



**AlphaServer 4100/4000**  
**V2.3—22 April 1998**  
DIGITAL Systems and Options Catalog

**Product Description**

The AlphaServer 4000/4100 family of mid-range servers now supports **5/600** MHz of processing power with 8MB on-board cache. The last of the EV56 processors, the 5/600 MHz processor surpasses the entire EV56 family members (5/533, 5/466, 5/400, each with 4MB on-board cache) with a 25% boost in cache performance plus a 12.5% boost in CPU performance over the 5/533 processor.

**AlphaServer 4100 5/600 MHz Packaged Systems** include 1 GB or 2 GB high-performance memory, 10/100-Mbit Ethernet adapter (DE500-AA), and a single channel UltraSCSI adapter (KZPBA-CA).

**New AlphaServer 4000 5/600 and 5/533 Packaged Systems** include 1 GB of high-performance memory, as well as a 10/100-Mbit Ethernet adapter (DE500-AA), and a single channel UltraSCSI adapter (KZPBA-CA).

The high-performance (50ns) memory is also offered as an option for AlphaServer 4100 5/533, 5/466 and 5/400 systems, and for AlphaServer 4000 5/466 and 5/400 systems. In addition, 5/600 MHz SMP CPU processors are available as add-on CPUs or as upgrades.

AlphaServer 4100 systems support up to 4 CPU processors, up to 4 memory options, and up to 8 PCI I/O slots. AlphaServer 4000 systems support up to 2 CPU processors, up to 2 memory options, and up to 16 PCI I/O slots. All AlphaServer mid-range servers are Members of Digital's Universal Platform, which supports DIGITAL UNIX, OpenVMS, and Windows NT operating systems. These universal systems also include ServerWORKS Manager for advanced server and network management capabilities, and Internet software for global Internet solutions.

AlphaServer systems offer pedestal and rackmount configurations. Pedestal systems support one drawer and up to three StorageWorks shelves. Cabinet systems support up to three drawers and up to 8 StorageWorks shelves. Regardless of the configuration you choose, the AlphaServer 4100 is Digital's flagship mid-range product. The powerful 5/600MHz processor with 8MB cache combined with faster high-performance memory deliver an even higher standard for mid-range computing.

DIGITAL AlphaServers continue to deliver on the Universal Platform Guarantee: that DIGITAL AlphaServers support any of the three operating systems offered by DIGITAL. The Universal AlphaServers in top gun blue enclosures running DIGITAL UNIX or OpenVMS can also run Windows NT. AlphaServer 4000/4100 systems can migrate from DIGITAL UNIX or OpenVMS to Windows NT Server with a simple license and software change. DIGITAL offers Windows NT Server 4.0 Enterprise Edition Conversion kits with installation and services by a team of qualified DIGITAL professionals to make this system migration easy and timely. See Step 13 for Windows NT migration information.

---

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 1998 Digital Equipment Corporation. All rights reserved

---

## 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, or  
5/600 MHz CPU, 8 MB secondary cache
  - 8 PCI slots (five available)<sup>1</sup>
- 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, or  
5/600 MHz CPU, 8 MB secondary cache
  - 8 PCI slots (5 available)<sup>1</sup>, or  
16 PCI slots<sup>2</sup> (13 available) with PCI slot expansion option installed, or if 16-slot AlphaServer 4000 is ordered
  - 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 warranty<sup>3</sup>
- Software warranty<sup>3</sup>

1. 3 I/O slots are EISA/PCI combination slots
2. 6 I/O slots are EISA/PCI combination slots
3. For Warranty description and available service upgrades, see Step 12.

**Step 1a—AlphaServer 4100 Systems (continued)****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. 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.
- .. A video monitor is required for system management; order separately if not available at customer site.
- .. For information on Mid-range Windows NT Conversion Software Kits, see Step 13.

**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-51LAC-FB	5/600	8MB	1GB high performance	5 PCI
DA-51LAC-GB	5/600	8MB	2GB high performance	5 PCI
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	4MB	128MB	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-51LAC-FB	5/600	8MB	1 GB high performance	5 PCI
DY-51LAC-GB	5/600	8MB	2 GB high performance	5 PCI
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	4MB	128MB	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 (continued)****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.

**.. 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. 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.

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

.. For information on Mid-range Windows NT Conversion Software Kits, see Step 13.

**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 <sup>1</sup>
DN-53KEC-EA	Included	5/533	4 MB	512 MB	5 PCI <sup>1</sup>
DN-53KEC-FA	Included	5/533	4 MB	1 GB	5 PCI <sup>1</sup>
DN-53KEC-GA	Included	5/533	4 MB	2 GB	5 PCI <sup>1</sup>
DN-53JEC-CA	Included	5/466	4 MB	128 MB	5 PCI <sup>1</sup>
DN-53JEC-EA	Included	5/466	4 MB	512 MB	5 PCI <sup>1</sup>
DN-53JEC-FA	Included	5/466	4 MB	1 GB	5 PCI <sup>1</sup>
DN-53JEC-GA	Included	5/466	4 MB	2 GB	5 PCI <sup>1</sup>
DN-53HEC-CA	Included	5/400	4 MB	128 MB	5 PCI <sup>1</sup>
DN-53HEC-EA	Included	5/400	4 MB	512 MB	5 PCI <sup>1</sup>
DN-53HEC-FA	Included	5/400	4 MB	1 GB	5 PCI <sup>1</sup>
DN-53HEC-GA	Included	5/400	4 MB	2 GB	5 PCI <sup>1</sup>

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 <sup>1</sup>
DN-53KEC-EB	Mandatory	5/533	4 MB	512 MB	5 PCI <sup>1</sup>
DN-53KEC-FB	Mandatory	5/533	4 MB	1 GB	5 PCI <sup>1</sup>
DN-53KEC-GB	Mandatory	5/533	4 MB	2 GB	5 PCI <sup>1</sup>
DN-53JEC-CB	Mandatory	5/466	4 MB	128 MB	5 PCI <sup>1</sup>
DN-53JEC-EB	Mandatory	5/466	4 MB	512 MB	5 PCI <sup>1</sup>
DN-53JEC-FB	Mandatory	5/466	4 MB	1 GB	5 PCI <sup>1</sup>
DN-53JEC-GB	Mandatory	5/466	4 MB	2 GB	5 PCI <sup>1</sup>
DN-53HEC-CA	Mandatory	5/400	4 MB	128 MB	5 PCI <sup>1</sup>
DN-53HEC-EB	Mandatory	5/400	4 MB	512 MB	5 PCI <sup>1</sup>
DN-53HEC-FB	Mandatory	5/400	4 MB	1 GB	5 PCI <sup>1</sup>
DN-53HEC-GB	Mandatory	5/400	4 MB	2 GB	5 PCI <sup>1</sup>

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-53LEC-FB	5/600	8 MB	1 GB high performance	13 PCI
DA-53KEC-FB	5/533	4 MB	1 GB high performance	13 PCI
DA-53KEC-EA	5/533	4 MB	512 MB	5 PCI <sup>1</sup>
DA-53KEC-FA	5/533	4 MB	1 GB	5 PCI <sup>1</sup>
DA-53KEC-GA	5/533	4 MB	2 GB	5 PCI <sup>1</sup>
DA-53JEC-EA	5/466	4 MB	512 MB	5 PCI <sup>1</sup>
DA-53JEC-FA	5/466	4 MB	1 GB	5 PCI <sup>1</sup>
DA-53JEC-GA	5/466	4 MB	2 GB	5 PCI <sup>1</sup>
DA-53HEC-CA	5/400	4 MB	128 MB	5 PCI <sup>1</sup>
DA-53HEC-EA	5/400	4 MB	512 MB	5 PCI <sup>1</sup>
DA-53HEC-FA	5/400	4 MB	1 GB	5 PCI <sup>1</sup>
DA-53HEC-GA	5/400	4 MB	2 GB	5 PCI <sup>1</sup>

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-53LEC-FB	5/600	8 MB	1 GB high performance	13 PCI
DY-53KEC-FB	5/533	4 MB	1 GB high performance	13 PCI
DY-53KEC-EA	5/533	4 MB	512 MB	5 PCI <sup>1</sup>
DY-53KEC-FA	5/533	4 MB	1 GB	5 PCI <sup>1</sup>
DY-53KEC-GA	5/533	4 MB	2 GB	5 PCI <sup>1</sup>
DY-53JEC-EA	5/466	4 MB	512 MB	5 PCI <sup>1</sup>
DY-53JEC-FA	5/466	4 MB	1 GB	5 PCI <sup>1</sup>
DY-53JEC-GA	5/466	4 MB	2 GB	5 PCI <sup>1</sup>
DY-53HEC-CA	5/400	4 MB	128 MB	5 PCI <sup>1</sup>
DY-53HEC-EA	5/400	4 MB	512 MB	5 PCI <sup>1</sup>
DY-53HEC-FA	5/400	4 MB	1 GB	5 PCI <sup>1</sup>
DY-53HEC-GA	5/400	4 MB	2 GB	5 PCI <sup>1</sup>

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 UltraSCSI 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  
**BA36R-SE**            Split-bus UltraSCSI StorageWorks shelf for Pedestal  
**DS-RZ1CB-VW**        UltraSCSI StorageWorks 4.3 GB disk drive

---

**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, input power plug NEMA L5-30P, Americas, ASIA PACIFIC  
**H9A10-EH**            240 V dual 16 A controller, each with 12 IEC C13 outlets, input power plug IEC 309, 16A, Europe

**StorageWorks UltraSCSI 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  
**BA36R-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	14 in	8U	1	8
					2	6
					3	2
H9A10-EH	CK-BA30A-BB	Front	14 in	8U	1	8
					2	6
					3	2

**Note:** H9A10-EF/EH has a total of 31 U of usable space for configuring the cabinet.  
For assistance in configuring a Cabinet System with four System Drawers, contact DIGITAL CustomSystems 1-800-DIGITAL.

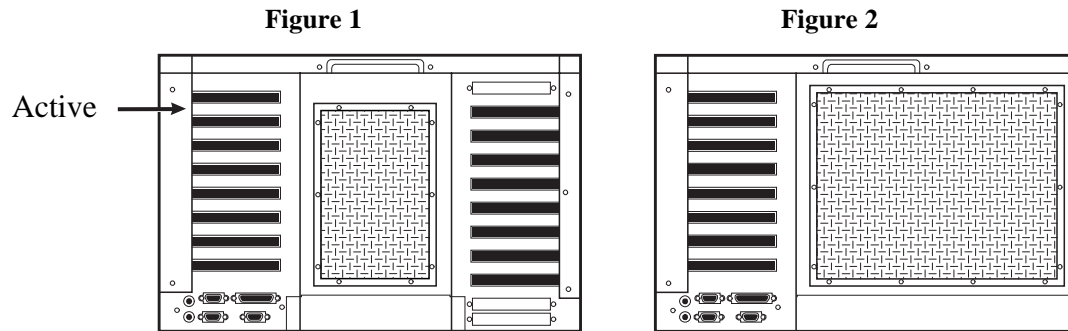
---

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

- .. All new AlphaServer 4000 System Drawers include 16 PCI knockouts on PCI bulkhead with 8 active PCI slots (see Figure 1).
- .. To convert an existing 8 PCI slot AlphaServer 4000 system to a 16 PCI slot AlphaServer 4000 system, order 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 systems with 8 PCI knockouts on PCI bulkhead (Figure 2), can be upgraded to an AlphaServer 4000 with 16 PCI slots.




---

**Step 2—Additional CPU Modules (CPU Add-On or CPU 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.
- .. Minimum revision of SRM console for 5/600MHz is V5.0-2. The console must be at this minimum revision, or greater, prior to installing the 5/600MHz (B3006-EB) modules.
- .. See Step 13 for Windows NT Conversion Software Kits.

<b>KN304-BA</b>	DIGITAL UNIX SMP upgrade includes one 5/400 (4 MB) CPU and DIGITAL UNIX SMP license
<b>KN304-DB</b>	DIGITAL UNIX SMP upgrade includes one 5/466 (4 MB) CPU and DIGITAL UNIX SMP license
<b>KN305-DB</b>	DIGITAL UNIX SMP upgrade includes one 5/533 (4MB) CPU and DIGITAL UNIX SMP license
<b>KN306-AB</b>	DIGITAL UNIX SMP upgrade includes one 5/600 (8MB) CPU and DIGITAL UNIX SMP license
<b>KN304-BB</b>	OpenVMS SMP upgrade includes one 5/400 (4 MB) CPU and OpenVMS SMP license
<b>KN304-DC</b>	OpenVMS SMP upgrade includes one 5/466 (4 MB) CPU and OpenVMS SMP license
<b>KN305-DC</b>	OpenVMS SMP upgrade includes one 5/533 (4MB) CPU and OpenVMS SMP license
<b>KN306-AC</b>	OpenVMS SMP upgrade includes one 5/600 (8MB) CPU and OpenVMS SMP license
<b>KN304-BC</b>	Windows NT SMP upgrade includes one 5/400 (4 MB) CPU; SMP license not required
<b>KN304-DD</b>	Windows NT SMP upgrade includes one 5/466 (4 MB) CPU; SMP license not required
<b>KN305-DD</b>	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. Includes U.S. power cord, order country-specific power cord for use outside U.S.

**H7291-AA** 450 Watt power supply

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

**Note:** 1<sup>st</sup> power supply supports 2 CPUs and 8 active PCI slots.

2<sup>nd</sup> 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.

3<sup>rd</sup> power supply provides N+1 support for 2 CPU systems and 16 active PCI slots.

---

### Step 4—Memory

AlphaServer 4100/4000 memory options are in memory pairs. Do not mix 50ns memory and 60ns memory within the same memory pair. For installed base systems or add on memory, the AlphaServer 4100 motherboard (54-23803-01) must be of minimum Revision B07.0 for high-performance memory options (MS332-xx).

- .. All System Drawers include one memory option.
- .. AlphaServer 4100 System Drawer supports up to three additional memory options:
  - DIGITAL UNIX and OpenVMS systems support a maximum of 8 GB of memory
  - Windows NT 3.51 supports a maximum of 2 GB of memory
  - Windows NT 4.0 supports a maximum of 4 GB of memory
- 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.

<b>MS320-CA</b>	128 MB memory option (Synch, 60ns)
<b>MS330-EA</b>	512 MB memory option (EDO, 60ns)
<b>MS330-FA</b>	1 GB memory option (EDO, 60ns)
<b>MS330-GA</b>	2 GB memory option (EDO, 60ns)
<b>MS332-FA</b>	1 GB high-performance memory option (EDO, 50ns)
<b>MS332-GA</b>	2 GB high-performance memory option (EDO, 50ns)

---

### 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 at URL= [http://www.digital.com/alphaserver/tech\\_docs/alphasrv4100/docs/supported\\_options.html](http://www.digital.com/alphaserver/tech_docs/alphasrv4100/docs/supported_options.html)

---

#### Step 5a—Disk Drives

<b>DS-RZ1BB-VW</b>	2.1 GB 7200 RPM 16-bit UltraSCSI disk drive, top gun blue, SBB
<b>DS-RZ1CB-VW</b>	4.3 GB 7200 RPM 16-bit UltraSCSI disk drive, top gun blue, SBB
<b>DS-RZ1DB-VW</b>	9.1 GB 7200 RPM 16-bit UltraSCSI disk drive, top gun blue, SBB
<b>DS-RZ1EF-VW</b>	18.2 GB 7200 RPM 16-bit UltraSCSI disk drive, top gun blue, SBB
<b>DS-RZ1CB-NT</b>	AlphaServer 4100/4000 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)

<b>TLZ09-LK</b>	8 GB 4 mm DAT 93 MB/min (compressed) 5.25-inch SCSI tape drive, frost white
<b>TLZ10-LK</b>	8 GB 4 mm DAT 93 MB/min (compressed) 5.25-inch SCSI tape drive, frost white
<b>RRD46-AC</b>	600 MB 12x speed CD-ROM 5.25-inch drive, top gun blue
<b>RRD46-AB</b>	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

<b>TLZ09-VA</b>	8 GB 4 mm DAT 93 MB/min (compressed) 5.25-inch SCSI tape drive in StorageWorks carrier
<b>DS-TLZ10-VA</b>	12/24 GB 4 mm DAT 3.25-inch SCSI tape drive in StorageWorks carrier
<b>DS-TLZ10-DB</b>	12/24 GB 4 mm DAT SCSI tape drive, Tabletop
<b>DS-TZ89N-TA</b>	35/70 GB DLT Table-top tape drive, 68-pin HD female SCSI connector
<b>DS-TZ89N-VW</b>	35/70 GB 5.25 inch single-bus SCSI DLT in StorageWorks carrier
<b>TZK11-VA</b>	2 GB QIC tape drive in StorageWorks carrier
<b>DS-RRD46-VA</b>	600 MB 12X CD-ROM drive in StorageWorks carrier
<b>TLZ9L-VA</b>	96 GB 4mm DAT 1.2MB/s loader in StorageWorks carrier
<b>TLZ9L-DB</b>	32-64 GB 4mm DAT Tabletop tape loader for 50HD SCSI host connector
<b>DS-TL891-NE</b>	10-cartridge DLT mini library, 1 TZ89N-AV, mount in cabinet tape drive, Interlock Kit required (2T-TL891-SL)
<b>DS-TL891-NT</b>	10-cartridge DLT mini library, 1 TZ89N-AV, table-top tape drive

---

## Step 5c—StorageWorks Shelves

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

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>.. Pedestal Enclosure supports maximum of three BA36R-SD/SE UltraSCSI StorageWorks Shelves.</li> <li>.. Cabinet Enclosure supports maximum of eight BA36R-RC/RD UltraSCSI StorageWorks shelves.</li> </ul> | <ul style="list-style-type: none"> <li>.. Maximum of two BA35R-MR controller shelves supported in RETMA cabinet.</li> <li>.. Additional StorageWorks UltraSCSI shelves require controller(s) and cables.</li> </ul> |
|---|---|

### UltraSCSI Configuration Rules

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>.. UltraSCSI configurations require UltraSCSI components (adapters/shelves/disks/cables).</li> <li>.. UltraSCSI adapters and RAID controllers support UltraSCSI disks at UltraSCSI speeds in UltraSCSI shelves (BA36R-xx) shelves.</li> </ul> | <ul style="list-style-type: none"> <li>.. Fast-10 SCSI shelves may not be retrofitted. When connecting to an UltraSCSI adapter, replace Fast-10 SCSI shelf with UltraSCSI (BA36R-xx) shelf.</li> <li>.. UltraSCSI drives and Fast-10 devices can be mixed in BA36R-xx UltraSCSI shelf. Drives negotiate maximum transfer speeds with UltraSCSI adapter/controller.</li> </ul> |
|--|---|

---

**Step 5c—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, and 180-Watt power supply in system building block (SBB), mounting hardware, and power cord. UltraSCSI shelves operate in UltraSCSI mode when connected to UltraSCSI KZPBA-CA adapters and KZPAC-AA/CA/CB controllers.

- .. 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**

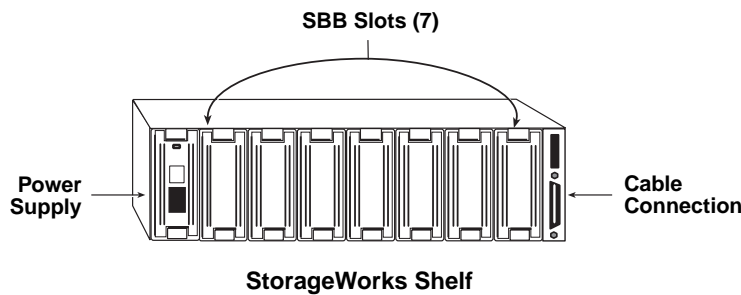
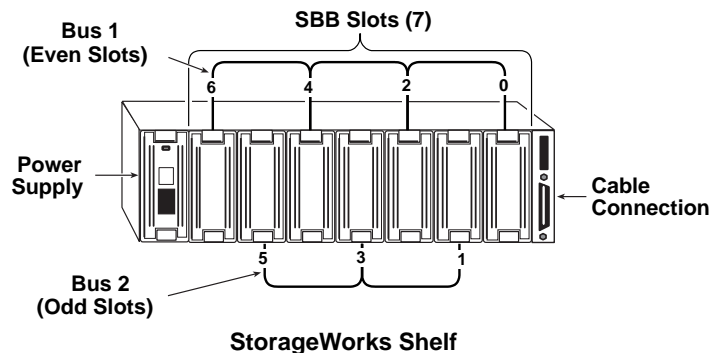
StorageWorks Fast-10 SCSI Shelf kits include a BA356 16-bit Wide StorageWorks shelf, and a 16-bit personality module with a power supply in system building block (SBB), mounting hardware, and power cord. Fast-10 shelves operate in Fast-10 mode when connected to KZPDA-AA, KZPAA-AA, and KZPSA-BB adapters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

**Note:** BA36R-SB and -RA shelves are not supported when connected to the KZPBA-CA UltraSCSI adapter included with system.

**BA36R-SB** Pedestal StorageWorks Fast-10 SCSI shelf kit (Worldwide)

**BA36R-RA** Cabinet StorageWorks Fast-10 shelf kit (Worldwide)

**BA35X-ME** Split bus mode active terminator for BA36R shelf

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

**Step 5d—PCI-based Adapters, Controllers, Connectors, and Cables**

- .. Systems include KZPBA-CA PCI one-port UltraSCSI Single Ended adapter, and a BN38C-02 cable.
- .. The following UltraSCSI adapters and controllers can be configured in AlphaServer 4100/4000 System Drawers. See the following chart for minimum operating system support required.

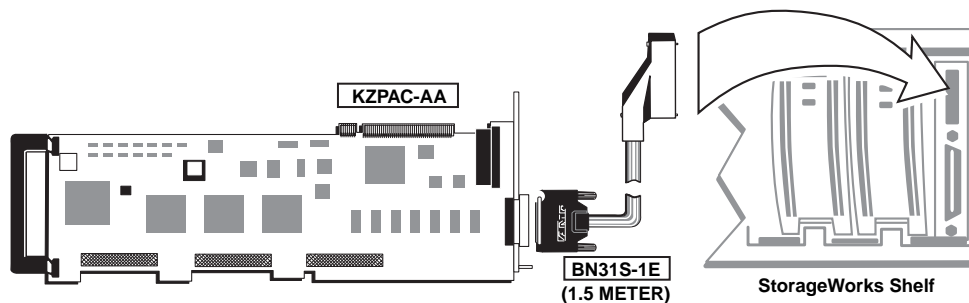
**Minimum Operating System Support Chart**

Operating System Currently Shipping	Minimum O/S required for UltraSCSI	Minimum O/S required for Non UltraSCSI	Year 2000- Ready Version
Windows NT 4.0	Windows NT 3.51	Windows NT 3.51	Windows NT V4.0
DIGITAL UNIX 4.0D	DIGITAL UNIX 3.2G	DIGITAL UNIX 3.2F	DIGITAL UNIX 4.0D
OpenVMS 7.1-1H1	OpenVMS 7.1-1H1	OpenVMS 6.2-1H3	OpenVMS 7.1-1H with patch-Patches also available for OpenVMS V6.2

		Maximum # Supported Controllers	
Order Number	Description	4x00-8 slots	4000-16 slots
KZPBA-CA	PCI one-port UltraSCSI Single-ended adapter	5	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		

		Maximum # Supported Controllers	
Order Number	Description	4x00-8 slots	4000-16 slots
KZPBA-CB	PCI one-port UltraSCSI Fast Wide Differential adapter	5	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		

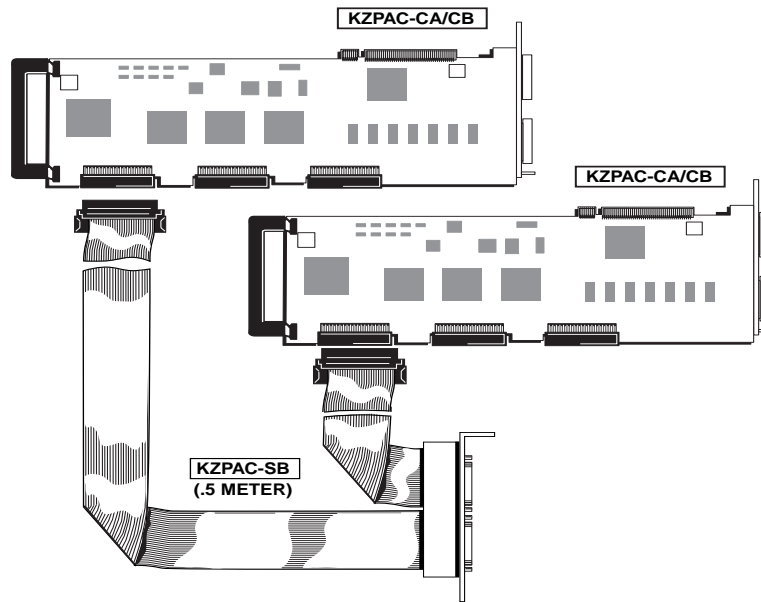
		Maximum # Supported Controllers	
Order Number	Description	4x00-8 slots	4000-16 slots
KZPAC-AA	PCI one-port UltraSCSI Single-ended RAID controller with 4 MB cache memory; includes RAID Array 230/plus Subsystem software and documentation kit; tape drives not supported.	4	4
KZPSC-UB	Cache battery-backup 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—PCI-based Adapters, Controllers, Connectors, and Cables (*continued*)

Order Number    Description		Maximum # Supported Controllers	
		4x00-8 slots	4000-16 slots
<b>KZPAC-CA</b>	PCI three-port UltraSCSI RAID controller (Single-ended) with 4 MB cache memory, includes RAID Array 230/Plus Subsystem Software and documentation kit, tape drives not supported.	4	4
<b>KZPAC-CB</b>	Same as above with 8 MB cache memory	4	4
<b>KZPSC-UB</b>	Cache battery-backup for KZPAC controller		
<b>BN31K-0E<sup>1</sup></b>	SCSI cable/bulkhead assembly kit for KZPAC-CA/CB; required for connection to third port; uses one PCI bulkhead slot		
<b>KZPAC-SB<sup>1</sup></b>	SCSI cable/bulkhead assembly kit with two ports for KZPAC-CA/CB, allows connection of 2 third-port outputs, uses one PCI bulkhead slot		
<b>BN37A-02</b>	2.0 m cable; VHDCI male to VHDCI male		
<b>BN37A-05</b>	5.0 m cable; VHDCI male to VHDCI male		
<b>BN37A-10</b>	10.0 m cable; VHDCI male to VHDCI male		
<b>BN37A-20</b>	20.0 m cable; VHDCI male to VHDCI male		

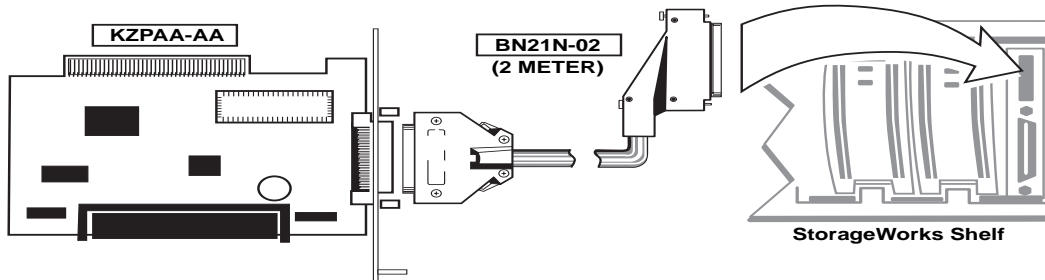
1. SCSI cable/bulkhead assembly kit is required for third-port connection. Use BN31K-0E for single KZPAC-CA configuration. Use KZPAC-SB for 2 KZPAC-CA configurations. See diagram below.



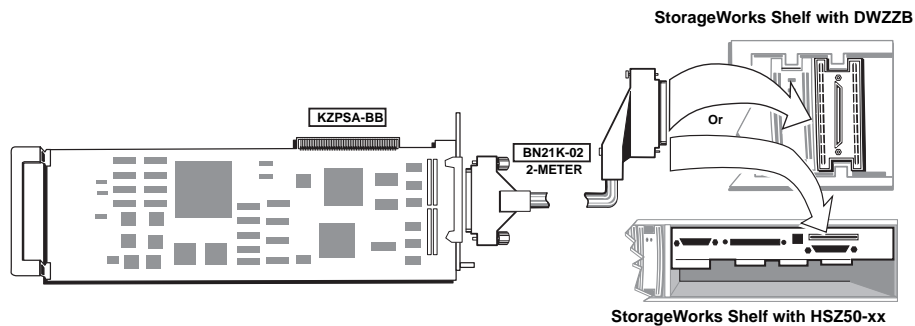
Order Number    Description		Maximum # Supported Controllers	
		4x00-8 slots	4000-16 slots
<b>KZPDA-AA</b>	PCI one port FWSE SCSI controller. Note: 1 KZPDA per PCI bus	2	4
<b>BN21K-02</b>	2 m SCSI cable, required for each Fast-10 StorageWorks shelf connected to KZPDA controller.		
<b>BN38C-02</b>	2 m SCSI cable, required for each UltraSCSI StorageWorks shelf connected to KZPDA controller.		

Step 5d—PCI-based 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, required for each 16-bit Fast-10 StorageWorks shelf connected to KZPAA		



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 non-Ultra 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
KFPASA-AA	PCI-DSSI controller. Requires HSDXX controller to connect directly to StorageWorks shelf	4	4
BC29S-06	Connection to HSD10 installed in BA36R Pedestal shelf		
BC29S-09	Connection to HSD10 installed in BA36R Cabinet shelf		

**Step 5d—PCI-based Adapters, Controllers, Connectors, and Cables** (*continued*)

		Maximum # Supported Controllers OpenVMS V6.2-1H3	
		4x00-8 slots	4000-16 slots
<b>Order Number</b>	<b>Description</b>		
<b>CIPCA-BA</b>	PCI-to-CI adapter -BA requires two PCI slots and one CI cable per adapter	3 <sup>1</sup>	6 <sup>1</sup>
<b>CIPCA-AA</b>	PCI-to-CI adapter -AA requires 1 EISA and 1 PCI and one CI cable per adapter	2 <sup>1</sup>	2 <sup>1</sup>
<b>BNCIA-10</b>	10-m CI cable		
<b>BNCIA-20</b>	20-m CI cable		
<b>BNCIA-45</b>	45-m CI cable		

1. 8 I/O slot systems support a maximum of 3 CIPCA-BA and CIPCA-AA options.  
16 I/O slot systems support a maximum of 6 CIPCA-BA and CIPCA-AA options.

**Step 5e—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  
HSZ54-AJ requires four QB-5CJAA-SA kits

- .. HSZ70-AH requires the following Operating System kits:  
QB-5SBAB-SA/SB for DIGITAL UNIX  
QB-5SBAC-SA/SB for OpenVMS  
QB-5SBAD-SA/SB Windows NT Alpha

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

---

**Step 5e—External Storage Controllers (continued)****DSSI controllers**

- .. Supported on OpenVMS systems only.
- .. DS-RZ1DB-VW is not supported on HSD10 Storage Array Controllers
- .. HSD10-Bx mounts in BA36R-xx StorageWorks shelf.
- .. HSD10-Bx requires BC29S-06/09 for connection from KFPSA to BA36R shelf.

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

**DSSI controllers supported with KFPSA-AA DSSI adapter only.**

---

<b>HSD50-AF</b>	StorageWorks DSSI Array controller with 32 MB cache; 6 channel and ECB
<b>HSD50-AH</b>	StorageWorks DSSI Array controller with 64 MB cache; 6 channel and ECB
<b>HSD50-AJ</b>	StorageWorks DSSI Array controller with 128 MB cache; 6 channel and ECB
<b>HSD52-AF</b>	StorageWorks Dual DSSI Array controller with 64 MB cache; 6 channel and ECB
<b>HSD52-AH</b>	StorageWorks Dual DSSI Array controller with 128 MB cache; 6 channel and ECB
<b>HSD52-AJ</b>	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.
- .. Requires BA35R-MR StorageWorks Controller shelf.

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

**Controller Accessories**

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

---

## Step 5f—Cabinet Expansion Options

### AlphaServer 4100/4000 Cabinet Expansion

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

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

---

## Step 5g—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 installed in an AlphaServer 4100/4000 cabinet.

System Management Station Kit requires a cabinet and 19-inches of space.

.. System Management 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)

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

### StorageWorks Cabinets

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

### StorageWorks Accessories

<b>DWZZB-VW</b>	SCSI signal converter, FWD on one end and FWSE on other end; requires BN21K-xx cables.
<b>BN21K-02</b>	02-meter 16-bit SCSI cable
<b>BN21K-03</b>	03-meter 16-bit SCSI cable
<b>BN21K-05</b>	05-meter 16-bit SCSI cable
<b>BN21K-10</b>	10-meter 16-bit SCSI cable
<b>BN21K-15</b>	15-meter 16-bit SCSI cable
<b>BN21K-20</b>	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
<b>DE500-AA</b>	PCI 10/100-Mbit Fast Ethernet controller (Twisted Pair)	4	4
<b>BN25G-03</b>	3-m (9.8 ft) cable for 10BaseT Twisted Pair connection		
<b>BN25G-04</b>	4-m (13.1 ft) cable for 10BaseT Twisted Pair connection		
<b>BN25G-07</b>	7-m (22.3 ft) cable for 10BaseT Twisted Pair connection		

**Step 6—Networks and Communications (continued)**

		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		

		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 OpenVMS V7.1-1H1	
Order Number	Description	4x00-8 slots	4x00-16 slots
SN-PBXNP-AC	PCI Token Ring adapter	4	4
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 V3.2G OpenVMS V6.2-1H3 Windows NT 4.0	
Order Number	Description	4x00-8 slots	4000-16 slots
PBXDA-AA	PCI-based 4-port asynchronous controller	2	4
PBXDA-AB	PCI-based 8-port asynchronous controller	2	4

		Maximum # Supported Controllers DIGITAL UNIX V3.2F / V3.2G OpenVMS 6.2-1H3	
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

---

**Step 6a—MEMORY CHANNEL Controller**
**DIGITAL UNIX Systems**

- .. Require DIGITAL UNIX V3.2G or later 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

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

In rackmount configurations MEMORY CHANNEL controller take up 4U of space.

---

**Step 7—Monitors**

Systems include PCI-based S3 TRIO 1 MB RAM graphics adapter.

- .. 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. 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).

<b>SN-VRCX5-WA/ W3/W4</b>	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.
-------------------------------	---

**Step 7—Monitors (continued)**

<b>SN-VRCX7-WA/ W3/W4</b>	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.
<b>SN-VRTX7-WA</b>	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.
<b>SN-VRCX1-WA/ W3/W4</b>	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.

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

**Power Cords—Quantity of two required for Pedestals**

<b>BN19A-2E</b>	UK/Ireland
<b>BN19C-2E</b>	Central Europe
<b>BN19E-2E</b>	Switzerland
<b>BN19H-2E</b>	Australia/New Zealand
<b>BN19K-2E</b>	Denmark
<b>BN18L-2E</b>	Israel
<b>BN19Z-2E</b>	Italy
<b>BN19S-2E</b>	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—System Upgrades

### 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.

Order Number	From	To	Includes
DN-53ZEA-AA	AlphaServer 4100	AlphaServer 4000 <sup>1</sup> with 16 I/O Slots (Windows NT 4.0)	AlphaServer 4000 System Drawer Upgrade for Windows NT with I/O Expansion Option <b>Note:</b> Mandatory return of existing AlphaServer 4100 System Drawer
DA-53ZEB-AA	AlphaServer 4100	AlphaServer 4000 <sup>1</sup> with 16 I/O Slots (DIGITAL UNIX)	AlphaServer 4000 System Drawer Upgrade with DIGITAL UNIX base system license and I/O Expansion Option <b>Note:</b> Mandatory return of existing AlphaServer 4100 System Drawer
DY-53ZEB-AA	AlphaServer 4100	AlphaServer 4000 <sup>1</sup> with 16 I/O Slots (OpenVMS)	AlphaServer 4000 System Drawer Upgrade with OpenVMS base system license and I/O Expansion Option <b>Note:</b> Mandatory return of existing AlphaServer 4100 System Drawer

1. 5/300 MHz CPUs numbered B3001-AA and B3002-AA are not supported in the new AlphaServer 4000 8/16 PCI slot System Drawers. B3002-AA CPUs must be upgraded to B3004-BA CPUs before installation in new AlphaServer 4000 System Drawer.

---



---

## 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

---

**Step 11—Software (continued)****Windows NT Server 4.0 plus 10-client access license, media (CD-ROM) kits**

<b>QB-23C2A-SB</b>	Windows NT Server license, media kit—PRC Chinese
<b>QB-23CTA-SB</b>	Windows NT Server license, media kit—Hebrew
<b>QB-23CQA-SB</b>	Windows NT Server license, media kit—Arabic
<b>QB-23C5A-SB</b>	Windows NT Server license, media kit—Thai

**Windows NT Server Optional Software**

<b>QB-4G45A-AA</b>	Purveyor Web Server Software V1.1 for Process Software Corp.
--------------------	--

---

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

- .. DIGITAL UNIX systems include Traditional unlimited user license (QL-MT7AG-AA), and DIGITAL UNIX Server Extensions (QL-MT6AG-AA).
- .. DIGITAL UNIX Packaged and Base systems require operating system media and documentation for first system on site (QL-MT4AG-6L).
- .. Internet Tools software includes NetScape Enterprise Server (QB-3PBAB-WB), Internet Innovators Solutions for DIGITAL UNIX (QC-02NAB-H8), Internet AlphaServer Administration (QB-3NCAA-SA).

<b>QL-MT5AG-AA</b>	DIGITAL UNIX developer's extension license
--------------------	--

**DIGITAL UNIX Media and Documentation**

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

**DIGITAL UNIX Layered Products CD-ROM**

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

**DECnet Licenses**

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

---

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

- .. OpenVMS systems include OpenVMS AlphaServer Base license (QL-MT1AG-6L or QI-MT1AG-6M) and DIGITAL Enterprise Integration Package V2.0 (QP-5LVAG-AC)
- DIGITAL Enterprise Integration 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**

- .. 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.

<b>QL-MT3AA-3B</b>	OpenVMS Concurrent Use 1-user license
<b>QL-MT3AA-3C</b>	OpenVMS Concurrent Use 2-user license
<b>QL-MT3AA-3D</b>	OpenVMS Concurrent Use 4-user license
<b>QL-MT3AA-3E</b>	OpenVMS Concurrent Use 8-user license

---



---

## Step 11—Software (*continued*)

### OpenVMS Concurrent Use Licenses

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-ROM

QA-03XAA-H8 <sup>1</sup>	Layered products media and documentation for OpenVMS on CD-ROM
--------------------------	--

1. Includes 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.

---



---

## Step 12—Hardware and Software Warranty and Supplemental Services (*continued*)

### 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.

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

### AlphaServer 4100/4000 Software Support Supplemental Services

#### Windows NT

<b>FM-WNTO2-12</b>	1-year, Software Support Supplemental Service
<b>FM-WNTO2-36</b>	3-year, Software Support Supplemental Service
<b>FM-WNTO2-60</b>	5-year, Software Support Supplemental Service

#### AlphaServer 4000 DIGITAL UNIX

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

#### AlphaServer 4100 DIGITAL UNIX

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

#### AlphaServer 4000 OpenVMS

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

---

**Step 12—Hardware and Software Warranty and Supplemental Services**
**AlphaServer 4100 OpenVMS**

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

**DIGITAL UNIX or OpenVMS SMP Upgrade**

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

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

<b>FM-5BXHW-60</b>	5-year 5 x 9, next day, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5B4HR-36</b>	3-year 5 x 9, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5B4HR-60</b>	5-year 5 x 9, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5B512-36</b>	3-year 5 x 12, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5B512-60</b>	5-year 5 x 12, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5B616-36</b>	3-year 6 x 16, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5B616-60</b>	5-year 6 x 16, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5B724-36</b>	3-year 7 x 24, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5B724-60</b>	5-year 7 x 24, four hour, 128 / 512 MB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5HXHW-60</b>	5-year 5 x 9, next day, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5H4HR-36</b>	3-year 5 x 9, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5H4HR-60</b>	5-year 5 x 9, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5H512-36</b>	3-year 5 x 12, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5H512-60</b>	5-year 5 x 12, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5H616-36</b>	3-year 6 x 16, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5H616-60</b>	5-year 6 x 16, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5H724-36</b>	3-year 7 x 24, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5H724-60</b>	5-year 7 x 24, four hour, 1 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5VXHW-60</b>	5-year 5 x 9, next day, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5V4HR-36</b>	3-year 5 x 9, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5V4HR-60</b>	5-year 5 x 9, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5V512-36</b>	3-year 5 x 12, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5V512-60</b>	5-year 5 x 12, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5V616-36</b>	3-year 6 x 16, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5V616-60</b>	5-year 6 x 16, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5V724-36</b>	3-year 7 x 24, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet
<b>FM-5V724-60</b>	5-year 7 x 24, four hour, 2 GB AlphaServer 4100/4000 Pedestal/Cabinet

---

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

<b>FM-5LXHW-60</b>	5-year 5 x 9, next day, 128 / 512 MB Memory option
<b>FM-5L4HR-36</b>	3-year, 5 x 9, four hour, 128 / 512 MB Memory option
<b>FM-5L4HR-60</b>	5-year, 5 x 9, four hour, 128 / 512 MB Memory option
<b>FM-5L512-36</b>	3-year 5 x 12, four hour, 128 / 512 MB Memory option
<b>FM-5L512-60</b>	5-year 5 x 12, four hour, 128 / 512 MB Memory option
<b>FM-5L616-36</b>	3-year 6 x 16, four hour, 128 / 512 MB Memory option
<b>FM-5L616-60</b>	5-year 6 x 16, four hour, 128 / 512 MB Memory option
<b>FM-5L724-36</b>	3-year 7 x 24, four hour, 128 / 512 MB Memory option
<b>FM-5L724-60</b>	5-year 7 x 24, four hour, 128 / 512 MB Memory option
<b>FM-5QXHW-60</b>	5-year 5 x 9, next day, 1 GB Memory option
<b>FM-5Q4HR-36</b>	3-year, 5 x 9, four hour, 1 GB Memory option
<b>FM-5Q4HR-60</b>	5-year, 5 x 9, four hour, 1 GB Memory option
<b>FM-5Q512-36</b>	3-year 5 x 12, four hour, 1 GB Memory option
<b>FM-5Q512-60</b>	5-year 5 x 12, four hour, 1 GB Memory option
<b>FM-5Q616-36</b>	3-year 6 x 16, four hour, 1 GB Memory option
<b>FM-5Q616-60</b>	5-year 6 x 16, four hour, 1 GB Memory option
<b>FM-5Q724-36</b>	3-year 7 x 24, four hour, 1 GB Memory option
<b>FM-5Q724-60</b>	5-year 7 x 24, four hour, 1 GB Memory option
<b>FM-5TXHW-60</b>	5-year 5 x 9, next day, 2 GB Memory option
<b>FM-5T4HR-36</b>	3-year, 5 x 9, four hour, 2 GB Memory option
<b>FM-5T4HR-60</b>	5-year, 5 x 9, four hour, 2 GB Memory option
<b>FM-5T512-36</b>	3-year 5 x 12, four hour, 2 GB Memory option
<b>FM-5T512-60</b>	5-year 5 x 12, four hour, 2 GB Memory option
<b>FM-5T616-36</b>	3-year 6 x 16, four hour, 2 GB Memory option
<b>FM-5T616-60</b>	5-year 6 x 16, four hour, 2 GB Memory option
<b>FM-5T724-36</b>	3-year 7 x 24, four hour, 2 GB Memory option
<b>FM-5T724-60</b>	5-year 7 x 24, four hour, 2 GB Memory option

**AlphaServer 4100/4000 CPU Add-on Options**

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

---

## Step 13—AlphaServer 4000/41000 DIGITAL UNIX and OpenVMS to Windows NT Migration

DIGITAL also offers the DIGITAL Servers line (white boxes) of Intel and Alpha servers designed specifically to run Windows NT. For users who only want to run Windows NT, these systems should be the primary choice.

DIGITAL Mid-range AlphaServers continue to deliver on the Universal Platform Guarantee: that DIGITAL AlphaServers support any of the three operating systems offered by DIGITAL. The Universal AlphaServers (blue boxes) running DIGITAL UNIX or OpenVMS can also run Windows NT. AlphaServer 4100/4000 systems can migrate from DIGITAL UNIX or OpenVMS to Windows NT Server with a simple license and software change. DIGITAL offers Windows NT Server 4.0 Enterprise Edition Conversion kits with installation and services by a team of qualified DIGITAL professionals to make this system migration easy and timely.

To migrate from an AlphaServer 4100/4000 DIGITAL UNIX or OpenVMS system to a Windows NT System, order a Windows NT Server V4.0 Enterprise Edition Conversion Kit. The conversion kit contains all software media, license, documentation, and HAL kit required to install Windows NT Server 4.0 Enterprise Edition onto an AlphaServer System. The conversion kit is available in the 5 most popular languages: English, Japanese, French, Spanish and German.

Note that some options currently supported on DIGITAL UNIX and/or OpenVMS operating systems are not supported on Windows NT Servers. Refer to the Supported Options List on the Web for AlphaServer 4100 Windows NT supported hardware at URL= [http://www.digital.com/alphaserver/tech\\_docs/alphasrv4100/docs/supported\\_options.html](http://www.digital.com/alphaserver/tech_docs/alphasrv4100/docs/supported_options.html)

### AlphaServer 4x00 Windows NT Server 4.0 Enterprise Edition Conversion Software Kits

Windows NT Enterprise Edition Conversion Kits include all software media, license, documentation, and HAL kit required to install and operate Windows NT Server 4.0 Enterprise Edition. Conversion kit supports Mid-range AlphaServer Systems listed on Microsoft Hardware Compatibility List (HCL). The conversion kit includes an 8-way SMP server license plus 25 Client Access Licenses (CALs).

**Note:** DIGITAL Services is **mandatory** to install the conversion options at the end user's location. Windows NT migration requires an SVGA video monitor and keyboard unless available on site.

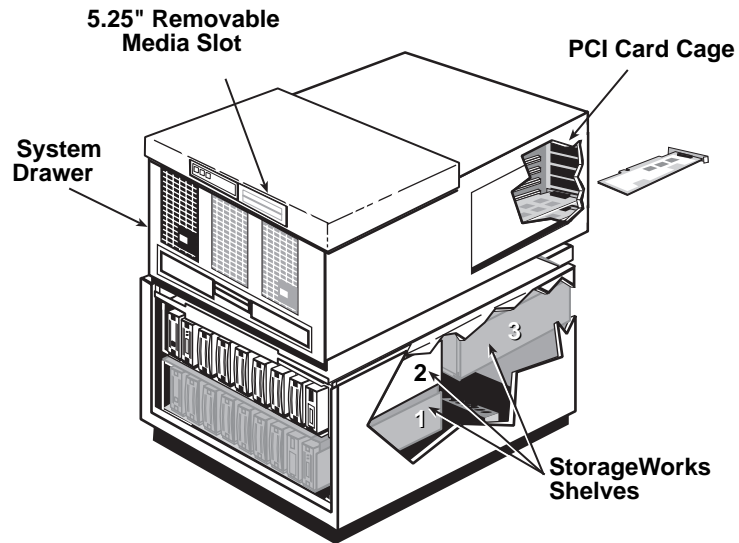
<b>QB-5Z6AB-WA</b>	Windows NT Server V4.0 Enterprise Edition Conversion Software Kit for AlphaServer—English
<b>QB-5Z6JB-WA</b>	Windows NT Server V4.0 Enterprise Edition Conversion Software Kit for AlphaServer—Japanese
<b>QB-5Z6PB-WA</b>	Windows NT Server V4.0 Enterprise Edition Conversion Software Kit for AlphaServer—French
<b>QB-5Z6SB-WA</b>	Windows NT Server V4.0 Enterprise Edition Conversion Software Kit for AlphaServer—Spanish
<b>QB-5Z6GB-WA</b>	Windows NT Server V4.0 Enterprise Edition Conversion Software Kit for AlphaServer—German

### DIGITAL Services Installation

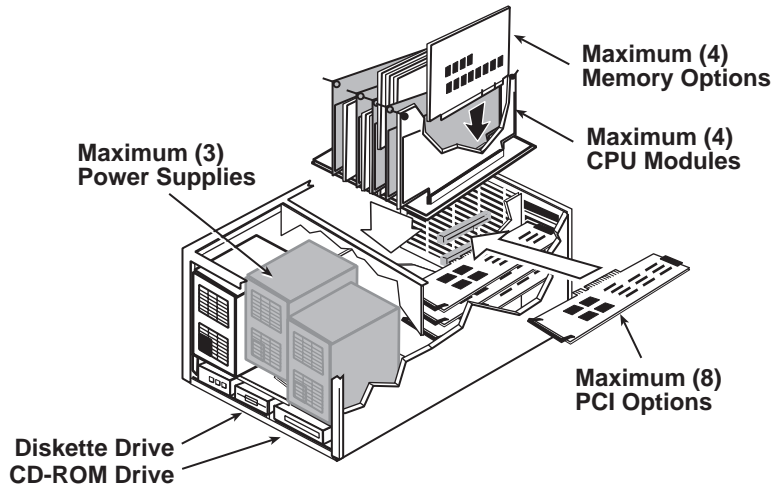
DIGITAL Services Installation is **mandatory** for all AlphaServer system conversions to Windows NT systems. DIGITAL Services will install conversion options at end user's location. Contact a DIGITAL Services representative for assistance in determining whether services other than the base installation service indicated below is appropriate for customer situation.

<b>QR-SMWNT-BA</b>	Windows NT Server 4.0 Enterprise Edition Base I & S Package
--------------------	---


# AlphaServer 4100/4000



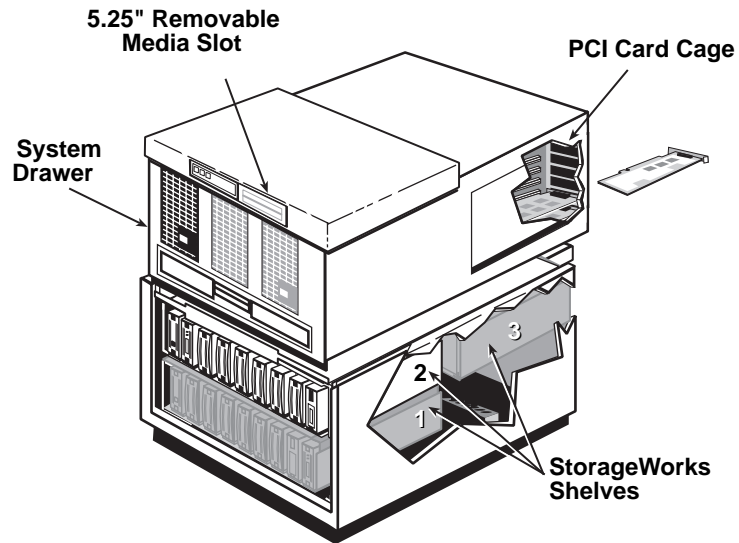
**AlphaServer 4100 Pedestal System**



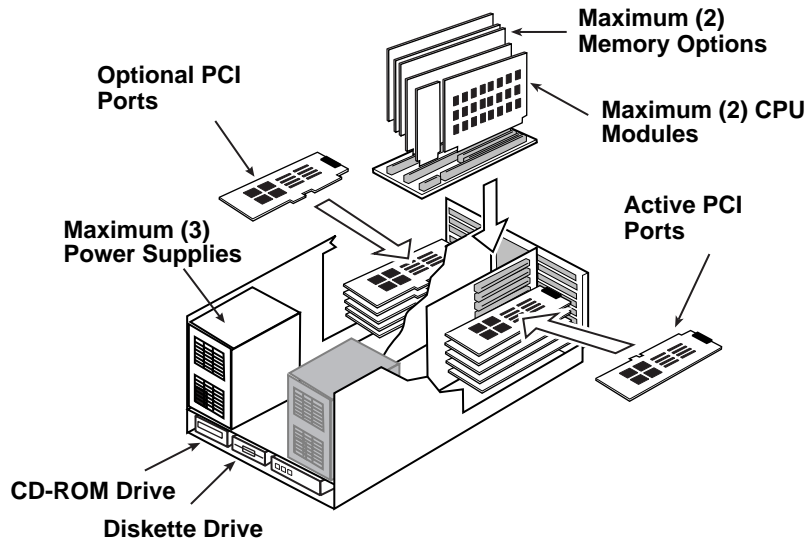
**AlphaServer 4100 System Drawer**

 = Optional

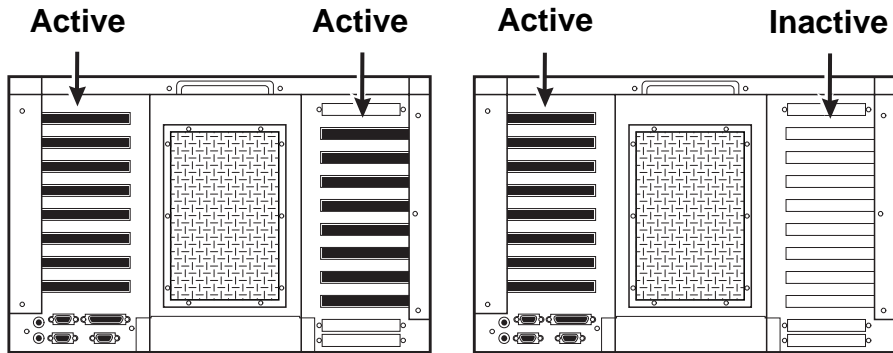
AlphaServer 4100/4000



AlphaServer 4000 Pedestal System



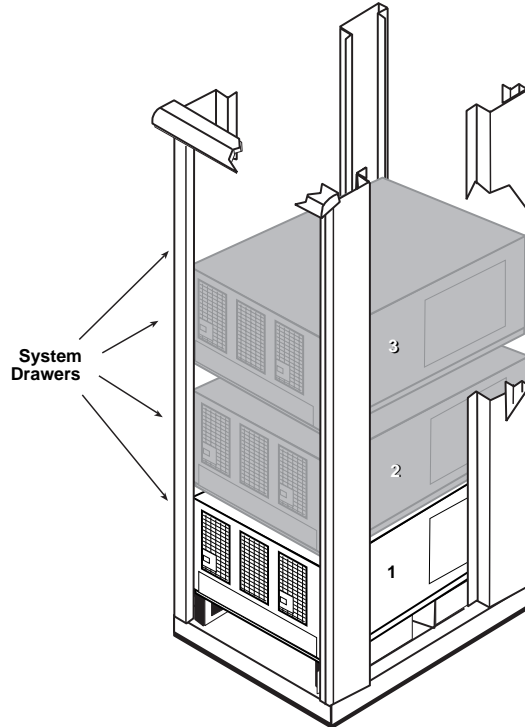
AlphaServer 4000 System Drawer



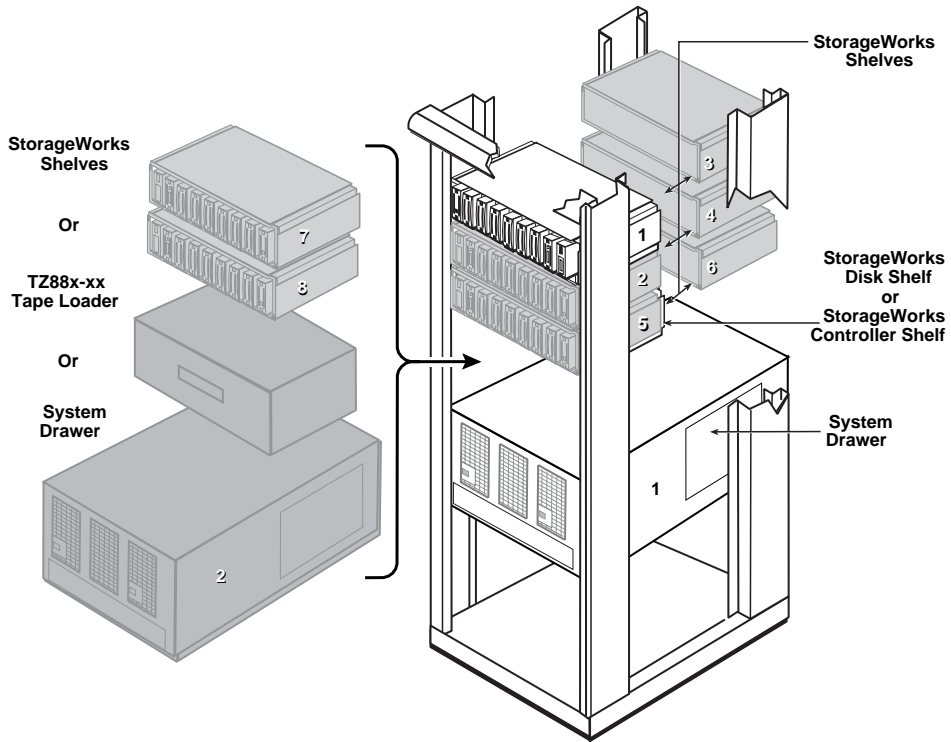
AlphaServer 4000 with 16 Active PCI Slots, includes H7150-AA

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


# AlphaServer 4100/4000



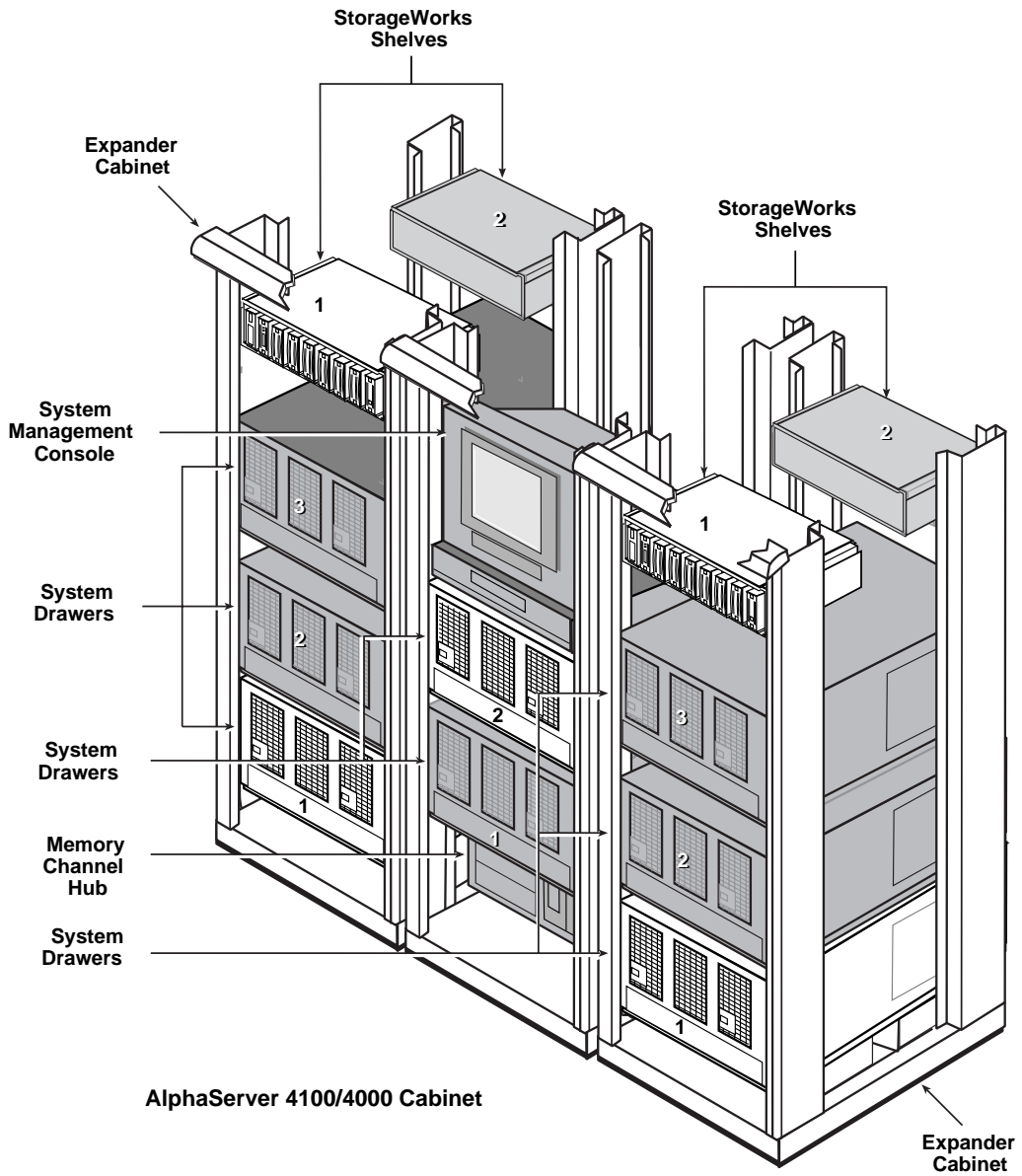
AlphaServer 4100/4000 Cabinet




AlphaServer 4100/4000 Cabinet

 = Optional

# AlphaServer 4100/4000



 = Optional

## AlphaServer 4100/4000

### Specifications

Specifications	Pedestal System		Cabinet System		System Drawer	
<b>External Dimensions</b>						
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)	
<b>Clearances</b>						
	<b>Operating/</b>	<b>Service</b>	<b>Operating/</b>	<b>Service</b>	<b>Operating/</b>	<b>Service</b>
Front	20cm(7.9in)	61 cm(24.1 in)	60cm(23.6in)	100cm(39.4 in)	20cm(7.9in)	20cm(7.9in)
Rear	20cm(7.9in)	61 cm(24.1 in)	60cm(23.6in)	100cm(39.4 in)	20cm(7.9in)	20cm(7.9in)
Sides	20cm(7.9in)	61 cm(24.1 in)	20cm(7.9in)	61 cm(24.0 in)	0	0
<b>Environmental</b>						
Temperature (min/max)						
Operating <sup>1</sup>	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 (-40F °- 150.8°F)		-40°C - 66°C (-40F °- 150.8°F)		-40°C - 66°C (-40°F - 150.8°F)	
Storage (60 days)	-40°C - 66°C (-40F °- 150.8°F)		-40°C - 66°C (-40F °- 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%	
<b>4100 Max Heat Dissipation</b>	1800 <sup>2</sup> W, 6143 BTU/hr		4800 W, 16382 BTU/hr		1100 W, 3754 BTU/hr	
<b>4000 Max Heat Dissipation</b>	1450 <sup>2</sup> W, 6143 BTU/hr		4800 W, 16382 BTU/hr		700 W, 3754 BTU/hr	
Airflow						
Quantity	200 CFM		300 CFM <sup>3</sup>		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/max)						
Operating	5-10 Hz	0.02 in-da	5-10 Hz	0.02in-da	5-10 Hz	0.02in-da
Acoustics	6.2 LNPEc (Bels)		6.7 LNPEc (Bels)		5.8 LNPEc (Bels)	
<b>Electrical (min/max)</b>						
	<b>U.S.</b>	<b>Europe</b>	<b>U.S.</b>	<b>Europe</b>		
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	

**Specifications (continued)****Agency Approvals**

cUL Marked for Canada 3 UL 1950, Ed.3 TUV EN 60 950/ A3 GS FCC part 15.B Class A verified CE Class A	cUL Marked for Canada 3 UL 1950, Ed.3 TUV EN 60 950/ A3 GS FCC part 15.B Class A verified CE Class A	cUL Marked for Canada 3 UL 1950, Ed.3 TUV EN 60 950/ A3 GS FCC part 15.B Class A verified CE Class A BCIQ CB Cert. UL, UL927-44877/USA IEC 950 2 <sup>nd</sup> Ed. 3 <sup>rd</sup> Amend. EN 60 950: 1995
IEC 950 2 <sup>nd</sup> Ed. 3 <sup>rd</sup> Amend. EN 60 950: 1995 AS/NZS 3260:1963, Australian/ New Zealand Standard CAN/CSA-C22.2 No. 950-95, CSA Standard UL 1950, 3 <sup>rd</sup> Ed. Rev July 1995, UL standard 73/23/EEC	IEC 950 2 <sup>nd</sup> Ed. 3 <sup>rd</sup> Amend. EN 60 950: 1995 AS/NZS 3260:1963, Australian/ New Zealand Standard CAN/CSA-C22.2 No. 950-95, CSA Standard UL 1950, 3 <sup>rd</sup> Ed. Rev July 1995, UL standard 73/23/EEC	EN 60 950: 1995 AS/NZS 3260:1963, Australian/ New Zealand Standard CAN/CSA-C22.2 No. 950-95, CSA Standard UL 1950, 3 <sup>rd</sup> Ed. Rev July 1995, UL standard 73/23/EEC

- 
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.
  3. CSA has been replaced by CUL for Canada.
  4. Australian C-Tick Mark submittals are in progress.