



AlphaServer 8200 and AlphaServer 8400 Windows NT

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DIGITAL Systems and Options Catalog

Product Description

The AlphaServer 8200 and 8400 line brings Windows NT support to the industry's already recognized leading solution for mission critical enterprise applications. AlphaServer 8200 and 8400 systems extend their mainframe power into highly scaleable, highly available Windows NT Server solutions for the most demanding enterprise applications, i.e., datawarehousing/datamart, enterprise resource planning with SAP, BAAN, J.D. Edwards, SAS, Oracle applications, etc. These enterprise 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.

AlphaServer 8200 and 8400 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, 1-8 GB of memory and 12-48 PCI slots. Full configuration support will be available with Windows NT 5.0. Digital AlphaServers are "Windows NT 5.0 64-bit VLM Ready" today.

AlphaServer 8200 and 8400 Windows NT systems are currently available in 5/440 models powered by Alpha 21164 processors (EV56). The AlphaServer 8200 and 8400 Windows NT line provides incredible investment protection with low cost of ownership and competitive price/performance.

Existing AlphaServer 8000 5/300, 5/350 or 5/440 customers can easily migrate their DIGITAL UNIX or OpenVMS environments to Windows NT with the addition of the AlphaServer 8000 Windows NT Console Subsystem hardware the KFE72-xx; and 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. Digital Services is required to install the conversion options at the end user's location.

Microsoft Cluster Server support will also be available on AlphaServer 8000 systems so that you can build two-node AlphaServer 8200 or 8400 Windows NT clusters to deliver even higher levels of system availability.

DIGITAL's Windows NT product family, with the AlphaServer 8200 and 8400 enterprise class servers included, 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.

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.

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Step 1—AlphaServer 8200 and 8400 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, FutureBus, EISA, or DSSI adapters, controllers and options, see Step 14 for additional information.
- See Step 13 and the Digital Priority Service Packages for Supplemental Hardware and Software Service offerings

AlphaServer 8200 Windows NT Expanded Base Servers include

- Processor module with two Alpha microprocessor 21164 5/440 MHz CPUs, each CPU includes 4 MB backup cache
- Five-slot 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)
- 1 GB, 2 GB or 4 GB of 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 (PBXGB-AA PowerStorm 3D30), and extension cables for video, keyboard and mouse—uses 5 PCI slots
- 3-button mouse (PBXWS-WA)
- Digital Fast Ethernet Network Interface card (DE500-AA)—uses 1 PCI slot
- PCI Fast Wide Differential SCSI controller (KZPSA-BB)—uses 1 PCI slot
- BA356-JB 16-bit wide StorageWorks shelf
- StorageWorks SCSI signal converter (DWZZB-VW)—reduces available disk drive slots in BA356 by one
- Fast Wide Differential SCSI cable (BN21K-xx)
- 4.3 GB 3.5" SCSI system disk drive
- 600 MB CD-ROM drive housed in BA656-AA integrated storage drawer
- PCI single-ended SCSI controller (KZPAA-AA) for CD-ROM connection only, and BN21H-02 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
- Product installation is included in Country List Price for 5/440 system units sold within the U.S. and some other countries. AlphaServer 8200 5/440 Dual CPU Expanded Base Servers

| Order Number | Operating System | CPU | Memory | Power |
|--------------|------------------|---------------|--------|--------------|
| DN-282FE-A9 | Windows NT | Two 5/440 MHz | 1 GB | Single-phase |
| DN-282FF-A9 | Windows NT | Two 5/440 MHz | 2 GB | Single-phase |
| DN-282FG-A9 | Windows NT | Two 5/440 MHz | 4 GB | Single-phase |

Step 1a—AlphaServer 8200 Power Cords

AlphaServer 8200 servers require a power cord unless a redundant power supply (H7266-AD/AE) is ordered, which includes a power cord, see Step 12.

- 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—AlphaServer 8200 and 8400 Windows NT Expanded Base Servers (continued)

AlphaServer 8400 Windows NT Expanded Base Servers include

- .. Processor module with two Alpha microprocessor 21164 5/440 MHz 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)
- .. 2 GB or 4 GB of 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 (PBXGB-AA PowerStorm 3D30), and extension cables for video, keyboard and mouse—uses 5 PCI slots
- .. 3-button mouse (PBXWS-WA)
- .. Digital Fast Ethernet Network Interface card (DE500-AA)—uses 1 PCI slot
- .. PCI Fast Wide Differential SCSI controller (KZPSA-BB)—uses 1 PCI slot
- .. BA660-AB StorageWorks Plug-in-unit
- .. StorageWorks SCSI signal converter (DWZZB-VW)—reduces available disk drive slots in BA660 by one
- .. Fast Wide Differential SCSI cable (BN21K-xx)
- .. 4.3 GB 3.5" SCSI system disk drive
- .. 600 MB CD-ROM drive
- .. PCI single-ended SCSI controller (KZPAA-AA) for CD-ROM connection only, and BN21H-02 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
- .. Product installation is included in Country List Price for 5/440 system units sold within the U.S. and some other countries.

AlphaServer 8400 5/440 Dual CPU Expanded Base Servers

| Order Number | Operating System | CPU | Memory | Power |
|--------------|------------------|---------------|--------|-------------|
| DN-292FF-AA | Windows NT | Two 5/440 MHz | 2 GB | Three-phase |
| DN-292FF-AB | Windows NT | Two 5/440 MHz | 2 GB | Three-phase |
| DN-292FF-AC | Windows NT | Two 5/440 MHz | 2 GB | Three-phase |
| DN-292FG-AA | Windows NT | Two 5/440 MHz | 4 GB | Three-phase |
| DN-292FG-AB | Windows NT | Two 5/440 MHz | 4 GB | Three-phase |
| DN-292FG-AC | Windows NT | Two 5/440 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 and 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 8x00 firmware and media required for Windows NT systems.

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** supports up to two additional dual CPU modules for a maximum of three CPU modules (total of 6 CPUs).
- .. **AlphaServer 8400 Windows NT systems** supports 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, e.g. 5/440 MHz.
- .. 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.

756P5-AX Windows NT 5/440 SMP add-on module, includes two 5/440 CPUs per module

Step 4—Memory

- .. Maximum of 8 GB of memory is currently supported on AlphaServer 8200 and 8400 Windows NT systems.
- .. Up to two additional memory modules can be added to AlphaServer 8200 Windows NT systems for a system maximum of three memory modules that do not exceed maximum capacity of 8 GB.
- .. Up to three additional memory modules can be added to AlphaServer 8400 Windows NT systems for a system maximum of four memory modules that do not exceed maximum capacity of 8 GB.
- .. Memory modules
 - 512 MB through 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-DA | 512 MB 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 PCI PIU includes a 12-slot PCI bus and uses one rear expansion bay. StorageWorks BA660-AB Plug-In Unit can occupy the corresponding front expansion bay.
- .. Each DWLPB-AA PCI PIU has one open space for addition of DWLPB-BA (second PCI expansion box) or BA661-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.

AlphaServer 8400—BA661 Wide StorageWorks Shelf

- .. Wide SCSI StorageWorks shelf can be added to AlphaServer 8400 standard DWLPB-AA **instead** of second PCI expansion box (DWLPB-BA).
- .. Maximum of one BA661-AA supported per DWLPB-AA.

BA661-AA Wide SCSI StorageWorks Shelf (BA356-LB). Shelf supports 16-bit (Wide) SCSI and some 8-bit (Narrow) SCSI devices.

Step 6—PCI-based Storage Controllers

KZPSA-BB **PCI 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 BA66x 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*)

| | |
|-----------------|--|
| 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 | Required for KZPAC-CA/CB to use third port on module. Connects KZPAC-CA/CB module to second PCI bulkhead slot. |
| BN31S-1E | 1.5-meter wide single-ended SCSI cable required for connections each used port on KZPAC-AA/CA/CB module. Manufacturing may substitute BN31S-02 cable for certain cabinet configurations. |
| BN31S-02 | 2-meter wide single-ended SCSI cable required for connections each used port on KZPAC-AA/CA/CB module |

Step 6a—External Storage Controllers

- .. Controllers require KZPSA-BB Fast Wide Differential FWD SCSI controller.
 - DS-HSZ70-Ax requires one QB-5SBAD-SA/SB kit
 - HSZ50-Ax requires one QB-5CJAA-SA kit
 - HSZ52-Ax requires two QB-5CJAA-SA kits
 - HSZ54-AJ requires four QB-5CJAA-SA kits
- .. 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. |
| HSZ50-AF | StorageWorks RAID Array 450/HSZ50 32 MB SCSI controller includes 6 SCSI channels, 36 SCSI-2 device connections in redundant configurations (42 when non-redundant), 32 LUN maximum, 32 MB cache module, single external cache battery system building block. |
| HSZ50-AH | StorageWorks RAID Array 450/HSZ50 64 MB SCSI controller includes 6 SCSI channels, 36 SCSI-2 device connections in redundant configurations (42 when non-redundant), 32 LUN maximum, 64 MB cache module, single external cache battery system building block. |
| HSZ50-AJ | StorageWorks RAID Array 450/HSZ50 128 MB SCSI controller includes 6 SCSI channels, 36 dual, 42 single SCSI-2 device connections, 32 LUN maximum, 128 MB cache module, single external cache battery system building block. |
| HSZ52-AF | StorageWorks RAID Array 450/HSZ50 64 MB dual SCSI controller includes 12 SCSI channels, 36 SCSI-2 device connections, 32 LUN maximum, two cache modules, one dual external cache battery system building block, two external cache batteries, two 2-meter cables. |
| HSZ52-AH | StorageWorks RAID Array 450/HSZ50 128 MB dual SCSI controller includes 12 SCSI channels, 36 SCSI-2 device connections, 32 LUN maximum, two cache modules, one dual external cache battery system building block, two external cache batteries, two 2-meter cables. |
| HSZ52-AJ | StorageWorks RAID Array 450/HSZ50 256 MB dual SCSI controller includes 12 SCSI channels, 36 SCSI-2 device connections, 32 LUN maximum, two cache modules, one dual external cache battery system building block, two external cache batteries, two 2-meter cables. |
| HSZ54-AJ | StorageWorks RAID Array 450/HSZ50 512 MB quad SCSI controller includes 12 SCSI channels, 72 SCSI-2 device connections, 64 LUN maximum, four cache modules, two dual external cache battery system building blocks, four external cache batteries, four 2-meter cables. |

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 BN21x-xx SCSI cables for connecting controllers and storage options.

Step 7a—Internal Storage Shelves and Plug-in Units—System Cabinet

AlphaServer 8200 Windows NT System Cabinets

- .. Systems include one 12-slot PCI Shelf Mount Box (DWLPB-CA) and one StorageWorks shelf (BA356-JB).
- .. Systems support up to a maximum of three 12-slot PCI Shelf Mount Boxes, and up to a maximum of three BA356 StorageWorks shelves per system cabinet.
- .. StorageWorks shelves support maximum of seven 3.5" devices, or two 5.25" devices and one 3.5" device. Shelves support narrow and wide SCSI 5400 RPM and 7200 RPM disk drives.
 - Standard configurations include a DWZZB-VW signal converter which reduces available 3.5" device slots by one.

BA356-JB Wide SCSI-2 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.

AlphaServer 8400 Windows NT System Cabinets

- .. Systems include one 12-slot PCI Plug-In Unit (DWLPB-AA) and one StorageWorks Plug-in-Unit shelf (BA660-AB).
- .. System supports up to a maximum of two 12-slot PCI Plug-In Units, and up to a maximum of seven StorageWorks shelves, three BA660 Plug-In Units (BA660 includes two BA356-LB shelves), and one BA661 StorageWorks shelf (BA661 includes one BA356-LB shelf).
- .. StorageWorks shelves support maximum of seven 3.5" devices, or two 5.25" devices and one 3.5" device. Shelves support narrow and wide SCSI 5400 RPM and 7200 RPM disk drives.
 - Standard configurations include a DWZZB-VW signal converter which reduces available 3.5" device slots by one.

BA660-AB Wide SCSI-2 StorageWorks Plug-in-Unit—includes two BA356-LB expansion shelves, 16-bit I/O personality module, 48 V/150 W dc power supply, dc fans, and AlphaServer 8400 mounting hardware. Supports 16-bit and some 8-bit SCSI devices depending on compliance with minimum hardware revision levels.

BA661-AA Wide SCSI-2 StorageWorks Shelf—includes one BA356-LB expansion shelf, 16-bit I/O personality module, 48V/150 W dc power supply, dc fans, mounting hardware. Can be added to DWLPB-AA/AB in place of second PCI expansion box (DWLPB-BA/BB). Maximum one BA661-AA per DWLPB-AA/AB; maximum six BA661-AA per system. Supports 16-bit and some 8-bit SCSI devices depending on compliance with minimum hardware revision levels.

Step 7b—Disk Drives

DS-RZ28L-VA 2.1 GB 7200 RPM 8-bit narrow SCSI disk drive
DS-RZ29L-VA 4.3 GB 7200 RPM 8-bit narrow SCSI disk drive
DS-RZ40-VA 9.0 GB 7200 RPM 8-bit narrow SCSI disk drive

DS-RZ1BB-VW 2.1 GB 7200 RPM 16-bit wide disk drive
DS-RZ1CB-VW 4.3 GB 7200 RPM 16-bit wide disk drive
DS-RZ1DB-VW 9.0 GB 7200 RPM 16-bit wide disk drive

Step 7c—Removable Media

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

Step 7d—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 8200 and AlphaServer 8400 systems running Windows NT Server 4.0 Enterprise Edition
- .. Currently the HSZ70 is supported on the KZPSA-BB Fast Wide Differential controller.
 - Minimum KZPSA-BB Firmware Required A11
 - Minimum Console Revision Required V5.0
 - Minimum Hardware Revision Tested A01
 - Minimum Firmware Revision Tested V7.0
 - Minimum Operating System Version Tested Windows NT Server 4.0 Enterprise Edition

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 on HSZ70 controllers in ESA 10000 and RA7000.

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 Ultra SCSI 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 Ultra SCSI 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

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

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.

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 KZPSA adapter ordered to support HSZ70(s) requires an HSZ70 Solutions Software Kit
- .. HSZ70 Solutions Software Kits provide tools needed to link ESA 10000 to a wide variety of vendor platforms.
- .. HSZ70 Solutions Software Kits with -SA variants included 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 appropriate platform

| Supported Adapters | HSZ70 Solutions Software Kit | Host Platform |
|--------------------|------------------------------|---------------|
| KZPSA-BB | QB-5SBAB-SA/SB | DIGITAL UNIX |

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

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 7e—I/O Expansion Cabinet
AlphaServer 8200 I/O Expansion Cabinet

.. H9B10-EA I/O expansion cabinet provides space for a maximum of 16 BA356-JB SCSI StorageWorks shelves and a maximum of four DWLPB-CB PCI Shelf Mount Boxes per system.

.. Each DWLPB-CB installed in expansion cabinet reduces available BA356-JB shelf bays by two.

.. Disk and tape drives supported are the same as Step 7 Internal Storage.

H9B10-EA AlphaServer 8200 I/O expansion cabinet—Single Phase power, maximum two per system

DWLPB-CB PCI shelf mount box for AlphaServer 8200 expansion cabinet only—maximum four per cabinet.

Step 7e—I/O Expansion Cabinet *(continued)*

AlphaServer 8400 I/O Expansion Cabinet

- .. H9F00-BA/BB/BC/BD I/O expansion cabinets provide space for up to six SCSI disk plug-in units (PIU). Each of the two pairs of expansion bays in the bottom of the cabinet can hold one Battery PIU, one PCI PIU or two SCSI disk PIUs. Two expansion bays in the top of the expansion cabinet can hold up to two SCSI disk PIUs.
- .. Disk and tape drives supported are the same as Step 7 Internal Storage.

| | |
|-----------------------|--|
| H9F00-BA/BB/BC | AlphaServer 8400 I/O expansion cabinet—Three phase power, maximum two per system Note: -BA = 60 Hz, 208V, -BB = 50 Hz, 380/416V, -BC = 50/60 Hz, 202V |
| DWLPB-AB | PCI plug-in unit for AlphaServer 8400 expansion cabinet only, maximum two per expansion cabinet, four 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 card (DE500-AA)—uses 1 PCI slot

| | |
|------------------|---|
| DE500-AA | PCI 10/100 Mbit Fast Ethernet Controller —Twisted pair. Up to 8 supported per PCI (DWLPB), maximum 8 per system. |
| 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-03 | 3-meter (9.8 ft) cable for 10BaseT Twisted Pair 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 FDDI controller 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 FDDI controller Fiber—Dual attachment station (DAS) , MultiMode Fiber (MMF), SC connector. Up to 6 supported per PCI (DWLPB), maximum 6 per system. |
| BN34D-xx | MultiMode Fiber Optic Duplex cable—SC connector to MIC connector |
| BN34B-xx | MultiMode Fiber Optic Duplex cable—SC connector to SC connector |
| DEFPA-UB | PCI to FDDI controller 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 FDDI controller 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.
- .. Select country specific power cords for -W3 and W4 variants.

| | |
|--------------------|--|
| SN-VRCX5-W* | 15" (13.9" viewable image size) high resolution color monitor (Corporate Series) |
| SN-VRCX7-W* | 17" (16.0" viewable image size) high resolution color monitor (Corporate Series) |
| SN-VRTX7-W* | 17" (16.0" viewable image size) high resolution color monitor (Professional Series), Trinitron |
| SN-VRCX1-W* | 21" (19.7" viewable image size) high resolution color monitor (Professional Series), Diamondtron |

* WA=Northern Hemisphere with 120V power cord, W3=Northern Hemisphere without power cord, W4=Southern Hemisphere without power cord.

Step 9—Video Monitors and Keyboard (*continued*)

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, 2.5 m long |
| BN19E-2E | Switzerland, 2.5 m long |
| BN19K-2E | Denmark, 2.5 m long |
| BN19Z-2E | Italy, 2.5 m long |
| BN19S-2E | Egypt, India, South Africa, 2.5 m long |
| BN18L-2E | Israel, 2.5 m long |

Keyboards

| | |
|-----------------|---|
| LK47W-A2 | U.S./English Keyboard (Frost White) |
| LK97W-A2 | U.S./English Windows95 Keyboard (Frost White) |

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 |
| LK461-xx | Gray Keyboard |
| LK46W-xx | Frost White Keyboard |

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 | AlphaServer 8200 Single phase 48 V dc redundant power supply—60 Hz power connector, maximum one per cabinet |
| H7266-AE | AlphaServer 8200 Single phase 48 V dc redundant power supply—50 Hz power connector, maximum one per cabinet |
| H7267-AA | AlphaServer 8200 Battery backup option kit, (after up to 5 minute capacity) |

AlphaServer 8400 System Cabinet and Expansion Cabinet include two three-phase power supplies (H7263-AC or H7263-AD)—200-240 V ac input voltage, 48 V dc, 2400 watt, output supply.

| | |
|--------------------|---|
| H7263-AC/AD | AlphaServer 8400 48 V dc Non-BBU capable power regulator option |
| H7237-CA/CB | AlphaServer 8400 Battery backup option kit, (up to 30 minute capacity) |
| H7238-BA/BB | AlphaServer 8400 Battery Pack Replacement option |

Step 12—Software

AlphaServer 8200 and 8400 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—Hardware Supplemental Support Services

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 4GB 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 |

AlphaServer 8400

| Two CPUs with 2 GB memory | Two CPUs with 4GB 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 13a—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 Digital Services account representative for assistance in determining the appropriate services for your sales opportunity.

Step 14—AlphaServer 8200 or 8400 DIGITAL UNIX or OpenVMS to Windows NT Migration

Existing AlphaServer 8000 5/350, 5/440, and 5/625 customers can easily migrate their DIGITAL 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 DIGITAL 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.

Digital Services is **required** 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
 - .. 1 DWLPB 12-slot PCI shelf
 - .. 1 Ethernet Adapter and/or 1 FDDI Adapter
 - .. 1 KZPSA PCI FWD SCSI Adapter
 - .. 1 SCSI disk shelf with 4 disk drives
 - .. 1 RRD43 (or higher) CD-ROM drive
- Note:** Maximum of one I/O module is supported (KFTHA or KFTIA), must be installed in system bus slot 8.

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

Components not supported

- .. The following options must be removed before converting DIGITAL 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 controllers and options
 - All FutureBus controllers and options
 - All DSSI controllers and options
 - All XMI controllers and options
 - All CI controllers and options
 - Prestoserve Non-Volatile Random Access Memory (NVRAM) installed in DIGITAL 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.

Conversion hardware required

- .. 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 (PBXGB-AA PowerStorm 3D30), 3-button mouse (PBXWS-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 8000 Rackmount Systems Windows NT console subsystem hardware |

Step 14a—AlphaServer 8200 and 8400 Windows NT Server Enterprise Edition Conversion Software Kits

Required 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 14b—Installation Service

Digital Services is **required** to 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. Installation Service must be ordered with all AlphaServer 8x00 DIGITAL UNIX and OpenVMS to Windows conversions.

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