Compaq
AlphaServer 8200 and 8400 Windows NT Systems
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Systems and Options Catalog

Product Description

Compaq AlphaServer 8200 and 8400 systems bring Windows NT support to the industry's recognized leading solution for mission critical enterprise applications. These systems extend their mainframe power into highly scaleable, highly available Windows NT Server solutions for the most demanding enterprise applications, i.e., data warehousing/datamart, enterprise resource planning with SAP, BAAN, J.D. Edwards, SAS, Oracle applications, etc. Windows NT servers offer a 12-15 month lead on the competition for enterprise Windows NT delivery with the power of large scale SMP, Very Large Memory and almost unlimited storage and I/O expandability.

Systems have the ability to increase capacity as the customer needs it in the same system package. Initial support under Windows NT Server 4.0/Enterprise Edition is 2-8 processors, 1-18 GB of memory and 12-48 PCI slots. Full configuration support will be available with future releases of Windows NT software. Compaq AlphaServers are "Windows NT 64-bit VLM Ready" today.

Existing AlphaServer 8200/84000 5/300, 5/350, 5/440 or 5/625 customers can easily migrate their Tru64 UNIX or OpenVMS environments to Windows NT. Migrating to Windows NT requires the addition of the AlphaServer Windows NT Console Subsystem hardware the KFE72-xx, the appropriate Windows NT Server 4.0/Enterprise Edition software conversion kit with media, licenses, and miscellaneous firmware and documentation in five of the most popular language versions: English, Spanish, French, German and Japanese; and, installation service. Compaq Services is required to install the conversion options at the end user's location.

Microsoft Cluster Server support is available on AlphaServer 8200 and 8400 Windows NT systems for users to build two-node Windows NT clusters that deliver even higher levels of system availability.

Compaq’s Windows NT product family, and the AlphaServer 8200 and 8400 enterprise class servers is the only full range Windows NT source, with unequaled high-end performance and headroom for growth through the end of the century. These servers are supported by the best worldwide service organization with a range of Windows NT consulting services from which to choose.

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Step 1—Windows NT Expanded Base Servers

- Selection of a Windows NT Server 4.0/Enterprise Edition plus 25 client access license, media (CD-ROM) kit and documentation is mandatory, see Step 2 for country-specific language kits.
- SVGA video monitor for user station and PS2 style keyboard for video monitor are **required**; order separately if not available at customer site, see Step 9.
- Console terminal for system console use is **required** to follow system power-on process and for system diagnostics; order separately if not available at customer site, see Step 10.
- Select PCI I/O devices listed in this Windows NT configuration menu **only**.
- Note that Windows NT Servers **do not** support XMI, CI, FutureBus, EISA, or DSSI adapters, controllers and options, see Step 14 for additional information.
- See Step 13 and the Compaq Priority Service Packages for Supplemental Hardware and Software Service offerings.

AlphaServer 8200 Windows NT Expanded Base Servers include

- **AlphaServer 8200** includes: Processor module with two Alpha microprocessor 21164 5/625 MHz[1] CPUs; each CPU includes 4 MB Backup cache.
- Five slot system backplane—three slots are used by dual CPU module, system I/O module (KFTHA-AA), and memory module.
- System I/O module with four I/O channels (KFTHA-AA).
- 4 GB Memory.
- 12 slot PCI Shelf Mount Box (DWLPB-CA).
  - Note: 4 open slots are available for additional PCI options after all Enterprise Base Server PCI options are installed.
- KFE72-BA Windows NT console hardware subsystem with 2 asynchronous serial ports, 1 parallel port, keyboard and mouse ports, floppy drive, PCI TGA2 graphics accelerator adapter (SN-PBXGB-AA) PowerStorm 3D30, and extension cables for video, keyboard and mouse—uses 5 PCI slots.
- 3-button mouse (SN-PBQWS-WA).
- 10/100 Mbit Fast Ethernet adapter—uses 1 PCI slot.
- PCI-based one port UltraSCSI Single-ended host adapter and one SCSI cable.
- 16-bit UltraSCSI StorageWorks Shelf (DS-BA356-JG).
- 4.3 GB 3.5" SCSI system disk drive.
- Factory Installed Software (FIS).
- 600 MB CD-ROM drive housed in BA656-AA integrated storage drawer.
- PCI Single-ended SCSI controller for CD-ROM connection only, and SCSI cable, connects CD-ROM to controller—uses 1 PCI slot.
- Universal single-phase power supply, requires selection of power cord from Step 1a.
- Redundant power supply (N+1)—optional.
- Shielded console cable for connection to console terminal.
- ServerWorks Manager kit.
- Hardware documentation.
- One year hardware product warranty, on-site, 4 hour response, five days per week.
- Software warranty on Microsoft's Windows NT Server 4.0/Enterprise Edition is conformance to the written material accompanying the software for a period of ninety days.
- System installation must be ordered separately.

1. 5/625 MHz CPU systems are clocked at 612.8 MHz for AlphaServer 8200 and 8400 applications

AlphaServer 8200 5/625 Dual CPU Expanded Base Servers (Top Gun Blue Enclosure)

DN-382GG-A9	Windows NT	Two 5/625 MHz	4 GB	Single-phase

Step 1a—Power cord for AlphaServer 8200

Selection of a power cord is **mandatory** for AlphaServer 8200 systems unless a redundant power supply is ordered. H7266-AD/AE Power Supplies include a power cord, see Step 11.

BN23H-4E	60 Hz - 4.5 m ac power cord for AlphaServer 8200, one per cabinet
BN20P-4E	50 Hz - 4.5 m ac power cord for AlphaServer 8200, one per cabinet

Step 1—Windows NT Expanded Base Servers *(continued)*

AlphaServer 8400 Windows NT Expanded Base Servers include

- **AlphaServer 8400** includes: Processor module with two Alpha microprocessor 21164 5/625 MHz[1] CPUs; each CPU includes 4 MB Backup cache.
- Nine slot system centerplane—three slots used by dual CPU module, system I/O module (KFTHA-AA), and memory module.
- System I/O module with four I/O channels (KFTHA-AA).
- 4 GB Memory
- 12 slot PCI Plug-In Unit (DWLPB-AA).
  - Note: 4 open slots are available for additional PCI options after all Enterprise Base Server PCI options are installed.
- KFE72-AA Windows NT console hardware subsystem with 2 asynchronous serial ports, 1 parallel port, keyboard and mouse ports, floppy drive, PCI TGA2 graphics accelerator adapter (SN-PBXGB-AA) PowerStorm 3D30, and extension cables for video, keyboard and mouse—uses 5 PCI slots.
- 3-button mouse (SN-PBQWS-WA).
- 10/100 Mbit Fast Ethernet adapter—uses 1 PCI slot.
- PCI-based one port UltraSCSI Single-ended host adapter and one SCSI cable.
- UltraSCSI StorageWorks Plug-in Unit (PIU) BA670-AA.
- 4.3 GB 3.5" SCSI system disk drive.
- Factory Installed Software (FIS).
- 600 MB CD-ROM drive.
- PCI Single-ended SCSI controller for CD-ROM connection only, and SCSI cable, connects CD-ROM to controller—uses 1 PCI slot.
- Two H7263-AC or H7263-AD non-BBU capable three-phase power regulators, includes power cord.
- Shielded console cable for connection to console terminal.
- ServerWorks Manager kit.
- Hardware documentation.
- One year hardware product warranty, on-site, 4 hour response, five days per week.
- Software warranty on Microsoft's Windows NT Server 4.0/Enterprise Edition is conformance to the written material accompanying the software for a period of ninety days.
- System installation must be ordered separately.

1. 5/625 MHz CPU systems are clocked at 612.8 MHz for AlphaServer 8200 and 8400 applications

AlphaServer 8400 5/625 Dual CPU Expanded Base Servers (Top Gun Blue Enclosure)

DN-392GG-AA	Windows NT	Two 5/625 MHz	4 GB	Three-phase
DN-392GG-AB	Windows NT	Two 5/625 MHz	4 GB	Three-phase
DN-392GG-AC	Windows NT	Two 5/625 MHz	4 GB	Three-phase

Note: xA = 60 Hz, 208 V, xB = 50 Hz, 416 V, xC = 50/60 Hz, 202 V Japan.
Three Phase power variations include attached power cord.

Step 2—Windows NT Country-Specific Language Kits

- Selection of a Windows NT Server 4.0/Enterprise Edition plus 25 client access license, media (CD-ROM) kit and documentation is **mandatory**.
- Windows NT Server 4.0/Enterprise Edition is the required version of software for AlphaServer 8200/8400 Windows NT systems.
- Windows NT Server kits are only orderable with Expanded Base Servers, they are **not** available separately.
- Kit includes: Windows NT Server 4.0/ Enterprise Edition plus 25 client access license, media (CD-ROM) kit and documentation in shrink-wrapped package. Kit also includes all unique AlphaServer 0 firmware and media required for Windows NT systems.

Step 2—Windows NT Country-Specific Language Kits *(continued)*

AlphaServer 8200 Windows NT Server 4.0/Enterprise Edition Kits

QB-5YUAA-WB	Windows NT Server 4.0/Enterprise Edition 1-8 CPU license and media	English
QB-5YUPA-WB	Windows NT Server 4.0/Enterprise Edition 1-8 CPU license and media	French
QB-5YUGA-WB	Windows NT Server 4.0/Enterprise Edition 1-8 CPU license and media	German
QB-5YUSA-WB	Windows NT Server 4.0/Enterprise Edition 1-8 CPU license and media	Spanish
QB-5YUJA-WB	Windows NT Server 4.0/Enterprise Edition 1-8 CPU license and media	Japanese

AlphaServer 8400 Windows NT Server 4.0/Enterprise Edition Kits

QB-5YUAA-WC	Windows NT Server 4.0/Enterprise Edition 1-16 CPU license and media	English
QB-5YUPA-WC	Windows NT Server 4.0/Enterprise Edition 1-16 CPU license and media	French
QB-5YUGA-WC	Windows NT Server 4.0/Enterprise Edition 1-16 CPU license and media	German
QB-5YUSA-WC	Windows NT Server 4.0/Enterprise Edition 1-16 CPU license and media	Spanish
QB-5YUJA-WC	Windows NT Server 4.0/Enterprise Edition 1-16 CPU license and media	Japanese

Step 3—Additional CPU Modules (SMP Expansion Options)

- **AlphaServer 8200 Windows NT systems** support up to two additional dual CPU modules for a maximum of three CPU modules (total of 6 CPUs).
- **AlphaServer 8400 Windows NT systems** support up to three additional dual CPU modules for a maximum of four CPU modules (total of 8 CPUs).
- CPU modules must be the same speed.
- For more than two processor modules in a system, a minimum of 2 two-bank memory modules are recommended for optimal system performance.
- All SMP upgrades include processor module with two Alpha microprocessors, and end-user product warranty.
- Base Windows NT license supports additional SMP add-ons.

CPU Models for AlphaServer 8200 and 8400 systems

758P5-AX	Windows NT 5/625 SMP add-on module, includes two 5/625 CPUs per module

Step 4—Memory

- **AlphaServer 8200 Windows NT systems** support a maximum of 12 GB of memory
  - Up to 2 additional memory modules can be added for a system maximum of 3 memory modules, not to exceed maximum capacity of 12 GB
- **AlphaServer 8400 Windows NT** systems support a maximum of 18 GB of memory
  - Up to 6 additional memory modules can be added for a system maximum of 7 memory modules, not to exceed maximum capacity of 18 GB.
- Memory modules
  - 1 GB and 2 GB memory modules have built in two-way interleaving; additional interleaving is accomplished by adding more memory modules
  - 4 GB memory modules have built in four-way interleaving. Best performance is achieved when two 2 GB modules are paired with one 4 GB module, **or** one 4 GB memory module is paired with another 4 GB memory module.

MS7CC-EA	1 GB memory module
MS7CC-FA	2 GB memory module
MS7CC-GA	4 GB memory module

Step 5—I/O Expansion Buses

- Select PCI I/O devices listed in this Windows NT Server configuration menu **only**.
- Systems include one KFTHA I/O module with four I/O channels, for a total of 48 PCI slots (40 open slots for customer use). Maximum of one KFTHA supported per system.

AlphaServer 8200—PCI Shelf Mount Box

- Systems include one 12-slot PCI Shelf Mount Box (DWLPB-CA), up to a maximum of three supported in system cabinet.
- Each DWLPB-CA PCI Shelf Mount Box includes a 12-slot PCI bus and required cable for connection to I/O channel.
- Each PCI Shelf Mount Box requires one I/O channel connection to KFTHA-AA.

Note: Each 12-slot PCI Shelf Mount Box DWLPB-CA installed in System Cabinet reduces available StorageWorks Shelf bays by two.

DWLPB-CA	PCI shelf mount box for AlphaServer 8200 system cabinet only—maximum three per cabinet.

AlphaServer 8400—PCI Plug-in Unit

- Systems include one 12-slot PCI Plug-in Unit (PIU) DWLPB-AA, up to a maximum of two supported.
- Each DWLPB-AA/AB PCI PIU includes a 12-slot PCI bus and uses one rear expansion bay. StorageWorks BA6x0-AB PIU can occupy the corresponding front expansion bay.
- Each DWLPB-AA/AB PCI PIU has one open space for addition of DWLPB-BA/BB (second PCI expansion box) or BA6x1-AA Wide SCSI StorageWorks shelf.

DWLPB-AA	PCI plug-in unit with one PCI box for AlphaServer 8400 system cabinet only, maximum two per system cabinet, two per system. Requires one I/O channel connection on KFTHA-AA.
DWLPB-BA	Second PCI expansion box for mounting in DWLPB-AA—maximum one per DWLPB-AA. Requires one I/O channel connection on KFTHA-AA.

Step 6—PCI-based Storage Controllers

Up to 33 SCSI buses supported on systems running Windows NT Operating System.

KZPBA-CA	**PCI one-port UltraSCSI Single-ended Adapter**—Requires one PCI slot, maximum 8 supported per PCI, maximum 8 per system.
KZPBA-CB	**PCI one-port UltraSCSI Differential Adapter**—Requires one PCI slot, maximum 8 supported per PCI, maximum 8 per system.
BN38C-01/02	1/2 meter UltraSCSI cable—VHDCI male to HD 68-pin male. Connects KZPBA-Cx to rear mounted UltraSCSI shelf (DS-BA356-Jx in AlphaServer 8200, or BA670-Ax in AlphaServer 8400)
BN38C-03/05[2]	3/5 meter UltraSCSI cable—VHDCI male to HD 68-pin male. Connects KZPBA-Cx to UltraSCSI shelf in H9B10-xx I/O expansion cabinet for 8200 systems, or H9F00-xx I/O expansion cabinet for 8400 systems.
KZPSA-BB	**PCI one-port Fast Wide Differential SCSI Adapter**—Requires one PCI slot, maximum 8 supported per PCI (DWLPB), maximum 32 per system.
BN21K-xx	SCSI-2 Fast Wide Differential cables—68-pin male straight to 68-pin male right-angle. Connects KZPSA-BB to DWZZB-VW signal converter. Select cable length required to connect KZPSA controller to DWZZB in BA356-xx or BA67x shelves.
KZPAC-AA	**PCI one-port RAID Array (FWSE) Controller with 4 MB cache memory**—Requires one PCI slot. Provides one SCSI connection. Allows RAID levels 0, 1 and 5. Includes RAID Array 230/Plus subsystem software and documentation kit. Tape and optical drives **not** supported. Maximum 4 supported per PCI (DWLPB), maximum 4 per system.
KZPAC-CA	**PCI three-port RAID Array (FWSE) Controller with 4MB cache memory**—Requires two PCI slots. Provides three SCSI connections. Allows RAID levels 0, 1 and 5. Includes RAID Array 230/Plus subsystem software and documentation kit. Tape and optical drives **not** supported. Maximum 4 supported per PCI (DWLPB), maximum 4 per system if third port not used (otherwise maximum of three per PCI (DWLPB), three per system). Order BN31K-0E or KZPAC-SB for third port connection.
KZPAC-CB	**Same as above with 8 MB cache memory**

Step 6—PCI-based Storage Controllers *(continued)*

MS100-BB	8 MB cache memory option; upgrades KZPAC-CA to KZPAC-CB, field installable only
KZPSC-UB	Cache memory battery back-up for KZPAC controllers
KZPAC-SB	SCSI cable/bulkhead assembly kit with two ports for KZPAC-CA/CB, allows connection of two third-port outputs using one PCI bulkhead slot
BN31K-0E	SCSI cable/bulkhead assembly kit for KZPAC-CA/CB; required for connection of third port to second PCI bulkhead slot.
BN31S-1E	1.5 meter SCSI cable, required for each Fast-10 shelf connected to KZPAC controller. Manufacturing may substitute BN31S-02 cable for certain cabinet configurations.
BN31S-02	2.0 meter SCSI cable, required for each Fast-10 shelf connected to KZPAC controller.
BN37A-01/02	1/2 meter UltraSCSI cable, VHDCI male to VHDCI male, required for each UltraSCSI shelf connected to KZPAC controller.

Step 6a—External Storage Controllers

- Controllers require KZPSA-BB or KZPBA-CB SCSI controller.
  - DS-HSZ70-Ax requires one QB-5SBAD-SA/SB kit
- Controllers are supported in SW800 cabinets.

DS-HSZ70-AH	**StorageWorks UltraSCSI RAID Array controller** includes 64 MB cache, expandable to 128 MB. Requires DS-HS35X-BC external cache battery and HSZ70 Solution Software kit, order separately.

Step 7—Storage

When multiple storage devices are configured with the system, specify which devices should be installed inside the system cabinet, inside the system expansion cabinet, or installed in the external StorageWorks cabinet. Line item sequencing allows Manufacturing to configure storage options in the appropriate cabinet.

- List storage options to be integrated in system cabinet immediately following system part number.
- List storage options to be integrated in StorageWorks cabinet immediately following StorageWorks cabinet part number.
- Order appropriate SCSI cables for connecting controllers and storage options. Step 7a—Internal Storage Shelves and Plug-in Units—System Cabinet.

Step 7a—System Cabinet Storage

AlphaServer 8200 Windows NT System Cabinets

System cabinet includes one DS-BA356-JG UltraSCSI StorageWorks shelf and one DWLPB-CA 12-slot PCI Shelf Mount Box. UltraSCSI devices are supported in DS-BA356-JG (single channel) and DS-BA356-JH (dual channel) UltraSCSI StorageWorks shelves inside AlphaServer 8200 System Cabinet. UltraSCSI devices are also supported in external StorageWorks cabinets in BA356-SD Rackmount shelves in SW500 and SW800 cabinets. DS-BA356-JG/JH includes BA35X-HG 48V/150W dc power supply and BA35X-RD metric mounting hardware.

- UltraSCSI configurations require UltraSCSI components (controllers, adapters, shelves, disks, and cables).
- UltraSCSI adapters and RAID controllers support UltraSCSI disks at UltraSCSI speeds in UltraSCSI Top Gun Blue shelves (DS-BA356-xx).
- System Cabinet supports up to six DS-BA356 StorageWorks shelves, or up to three PCI Shelf Mount Boxes, or a combination of StorageWorks shelves and StorageWorks Shelf Mount Boxes.
- Each DWLPB-CA Shelf Mount Box installed reduces number of StorageWorks shelves supported by two. For example:
  - System cabinet with **one** DWLPBA-CA PCI Shelf Mount Box installed supports **four** StorageWorks shelves.
  - System cabinet with **two** DWLPBA-CA PCI Shelf Mount Boxes installed supports **two** StorageWorks shelves.
- StorageWorks shelves support maximum of seven 3.5” devices, or two 5.25” devices and one 3.5” device.
- BA656 Internal Storage Drawer included in system cabinet supports CD-ROM drive only.

UltraSCSI Shelves

- Each UltraSCSI StorageWorks shelf requires a SCSI controller and SCSI cable to connect controller to shelf. Refer to the UltraSCSI Configuration Guidelines in EK-ULTRA-CG.C01.
- Shelves support UltraSCSI and Fast-10 5400 RPM and 7200 RPM disk drives. Drives negotiate maximum transfer speeds with UltraSCSI adapters/controllers.

DS-BA356-JG	**UltraSCSI Single Channel StorageWorks Shelf**—includes 16-bit I/O personality module, 48V/150W dc power supply, dc fans, and rackmounting hardware. Supports 16-bit wide SCSI devices and some 8-bit narrow SCSI devices depending on compliance with minimum revision levels.
DS-BA356-JH	**UltraSCSI Dual Channel StorageWorks Shelf**—includes 16-bit I/O personality module, 48V/150W dc power supply, dc fans, and rackmounting hardware. Supports 16-bit wide SCSI devices and some 8-bit narrow SCSI devices depending on compliance with minimum revision levels.

Options for DS-BA356 StorageWorks Shelves

- An additional power supply provides N+1 power for DS-BA356-xx StorageWorks shelves.
- Power supply uses 3.5” slot in StorageWorks shelf, reducing total number of devices supported by one.

DS-BA35X-HJ	Enhanced 48 V dc 150W Redundant Power Supply for StorageWorks shelf; includes 48 V dc jumper cable for connecting to first power supply in StorageWorks shelf.
DS-BA35X-DA	UltraSCSI StorageWorks DOC Signal Converter—required to convert FWD signals from KZPSA-BB or KZPBA-CB to Singe-ended for connection to DS-BA356-JG/JH StorageWorks shelves, field installed only.
DS-BA35X-FA	Fast 20 Personality Module for BA356 Single Ended to Single Ended one-Channel, field installed only.
DS-BA35X-FB	Fast 20 Personality Module for BA356 Single Ended to Single Ended two-Channel, field installed only.
BN38C-02	1/2 meter UltraSCSI cable—VHDCI male to HD 68-pin male.

Step 7a—System Cabinet Storage *(continued)*

AlphaServer 8400 Windows NT System Cabinets

- Systems include one 12-slot PCI Plug-In Unit (DWLPB-AA) and one UltraSCSI Plug-in Unit (BA670-AA)
- System supports up to a maximum of two 12-slot PCI Plug-In Units, and up to a maximum of seven StorageWorks shelves, i.e., three BA670 Plug-In Units (each BA670 includes two SCSI shelves), and one BA671 StorageWorks shelf (each BA671 includes one SCSI shelf).
- StorageWorks shelves support maximum of seven 3.5" devices, or two 5.25" devices and one 3.5" device.
- StorageWorks shelves support narrow and wide SCSI 5400 RPM, 7200, and 10000 RPM disk drives.
- UltraSCSI and Fast-10 disk drives can be mixed in BA670 or BA671 UltraSCSI shelves. Drives negotiate maximum transfer speeds with UltraSCSI adapters/controllers.
- Each StorageWorks shelf requires a SCSI controller for each active SCSI port and SCSI cable to connect controller to shelf.

AlphaServer 8400 StorageWorks Plug-In Units (PIUs) and StorageWorks Shelves

BA670-AA	**UltraSCSI Single Channel StorageWorks PIU**—includes two shelves, 16-bit I/O personality module, single channel I/O module, 48 V/150 W dc power supply, and mounting hardware. Supports 16-bit wide SCSI devices and some 8-bit narrow SCSI devices depending on compliance with minimum hardware revision levels.
BA670-AB	**UltraSCSI Dual Channel StorageWorks PIU**—includes two shelves, 16-bit I/O personality module, dual channel I/O module, 48 V/150 W dc power supply, and mounting hardware. Supports 16-bit wide SCSI devices and some 8-bit narrow SCSI devices depending on compliance with minimum hardware revision levels.
BA671-AA	**UltraSCSI- Single Channel StorageWorks Shelf**—includes 16-bit I/O personality module, single channel I/O module, 48V/150W DC power supply, mounting hardware. Can be added to DWLPB-AA/AB in place of second PCI expansion box (DWLPB-BA/BB). Maximum one BA671-AA per DWLPB-AA/AB; maximum six BA671-AA per system. Supports 16-bit (wide) SCSI and some 8-bit (narrow) SCSI devices.
BA671-AB	**UltraSCSI Dual Channel StorageWorks Shelf—**includes 16-bit I/O personality module, dual channel I/O module, 48V/150W DC power supply, and mounting hardware. Can be added to DWLPB-AA/AB in place of second PCI expansion box (DWLPB-BA/BB). Maximum one BA671-AB per DWLPB-AA/AB; maximum six BA671-AB per system. Supports 16-bit (wide) SCSI and some 8-bit (narrow) SCSI devices.

Step 7b—Supported Devices

16-bit and 8-bit Disk Drives

DS-RZ1CBVW	4.3 GB 7200 RPM 16-bit Ultra SCSI disk drive
DS-RZ1DA-VW	9.1GB Ultra SCSI 7200 RPM Disk Drive, SBB
DS-RZ1DD-VW	9.1 GB 10000 RPM 16-bit UltraSCSI disk drive
DS-RZ1EA-VW	18.2GB Ultra SCSI 7200 RPM Disk Drive, SBB, not supported on KZPAC controllers
DS-RZ1ED-VW	18.2 GB 10000 RPM 16-bit UltraSCSI disk drive
DS-RZ1FB-VW	36.4GB Ultra SCSI 7200 RPM Disk Drive, SBB, not supported on KZPAC controllers
DS-RZ1DF-VA	9.1 GB 7200 RPM 8-bit narrow SCSI disk drive
DS-RZ1EF-VA	18.2 GB 7200 RPM 8-bit narrow SCSI disk drive

Tape Drives

TLZ09-VA	8.0 GB 4 mm DAT drive 93 MB/min (compressed) in 5.25" StorageWorks carrier
TLZ9L –VA	32/64 GB 4 mm DAT tape loader in StorageWorks carrier
TZ88N-VA	20/40 GB DLT 5.25-inch SCSI tape drive in StorageWorks carrier
TZK11-VA	2 GB QIC tape drive in StorageWorks carrier

Note: Tape drives and optical devices are not supported on KZPAC SCSI RAID controller.

Additional Tape Drives supported

TZ87, TZ89, TZ875, TZ877, TZ885, TZK10, TZK12, TZK20, TLZ06, TLZ07,DS-TL891-NE/NT, DS-TL892-UA, TKZ62, DSTL893-BA/AC, DS-TL896-BA/AC

Step 7c—UltraSCSI RAID Array Controller and UltraSCSI RAID Packaged Solutions

UltraSCSI RAID Array Controller

DS-HSZ70-AH StorageWorks UltraSCSI RAID Array controller includes 64 MB cache, 6 UltraSCSI single-ended channels, CLI cable kit, controller to controller jumper cable, and two ECB cables. Requires HSZ70 Solutions Software Kit and external cache battery.

ESA 10000 Storage Arrays and RAID Array 7000 (RA7000) Options

- ESA 10000 Storage Arrays and RAID Array 7000 (HSZ70 Product Set) are supported on AlphaServer systems running Windows NT Server 4.0 Enterprise Edition
- The HSZ70 is supported on the KZPSA-BB Fast Wide Differential controller and KZPBA-CB UltraSCSI Differential controller.

ESA 10000 Enterprise Storage Arrays

See StorageWorks Packaged Solutions in StorageWorks Chapter of *DIGITAL Systems and Options Catalog*, or on the WEB at http://www.digital.com/info/SOHOME/ for additional configuration information.

DS-SWXES-AA/AB ESA 10000 high capacity/general business base unit

Includes**:** Data Center 600 mm enclosure
2 BA370-AA Rackmounted shelves with 5 shelf power supplies each, expandable to 8
2 HSZ70 six port controllers 64 MB mirrored write back cache each, expandable to 128 MB each
6 UltraSCSI expansion cables
1 10 meter host to controller cable (BN37A-10)
Serial line assembly with adapters (9 pin and 25 pin)
Power cord and documentation
Supports up to 48 drives

Requires: HSZ70 Solutions Software kit for platform, host adapter, and disks to be ordered separately
Options: 64 MB cache upgrade and fully redundant power

DS-SWXES-BA/BB ESA 10000 high bandwidth base unit

Includes: Data Center 600 mm enclosure
2 BA370-AA Rackmounted shelves with 5 shelf power supplies each, expandable to 8
4 HSZ70 six port controllers 64 MB mirrored write back cache each, expandable to 128 MB each
2 10 meter host to controller cables (BN37A-10)
Serial line assembly with adapters (9 pin and 25 pin)
Power cord and documentation
Supports up to 48 drives

Requires: HSZ70 Solutions Software kit for platform, host adapter, and disks to be ordered separately
Options: 64 MB cache upgrade and fully redundant power

DS-SWXES-CA/CB ESA 10000 dual expansion base unit

Includes: Data Center 600 mm enclosure
2 BA370-AA Rackmounted shelves with 5 shelf power supplies each, expandable to 8
12 UltraSCSI expansion cables
SW600 cabinet joiner kit
Power cord and documentation
Supports up to 48 drives

Requires: HSZ70 Solutions Software kit for platform, host adapter, and disks to be ordered separately
Options: Fully redundant power

DS-SWXES-DA/DB ESA 10000 single expansion w/ dual controllers base unit

Includes: Data Center 600 mm enclosure
1 BA370-AA Rackmounted shelf with 5 shelf power supplies, expandable to 8
2 HSZ70 six port controllers 64 MB mirrored write back cache each, expandable to 128 MB each
1 10 meter host to controller cable (BN37A-10)
Serial line assembly with adapters (9 pin and 25 pin)
Power cord and documentation
Supports 24 drives, expandable to 48 with BA370 rackmount upgrade.

Requires: HSZ70 Solutions Software kit for platform, host adapter, and disks to be ordered separately
Options: 64 MB cache upgrade, fully redundant power, and BA370 rackmount upgrade.

Step 7c—UltraSCSI RAID Array Controller and UltraSCSI RAID Packaged Solutions *(continued)*

RAID Array 7000 (RA7000)

DS-SWXRA-HA RAID Array 7000 with Dual controllers

Includes: 24 SBB Departmental Cabinet
2 HSZ70 6 port controllers with 64 MB mirrored write-back cache each, expandable to 128 MB each
I/O expansion module
Dual cache battery in SBB with cable
Five 180 watt power supplies, expandable to eight
Fully redundant cooling
Environmental Monitor Unit (EMU)
5 meter host to controller cable BN37A-05 with BN38E-0B VHDCI to 68 HD conversion cable,
Serial line kit, controller to controller jumper cable for redundant controllers, and U.S. power cord.

Requires: HSZ70 Solutions Software Kit for platform, host adapter, and disks to be ordered separately
Options: 64 MB cache upgrade, Up to two RA7000 Expansion cabinets. Optional power supplies.

DS-SWXRA-HC RAID Array 7000 with Single controller

Includes: 24 SBB Storage Cabinet
1 HSZ70 6 port controller with 64 MB mirrored write-back cache, expandable to 128MB
I/O expansion module
Single cache battery in SBB with cable
Five 180 watt power supplies expandable to eight
Fully redundant cooling
Environmental Monitor Unit (EMU)
5 meter host to controller cable BN37A-05 with BN38E-0B VHDCI to 68 HD conversion cable,
Serial line kit, controller to controller jumper cable for redundant controllers, and U.S. power cord.

Requires: HSZ70 Solutions Software Kit for platform, host adapter, and disks to be ordered separately
Options: Second HSZ70 controller and cache battery; 64 MB cache upgrade; Up to two RA7000 Expansion cabinets. Optional power supplies.

Adapters and Platform Specific Solutions Software

- Each HSZ70 ordered requires an HSZ70 Solutions Software Kit
- HSZ70 Solutions Software Kits with -SA variants include documentation
  HSZ70 Solutions Software Kits with -SB variants do not include documentation, select for each additional adapter ordered if documentation is available on-site.

HSZ70 Solutions Software Kits include:

- PCMCIA card containing software for storage controller
- StorageWorks Command Console (SWCC) software, and software licenses
- HSZ70 and SWCC supporting documentation

Select Adapter and HSZ70 Solutions Software Kit for Windows NT

Supported Adapters	HSZ70 Solutions Software Kit	Host Platform
KZPBA-CB or KZPSA-BB	**QB-5SBAD-SA/SB**	Windows NT

Cache Upgrade

Select cache upgrade for HSZ70 controllers. Redundant controllers require equal amounts of cache

DS-HSSIM-AB 64 MB Cache Upgrade for HSZ70

Disk Expansion Cabinet

Note: Order Expansion Cable Kit for each Disk Expansion Cabinet selected.

DS-SWXRA-HB Disk Expansion Cabinet, includes 24 disk slots, 5 power supplies, redundant cooling, EMU and PVA, power cable

DS-BNK37-1E Expansion Cable Kit, required for each Disk Expansion Cabinet DS-SWXRA-HB

Step 7c—UltraSCSI RAID Array Controller and UltraSCSI RAID Packaged Solutions *(continued)*

DS-BA35X-HH	180 Watt Power Supply. Fully redundant power requires three additional power supplies, one additional DS-BA35X-HE power control unit, and one additional DS-SW6XP-AA/AB power distribution unit.
DS-BA35X-HE	AC Power Control Unit, required when more than five 180 Watt power supplies are installed
DS-SW6XP-AA/AB	SW600 Power Distribution Unit, quantity of 1 required for each SW600 for full power redundancy.

Additional Options

DS-HS35X-BC	Single replacement external cache battery, one battery in a single Blue SBB
DS-HS35X-BD	Dual replacement external cache battery, two batteries in a single Blue SBB, supports cache of dual redundant controllers. Requires ordering 1 Power Verification and Addressing (PVA) DS-BA35X-EC
DS-BA35X-BA	Battery shelf for SW600 cabinet
DS-BA35X-MK	Dual speed fan kit
DS-BA35X-MN	Single-Ended I/O module
DS-BA35X-EB	Environmental Monitor Unit (EMU)
DS-BA35X-EC	Power Verification and Addressing (PVA)
BN37A-xx	Host to controller cable
BN38E-0B	68-pin HD to VHDCI UltraSCSI conversion cable
H9C10-JC	H9A10 Cabinet Joiner Kit for SW600
H8865-AA	UltraSCSI Single-Ended external terminator
H8863-aa	UltraSCSI Differential external terminator
DS-BA370-AA	Rackmountable BA370 shelf includes five 180 W power supplies, eight high power blowers, RETMA and Metric mounting kit.
DS-SW600-AA	60 Hz 600 mm Storage Cabinet includes single phase power distribution unit DS-SW6XP-AA
DS-SW600-AB	50 Hz 600 mm Storage Cabinet includes single phase power distribution unit DS-SW6XP-AA

Step 7d—I/O Expansion Cabinets

AlphaServer 8200 I/O Expansion Cabinets

- H9B10-EA and H9B10-JA I/O expansion cabinets provide space for a maximum of 16 SCSI StorageWorks shelves, a maximum of four DWLPB-CB PCI Shelf Mount Boxes, or a combination of StorageWorks shelves and PCI Shelf Mount Boxes per system.
- Each DWLPB-CB installed in expansion cabinet reduces number of StorageWorks shelves supported by two.
- Disk and tape drives supported are the same as Step 7 Internal Storage.

Note: Selection of a power cord is required for each I/O expansion cabinet unless a redundant power supply (H7266-AD/AE) is ordered. See Step 1a.

H9B10-EA	AlphaServer 8200 I/O expansion cabinet—Single Phase power, maximum two per system, Gray
H9B10-JA	AlphaServer 8200 I/O expansion cabinet—Single Phase power, maximum two per system, Top Gun Blue
DWLPB-CB	PCI Shelf Mount Box for AlphaServer 8200 expansion cabinet only—maximum four per I/O expansion cabinet
DS-BA356-JG	**UltraSCSI Single Channel StorageWorks Shelf**—includes 16-bit I/O personality module, 48V/150W dc power supply, dc fans, and rackmounting hardware. Supports 16-bit wide SCSI devices and some 8-bit narrow SCSI devices depending on compliance with minimum revision levels.
DS-BA356-JH	**UltraSCSI Dual Channel StorageWorks Shelf**—includes 16-bit I/O personality module, 48V/150W dc power supply, dc fans, and rackmounting hardware. Supports 16-bit wide SCSI devices and some 8-bit narrow SCSI devices depending on compliance with minimum revision levels.

Step 7d—I/O Expansion Cabinets *(continued)*

AlphaServer 8400 I/O Expansion Cabinets

- I/O Expansion Cabinet includes one three-phase power regulator
  - Provides space for two additional three-phase power regulators
- H9F00-BA/BB/BC Rev C03 or later cabinets include the H7263-AC or H7263-AD non-BBU capable power regulator.

H9F00-BA/BB/BC **I/O expansion cabinet** (Gray)–Three phase power, maximum two per system.
Note: -BA = 60 Hz, 208V, -BB = 50 Hz, 380/416V, -BC = 50/60 Hz, 202V.

H9F00-JC/JD/JE **I/O expansion cabinet** (Top Gun Blue)–Three phase power, maximum two per system.
Note: -JC = 60 Hz, 208V, -JD = 50 Hz, 380/416V, -JE = 50/60 Hz, 202V.

Expansion Bay Location		Plug-In Unit (PIU)	Quantity	Expansion Bays Occupied
Upper	Disk Plug-in Unit	(BA670-AA/AB)	Two maximum	Front or Rear
Lower	Disk Plug-in Unit	(BA670-AA/AB)	Four maximum	Front or Rear
Lower	PCI Plug-in Unit	(DWLPB-AB)	Two maximum	Rear only
Lower	Battery Plug-in Unit	(H7237-AA/AC/CA/CB)	One maximum	Front and Rear

DWLPB-AB **PCI Plug-in Unit for AlphaServer 8400 expansion cabinet** only, maximum two per expansion cabinet. Maximum of six DWLPB-AA and DWLPB-AB (PCI PIU) per system. Requires one I/O channel connection on KFTHA-AA.

DWLPB-BB **Second PCI expansion box for mounting in DWLPB-AB**—maximum one per DWLPB-AB. Requires one I/O channel connection on KFTHA-AA.

Step 8—Networks and Communications

Systems include Fast Ethernet Network Interface carduses 1 PCI slot

DE500-BA **PCI 10/100 Mbit Fast Ethernet UTP Controller**—Unshielded Twisted Pair. Up to 8 supported per PCI (DWLPB), maximum 8 per system. Requires BN24Q, BN28Q, BN25G or BN26M cable.

BN24Q-xx Category 5 Cross-over cable for point-to-point connections, unshielded for DE500-BA

BN28Q-xx Category 5 Cross-over cable for point-to-point connections, shielded for DE500-BA

BN25G-03 3 meter (9.8 ft) cable for 10BaseT Twisted Pair connection

BN26M-xx Twisted pair shielded cable (-03,-04,-07 lengths avail) for DE500-BA

DE450-CA **PCI 10 Mbit Ethernet Controller**—AUI, 10BaseT, or 10Base2. Up to 8 supported per PCI (SWLPB), maximum 8 per system.

BNE4C-02 2 meter cable for AUI connection, Ethernet/IEEE 802.3 devices

BNE4C-05 5 meter cable for AUI connection

BN25G-04 4 meter (13.1 ft) cable for 10BaseT Twisted pair connection

BN25G-07 7 meter (22.3 ft) cable for 10BaseT Twisted Pair connection

BC16M-06 6-ft cable for 10Base2 ThinWire connection

BC16M-15 15-ft cable for 10Base2 ThinWire connection

BC16M-30 30-ft cable for 10Base2 ThinWire connection

DEFPA-AB **PCI to FDDIcontroller Fiber—Single attachment station (SAS)**, MultiMode Fiber (MMF), SC connector. Up to 6 supported per PCI (DWLPB), maximum 6 per system.

DEFPA -DB **PCI to FDDIcontroller Fiber—Dual attachment station (DAS)**, MultiMode Fiber (MMF), SC connector. Up to 6 supported per PCI (DWLPB), maximum 6 per system.

DEGPA-SA PCI to GigaBit ethernet adapter. One DEGPA-SA is allowed per DWLPB; maximum of 4 per system (not supported on DWLPA). DEGPA-SA does not support network boot. For use with AlphaServer 8x00 Windows NT systems with 440 MHz CPUs or greater speeds.

BN34D-xx MultiMode Fiber Optic Duplex cable—SC connector to MIC connector

BN34B-xx MultiMode Fiber Optic Duplex cable—SC connector to SC connector

Step 8—Networks and Communications *(continued)*

DEFPA-UB	**PCI to FDDIcontroller Copper—Single attachment station (SAS)**, TP-PMD. Up to 6 supported per PCI (DWLPB), maximum 6 per system. Requires BN25H-03 connecting cable.
DEFPA-MB	**PCI to FDDIcontroller Copper—Dual attachment station (DAS)**, TP-PMD. Up to 6 supported per PCI (DWLPB), maximum 6 per system. Requires BN25H-03 connecting cable.
BN25H-03	3 meter Unshielded twisted pair RJ45 connectors

Step 9—Video Monitors and Keyboard

Windows NT systems require a video monitor and keyboard for user stations unless available on site.

Note: Selection of a video extension cable and a country specific power cord is **mandatory** for all monitor variants.
See Step 9a for video extension cable
See Step 9b for country specific power cords

SN-VRQV5-24/23	15" (13.8" viewable image size) Corporate Series auto-scan color monitor, flat square Invar CRT, 0.28 mm dot pitch, VGA to 1024 x 768 @ 75 Hz, TCO 95, MPRII, Energy Star, attached 1.8 meter video cable. Requires mandatory selection of video extension cable and country specific power cords for all variants. –24 = Northern Hemisphere without power cord –23 = Southern Hemisphere without power cord
SN-VRQP7-24/23	17” (16.0” viewable image size) professional series auto-scanning color monitor, Trinitron CRT, 0.25 mm aperture grill pitch, VGA to 1280 x 1024 at 75 Hz, TCO 95, MPR-II, Energy Star, attached 1.8 meter video cable. Requires mandatory selection of video extension cable and country specific power cords for all variants. –24 = Northern Hemisphere without power cord. –23 = Southern Hemisphere without power cord..
SN-VRQP1-24/23	21" (19.6" viewable image size) auto-scanning color monitor, Trinitron CRT, 0.25 mm aperture grill pitch, VGA to 1600 x 1200 at 75 Hz NI, TCO 95, Energy Star, includes a 1.8 meter video cable. Requires mandatory selection of video extension cable and country specific power cords for all variants. –24 = Northern Hemisphere without power cord. –23 = Southern Hemisphere without power cord.

Step 9a—Video Extension Cable

BN39C-02	1.8 meter video extension cable—mandatory for each monitor ordered

Step 9b—Monitor Power Cords

BN26J-1K	North American, Japan, 120 V, 75-inches long
BN19H-2E	Australia, New Zealand, 2.5m long
BN19C-2E	Central Europe, 2.5 m long
BN19A-2E	UK, Ireland, Hong Kong, 2.5 m long
BN19E-2E	Switzerland, 2.5 m long
BN19K-2E	Denmark, 2.5 m long
BN19M-2E	Italy, 2.5 m long
BN19S-2E	India, South Africa, 2.5 m long
BN18L-2E	Israel, 2.5 m long

Step 9c—Keyboards

Windows NT Keyboard	Country
SN-LKQ97-AA	US/UK
SN-LKQ97-AC	Canada-French
SN-LKQ97-AR	Latin American-Spanish
SN-LKQ97-AU	Brazil
SN-LKQ97-AB	Belgium
SN-LKQ97-AD	Denmark
SN-LKQ97-AE	UK
SN-LKQ97-AF	Finland
SN-LKQ97-AG	Germany
SN-LKQ97-AH	Netherlands
SN-LKQ97-AI	Italy
SN-LKQ97-AK	Switzerland
SN-LKQ97-AM	Sweden
SN-LKQ97-AN	Norway
SN-LKQ97-AP	France
SN-LKQ97-AS	Spain
SN-LKQ97-AV	Portugal
SN-LKQ97-AX	Bosnia-Herzegovina, Croatia, Slovenia, and Yugoslavia (BHCSY)
SN-LKQ97-BH	Greece
SN-LKQ97-BP	Poland
SN-LKQ97-BQ	Hungary
SN-LKQ97-BR	Arabic
SN-LKQ97-BT	Russia
SN-LKQ97-BU	Turkey
SN-LKQ97-BV	Czech Republic
SN-LKQ97-CZ	Slovak
SN-LKQ97-AJ	Japan
SN-LKQ97-BI	Taiwan
SN-LKQ97-BK	Korea
SN-LKQ97-CV	Simplified Chinese
SN-LKQ97-CB	Thai
SN-LKQ97-BA	International

Step 10—Console Terminal

- System power-on and diagnostic console functions can be performed using a standard console terminal connected to the console serial port.
- All other console functions and utilities must be performed using a video monitor.

VT510-xx	VT510 terminal
LA30N-xx	LA30 printer

Step 11—Power Options

AlphaServer 8200 System Cabinet and Expansion Cabinet include: one single-phase power supply (H7266-AA) 200-240 V ac input voltage, 48 V dc, 2400 watt, output supply.

H7266-AD	Single phase 48 V dc redundant power supply—60 Hz power connector, maximum one per cabinet
H7266-AE	Single phase 48 V dc redundant power supply—50 Hz power connector, maximum one per cabinet
H7267-AA	Battery backup option kit, (after up to 5 minute capacity)

AlphaServer 8400 System Cabinet and Expansion Cabinet

- System Cabinet includes two three-phase power supplies (H7263-AC or H7263-AD)—200-240 V ac input voltage, 48 V dc, 2400 watt output supply.
- Expansion Cabinet includes one three-phase power supply (H7263-AC or H7263-AD)—200-240 V ac input voltage, 48 V dc, 2400 watt output supply.

H7263-AC/AD	48 V dc Non-BBU capable power regulator option
H7237-CA/CB	Battery backup option kit, (up to 30 minute capacity)
H7238-BA/BB	Battery Pack Replacement option

Step 12—Software

Windows NT Expanded Base Servers require the selection of language specific Windows NT Server 4.0/Enterprise Edition license, media (CD-ROM) kit. See Step 2 for list of **mandatory** Windows NT kits.

Step 13—Installation Services and Hardware Supplemental Support Services

- Installation or Installation and Startup is mandatory for all AlphaServer 8200 systems.
- Consult your Compaq Customer Service Account Representative for assistance in choosing the support plan that is most appropriate.
- For more information on Compaq Services see: http://www.digital.com/services

Step 13a—AlphaServer 8200 Systems

Installation and Startup Packages

FP-8INST-xx	Installation Service Package
FP-8STAR-xx	Installation Service and Startup Package

Step 13a—AlphaServer 8200 Systems *(continued)*

System Maintenance Services—AlphaServer 8200 Systems

1-Year	3-Year	System Maintenance Service Packages
FP-801-12**	**FP-801**-36**	Priority
FP-811-12**	**FP-811**-36**	Priority NODE
FP-802-12**	**FP-802**-36**	Priority 24
FP-812-12**	**FP-812**-36**	Priority 24 NODE
FP-803-12**	**FP-803**-36**	Priority Plus
FP-813-12**	**FP-813**-36**	Priority Plus NODE
FP-805-12**	**FP-805**-36**	Priority Premier

Hardware—Americas and Asia Pacific only

- Systems include one-year hardware warranty, on-site, same day, 4-hour response time.
- Select optional Hardware Supplemental Support Services if required.

AlphaServer 8200

Two CPUs with less than 2 GB memory	Two CPUs with 2 GB memory	Two CPUs with 4 GB memory	
FM-8D4HR-36	**FM-8G4HR-36**	**FM-8V4HR-36**	Years 1-3, 5 x 9, 4-hour response time
FM-8D512-36	**FM-8G512-36**	**FM-8V512-36**	Years 1-3, 5 x 12, 4-hour response time
FM-8D616-36	**FM-8G616-36**	**FM-8V616-36**	Years 1-3, 6 x 16, 4-hour response time
FM-8D724-36	**FM-8G724-36**	**FM-8V724-36**	Years 1-3, 7 x 24, 4-hour response time
FM-8D4HR-60	**FM-8G4HR-60**	**FM-8V4HR-60**	Years 1-5, 5 x 9, 4-hour response time
FM-8D512-60	**FM-8G512-60**	**FM-8V512-60**	Years 1-5, 5 x 12, 4-hour response time
FM-8D616-60	**FM-8G616-60**	**FM-8V616-60**	Years 1-5, 6 x 16, 4-hour response time
FM-8D724-60	**FM-8G724-60**	**FM-8V724-60**	Years 1-5, 7 x 24, 4-hour response time

Step 13b—AlphaServer 8400 Systems

Installation and Startup Packages

FP-8INST-xx	Installation Service Package
FP-8STAR-xx	Installation Service and Startup Package

System Maintenance Services—AlphaServer 8400 Systems

1-Year	3-Year	System Maintenance Service Packages
FP-801-12**	**FP-801**-36**	Priority
FP-811-12**	**FP-811**-36**	Priority NODE
FP-802-12**	**FP-802**-36**	Priority 24
FP-812-12**	**FP-812**-36**	Priority 24 NODE
FP-803-12**	**FP-803**-36**	Priority Plus
FP-813-12**	**FP-813**-36**	Priority Plus NODE
FP-805-12**	**FP-805**-36**	Priority Premier

Step 13b—AlphaServer 8400 Systems *(continued)*

AlphaServer 8400

Two CPUs with 2 GB memory	Two CPUs with 4 GB memory	
FM-4Z4HR-36	**FM-8Z4HR-36**	Years 1-3, 5 x 9, 4-hour response time
FM-4Z512-36	**FM-8Z512-36**	Years 1-3, 5 x 12, 4-hour response time
FM-4Z616-36	**FM-8Z616-36**	Years 1-3, 6 x 16, 4-hour response time
FM-4Z724-36	**FM-8Z724-36**	Years 1-3, 7 x 24, 4-hour response time
FM-4Z4HR-60	**FM-8Z4HR-60**	Years 1-5, 5 x 9, 4-hour response time
FM-4Z512-60	**FM-8Z512-60**	Years 1-5, 5 x 12, 4-hour response time
FM-4Z616-60	**FM-8Z616-60**	Years 1-5, 6 x 16, 4-hour response time
FM-4Z724-60	**FM-8Z724-60**	Years 1-5, 7 x 24, 4-hour response time

Step 13c—Additional 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 system purchase, the right level of support for their information technology (IT) and business environment.

The AlphaServer Support Plan builds on the foundation Warranty and Installation Services to include Startup Services, Priority Service Packages, Silver/Gold Support, System Healthcheck, and Availability Review/Partnership. Contact your Compaq Services account representative for assistance in determining the appropriate services for your sales opportunity.

Step 14—Tru64 UNIX or OpenVMS to Windows NT Migration

Existing AlphaServer 8000 5/300, 5/350, 5/440, and 5/625 customers can migrate their Tru64 UNIX or OpenVMS environments to Windows NT with the addition of the AlphaServer 8000 Windows NT Console Subsystem hardware, the KFE72-xx, along with the appropriate Windows NT Server 4.0/Enterprise Edition software conversion kit with miscellaneous firmware and documentation in five of the most popular language versions: English, Spanish, French, German, and Japanese, and installation services.

Note that some AlphaServer 8200 and 8400 options currently supported on Tru64 UNIX and/or OpenVMS operating systems are **not** supported on Windows NT Servers. Select options listed in this Windows NT configuration menu **only**, or refer to the Supported Options List on the Web for AlphaServer 8x00 Windows NT supported hardware.

Compaq Services is **mandatory** to install the conversion options at the end user's location. Windows NT migration requires SVGA video monitor and keyboard unless available on site. Refer to list of supported options in this menu. AlphaServer 8200 or 8400 system configuration must include the following minimum components at time of Windows NT conversion.

Minimum components required

- 1 **dual-CPU** 300*, 350, 440, or 625 MHz module.
- 512 MB memory.
- 1 KFTHA I/O module with KZPAA to CD-ROM, **or** 1 KFTIA I/O module with ISP3 to CD-ROM
  Note: Maximum of one I/O module is supported (KFTHA or KFTIA), must be installed in system bus slot 8.
- 1 DWLPB 12-slot PCI shelf
- 1 Ethernet Adapter and/or 1 FDDI Adapter
- 1 PCI SCSI Adapter (KZPSA or KZPBA)
- 1 SCSI disk shelf with 4 disk drives
- 1 RRD43 (or higher) CD-ROM drive

* Dual 300 MHz CPU modules must be Rev P08 or higher.

Step 14—Tru64 UNIX or OpenVMS to Windows NT Migration *(continued)*

Maximum CPUs, Memory and I/O Controller Modules supported under Windows NT Server 4.0 Enterprise Edition

		AlphaServer 8200		AlphaServer 8400	
CPU Speed	**System I/O Module**	**CPUs**	**Memory**	**CPUs**	**Memory**
300 MHz 350/440/625 MHz	**1 (KFTHA or KFTIA)**	**6 (3modules)**	**Up to 12 GB**	**6 (3 modules) 8 (4 modules)**	**Up to 18 GB**

Components not supported

- The following options must be removed before converting Tru64 UNIX or OpenVMS servers to Windows NT operating system.
  - Uni 300 MHz and 350 MHz CPU modules
  - Multiple system I/O modules. One KFTIA **or** one KFTHA is supported in system bus slot 8 only
  - All DWLPA-xx PCI shelves
  - EISA bridge options (KFE70-AA, KFE70-BA, and KFE70-CA)
  - All EISA, FutureBus, DSSI, XMI and CI controllers and options
  - Prestoserve Non-Volatile Random Access Memory (NVRAM) installed in Tru64 UNIX servers (DJ-ML200-BA, DJ-ML200-CA, and DJ-ML300-BA)
  - MEMORY CHANNEL options (CCMAA-BA, CCMHA-AA, and CCMLA-AA)
  - XMI options (DWLMA-AA, KZMSA-AB. DEMNA-M, and DEMFA-AA)
  - RRD42 CD-ROM must be upgraded to RRD43 or higher

Note: Only those PCI I/O options shown in this menu or on the Web Supported Options List are supported on AlphaServer 8x00 Windows NT systems. Any options installed in slots 0-4 must be relocated to make these slots available for the KFE72 modules required for Windows NT conversion.

Mandatory components

The following components are mandatory to convert an existing AlphaServer 8200 or 8400 Tru64 UNIX or OpenVMS server to Windows NT server. See below for listings.

- KFE72 Hardware
- Windows NT Server Enterprise Edition conversion software and media kit
- Compaq Services Installation

KFE72 Hardware

Mandatory KFE72 Windows NT console hardware subsystem includes 2 asynchronous serial ports, 1 parallel port, keyboard and mouse ports, floppy drive, PCI TGA2 graphics accelerator adapter (SN-PBXGB-AA) PowerStorm 3D30, 3-button mouse (SN-PBQWS-WA), and, extension cables for video, keyboard and mouse. The KFE72 uses 5 PCI slots, and must be installed in slots 0-4. **Note:** KFE70 is not supported on Windows NT servers.

KFE72-AA	AlphaServer 8400 Windows NT console subsystem hardware
KFE72-BA	AlphaServer 8200 Windows NT console subsystem hardware
KFE72-CA	AlphaServer 8x00 Rackmount Systems Windows NT console subsystem hardware

Windows NT Server Enterprise Edition Conversion Software and Media Kits

Mandatory Windows NT Conversion Software Kit includes Windows NT Server 4.0/Enterprise Edition license, media (CD-ROM) and documentation **plus** all miscellaneous software unique to AlphaServer 8200/8400 Windows NT operation. Conversion software kit must be ordered with the conversion hardware shown above and is **not** available separately.

QB-5Z6AA-WA	Windows NT Server 4.0/Enterprise Edition Conversion Software Kit for AlphaServer 8x00 license and media (CD-ROM)—English
QB-5Z6PA-WA	Windows NT Server 4.0/Enterprise Edition Conversion Software Kit for AlphaServer 8x00 license and media (CD-ROM)—French
QB-5Z6GA-WA	Windows NT Server 4.0/Enterprise Edition Conversion Software Kit for AlphaServer 8x00 license and media (CD-ROM)—German
QB-5Z6SA-WA	Windows NT Server 4.0/Enterprise Edition Conversion Software Kit for AlphaServer 8x00 license and media (CD-ROM)—Spanish
QB-5Z6JA-WA	Windows NT Server 4.0/Enterprise Edition Conversion Software Kit for AlphaServer 8x00 license and media (CD-ROM)—Japanese

Step 14—Tru64 UNIX or OpenVMS to Windows NT Migration *(continued)*

COMPAQ Services Installation

COMPAQ Services Installation is **mandatory** for all AlphaServer 8200 or 8400 Tru64 UNIX and OpenVMS system conversions to Windows NT systems. Compaq Services will install conversion options at end user's location. Contact a Compaq Services representative for assistance in determining whether services other than the base installation service indicated below is appropriate for customer situation.

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

Step 15—Microsoft Cluster Server (MSCS) V1.0 Support for AlphaServer 8000 Systems

Two-node AlphaServer 8200 or 8400 Windows NT clusters can be configured with the following hardware and software to deliver even higher levels of system availability.

Software Required

- Windows NT Server 4.0 Enterprise Edition Software Kit for 8x00 Systems (see step 2)
- Microsoft Cluster Server V1.0 (included with Windows NT Server 4.0 Enterprise Edition)
- Service Pack 3 (SP3) with Microsoft Hotfix Q147222 or Service Pack 4 (SP4)
- HSZ70 Solutions Software Kit for Windows NT (see Step 7d)

Note: Compaq Clusters for Windows NT is not supported on AlphaServer 8x00 systems.

Clustered Systems Certified To Date

- 8400 5/xxx to 8400 5/xxx with KZPSA or KZPBA and RA7000/ESA10000
- 8200 5/xxx to 8200 5/xxx with KZPSA or KZPBA and RA7000/ESA 10000
- 8200 5/xxx to 8400 5/xxx with KZPSA or KZPBA and RA7000/ESA 10000

5/xxx = CPU speeds 5/300, 5/350, 5/440 and 5/625 as specified in Step 14

Microsoft Windows NT Cluster SCSI Adapters

Maximum of 2 shared buses supported.

Shared Storage Subsystems

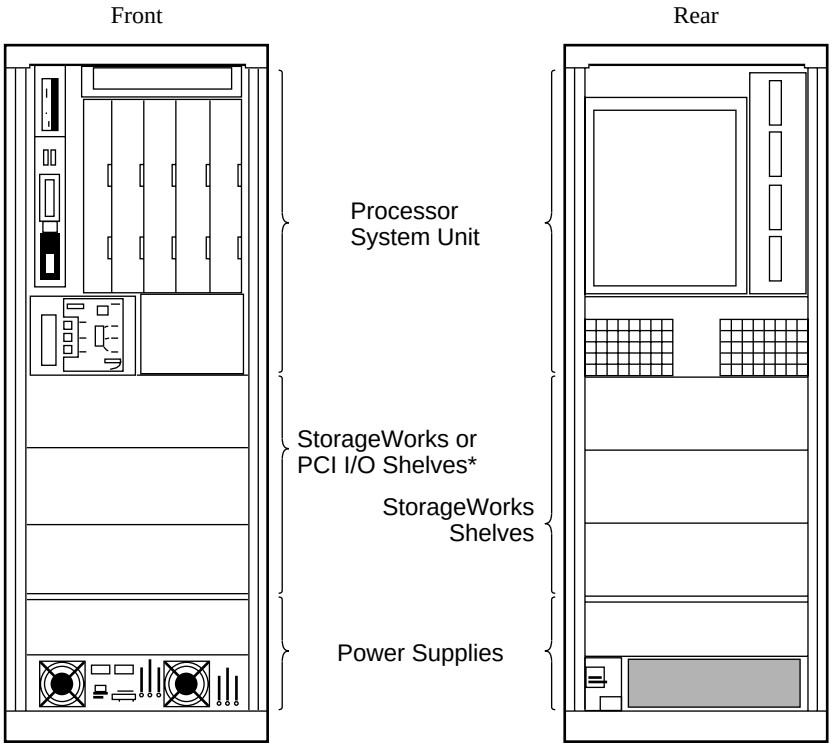
Shared Storage Subsystems (Cluster RAID)	Maximum # per shared bus	Maximum # shared buses = 2 Maximum # per cluster
HSZ70	2	4
RA7000	1	2
ESA10000	1	2

Note: Shared standalone disks or other storage subsystems are not currently supported.

Cluster Restrictions

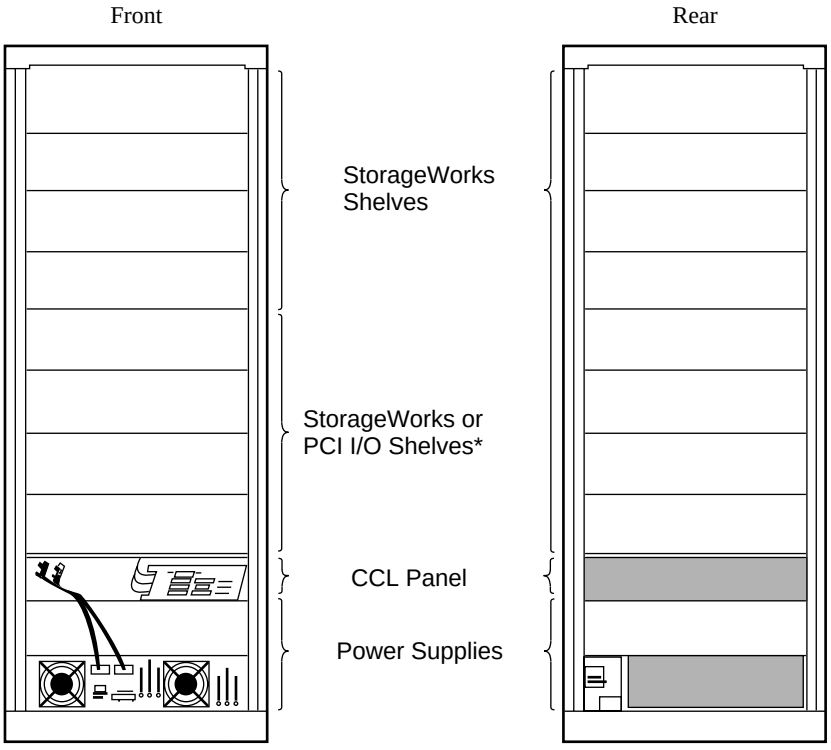
1. Maximum of 6 shared SCSI drives supported per cluster. This can be configured as one shared SCSI bus with 6 shared drives, or as two shared SCSI buses with 3 shared drives on each SCSI bus.
2. Refer to RA7000 and ESA10000 configuration rules to determine maximum allowable size of shared SCSI RAID sets.
3. Operating System disk drive cannot reside on shared SCSI bus.

AlphaServer 8200 System Cabinet



BU-3480

Expansion Cabinet



* A PCI I/O shelf extends into the rear of the cabinet.
A StorageWorks shelf cannot be located behind a PCI shelf.

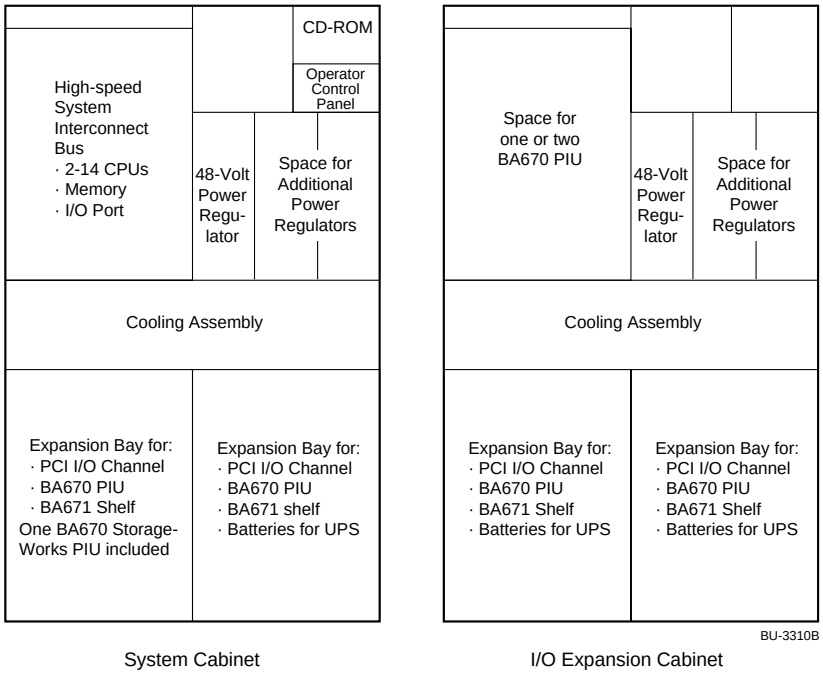
BU-3481

AlphaServer 8200 System Specifications

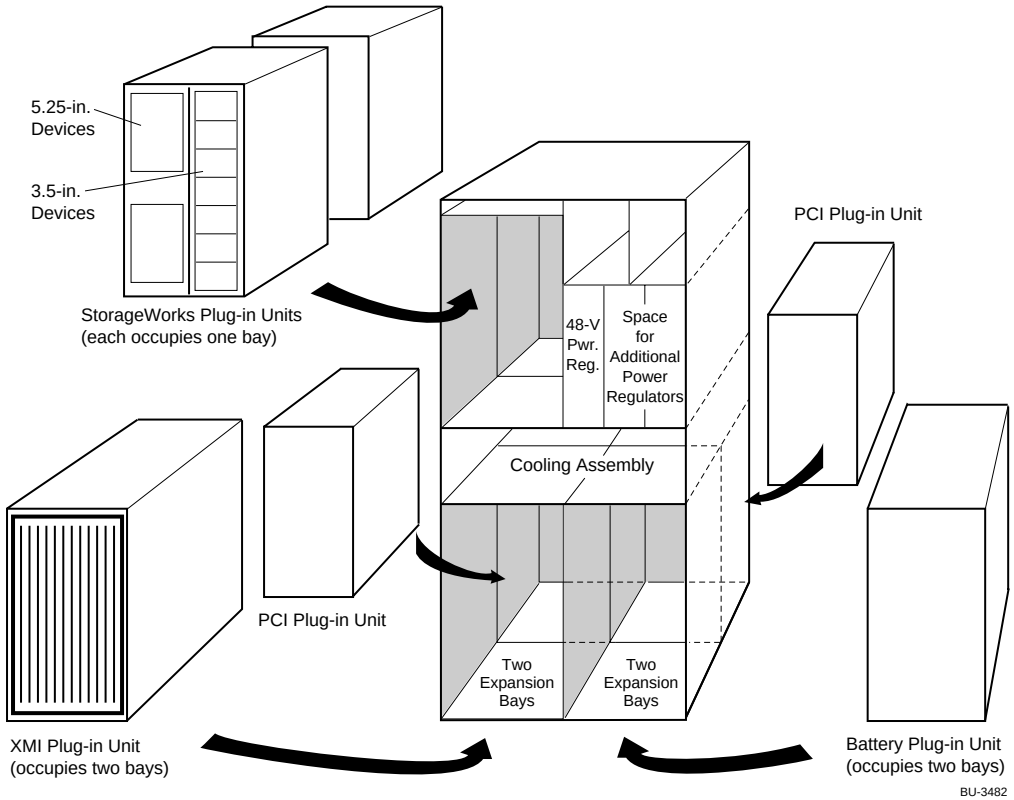
Physical Characteristics	Operating	Shipping
Height	170.0 cm (67.0 in)	194.0 cm (76.25 in)
Width	60.0 cm (23.6 in)	91.5 cm (36.0 in)
Depth	92.5 cm (36.4 in)	121.5 cm (47.9 in)
Weight		
Minimum configuration	318 kg (700 lb)	363 kg (800 lb)
Maximum configuration	591 kg ((1300 lb)	636 kg (1400 lb)
Clearances	**Operating**	**Service**
Front	1.0 m (40 in)	1.5 m (59 in)
Rear	.75 m (29.5 in)	1.0 m (40 in)
Sides	0	0
Environmental	**Operating**	**Non-Operating**
Temperature	10°C to 35°C (50°F to 95°F)	–40°C to 66°C (–40°F to 151°F)
Humidity	10% to 90%	10% to 95%
Altitude	0–2.4 km (0–8200 ft)	9,100 m (30,000 ft)
Vibration	2–22 Hz @ 0.01"da minimum	22–500 Hz @ 0.25g maximum.
Heat dissipation[1]	**Minimally configured system**[1] (system cabinet) 3200 Btu/hr, 930 W **Fully configured system**[2] (system cabinet) 9100 Btu/hr, 2647 W **Fully configured system**[3] (system cabinet with two I/O expansion cabinets) 21,300 Btu/hr, 6234 W	
Regulatory		
Agency approvals	UL Listed to UL1950 CSA Certified to CAN/C22.2 No. 950-M89 FCC Part 15 (Class A) CE Declaration #1259	
Reviewed to	EN 60950/A1, Jan. 1993, European Norm AS/NZS 3260:1993, Australian/New Zealand Standard EMKO-TSE{74-SEC}Summary of Nordic Deviations IEC950, 2nd Ed., 2nd Amend.	
Power Requirements[4]	US/Canada/Japan	Europe/AP
Nominal AC input line voltage	202-240 (208) V Japan (202) V	202-240 (240) V
Frequency range	50 Hz–60 Hz	50 Hz–60 Hz
Phases	Single-phase line-to-line or line-to-neutral	Single-phase line-to-line or line-to-neutral
Maximum input current	16 A rms	16 A rms
Surge current	80 A peak	80 A peak
Rating	16 A	16 A
Power cord part number	BN23H-4E	BN20P-4E
Power cord length	4.5 m (15 ft)	4.5 m (15 ft)
Power cap (system)	DEC 12-16886-00 NEMA L6-30P	DEC 12-30333-03
Receptacle	NEMA L6-30R	IEC 309 (32 A)[5] 2 Pole/3-Wire (220-240 V)
PCS/PDS/PDU/UPS cable	BC26E	

1. Minimally configured system contains one power supply, dual CPU, one memory, one System I/O module, one CD-ROM, and one disk drive.
2. Fully configured system contains two power supplies, one CPU module, two memory modules, two System I/O modules, one CD-ROM, 16 disk drives, two PCI shelves, and two StorageWorks shelves.
3. Fully configured system and two expansion cabinets consists of the above “fully configured system” and two expansion cabinets which each contain one PCI shelf , 14 StorageWorks shelves, and 84 RZ28 disk drives.
4. Power system provides unity power factor which allows full utilization of the input line current (Watts = VA).
5. Receptacle type is Hubbell 332R6 or equivalent.

AlphaServer 8400 System Diagram



Note: Three-Phase Power Systems support up to three Power Regulators.



AlphaServer 8400 System Specifications

Physical Characteristics	Operating	Shipping
Height	170.0 cm (67.0 in)	195.0 cm (76.7 in)
Width	80.0 cm (31.5 in)	109.5 cm (43.1 in)
Depth	87.5 cm (34.4 in)	121.0 cm (47.5 in)
Weight, full configuration		
Without batteries	408 kg (900 lb.)	448 kg (1000 lb.)
With batteries	545 kg (1200 lb.)	585 kg (1300 lb.)
Clearances	**Operating**	**Service**
Front	1.0 m (40 in)	1.5 m (59 in)
Rear	1.0 m (40 in)	1.0 m (40 in)
Sides	0	0
Environmental	**Operating**	**Non-Operating**
Temperature	15°C to 28°C (59°F to 82°F)	-40ºC to 66ºC (-40º F to 151ºF)
Humidity	20% to 80%	10% to 95%
Altitude	0–2.4 km (0–8000 ft)	9,100 m (30,000 ft)
Vibration	2–22 Hz @ 0.01"da minimum	22–500 Hz @ 0.25g max.
Heat dissipation[1]	**Minimally configured system**[1] (system cabinet) 3,400 Btu/hr, 1,000 W **Fully configured system**[2] (system cabinet) 15,700 Btu/hr, 4,600 W **Fully configured system**[3] (system cabinet with two I/O expansion cabinets) 30,600 Btu/hr, 9,000 W	
Regulatory		
Agency approvals	UL Listed to UL1950 UL Classified to IEC950 CSA Certified to CAN/CSA-C22.2, No. 950-M89 FCC Part 15 (Class A) CE Declaration #1171	
Reviewed to	AS 3260, Australian Standard EN 60950, European Norm	

Power Requirements[1] Three-Phase Power Subsystem[2]	US/Canada	Europe/AP	Japan
Nominal voltage	120/208 V	380–415 V	202 V
Frequency range	50–60 Hz	50–60 Hz	50–60 Hz
Phases	3-phase star 4-wire N-GND	3-phase star 4-wire N-GND	3-phase delta 4-wire mid-GND or 3-wire junction GND
Maximum input current/phase	24 A rms	12.8 A rms	24 A rms
Surge current	50 A peak	50 A peak	50 A peak
Rating	30 A	16 A	30 A
Power cap (system)	DEC 12-12314-00	DEC 12-30333-02	DEC 12-12314-00
Receptacle (site)	DEC 12-12315-01	See footnote 4	DEC 12-12315-01
(Industry equivalent)	NEMA L21-30R	IEC 309	NEMA L21-30R
PCS/PDS/PDU/UPS cable	BC24W	BN29X	BC24W

1. Minimally configured system contains one regulator, one CPU module, one memory module, one KFTIA-AA module, CD-ROM, and RZ28 disk drive.
2. Fully configured system contains two power regulators, four CPU modules, three memory modules, two System I/O modules, one DWLPB-AA, one DWLPB-BA, three BA67x-AB, CD-ROM, 36 RZ28 drives.
3. Fully configured system and expansion cabinets consist of the above “fully configured system” and two expansion cabinets which each contain one DWLPB-AB, one DWLPB-BB, six KZPSA-BB, five BA67x-AB, and 60 RZ28 drives.
4. Receptacle type is Hubbell 516R6 or equivalent