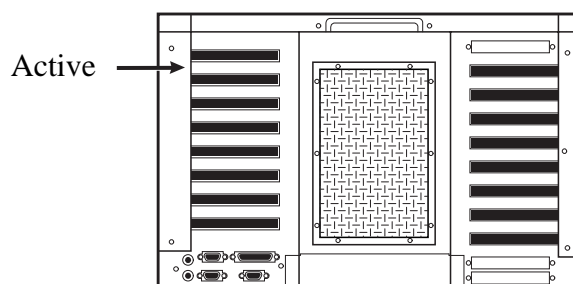
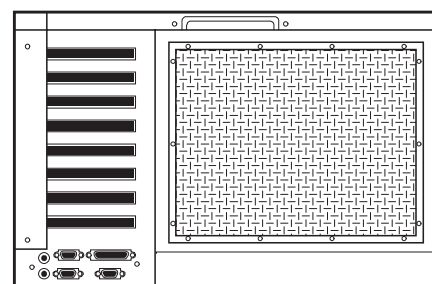
Note: For assistance in configuring a Cabinet System with four System Drawers, contact Computer Special Systems (CSS) at 1-800-DIGITAL.

Step 1c—AlphaServer 4000 System Drawer 16 PCI Slot Expansion Option

- .. All new AlphaServer 4000 System Drawers include 16 PCI knockouts on a PCI bulkhead with 8 active PCI slots (see Figure 1).
- .. To activate the additional 8 PCI slots, order a PCI Slot Expansion Option (H7150-AA).

- H7150-AA** 8 PCI-slot expansion option for AlphaServer 4000 System Drawer, includes one H7291-AA power supply

Note: AlphaServer 4100 and 4000 systems with 8 PCI knockouts on PCI bulkhead (Figure 2), can be upgraded to an AlphaServer 4000 with 16 PCI slots. See Step 10.

Figure 1**Figure 2**

Step 2—Additional CPU Modules (SMP Upgrades)

- .. AlphaServer 4100 System Drawer supports three additional CPUs
- .. AlphaServer 4000 System Drawer supports one additional CPU
- .. CPUs (i.e., 5/533 4 MB) and operating system must be of the same type in each System Drawer.

KN304-BA	DIGITAL UNIX SMP upgrade includes one 5/400 (4 MB) CPU and DIGITAL UNIX SMP license
KN304-DB	DIGITAL UNIX SMP upgrade includes one 5/466 (4 MB) CPU and DIGITAL UNIX SMP license
KN305-DB	DIGITAL UNIX SMP upgrade includes one 5/533 (4MB) CPU and DIGITAL UNIX SMP license
KN304-BB	OpenVMS SMP upgrade includes one 5/400 (4 MB) CPU and OpenVMS SMP license
KN304-DC	OpenVMS SMP upgrade includes one 5/466 (4 MB) CPU and OpenVMS SMP license
KN305-DC	OpenVMS SMP upgrade includes one 5/533 (4MB) CPU and OpenVMS SMP license
KN304-BC	Windows NT SMP upgrade includes one 5/400 (4 MB) CPU; SMP license not required
KN304-DD	Windows NT SMP upgrade includes one 5/466 (4 MB) CPU; SMP license not required
KN305-DD	Windows NT SMP upgrade includes one 5/533 (4 MB) CPU; SMP license not required

Step 3—Additional Power Supply

Power supply included with System Drawer provides support for two processors, memory, and I/O adapters.

H7291-AA 450 Watt power supply

		AlphaServer 4100	AlphaServer 4000 with 8 PCI slots	AlphaServer 4000 with 16 PCI slots
1 st	450 W power supply (included)	Supports up to 2 CPUs	Supports up to 2 CPUs	Supports up to 2 CPUs
2 nd	450 W power supply	Supports 3 rd or 4 th CPU or Provides N+1 for up to 2 CPUs	Provides N+1 for 2 CPUs	See Note.
3 rd	450 W power supply	Provides N+1 for up to 4 CPUs	N/A	See Note.

Note: 1st power supply supports 2 CPUs and 8 active PCI slots.
 2nd power supply provides N+1 for 2 CPUs and 8 active PCI slots.
 H7150-AA 8 PCI slot expansion option includes a Power Supply. Supports 2 CPUs and 16 active PCI slots.
 3rd power supply provides N+1 support for 2 CPU systems and 16 active PCI slots.

Step 4—Memory

- .. All System Drawers include one memory option.
- .. AlphaServer 4100 System Drawer supports up to three additional memory options:
 - DIGITAL UNIX and OpenVMS maximum memory 8 GB
 - Windows NT 3.51 maximum memory 2 GB. Windows NT 4.0 maximum memory 4 GB. **Note:** Windows NT is a 32-bit operating system that limits memory to a maximum of 4 GB on Windows NT 4.0.
- .. AlphaServer 4000 System Drawer supports one additional memory option for maximum of 4 GB total.

Note: Field installation of memory requires largest memory option to be placed in Memory Slot 0.

MS320-CA	128 MB memory option
MS330-EA	512 MB memory option
MS330-FA	1 GB memory option
MS330-GA	2 GB memory option

Step 5—Storage

- .. System Drawer includes one FWSE single-port UltraSCSI adapter (KZPBA-CA) with UltraSCSI cable (BN38C-02).
- .. Pedestal and Cabinet enclosure requires selection of:
 - UltraSCSI single-bus or split-bus shelf
 - UltraSCSI 4.3 GB disk drive

Note: Additional tape drives and devices are supported. Refer to the Supported Options List for operating system support (URL= http://www.digital.com/alphaserver/tech_docs/alphasrv800/docs/supported_options.html).

Step 5a—Disk Drives

DS-RZ1BB-VW	2.1 GB 7200 RPM 16-bit UltraSCSI disk drive, top gun blue, SSB
DS-RZ1CB-VW	4.3 GB 7200 RPM 16-bit UltraSCSI disk drive, top gun blue, SSB
DS-RZ1DB-VW	9.1 GB 7200 RPM 16-bit UltraSCSI disk drive, top gun blue, SSB
DS-RZ1CB-NT	AS4xxx 4.3 GB 7200 RPM 16-bit UltraSCSI disk drive with Windows NT factory installed

Step 5b—Removable Media

- .. All System Drawers include CD-ROM drive in integral 5.25-inch drive slot connected to integral FNSE SCSI-2 controller.
- .. System Drawer installed in Pedestal Enclosure supports one additional removable media device. Optional 5.25-inch half-height removable media slot in Pedestal systems is connected to integral FNSE SCSI-2 controller.

Tape Drive and additional CD-ROM for Pedestal systems only (OCP)

TLZ09-LK	8 GB 4 mm DAT 93 MB/min (compressed) 5.25-inch SCSI tape drive, frost white
RRD46-AC	600 MB 12x speed CD-ROM 5.25-inch drive, top gun blue
RRD46-AB	600 MB 12x speed CD-ROM 5.25-inch drive, frost white

Tape Drives and additional CD-ROM for StorageWorks shelves in Pedestal and Cabinet systems

TLZ09-VA	8 GB 4 mm DAT 93 MB/min (compressed) 5.25-inch SCSI tape drive in StorageWorks carrier
DS-TLZ10-VA	12/24 GB 4 mm DAT 3.25-inch SCSI tape drive in StorageWorks carrier
DS-TZ89N-TA	35/70 GB DLT Table-top tape drive, 68-pin HD female SCSI connector
DS-TZ89N-VW	35/70 GB 5.25 inch single-bus SCSI DLT in StorageWorks carrier
TZK11-VA	2 GB QIC tape drive in StorageWorks carrier
DS-RRD46-VA	600 MB 12X CD-ROM drive in StorageWorks carrier

DLT Tape Loaders

TLZ9L-VA	32-64 GB 4 mm DAT 5.25-inch SCSI tape drive loader in StorageWorks carrier
DS-TL891-NE	10-cartridge, 1 TZ89N-AV, mount-in cabinet tape drive
DS-TL891-NT	10-cartridge, 1 TZ89N-AV, table-top tape drive

Step 5c—UltraSCSI StorageWorks Shelves

Pedestal and Cabinet Enclosures do **not** include StorageWorks shelf and 4.3 GB disk drive, selection is mandatory.

- .. Pedestal Enclosure supports maximum of three BA36R-SD/SE UltraSCSI StorageWorks Shelves.
- .. Cabinet Enclosure supports maximum of eight BA36R-RC/RD UltraSCSI StorageWorks shelves.
- .. Maximum of two BA35R-MR controller shelves supported in RETMA cabinet.
- .. Additional StorageWorks UltraSCSI shelves require controller(s) and cables.

UltraSCSI Configuration Rules

- .. UltraSCSI configurations require UltraSCSI components (adapters/shelves/disks/cables).
- .. UltraSCSI adapters and RAID controllers support UltraSCSI disks at UltraSCSI speeds in UltraSCSI shelves (BA36R-xx) shelves.
- .. Fast-10 SCSI shelves may not be retrofitted. When connecting to an UltraSCSI adapter, replace Fast-10 SCSI shelf with BA36R shelf.
- .. Adding an UltraSCSI disk to a Fast-10 SCSI shelf will result in an unsupported configuration. Replace with an UltraSCSI shelf.
- .. UltraSCSI drives and Fast-10 devices can be mixed in BA356 UltraSCSI shelf. Drives negotiate maximum transfer speeds with UltraSCSI adapter/controller.

Step 5c—UltraSCSI StorageWorks Shelves (continued)
StorageWorks UltraSCSI Shelf Kits

StorageWorks UltraSCSI Shelf kits include 16-bit UltraSCSI shelf and 16-bit UltraSCSI personality module with doc chip, 180-Watt power supply in system building block (SBB), mounting hardware, and power cord. UltraSCSI adapters/controllers include the KZPBA-CA and KZPAC-AA/CA/CB.

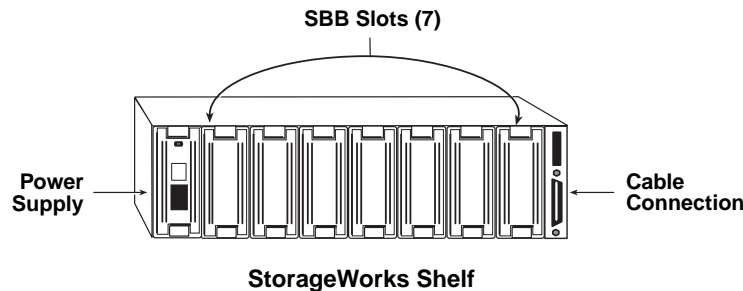
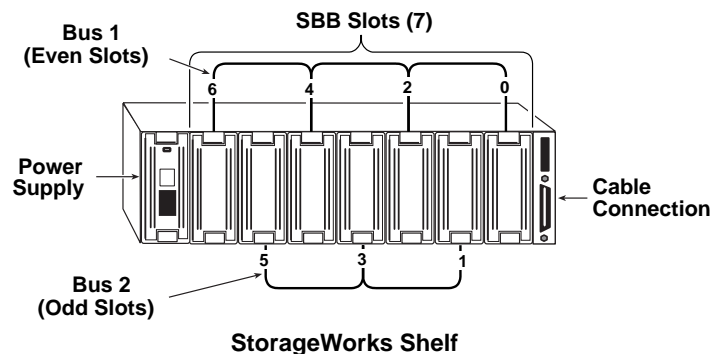
- .. Each BA36R shelf supports:
 - Seven 3.5-inch hard disk drives or
 - One 5.25-inch device and four 3.5-inch hard disk drives or
 - Two 5.25-inch devices and one 3.5-inch hard disk drive
- .. Installation of redundant power supply reduces number of 3.5-inch devices by one.

BA36R-SD/SE	Pedestal StorageWorks UltraSCSI shelf kit (single-bus/split-bus)
BA36R-RC/RD	Cabinet StorageWorks UltraSCSI shelf kit (single-bus/split-bus)
CK-BA35X-HH	180-Watt universal ac input redundant power supply; power cord; included in shelf kits

StorageWorks Fast-10 SCSI Shelf Kits

StorageWorks Fast-10 SCSI Shelf kits include a BA356 16-bit Wide StorageWorks shelf, and a 16-bit personality module with a power supply in system building block (SBB), mounting hardware, and power cord. Fast-10 adapters and controllers include the KZPDA-AA, KZPAA-AA, and KZPSA-BB.

BA36R-SB	Pedestal StorageWorks UltraSCSI shelf kit (Worldwide)
BA36R-RA	Cabinet StorageWorks UltraSCSI shelf kit (Worldwide)
BA35X-ME	Split-bus mode active terminator for BA36R shelf
BA35x-FB	Split-bus dual channel UltraSCSI personality module

Single Bus StorageWorks Shelf**Split Bus StorageWorks Shelf**

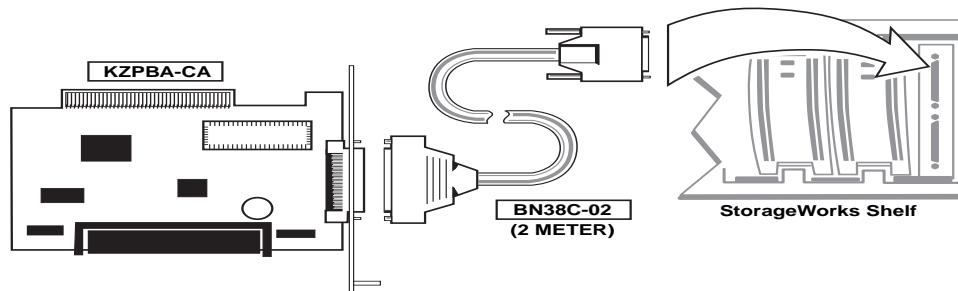
Step 5d—UltraSCSI Backplane Storage Adapters, Controllers, Connectors, and Cables

- .. Systems include KZPBA-CA PCI one-port Fast Wide Single Ended (FWSE) UltraSCSI controller, and a BN38C-02 cable.
- .. The following UltraSCSI controllers can be configured in AlphaServer 4100/4000 System Drawers. Refer to the following chart for operating system support.

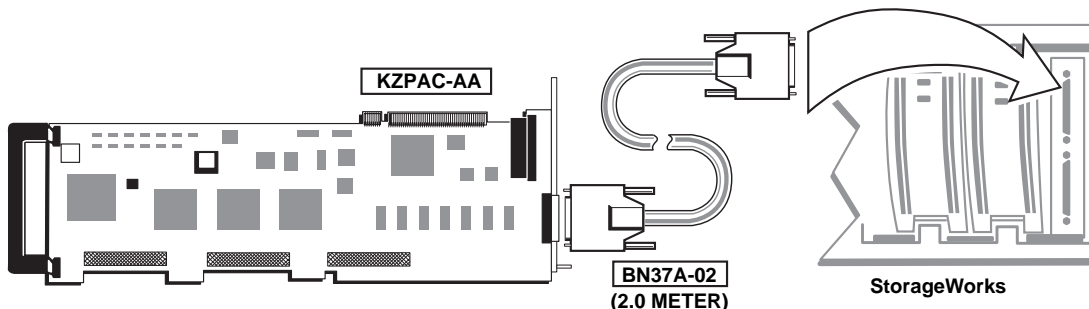
Operating System Support required for Ultra SCSI

O/S Currently Shipping	UltraSCSI Backwards compatibility with	Minimum Operating System Support
Windows NT 4.0	Windows NT 3.51	Windows NT 3.51
DIGITAL UNIX 4.0B	DIGITAL UNIX 3.2G	DIGITAL UNIX 3.2F
OpenVMS 7.1-1H1	OpenVMS 7.1-1H1	OpenVMS 6.2-1H3

Order Number	Description	Maximum # Supported Controllers	
		4x00-8 slots	4000-16 slots
KZPBA-CA	PCI one-port FWSE SCSI controller adapter	4	8
BN38C-02	2 m VHDCI cable; male to 68HD male		
BN38C-05	5 m VHDCI cable; male to 68HD male		
BN38C-10	10 m VHDCI cable; male to 68HD male		
BN38C-20	20 m VHDCI cable; male to 68HD male		



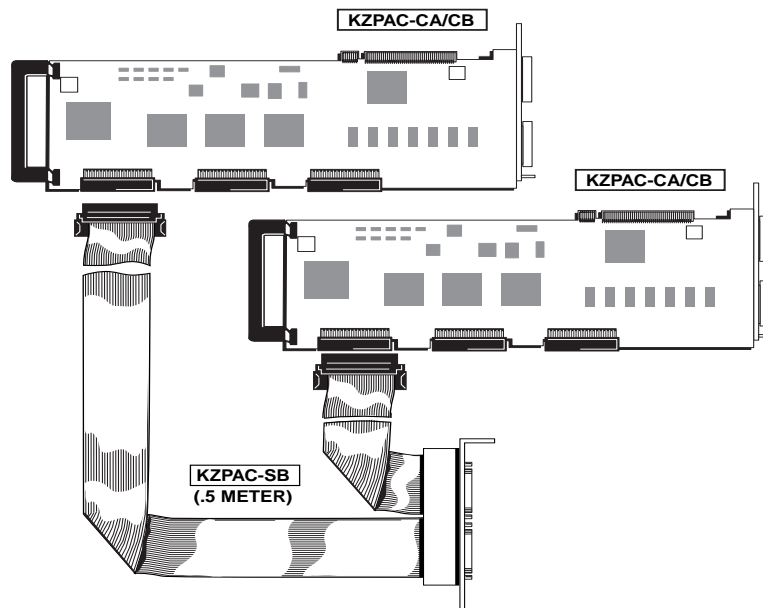
Order Number	Description	Maximum # Supported Controllers	
		4x00-8 slots	4000-16 slots
KZPAC-AA	PCI one-port FWSE SCSI RAID controller with 4 MB cache memory; includes RAID Array 230/plus Subsystem software and documentation kit; tape drives not supported. When used in an UltraSCSI shelf, it operates in UltraSCSI mode.	4	8
KZPSC-UB	Cache battery-backup for KZPAC controller		
BN37A-02	2.0 m cable; VHDCI male to VHDCI male		
BN37A-05	5.0 m cable; VHDCI male to VHDCI male		
BN37A-10	10.0 m cable; VHDCI male to VHDCI male		
BN37A-20	20.0 m cable; VHDCI male to VHDCI male		



Step 5d—UltraSCSI Backplane Storage Adapters, Controllers, Connectors, and Cables

Order Number Description		Maximum # Supported Controllers	
		4x00-8 slots	4000-16 slots
KZPAC-CA	PCI three-port RAID controller with 4 MB cache memory; includes RAID Array 230/plus Subsystem Software and documentation kit; tape drives not supported.	4	8
KZPAC-CB	Same as above with 8 MB cache memory	4	8
KZPSC-UB	Cache battery-backup for KZPAC controller		
BN37A-02	2.0 m cable; VHDCI male to VHDCI male		
BN37A-05	5.0 m cable; VHDCI male to VHDCI male		
BN37A-10	10.0 m cable; VHDCI male to VHDCI male		
BN37A-20	20.0 m cable; VHDCI male to VHDCI male		

Note: KZPAC-SB two port SCSI cable/bulkhead assembly kit is required for third-port connection.

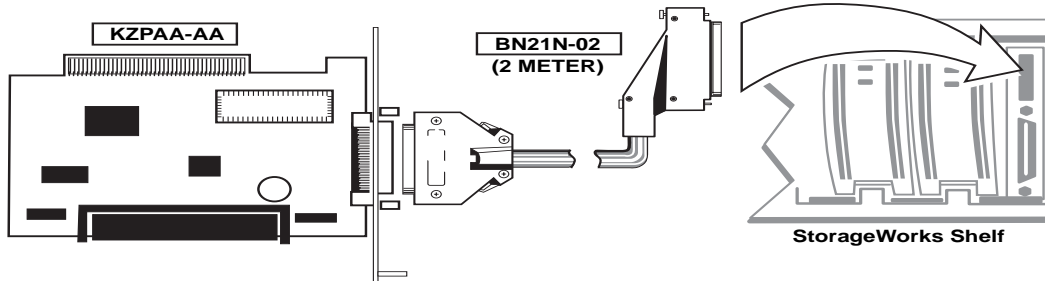


Step 5e—Fast-10 Backplane Storage Adapters, Controllers, Connectors, and Cables

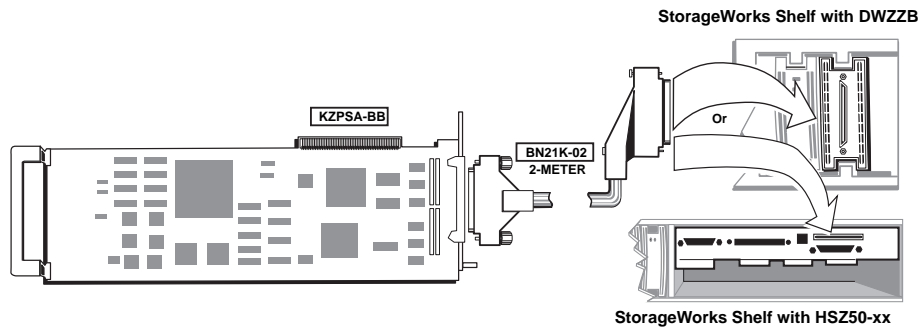
Order Number Description		Maximum # Supported Controllers	
		4x00-8 slots	4000-16 slots
KZPDA-AA	PCI one port FNSE SCSI controller	2	4
BN21K-02	2-m SCSI cable, required for each StorageWorks shelf SCSI port attached to KZPBA controller. Note: 1 KZPBA per PCI bus.		

Step 5e—Fast-10 Backplane Storage Adapters, Controllers, Connectors, and Cables (continued)

Order Number	Description	Maximum # Supported Controllers	
		4x00-8 slots	4000-16 slots
KZPAA-AA	PCI one port FNSE SCSI controller	2	2
BN21N-02	2-m 8-bit to 16-bit SCSI cable		



Order Number	Description	Maximum # Supported Controllers	
		4x00-8 slots	4000-16 slots
KZPSA-BB	PCI one-port FWD SCSI adapter; requires DWZZB-VW signal converter if connecting directly to StorageWorks shelf.	5	10
BN21K-02	02-m 16-bit SCSI cable (internal)		
BN21K-03	03-m 16-bit SCSI cable (external)		
BN21K-05	05-m 16-bit SCSI cable (external)		
BN21K-10	10-m 16-bit SCSI cable (external)		
BN21K-15	15-m 16-bit SCSI cable (external)		
BN21K-20	20-m 16-bit SCSI cable (external)		



Order Number	Description	Maximum # Supported Controllers OpenVMS V6.2-1H3	
		4x00-8 slots	4000-16 slots
KFPSA-AA	PCI-DSSI controller. Connecting to StorageWorks shelf directly, requires HSDxx controller.	4	4
BC29S-06	Connection to HSD10 installed in BA36R Pedestal shelf		
BC29S-09	Connection to HSD10 installed in BA36R Cabinet shelf		

Step 5e—Fast-10 Backplane Storage Controllers (continued)

		Maximum # Supported Controllers OpenVMS V6.2-1H3	
		4x00-8 slots	4000-16 slots
Order Number	Description		
CIPCA-BA/AA	PCI-to-CI adapter Requires two PCI slots Requires one of the following CI cables per adapter	2	6
BNCIA-10	10-m CI cable		
BNCIA-20	20-m CI cable		
BNCIA-45	45-m CI cable		

Step 5f—Non-Backplane External Storage Controllers

- .. Maximum of two BA35R-MR controller shelves are supported in the H9A10-EF/EH cabinets.
- .. The following controllers are supported for mounting in AlphaServer 4000/4100 systems.

SCSI controllers

- .. Minimum operating system support: DIGITAL UNIX V3.2G, OpenVMS V6.2-1H3, Windows NT 3.51/4.0 or later.
- .. Controllers require KZPSA-BB Fast Wide Differential SCSI controller.
- .. HSZ50-Ax requires one QB-5CJAA-SA kit
HSZ52-Ax requires two QB-5CJAA-SA kits
HSZ52-AJ requires four QB-5CJAA-SA kits

HSZ50-AF	StorageWorks RAID Array 450/HSZ50 32 MB SCSI controller, 6 SCSI channels, 36 SCSI-2 device connections, 32 LUN maximum, 32 MB cache module, single external cache battery system building block
HSZ50-AH	StorageWorks RAID Array 450/HSZ50 64 MB SCSI controller, 6 SCSI channels, 36 SCSI-2 device connections, 32 LUN maximum, 64 MB cache module, single external cache battery system building block
HSZ50-AJ	StorageWorks RAID Array 450/HSZ50 128 MB SCSI controller, 6 SCSI channels, 36 dual, 42 single SCSI-2 device connections, 32 LUN maximum, 128 MB cache module, single external cache battery system building block
HSZ52-AF	StorageWorks RAID Array 450/HSZ50 64 MB dual-SCSI controllers, 12 SCSI channels, 36 SCSI-2 device connections, 32 LUN maximum, two cache modules, one dual external cache battery system building block, two external cache batteries, two 2-meter cables
HSZ52-AH	StorageWorks RAID Array 450/HSZ50 128 MB dual-SCSI controllers, 12 SCSI channels, 36 SCSI-2 device connections, 32 LUN maximum, two cache modules, one dual external cache battery system building block, two external cache batteries, two 2-meter cables
HSZ52-AJ	StorageWorks RAID Array 450/HSZ50 256 MB dual-SCSI controllers, 12 SCSI channels, 36 SCSI-2 device connections, 32 LUN maximum, two cache modules, one dual external cache battery system building block, two external cache batteries, two 2-meter cables
HSZ54-AJ	StorageWorks RAID Array 450/HSZ50 512 MB quad-SCSI controllers, 12 SCSI channels, 72 SCSI-2 device connections, 64 LUN maximum, four cache modules, two dual external cache battery system building blocks, four external cache batteries, four 2-meter cables

DSSI controllers

- .. Supported on OpenVMS systems only.
- .. HSD10-Bx mounts in BA36R-xx StorageWorks shelf.
- .. HSD10-Bx requires BC29S-06/09 for connection from KFPSA to BA36R shelf.

HSD10-BA	StorageWorks DSSI Array controller, supports 7 SCSI-2 disks, tapes, optical devices
HSD10-BD	StorageWorks DSSI Array controller with 16 MB cache, supports 7 SCSI-2 disks, tapes, optical disks
HSD10-BF	StorageWorks DSSI Array controller with 32 MB cache, supports 7 SCSI-2 disks, tapes, optical disks

Step 5f—Non-Backplane External Storage Controllers (continued)
DSSI controllers

HSD30-CF	StorageWorks DSSI Array controller with 32 MB cache; supports 18 SCSI-2 disks, tapes, optical disks, RAID 0; includes base firmware and license
HSD50-AF	StorageWorks DSSI Array controller with 32 MB cache; 6 channel and ECB
HSD50-AH	StorageWorks DSSI Array controller with 64 MB cache; 6 channel and ECB
HSD50-AJ	StorageWorks DSSI Array controller with 128 MB cache; 6 channel and ECB
HSD52-AF	StorageWorks Dual DSSI Array controller with 64 MB cache; 6 channel and ECB
HSD52-AH	StorageWorks Dual DSSI Array controller with 128 MB cache; 6 channel and ECB
HSD52-AJ	StorageWorks Dual DSSI Array controller with 256 MB cache; 6 channel and ECB

CI Controllers

- .. Supported on OpenVMS systems only.
- .. Requires CIPCA-AA/BA Storage controller and cables (See Step 5d).
- .. Requires BA35R-MR StorageWorks Controller shelf.

HSJ50-AF	StorageWorks 6-channel CI array controller with 32 MB cache, cache battery
HSJ50-AH	StorageWorks 6-channel CI array controller with 64 MB cache, cache battery
HSJ50-AJ	StorageWorks 6-channel CI array controller with 128 MB cache, cache battery
HSJ52-AF	StorageWorks Dual CI array controller with 64 MB cache, cache battery
HSJ52-AH	StorageWorks Dual CI array controller with 128 MB cache, cache battery
HSJ52-AJ	StorageWorks Dual CI array controller with 256 MB cache, cache battery
HSJ54-AJ	StorageWorks Quad CI array controller with 512 MB cache, cache battery

Controller Accessories

H879-AA	External SCSI 68-pin, male 8-bit or 16-bit differential terminator
H885-AA	SCSI Tri-link connector, 68-pin, two female and one male connector
BN21W-0B	SCSI Y cable, 68-pin, two female and one male
BN30B-02	IEC to IEC power cord, gray for H9A10-EH Cabinet (Europe)
BN35S-02	IEC to IEC power cord, black for H9A10-EH Cabinet (Europe)
BA35R-MR	Rackmount StorageWorks controller shelf with RETMA mounting kit, and NEMA power for H9A10-EF Cabinet, Americas, Asia Pacific. Order BN30B-02 for mounting in H9A10-EH cabinet (Europe)
CK-BA35X-HH	Power supply for n+1 redundant support in UltraSCSI StorageWorks controller shelf
SC008-AC/AD	Star Coupler Passive Hub device, supports eight CI ports

Step 5g—I/O Expansion Options**AlphaServer 4100/4000 Cabinet Expansion**

To expand AlphaServer 4100/4000 Cabinet systems, order Expansion Cabinet, plus Cabinet joiner kit H9C10-JC

H9A10-EF	Expansion Cabinet with fan, Americas, Asia Pacific
H9A10-EH	Same as above for Europe
H9A10-EJ	Expansion Cabinet without fan, Americas, Asia Pacific
H9A10-EK	Same as above for Europe
H9C10-JC	Joiner Kit with brackets and trim (top gun blue)

Step 5g—I/O Expansion Options (continued)**AlphaServer 4100/4000 System Management Station Kit**

To efficiently manage multiple System Drawers in a cabinet system, the AlphaServer 4100/4000 supports a System Management Station Kit that allows multiple System Drawers to be controlled from a single terminal, keyboard and mouse housed inside an AlphaServer 4100/4000 cabinet.

- .. System Management Station Kit requires a cabinet and 19-inch of space. Station kit includes:
 - 15-inch color monitor, keyboard and mouse
 - Console switch box and mounting shelf
 - Cables for first two System Drawers (up to eight System Drawers can be supported with additional cables)
 - Door with console monitor access (factory installation only)

H4020-AA System Management Station Kit for AlphaServer 4100/4000 systems
2T-H7085-10 System Management Station Kit dual cable, 10-feet in length; each cable kit supports up to two additional System Drawers

StorageWorks Cabinets

SW800-GA SW800 Data Center Cabinet, 60Hz, top gun blue, 1700 mm high, 800 mm wide
SW800-GB SW800 Data Center Cabinet, 50Hz, top gun blue, 1700 mm high, 800 mm wide
SW500-GC SW500 Departmental Cabinet, 60Hz, top gun blue, 1100 mm high, 600 mm wide
SW500-GD SW500 Departmental Cabinet, 50Hz, top gun blue, 1100 mm high, 600 mm wide
SW300-GA SW300 Departmental Cabinet, 60Hz, top gun blue, 1100 mm high, 600 mm wide

StorageWorks Accessories

DWZZB-VW FWD SCSI-2 signal converter on one end and FWSE on other end; requires BN21K-xx cables.
BN21K-02 02-meter 16-bit SCSI cable
BN21K-03 03-meter 16-bit SCSI cable
BN21K-05 05-meter 16-bit SCSI cable
BN21K-10 10-meter 16-bit SCSI cable
BN21K-15 15-meter 16-bit SCSI cable
BN21K-20 20-meter 16-bit SCSI cable

Step 6—Networks and Communications

Systems include DE500-AA PCI 10/100-Mbit Ethernet controller (uses one PCI slot).

		Maximum # Supported Controllers	
Order Number	Description	4x00-8 slots	4000-16 slots
DE500-AA	PCI 10/100-Mbit Fast Ethernet controller (Twisted Pair)	4	4
BN25G-03	3-m (9.8 ft) cable for 10BaseT Twisted Pair connection		
BN25G-04	4-m (13.1 ft) cable for 10BaseT Twisted Pair connection		
BN25G-07	7-m (22.3 ft) cable for 10BaseT Twisted Pair connection		

		Maximum # Supported Controllers	
Order Number	Description	4x00-8 slots	4000-16 slots
DE450-CA	PCI 10-Mbit Ethernet controller; AUI, 10BaseT, or 10Base2	4	4
BNE4C-02	2-m (6.6 ft.) cable for AUI connection, Ethernet/IEEE 802.3 devices		
BNE4C-05	5-m (16.4 ft.) cable for AUI connection		
BN25G-03	3-m (9.8 ft) cable for 10BaseT Twisted Pair connection		
BN25G-04	4-m (13.1 ft) cable for 10BaseT Twisted Pair connection		
BN25G-07	7-m (22.3 ft) cable for 10BaseT Twisted Pair connection		
BC16M-06	1.8-m (6-ft) cable for 10Base2 ThinWire connection		
BC16M-15	4.8-m (5-ft) cable for 10Base2 ThinWire connection		
BC16M-30	9.1-m (30-ft) cable for 10Base2 ThinWire connection		

Step 6—Networks and Communications (continued)

		Maximum # Supported Controllers	
Order Number	Description	4x00-8 slots	4000-16 slots
DEFPA-AB	PCI to FDDI Adapter, single attachment station (SAS), multi-mode fiber (MMF), SC connector	4	4
DEFPA-DB	PCI to FDDI Adapter, DAS, MMF, SC connector	4	4
BN34D-03	3-m (9.8 ft) MIC-SC dual fiber optic cable		
BN34D-10	10-m (32.8 ft) MIC-SC dual fiber optic cable		
BN34B-03	3-m (9.8 ft) SC to SC dual fiber optic cable		
BN34B-10	10-m (32.8 ft) SC to SC dual fiber optic cable		
BN34B-20	20-m (65.6 ft) SC to SC dual fiber optic cable		
BN34B-30	30-m (98.4 ft) SC to SC dual fiber optic cable		
		Maximum # Supported Controllers	
Order Number	Description	4x00-8 slots	4000-16 slots
DEFPA-UB	PCI to FDDI Adapter, SAS, TP-PMD, requires BN25H-03	4	4
DEFPA-MB	PCI to FDDI Dual Adapter, DAS, TP-PMD, requires BN25H-03	4	4
BN25H-03	3-m (9.8 ft) FDDI crossover cable		
		Maximum # Supported Controllers DIGITAL UNIX V3.2F / V3.2G OpenVMS V6.2-1H3	
Order Number	Description	4x00-8 slots	4x00-16 slots
PBXNP-AA	PCI Token Ring adapter	1	1
BN25G-03	3-m (9.8 ft) cable		
BN25G-04	4-m (13.1 ft) cable		
BN25G-07	7-m (22.3 ft) cable		
		Maximum # Supported Controllers DIGITAL UNIX V3.2F / V3.2G OpenVMS V6.2-1H3	
Order Number	Description	4x00-8 slots	4000-16 slots
DNSES-AA	EISA-based synchronous communications controller	2	2
		Maximum # Supported Controllers DIGITAL UNIX V3.2F / V3.2G Windows NT 4.0	
Order Number	Description	Windows NT	DIGITAL UNIX
CXI01-AA	ISA-based asynchronous multiport MUX 16 port XEM	2	1
CXI01-AD	ISA-based asynchronous multiport MUX 16 port EPC	2	1
CXI01-AB	ISA-based asynchronous multiport MUX expander XEM	2	1
CXI01-AC	ISA-based asynchronous MUX cable converter (RJ45-DB25)	2	1
CXI01-AE	ISA-based asynchronous multiport MUX expander EPC	2	1
CXI01-AF	ISA-based asynchronous MUX adapter (RJ45-MJ11), 8 pack	2	1

Step 6a—MEMORY CHANNEL Controller

DIGITAL UNIX Systems

- .. Require DIGITAL UNIX V3.2G and System Console Firmware Revision 2.0.
- .. Each system node in a MEMORY CHANNEL cluster requires a software license.
- .. Servers in a compute-server array require a DIGITAL UNIX Driver for MEMORY CHANNEL License.
- .. Servers in a TruCluster high-availability environment require a license for TruCluster for DIGITAL UNIX.

OpenVMS Systems

- .. Require OpenVMS V7.1 and OpenVMS Cluster license

Configuring information:

- .. Two PCI to MEMORY CHANNEL Controllers (CCMAA-BA) supported for redundancy/failover.
- .. For two-system nodes, order one CCMAA-BA per system and one BC12N-10 cable to directly connect adapters.
- .. For three or four system nodes order one CCMHA-AA (MEMORY CHANNEL Hub), and one CCMAA-BA and one BC12N-10 cable per system node.
- .. CCMHA-AA (MEMORY CHANNEL Hub) is configured with four CCMLA-AA Line Cards and supports up to four nodes. Expansion up to eight system nodes can be achieved by adding up to four additional CCMLA-AA Line Cards.
- .. Maximum two CCMAA-BA supported per System Drawer.

Nodes	MEMORY CHANNELS	MEMORY CHANNEL Hubs	Line Cards
2	2 CCMAA-BA		
3-4	3-4 CCMAA-BA	1 CCMHA-AA	
5-8	5-8 CCMAA-BA	1 CCMHA-AA	1-4 CCMLA-AA

CCMAA-BA	PCI to MEMORY CHANNEL Controller —Single port MEMORY CHANNEL option
CCMHA-AA	100 MB MEMORY CHANNEL Hub with 4 Line Cards
CCMLA-AA	MEMORY CHANNEL Line Card for use with MEMORY CHANNEL Hub (CCMHA-AA)
CCMRA-AA	Rackmount kit for mounting MEMORY CHANNEL hub
BC12N-10	MEMORY CHANNEL cable
QB-3RLAG-AA	TruCluster Software for DIGITAL UNIX
QB-4ZCAG-AA	DIGITAL UNIX Driver for MEMORY CHANNEL license
QL-MUZAG-AA	OpenVMS Cluster license for Alpha systems

Note: For stand alone configurations, CCMHA-AA MEMORY CHANNEL Hub, includes BN19P-2E power cord for Canada, Japan, US operation. For other regions, order power cords from Step 8.

Step 7—Monitors

Systems include PCI-based graphics, which use one PCI slot.

- .. Windows NT systems: a monitor is required unless available on site.
- .. DIGITAL UNIX and OpenVMS systems: all console functions, including the RAID Configuration Utility (RCU), can be performed using a standard video terminal (VT2xx, VT3xx, VT4xx, or VT5xx) connected to one of system serial ports.
- .. Two 17-inch monitors are available: the SN-VRCX7-Wx and the SN-VRTX7-Wx. The SN-VRCX7-Wx has an optimal resolution of 1024 x 768 @85Hz, which is suitable for general productivity and high 2D graphics environments (a 3-m video cable is attached). The SN-VRTX7-Wx has an optimal resolution of 1280 x 1024 @75Hz, which is suitable for 3D graphics and high resolution environments (a detachable 3-m video cable is provided).

SN-VRCX5-WA/ W3/W4	15-inch (13.9-inch viewable image size) high resolution color monitor (Corporate Series), flat-square invar CRT with 0.28MM dot pitch. Auto-scanning VGA to 1024 X 768 @85HZ refresh rates. TCO 92, MPR-II, and Energy Star compliant. Attached video cable. -WA = Northern Hemisphere with 120V power cord. -W3 = Northern Hemisphere without power cord. -W4 = Southern Hemisphere without power cord.
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Step 7—Monitors (continued)

SN-VRCX7-WA/ W3/W4	17-inch (16.0-inch viewable image size) high resolution color monitor (Corporate Series), flat-square invar CRT with 0.28MM dot pitch. Auto-scanning VGA to 1024 x 768 @85HZ refresh rates. TCO 92, MPR-II, and Energy Star compliant. Attached video cable. -WA = Northern Hemisphere with 120V power cord. -W3 = Northern Hemisphere without power cord. -W4 = Southern Hemisphere without power cord.
SN-VRTX7-WA	17-inch (16.0-inch viewable image size) high resolution color monitor (Professional Series), Trinitron CRT with 0.25MM aperture grill pitch. Auto-scanning VGA to 1280 x 1024 @75HZ refresh rates. TCO 92, MPR-II, and Energy Star compliant. HD15 male to male video cable included. -WA = Northern Hemisphere with 120V power cord.
SN-VRT17-W4	17-inch (16.0-inch viewable image size) Professional Series auto-scan color monitor, TRINITRON CRT, 0.25 mm aperture grill pitch, VGA to 1280x1024@75 Hz, MPRII, Energy Star, HD15 male-to-male video cable, Southern Hemisphere.
SN-VRCX1-WA/ W3/W4	21-inch (19.7-inch viewable image size) high resolution color monitor (Professional Series), Diamondtron CRT with 0.28MM aperture grill pitch. Auto-scanning VGA to 1600 x 1200 @75HZ refresh rates. TCO 92, MPR-II, and Energy Star compliant. HD15 male to male video cable included. -WA = Northern Hemisphere with 120V power cord. -W3 = Northern Hemisphere without power cord. -W4 = Southern Hemisphere without power cord.

Step 8—Keyboards and Power Cords

System Drawers ordered in the Americas and Asia Pacific include keyboard, mouse and power cords. Select country-specific keyboard for all Pedestal and Cabinet systems in other countries. All keyboards are frost white.

Windows NT Keyboard	DIGITAL UNIX Keyboard	OpenVMS Keyboard	Country
LK97W-A2	LK47W-A2	LK46W-A2	US/English
LK97W-AB	LK47W-AB	LK46W-AB	Belgian
		LK46W-AC	Canadian/French
LK97W-AD	LK47W-AD	LK46W-AD	Danish
LK97W-AE	LK47W-AE	LK46W-AE	UK
		LK46W-AF	Finnish
LK97W-AG	LK47W-AG	LK46W-AG	German
		LK46W-AH	Dutch
LK97W-AI	LK47W-AI	LK46W-AI	Italian
LK97W-AK	LK47W-AK	LK46W-AK	Swiss/Generic
		LK46W-AL	Swiss/German
		LK46W-AM	Swedish
LK97W-AN	LK47W-AN	LK46W-AN	Norwegian
LK97W-AP	LK47W-AP	LK46W-AP	French
		LK46W-AQ	Canadian/English
LK97W-AS	LK47W-AS	LK46W-AS	Spanish
LK97W-AV	LK47W-AV	LK46W-AV	Portuguese

Power Cords (Note: Quantity of two required for Pedestals)

BN19A-2E	UK/Ireland
BN19C-2E	Central Europe
BN19E-2E	Switzerland
BN19H-2E	Australia/New Zealand
BN19K-2E	Denmark
BN18L-2E	Israel
BN19M-2E	Italy
BN19S-2E	India/South Africa

Step 9—Terminals and Printers

Systems include two EIA-232 asynchronous serial ports with 9-pin D-subminiature connectors, and two 9-pin to MMJ adapters (H8571-J).

DIGITAL UNIX and OpenVMS systems

Console terminals can either be a graphics monitor connected to the included video graphics adapter or a serial video terminal. If a serial video terminal is used as the console terminal, it must be VT220, VT320, VT420, or VT520 compatible. Select terminals, printers, and cables as required.

Step 10—CPU and System Upgrades

CPU Upgrades

304XR-AW	Upgrades 5/300E MHz CPU to 5/400 MHz CPU; requires mandatory return of 300E MHz CPU
304XR-DW	Upgrades 5/300E MHz CPU to 5/466 MHz CPU; requires mandatory return of 300E MHz CPU
304XR-BW	Upgrades 5/300 MHz CPU to 5/400 MHz CPU; requires mandatory return of 300 MHz CPU
304XR-EW	Upgrades 5/300 MHz CPU to 5/466 MHz CPU; requires mandatory return of 300 MHz CPU
305XR-AW	Upgrades 5/300E MHz CPU to 5/533 MHz CPU; requires mandatory return of 300E MHz CPU
305XR-BW	Upgrades 5/300 MHz CPU to 5/533 MHz CPU; requires mandatory return of 300 MHz CPU
305XR-CW	Upgrades 5/400 MHz CPU to 5/533 MHz CPU; requires mandatory return of 400 MHz CPU
305XR-DW	Upgrades 5/466 MHz CPU to 5/533 MHz CPU; requires mandatory return of 466 MHz CPU
304XR-CW	Upgrades 5/400 MHz CPU to 5/466 MHz CPU; requires mandatory return of 400 MHz CPU

System Upgrades

AlphaServer 4100 users who want 16 PCI I/O slots can upgrade their existing AlphaServer 4100 to an AlphaServer 4000 with 16 PCI slots via a field installable PCI I/O System Drawer upgrade. The upgrade includes the H7150-AA and requires customers to swap out CPU and memory to a new AlphaServer 4000 drawer which is limited to a maximum of two CPUs and 4 GB of memory. An upgrade requires the return of the existing AlphaServer 4100 drawer.

AlphaServer 4000—AlphaServer 4100			
Order Number	From	To	Includes
DN-51Z1L-AA	AlphaServer 4000	AlphaServer 4100	AlphaServer 4100 System Drawer for Windows NT. Requires mandatory return of AlphaServer 4000 System Drawer.
DA-51Z1J-AA	AlphaServer 4000	AlphaServer 4100	AlphaServer 4100 System Drawer and DIGITAL UNIX base system license. Requires mandatory return of AlphaServer 4000 System Drawer and DIGITAL UNIX license.
DY-51Z1K-AA	AlphaServer 4000	AlphaServer 4100	AlphaServer 4100 System Drawer and OpenVMS base system license. Requires mandatory return of AlphaServer 4000 System Drawer and OpenVMS license.

AlphaServer 4000 with 8 PCI slots—AlphaServer 4000 with 16 PCI slots			
Order Number	From	To	Includes
DH-53Z2A-AA	AlphaServer 4000 with 8 I/O Slots	AlphaServer 4000 * with 16 I/O Slots	AlphaServer 4000 System Drawer with I/O Expansion option. Requires mandatory return of existing AlphaServer 4000 System Drawer.
DN-53ZEA-AA	AlphaServer 4100	AlphaServer 4000 * with 16 I/O Slots (Windows NT 4.0)	AlphaServer 4000 System Drawer Upgrade for Windows NT with I/O Expansion Option. Requires mandatory return of existing AlphaServer 4100 System Drawer.

Note: 5/300 MHz CPUs (B3001-AA and B3002-AA) are not supported in the new AlphaServer 4000 8/16 PCI slot System Drawers. B3002-AA CPUs will be upgraded to B3004-BA CPUs before installation in new AlphaServer 4000 System Drawers.

Step 10—CPU and System Upgrades (continued)

AlphaServer 4100 with 8 PCI slots —AlphaServer 4000 with 16 PCI slots			
Order Number	From	To	Includes
DA-53ZEB-AA	AlphaServer 4100	AlphaServer 4000 * with 16 I/O Slots (DIGITAL UNIX)	AlphaServer 4000 System Drawer Upgrade with DIGITAL UNIX base system license and I/O Expansion Option. Requires mandatory return of existing AlphaServer 4100 System Drawer.
DY-53ZEB-AA	AlphaServer 4100	AlphaServer 4000 * with 16 I/O Slots (OpenVMS)	AlphaServer 4000 System Drawer Upgrade with OpenVMS base system license and I/O Expansion Option. Requires mandatory return of existing AlphaServer 4100 System Drawer.

Note: 5/300 MHz CPUs (B3001-AA and B3002-AA) are not supported in the new AlphaServer 4000 8/16 PCI slot System Drawers. B3002-AA CPUs will be upgraded to B3004-BA CPUs before installation in new AlphaServer 4000 System Drawers.

Step 11—Software**Windows NT systems**

Selection of language specific Windows NT Server 4.0 license, media (CD-ROM) kit is mandatory for all non-North American variants

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

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.
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DIGITAL UNIX**Software Processor Code = G for all software, 1-4 processors**

- .. DIGITAL UNIX systems include Traditional unlimited user license.
- .. DIGITAL UNIX Packaged and Base systems require operating system media and documentation for first system on site.

QL-MT5AG-AA	DIGITAL UNIX developer's extension license
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DIGITAL UNIX Media and Documentation

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

Step 11—Software (*continued*)**DIGITAL UNIX Layered Products CD-ROM**

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

DECnet Licenses

QL-MTJAG-AA DECnet/OSI end-system license for DIGITAL UNIX

OpenVMS**DIGITAL Enterprise Integration Package V2.0**

This package includes licenses for DIGITAL TCP/IP Services for OpenVMS, DECwindows Motif for OpenVMS Alpha, DECprint Supervisor for OpenVMS Alpha Plus, DECprint Supervisor for OpenVMS Open, DECnet-Plus for OpenVMS Alpha End System, Archive/Backup System for OpenVMS Management Tools, Archive/Backup Agent for Windows NT, Datametrics ViewPoint Data Collector, DIGITAL OpenVMS Disk Services for Windows NT, DIGITAL Office Server for OpenVMS, DIGITAL PATHWORKS 32, PATHWORKS V6 for OpenVMS (Advanced Server), and DIGITAL Office Server Client Access License.

OpenVMS Concurrent Use Licenses**Software Processor Code = G for all software, 1-4 processors**

- .. OpenVMS Concurrent Use license provide the right to interactively use the operating system by the specified number of concurrent users on a designated OpenVMS system.
- .. OpenVMS Concurrent Use licenses can be moved from one system to another at user discretion and can 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-MT2AG-AA OpenVMS Traditional unlimited user license

OpenVMS Media and Documentation

QA-MT1AA-H8 OpenVMS media and documentation on CD-ROM
 QA-09SAA-GZ OpenVMS base hardcopy documentation

OpenVMS Layered Products CD-ROMQA-03XAA-H8¹ Layered products media and documentation for OpenVMS on CD-ROM

1. Includes DIGITAL Enterprise Integration Server for OpenVMS media and documentation.

DIGITAL Enterprise Integration Package

QA-5LVAA-H8 DIGITAL Enterprise Integration Server for OpenVMS media and documentation

DECnet Licenses

QL-MTGAG-AA DECnet extended function license for OpenVMS
 QL-MTHAG-AA DECnet end-system to extended function upgrade license for OpenVMS

Step 12—Hardware and Software Warranty and Supplemental Services

Hardware Warranty

The AlphaServer 4100/4000 System Drawer and components installed in the System Drawer (such as CPU, memory, PCI controllers, power supplies) have a 3-year onsite, 5-day per week, 9-hour per day hardware warranty, with next day response time.

StorageWorks components contained in the Pedestal or Cabinet Systems are supported by the comprehensive StorageWorks Warranty: 5-years for disks, 3-years for controllers, 2-years for tape devices, and 1-year for other components. The first year includes onsite next day response time.

Network products in the Pedestal or Cabinet Systems carry the Network Products Warranty.

Users can upgrade to higher levels of service through a variety of hardware supplemental services.

Software Warranty

- .. Software warranty:
 - Warranty on DIGITAL UNIX and OpenVMS software is conformance to SPD with advisory telephone support for a period of ninety days.
 - Warranty on the Microsoft Windows NT Server 4.0 software is conformance to the written material accompanying the software for a period of ninety days
- .. Software service upgrades for DIGITAL UNIX include advisory and remedial software support with new version license rights for operating system for the time period indicated.
- .. Software service upgrades for OpenVMS include advisory and remedial software support with new version license rights for operating system and Enterprise Integration Package for the time period indicated.
- .. Software Supplemental Support Service options upgrade 90-day service to time period indicated below.

Value Added Services

The AlphaServer support plan is designed to accommodate critical system availability needs. The comprehensive suite of recommended services will maximize uptime and satisfaction, by enabling customers to select, at the time of their system purchase, the appropriate level of support for their information technology (IT) and business environment.

The AlphaServer Support Plan builds on the foundation of Installation and Supplemental Services to include Startup Services, Silver/Gold Support, System Healthcheck, and Availability Review/Partnership.

Installation

It is recommended that onsite installation service be included as a separate entry on any quotation.

FM-4XPCI-IN	PCI I/O expansion option installation
FM-51CPU-IN	Add-on SMP Installation
FM-51MEM-IN	Add-on Memory Installation
FM-51DWR-IN	AlphaServer 4100/4000 Drawer Installation
FM-51PED-IN	AlphaServer 4100/4000 Pedestal Installation
FM-51CAB-IN	AlphaServer 4100/4000 Cabinet Installation
FM-TRAVL-IN	One time travel charge per installation

AlphaServer 4100/4000 Software Support Supplemental Services

Windows NT

FM-WNTO2-12	1-year, Software Support Supplemental Service
FM-WNTO2-36	3-year, Software Support Supplemental Service
FM-WNTO2-60	5-year, Software Support Supplemental Service

Step 12—Hardware and Software Warranty and Supplemental Services (*continued*)
AlphaServer 4000 DIGITAL UNIX

FM-40UNS-12	1-year, Full Software Support Supplemental Service
FM-40UNS-36	3-year, Full Software Support Supplemental Service
FM-40UNS-60	5-year, Full Software Support Supplemental Service
FM-40UNN-12	1-year, Node Software Support Supplemental Service
FM-40UNN-36	3-year, Node Software Support Supplemental Service
FM-40UNN-60	5-year, Node Software Support Supplemental Service

AlphaServer 4100 DIGITAL UNIX

FM-41UNS-12	1-year, Full Software Support Supplemental Service
FM-41UNS-36	3-year, Full Software Support Supplemental Service
FM-41UNS-60	5-year, Full Software Support Supplemental Service
FM-41UNN-12	1-year, Node Software Support Supplemental Service
FM-41UNN-36	3-year, Node Software Support Supplemental Service
FM-41UNN-60	5-year, Node Software Support Supplemental Service

AlphaServer 4000 OpenVMS

FM-40VMS-12	1-year, Full Software Support Supplemental Service
FM-40VMS-36	3-year, Full Software Support Supplemental Service
FM-40VMS-60	5-year, Full Software Support Supplemental Service
FM-40VNS-12	1-year, Node Software Support Supplemental Service
FM-40VNS-36	3-year, Node Software Support Supplemental Service
FM-40VNS-60	5-year, Node Software Support Supplemental Service

AlphaServer 4100 OpenVMS

FM-41VMS-12	1-year, Full Software Support Supplemental Service
FM-41VMS-36	3-year, Full Software Support Supplemental Service
FM-41VMS-60	5-year, Full Software Support Supplemental Service
FM-41VNS-12	1-year, Node Software Support Supplemental Service
FM-41VNS-36	3-year, Node Software Support Supplemental Service
FM-41VNS-60	5-year, Node Software Support Supplemental Service

DIGITAL UNIX or OpenVMS SMP Upgrade

FM-51VMP-12	1-year, DIGITAL UNIX or OpenVMS SMP Upgrade
FM-51VMP-36	3-year, DIGITAL UNIX or OpenVMS SMP Upgrade
FM-51VMP-60	5-year, DIGITAL UNIX or OpenVMS SMP Upgrade

AlphaServer 4100/4000 Pedestal or Cabinet Enclosure with first System Drawer

FM-5BXHW-60	5-year 5 x 9, next day, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5B4HR-36	3-year 5 x 9, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5B4HR-60	5-year 5 x 9, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5B512-36	3-year 5 x 12, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5B512-60	5-year 5 x 12, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5B616-36	3-year 6 x 16, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5B616-60	5-year 6 x 16, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5B724-36	3-year 7 x 24, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5B724-60	5-year 7 x 24, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet

Step 12—Hardware and Software Warranty and Supplemental Services (*continued*)
AlphaServer 4100/4000 Pedestal or Cabinet Enclosure with first System Drawer

FM-5HXHW-60	5-year 5 x 9, next day, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5H4HR-36	3-year 5 x 9, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5H4HR-60	5-year 5 x 9, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5H512-36	3-year 5 x 12, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5H512-60	5-year 5 x 12, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5H616-36	3-year 6 x 16, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5H616-60	5-year 6 x 16, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5H724-36	3-year 7 x 24, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5H724-60	5-year 7 x 24, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5VXHW-60	5-year 5 x 9, next day, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5V4HR-36	3-year 5 x 9, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5V4HR-60	5-year 5 x 9, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5V512-36	3-year 5 x 12, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5V512-60	5-year 5 x 12, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5V616-36	3-year 6 x 16, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5V616-60	5-year 6 x 16, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet

AlphaServer 4100/4000 Pedestal or Cabinet Enclosure with first System Drawer

FM-5V724-36	3-year 7 x 24, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
FM-5V724-60	5-year 7 x 24, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet

AlphaServer 4100/4000 Memory

FM-5LXHW-60	5-year 5 x 9, next day, 128 / 512 MB Memory option
FM-5L4HR-36	3-year, 5 x 9, four hour, 128 / 512 MB Memory option
FM-5L4HR-60	5-year, 5 x 9, four hour, 128 / 512 MB Memory option
FM-5L512-36	3-year 5 x 12, four hour, 128 / 512 MB Memory option
FM-5L512-60	5-year 5 x 12, four hour, 128 / 512 MB Memory option
FM-5L616-36	3-year 6 x 16, four hour, 128 / 512 MB Memory option
FM-5L616-60	5-year 6 x 16, four hour, 128 / 512 MB Memory option
FM-5L724-36	3-year 7 x 24, four hour, 128 / 512 MB Memory option
FM-5L724-60	5-year 7 x 24, four hour, 128 / 512 MB Memory option
FM-5QXHW-60	5-year 5 x 9, next day, 1 GB Memory option
FM-5Q4HR-36	3-year, 5 x 9, four hour, 1 GB Memory option
FM-5Q4HR-60	5-year, 5 x 9, four hour, 1 GB Memory option
FM-5Q512-36	3-year 5 x 12, four hour, 1 GB Memory option
FM-5Q512-60	5-year 5 x 12, four hour, 1 GB Memory option
FM-5Q616-36	3-year 6 x 16, four hour, 1 GB Memory option
FM-5Q616-60	5-year 6 x 16, four hour, 1 GB Memory option
FM-5Q724-36	3-year 7 x 24, four hour, 1 GB Memory option
FM-5Q724-60	5-year 7 x 24, four hour, 1 GB Memory option

Step 12—Hardware and Software Warranty and Supplemental Services (*continued*)**AlphaServer 4100/4000 Memory**

FM-5TXHW-60	5-year 5 x 9, next day, 2 GB Memory option
FM-5T4HR-36	3-year, 5 x 9, four hour, 2 GB Memory option
FM-5T4HR-60	5-year, 5 x 9, four hour, 2 GB Memory option
FM-5T512-36	3-year 5 x 12, four hour, 2 GB Memory option
FM-5T512-60	5-year 5 x 12, four hour, 2 GB Memory option
FM-5T616-36	3-year 6 x 16, four hour, 2 GB Memory option
FM-5T616-60	5-year 6 x 16, four hour, 2 GB Memory option
FM-5T724-36	3-year 7 x 24, four hour, 2 GB Memory option
FM-5T724-60	5-year 7 x 24, four hour, 2 GB Memory option

AlphaServer 4100/4000 CPU Add-on Options

FM-5JXHW-60	5-year 5 x 9, next day, CPU SMP Add-on option
FM-5J4HR-36	3-year, 5 x 9, four hour, CPU SMP Add-on option
FM-5J4HR-60	5-year, 5 x 9, four hour, CPU SMP Add-on option
FM-5J512-36	3-year 5 x 12, four hour, CPU SMP Add-on option
FM-5J512-60	5-year 5 x 12, four hour, CPU SMP Add-on option
FM-5J616-36	3-year 6 x 16, four hour, CPU SMP Add-on option
FM-5J616-60	5-year 6 x 16, four hour, CPU SMP Add-on option
FM-5J724-36	3-year 7 x 24, four hour, CPU SMP Add-on option
FM-5J724-60	5-year 7 x 24, four hour, CPU SMP Add-on option

AlphaServer 4100/4000

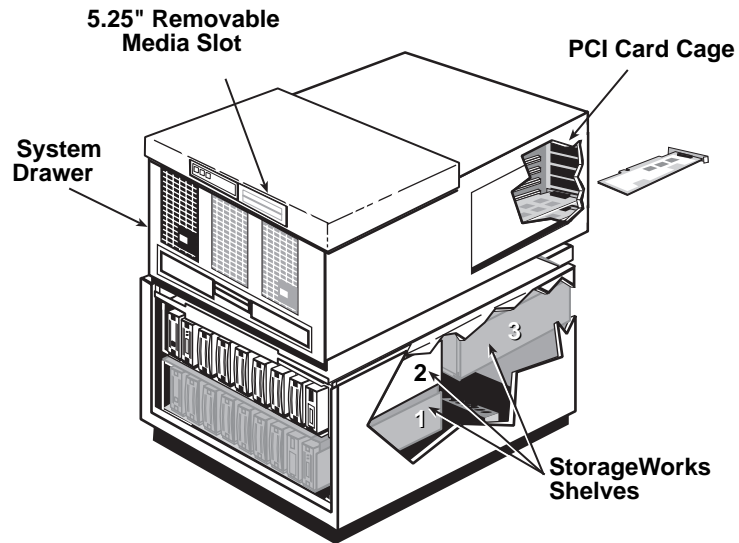
Specifications

Specifications	Pedestal System		Cabinet System		System Drawer	
External Dimensions						
Height	75 cm (29.5 in)		170 cm (67.0 in)		30 cm (11.8 in)	
Width	49 cm (19.3 in)		60 cm (23.6 in) Rack		45 cm (17.7 in)	
Depth	90 cm (35.4 in)		90 cm (35.4 in)		69 cm (27.2 in)	
Weight	113.6 kg (250 lb)		350.9 kg (772 lb)		45.5 kg (100 lb)	
Clearances						
	Operating/	Service	Operating/	Service	Operating/	Service
Front	20 cm (7.9 in)	61 cm (24.1 in)	60 cm (23.6 in)	100 cm (39.4 in)	20 cm (7.9 in)	20 cm (7.9 in)
Rear	20 cm (7.9 in)	61 cm (24.1 in)	60 cm (23.6 in)	100 cm (39.4 in)	20 cm (7.9 in)	20 cm (7.9 in)
Sides	20 cm (7.9 in)	61 cm (24.1 in)	20 cm (7.9 in)	61 cm (24.0 in)	0	0
Environmental						
Temperature (min/maximum)						
Operating ¹	10°C - 40°C (50°F - 104°F)		10°C - 40°C (50°F - 104°F)		10°C - 40°C (50°F - 104°F)	
Nonoperating	-40°C - 66°C (-40°F - 150.8°F)		-40°C - 66°C (-40°F - 150.8°F)		-40°C - 66°C (-40°F - 150.8°F)	
Storage (60 days)	-40°C - 66°C (-40°F - 150.8°F)		-40°C - 66°C (-40°F - 150.8°F)		-40°C - 66°C (-40°F - 150.8°F)	
Rate of Change	11°C - 19.8°C/hr (20°F - 36°F/hr)		11°C - 19.8°C/hr (20°F - 36°F/hr)		11°C - 19.8°C/hr (20°F - 36°F/hr)	
Relative Humidity						
Operating	20%-90% noncondensing		20%-90% noncondensing		20% 90% noncondensing	
Nonoperating	10%-95%		10%-95%		10%-95%	
Storage (60 days)	10%-95%		10%-95%		10%-95%	
4100 Max Heat Dissipation	1800 ² W, 6143 BTU/hr		4800 W, 16382 BTU/hr		1100 W, 3754 BTU/hr	
4000 Max Heat Dissipation	1450 ² W, 6143 BTU/hr		4800 W, 16382 BTU/hr		700 W, 3754 BTU/hr	
Airflow						
Quantity	200 CFM		300 CFM ³		200 CFM	
Intake	Rear		Rear		Rear	
Exhaust	Front		Front and Top		Front	
Altitude						
Operating	3,050 m (10,000 ft)		3,050 m (10,000 ft)		3,050 m (10,000 ft)	
Nonoperating	12,200 m (40,000 ft)		12,200 m (40,000 ft)		12,200 m (40,000 ft)	
Mechanical Shock						
Operating	1.5 G, 10+/-3 ms		5 G, 10+/-3 ms		10 G, 10+/-3 ms	
Vibration (min/maximum)						
Operating	5-10 Hz	0.02 in-da	5-10 Hz	0.02 in-da	5-10 Hz	0.02 in-da
	10-500 Hz	0.1 G	10-500 Hz	0.1 G	10-500 Hz	0.1 G
Acoustics	6.2 LNPEc (Bels)		6.7 LNPEc (Bels)		5.8 LNPEc (Bels)	
Electrical (min/maximum)						
	US	Europe	US	Europe		
Voltage	100-120 V	200-240 V	100-120 V	200-240 V	100-120/200-240 V	
Phase	Single	Single	Single	Single	Single	
Nominal Frequency	50 Hz -60 Hz	50 Hz -60 Hz	50 Hz -60 Hz	50 Hz -60 Hz	50 Hz -60 Hz	
Maximum rated current	12 A	10 A	24 + 24 A	16 + 16 A	8.4 A/4.2 A	
	(multiple cord set)	(multiple cord set)	dual controllers	dual controllers	(single cord set)	
					8 A/4 A	
					(multiple cord set)	
AlphaServer 4100 typical power	720 W	920 W	config-specific	config-specific	650 W	
AlphaServer 4000 typical power	550 W	550 W	config-specific	config-specific	430 W	
Power Cord						
Length	450 cm (177 in)	200-250 cm	450 cm (177 in)	450 cm	250 cm (98.4 in)	
Plug	NEMA 5-15P	Country specific	NEMA L5-30P	IEC309, 32A	IEC 320	
Agency Approvals						
	CAN/CSA-C22.2 No. 950-M95		CAN/CSA-C22.2 No. 950-M95		CAN/CSA-C22.2 No. 950-M95	
	UL 1950, Ed.3		UL 1950, Ed.3		UL 1950, Ed.3	
	TUV EN 60 950/ A3 GS		TUV EN 60 950/ A3 GS		TUV EN 60 950/ A3 GS	
	IEC 950 2 nd Ed. 3 rd amend		IEC 950 2 nd Ed. 3 rd amend		IEC 950 2 nd Ed. 3 rd amend	
	FCC part 15.B Class A		FCC part 15.B Class A		FCC part 15.B Class A	
	CE		CE		CE	

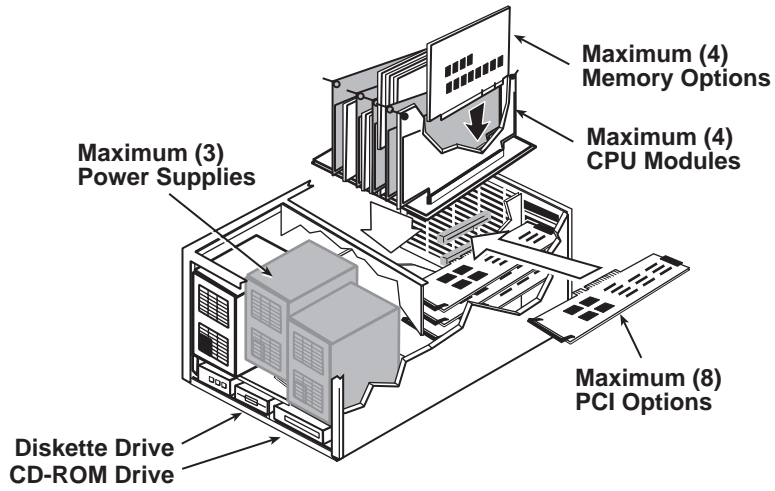
1. Maximum operating temperature at sea level. Reduce by 1C (1.8F) for every 600 m (2000 ft) above sea level.

2. Maximum power consumption for two line cords. Cabinet fans only.


AlphaServer 4100/4000



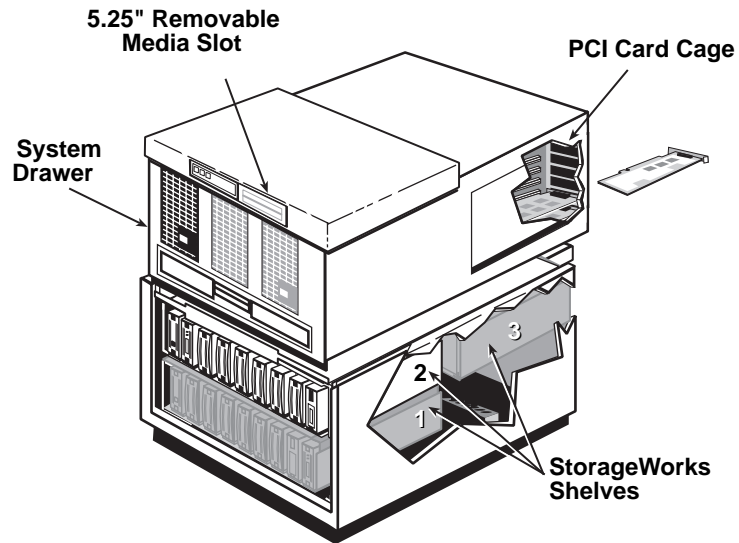
AlphaServer 4100 Pedestal System



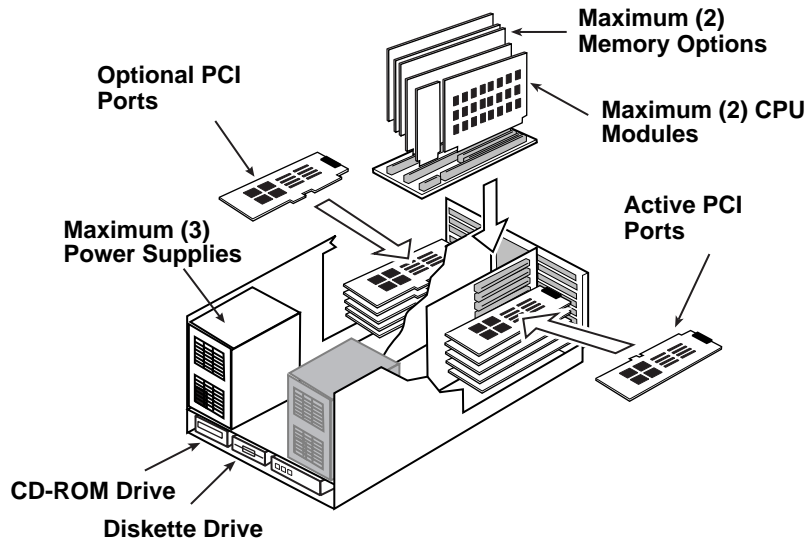
AlphaServer 4100 System Drawer

 = Optional

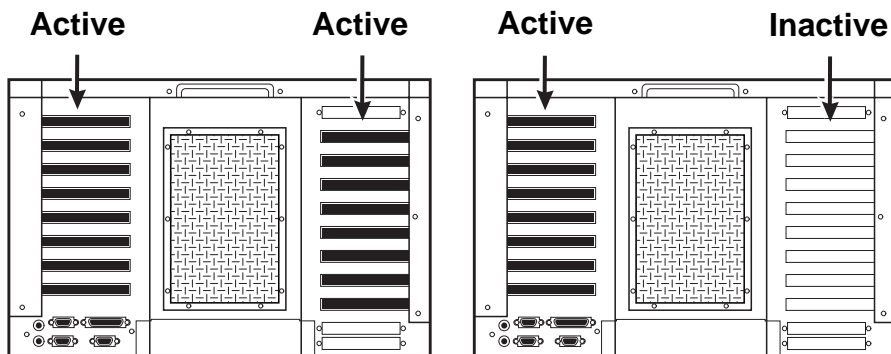
AlphaServer 4100/4000



AlphaServer 4000 Pedestal System



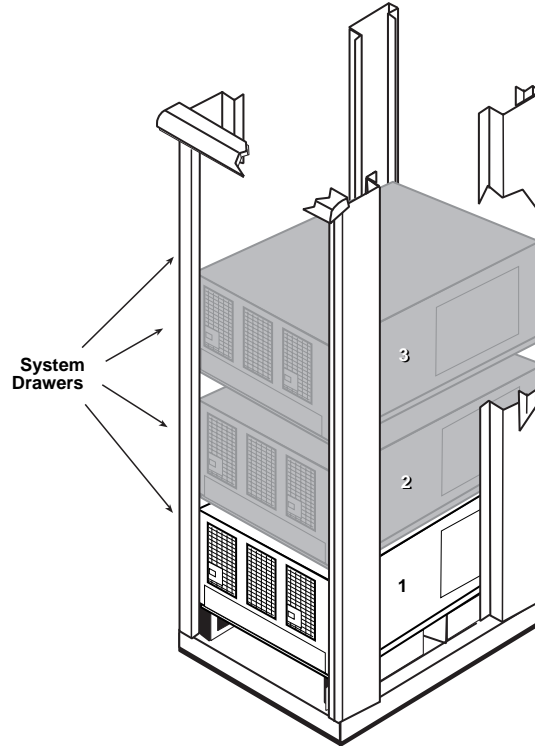
AlphaServer 4000 System Drawer



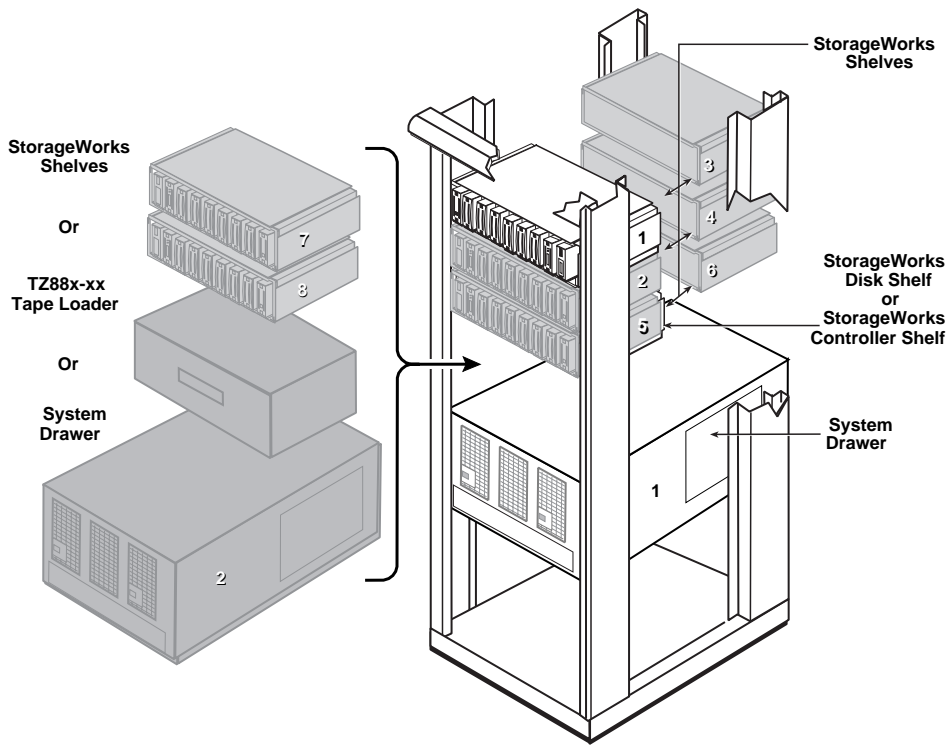
AlphaServer 4000 with 16 Active PCI Slots, includes H7150-AA

AlphaServer 4000 with 8 Active PCI Slots, supports H7150-AA


AlphaServer 4100/4000



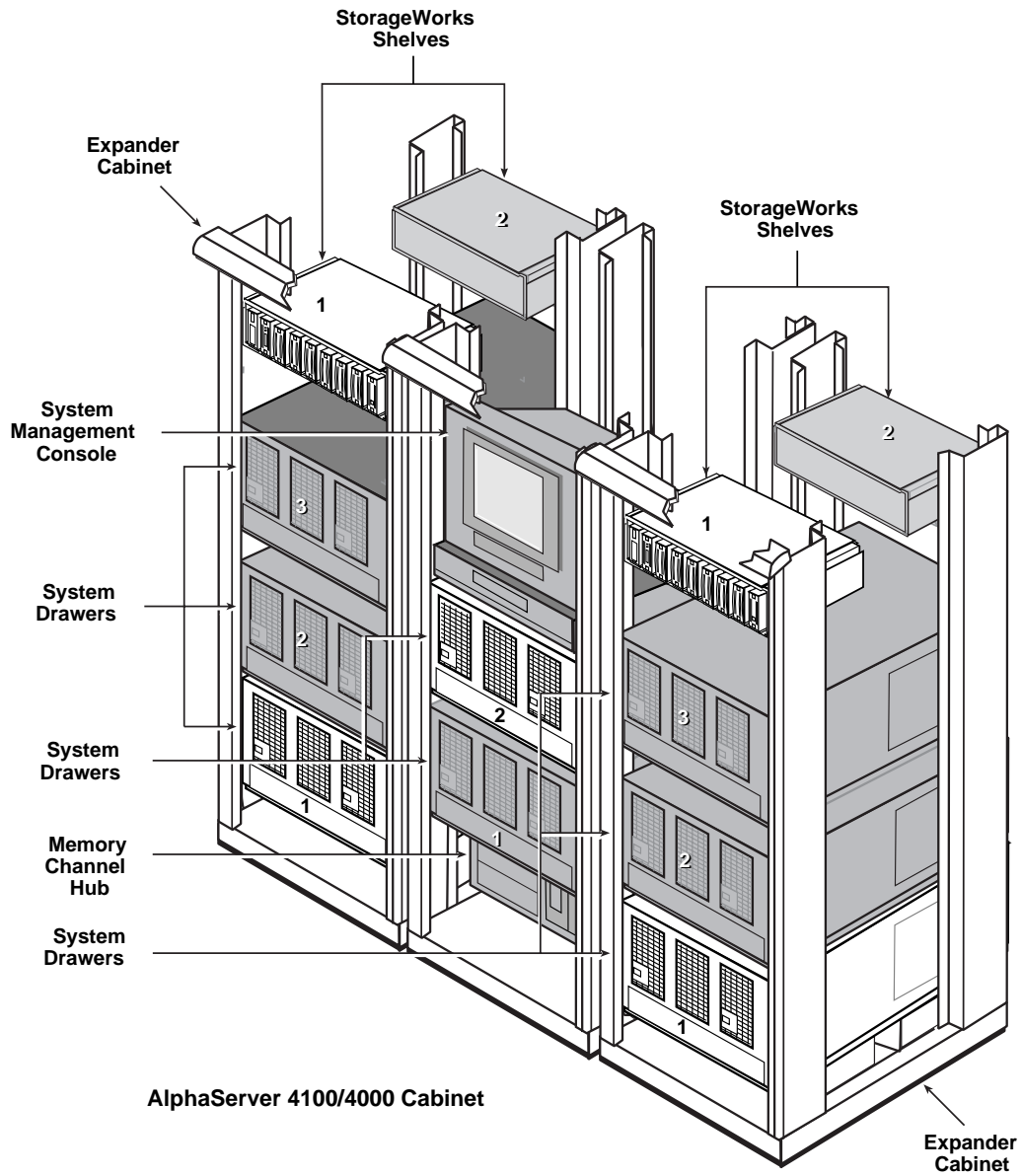
AlphaServer 4100/4000 Cabinet




AlphaServer 4100/4000 Cabinet

 = Optional

AlphaServer 4100/4000



 = Optional