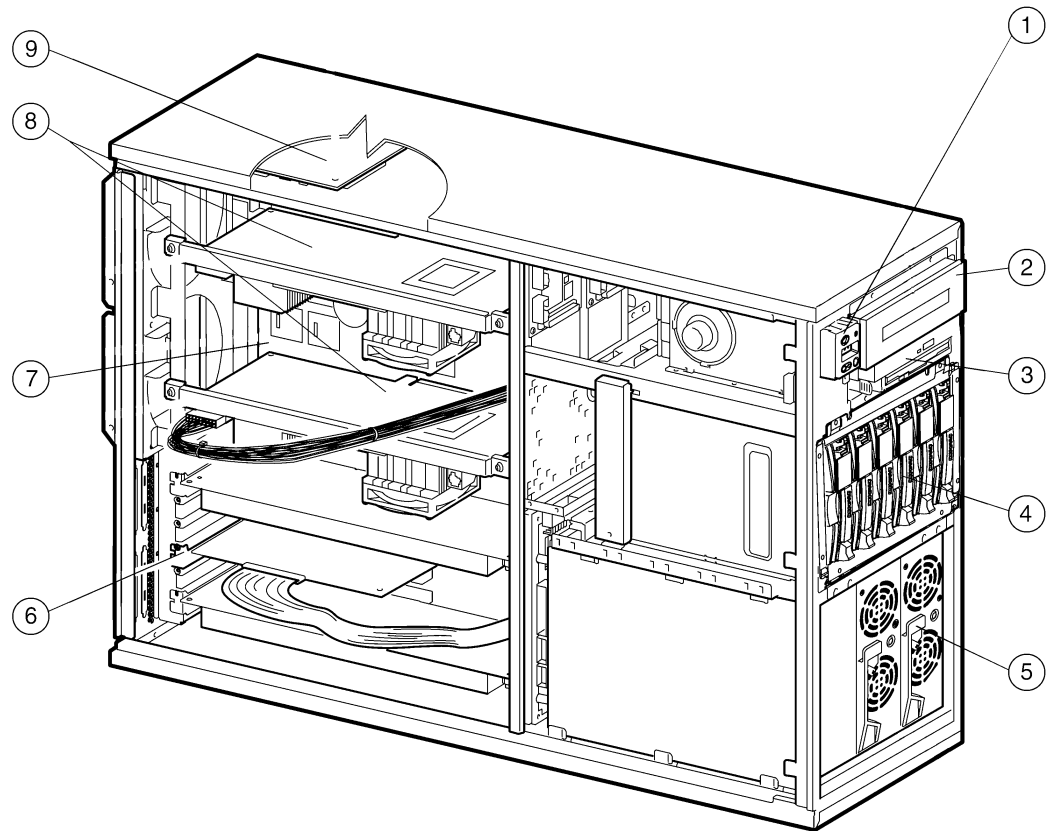


## Overview

### At A Glance

AlphaServer™/AlphaStation™  
DS20E Systems include:

- Alpha 21264 667-MHz or 833-MHz processor (dual processor capability)
- 8-MB level DDR cache per processor
- ECC-protected memory bus and cache
- 512-MB or 1-GB SDRAM memory expandable to 4 GB
- Five PCI and one shared PCI/ISA slot (six total slots)
- Six hot swap hard disk drive bays
- Internal mass storage capacity up to 436 GB
- Integrated environmental server management module
- Two 375-Watt hot pluggable power supplies with optional third for N+1 redundancy
- Combo 24X CD-ROM drive and 1.44-MB floppy disk drive
- Protected by Compaq Services, including a three-year on-site limited warranty



- |                                    |                               |
|------------------------------------|-------------------------------|
| 1. Operator Control Panel          | 6. Ultra2/Ultra3 SCSI adapter |
| 2. Removable media bay             | 7. System motherboard         |
| 3. Combination CD-ROM/floppy drive | 8. CPU modules                |
| 4. Hard disk drive cage            | 9. Server Management Module   |
| 5. Power supplies                  |                               |

## Standard Features

<b>Processor</b>	Alpha 21264 667-MHz or 833-MHz processor	
<b>Cache Memory</b>	8-MB level 2 dual data rate cache per processor	
<b>Upgradability</b>	System upgradable to dual processing	
<b>Memory</b>	Minimum	512-MB or 1-GB ECC SDRAM memory standard
	Maximum	4 GB
<b>Network Controller</b>	Choice of Ethernet controllers	
<b>Expansion</b>	I/O (Total)	6
	PCI	5
	Shared PCI/ISA	1
<b>Storage Controller</b>	Choice of storage controllers	
<b>Storage</b>	Diskette Drive	1.44 MB
	CD-ROM	24X Max IDE CD-ROM Drive
	Internal Hard Drives	Choice of 18.2-GB, 36.4-GB, or 72.8-GB drives
	Maximum Internal Storage	436 GB
<b>Interfaces</b>	Parallel	1
	Serial	2
	Pointing Device (Mouse)	1
	Keyboard	1
	SCSI knockouts on rear of chassis	6
	Parallel	1
<b>Form Factor</b>	Rackmount or Tower	
<b>Manageability</b>	Compaq <i>Insight Manager</i> <sup>™</sup>	
<b>Power Supply</b>	Two 375-Watt hot plug power supplies, standard; optional third N+1 for redundancy Hot plug redundant power supply support; hot plug fan support	
<b>OS Support</b>	AlphaServer DS20E <i>Tru64</i> <sup>™</sup> UNIX <sup>™</sup> systems include pre-installed software (V5.1A), Base license, Unlimited User license, Server Extension license, Internet Express, iPlanet Directory Server, iPlanet Enterprise Server, and Compaq Secure Web Server AlphaStation DS20E Tru64 UNIX systems include pre-installed software (V5.1A), 2-user Base license AlphaServer DS20E OpenVMS <sup>™</sup> systems include pre-installed software (V7.3), Base license with System Manager license and Enterprise Integration Server License Package for OpenVMS V3.1 AlphaStation DS20E OpenVMS systems include pre-installed software (V7.3), Base license, Concurrent Use 1-user license, NAS 150 Client license, and Compaq Open3D traditional license Minimum OS support: Tru64 UNIX V4.0F, OpenVMS V7.1-2 or V7.2-1	
<b>Service and Support</b>	Compaq Services provides a wide range of service offerings including a three-year limited warranty fully supported by a worldwide network of resellers and service providers; lifetime toll-free 7 x 24 hardware technical phone support.	

## Systems/Options

### Step 1 – Select system

AlphaServer/AlphaStation DS20E systems require the **mandatory** selection of the following items:

- Pedestal/tower or rackmount bezel kit
- Disk drive cage
- LVD SCSI adapter
- System disk drive
- Ethernet adapter
- Power cord
- Software media and documentation for first system onsite

**NOTES:** DS20E minimum OS support – Tru64 UNIX V4.0F, OpenVMS V7.1-2 or V7.2-1

Keyboard and mouse not included.

Option part numbers identified with the notation "U.S./Canada orders" and "Other country orders" refers specifically to the country where the order originates, and indicates the valid and orderable part numbers in the respective geographies.

For system integration of options with 6-3 part numbers, non-U.S./Canada orders, contact *CustomSystems*

AlphaServer DS20E Systems			
OS	CPU	Memory/Cache	Order Number
Tru64 UNIX	667 MHz	512 MB/8 MB	DA-56PAB-EA
Tru64 UNIX	667 MHz	1 GB/8 MB	DA-56PAB-FA
Tru64 UNIX	833 MHz	512 MB/8 MB	DA-56RAA-EA
Tru64 UNIX	833 MHz	1 GB/8 MB	DA-56RAA-FA
OpenVMS	667 MHz	512 MB/8 MB	DY-56PAB-EA
OpenVMS	667 MHz	1 GB/8 MB	DY-56PAB-FA
OpenVMS	833 MHz	512 MB/8 MB	DY-56RAA-EA
OpenVMS	833 MHz	1 GB/8 MB	DY-56RAA-FA
AlphaStation DS20E Systems			
Tru64 UNIX	667 MHz	512 MB/8 MB	DA-56PAB-EW
Tru64 UNIX	667 MHz	1 GB/8 MB	DA-56PAB-FW
Tru64 UNIX	833 MHz	512 MB/8 MB	DA-56RAA-EW
Tru64 UNIX	833 MHz	1 GB/8 MB	DA-56RAA-FW
OpenVMS	667 MHz	512 MB/8 MB	DY-56PAB-EW
OpenVMS	667 MHz	1 GB/8 MB	DY-56PAB-FW
OpenVMS	833 MHz	512 MB/8 MB	DY-56RAA-EW
OpenVMS	833 MHz	1 GB/8 MB	DY-56RAA-FW

### Step 2 – Select mandatory options

#### Step 2a – Bezel Kits – Mandatory

- Pedestal/Tower kit or Rackmount kit is mandatory for each system

Pedestal/Tower bezel kit 3X-BA56P-PB

Rackmount bezel kit (M-Series Cabinets) 3X-BA56R-RC

Rackmount bezel kit for Compaq Series 9000 Cabinets (Onsite integration only – contact CustomSystems if factory integration is required) 3X-BA56R-RE

#### Step 2b – Disk Drive Cage – Mandatory

- Systems support one disk drive cage; disk drive cage supports six 3.5-inch hard disk drives

6-bay disk drive cage BA610-6D

## Options

### Step 2 – Select mandatory options (continued)

#### Step 2c – SCSI Adapter – Mandatory

- Selection of LVD SCSI adapter to connect to internal disk drive cage is mandatory; SCSI cable included with disk-drive cage
 

Single-channel LVD adapter, maximum four per system	3X-KZPCA-AA
PCI 2-channel multimode Ultra3 LVD SCSI adapter VHDCI (Tru64 UNIX 5.1 or higher and OpenVMS V7.2-2 or higher)	3X-KZPEA-DB
<b>NOTE:</b> Patch kit required, kit available at <a href="http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/">http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/</a>	
No shared SCSI or SDLT tape/library support.	
PCI-to-10/100 MBPS Ethernet, graphics, LVD SCSI combination adapter, maximum one per system (cannot be installed in PCI slot 1)	3X-DEPVZ-AA

#### Step 2d – System Disk Drive (Supported in Disk Drive Cage) – Mandatory

- Selection of one disk drive is mandatory
 

18.2-GB Ultra3 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A0585-AA
18.2-GB Ultra3 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A1543-AA
36.4-GB Ultra3 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A0919-AA
36.4-GB Ultra3 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3079-AA
72.8-GB Ultra3 (LVD) 10,000 rpm 1-inch Universal disk drive	3R-A3050-AA
Ultra Universal drive height converter, 4-pack; required for installed base customers with earlier 4-slot drive cages (3X-BA611-4D) when ordering 1-inch universal drives	3R-A0528-AA

#### Step 2e – Ethernet Adapters – Mandatory

- Selection of one Ethernet adapter is mandatory (Ethernet adapter is not required if KZPCM or 3X-DEPVZ-AA adapter is selected)
- See Step 12 for additional networking options
 

PCI 1-port 10/100 Mbit Fast Ethernet adapter, UTP, maximum four per system	3X-DE600-AA
PCI 2-port 10/100 Mbit, Fast Ethernet adapter, UTP, maximum two per system, maximum eight 10/100 Ethernet ports per system	3X-DE602-AA
Multi-mode fiber (MMF) add-on daughter card for 3X-DE602-AA, maximum two per system, maximum eight 10/100 Ethernet ports per system	3X-DE602-FA
PCI 2-port 10/100 Mbit Fast Ethernet adapter, UTP, maximum two per system, maximum eight 10/100 Ethernet ports per system	3X-DE602-BB
2-port 10/100 Mbit, UTP, Ethernet add-on daughter card for 3X-DE602-BB, maximum two per system, maximum eight 10/100 Ethernet ports per system	3X-DE602-TA
PCI 10/100 Mbit 4-port Ethernet adapter, UTP, maximum one per system	DE504-BA
PCI Video/NIC Combo adapter, 3Dlabs Permedia P2 graphics with 4-MB VRAM, single-port 10/100 Mbit Fast Ethernet, maximum one per system	3X-DEPVD-AA
Cable for 10BaseT twisted pair connection	BN25G-xx

#### Step 2f – Power Cords – Mandatory

- Selection of power cord is mandatory for all systems

Pedestal Power Cords		
	North American 120V, 75-inch	BN26J-1K
	Australia, New Zealand, 2.5-meter	103541-511 (U.S./Canada orders)
		BN19H-2E (Other country orders)
	Central Europe, 2.5-meter	BN19C-2E
	Denmark, 2.5-meter	103541-481 (U.S./Canada orders)
		BN19K-2E (Other country orders)
	Egypt, India, South Africa, 2.5-meter	103541-AR1 (U.S./Canada orders)
		BN19S-2E (Other country orders)
	Israel, 2.5-meter	BN18L-2E

## Options

### Step 2 – Select mandatory options (continued)

#### Step 2f – Power Cords – Mandatory (continued)

Pedestal Power Cords (continued)	Italy, 2.5-meter	103541-461 (U.S./Canada orders)
		BN35M-02 (Other country orders)
	Japan, 2.5-meter	3X-BN46F-02
	Switzerland, 2.5-meter	103541-511 (U.S./Canada orders)
		BN19E-2E (Other country orders)
	UK, Ireland, 2.5-meter	BN19A-2E
Rackmount Power Cords	U.S./Canada	BN20Z-4E
	Non-U.S.	BN35S-4E
	Japan, 2.5-meter	3X-BN46D-4E

### Step 3 – Additional CPU Modules – Optional

- One 6/667-MHz or 6/833-MHz CPU included, one additional CPU supported, second CPU must be the same speed.
 

SMP upgrade includes one 6/667-MHz CPU with 8-MB cache and Tru64 UNIX SMP license	KN311-CB
SMP upgrade includes one 6/667-MHz CPU with 8-MB cache and OpenVMS SMP license	KN311-CC
SMP upgrade includes one 6/833-MHz CPU with 8-MB cache and Tru64 UNIX SMP license	KN312-BB
SMP upgrade includes one 6/833-MHz CPU with 8-MB cache and OpenVMS SMP license	KN312-BC

### Step 4 – Memory – Optional

- System includes one memory option; up to three additional memory options can be added
 

512-MB memory option (4 x 128-MB DIMMs)	MS340-DA
1-GB memory option (4 x 256-MB DIMMs)	MS340-EA

### Step 5 – Additional Power Supplies – Optional

- Two 375 watt power supplies included with system; optional third power supply provides N+1 redundancy
 

DS20E redundant power supply	FR-H7910-AA
------------------------------	-------------

### Step 6 – Internal Removable Storage – Optional

- System supports three internal removable media devices:
  - One combo 24X CD-ROM drive and 1.44-MB disk drive
  - One additional removable media slot provides support for one 5.25-inch half-height device; requires KZPBA-CA or KZPCM-DA UltraSCSI adapter, or 3X-KZPCA-AA or 3X-DEPVZ-AA Ultra2 (LVD) adapter, and SCSI cable (3X-BC56C-2F) or 3X-KZPEA-DB Ultra3 (LVD) adapter. For optimum performance it is recommended that Ultra2 capable devices be connected to at least an Ultra2 capable adapter.
 

12/24-GB 4 mm DAT SCSI tape drive (TLZ10) 5.25-inch half-height, top gun blue	TLZ10-LB
5.25-inch half-height 20/40-GB 4 mm DAT Ultra 2 (LVD) SCSI tape drive, top gun blue	3X-SD20X-LB
5.25-inch half-height 35/70-GB 8 mm AIT Wide Ultra SCSI tape drive, top gun blue	3X-SZ35X-LB
5.25-inch half-height 50/100-GB 8 mm AIT Ultra 2 (LVD) SCSI tape drive, top gun blue	3X-SZ50X-LB
5.25-inch half-height 35/70-GB 8 mm AIT LVD UltraSCSI tape drive, carbon black; requires 3X-KZPCA-AA or 3X-DEPVZ-AA LVD adapter	3R-A2392-AA
35/70-GB AIT hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves, 3X-KZPCA-AA, 3X-DEPVZ-AA LVD, or 3X-KZPEA-DB adapter	3R-A2396-AA
50/100-GB AIT hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves, 3X-KZPCA-AA, 3X-DEPVZ-AA LVD, or 3X-KZPEA-DB adapter	3R-A2779-AA

## Options

### Step 6 – Internal Removable Storage – Optional (*continued*)

20/40-GB DAT DDS4 hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves, 3X-KZPCA-AA LVD or 3X-KZPEA-DB adapter	3R-A2780-AA
SCSI cable with one connector and active terminator to connect optional PCI adapter to 5.25-inch device	3X-BC56C-2F

### Step 7 – External Storage – Optional

#### UltraSCSI StorageWorks™ BA356 Pedestals

- UltraSCSI top gun blue pedestals provide support for UltraSCSI disk drives; pedestal is available in single-bus or split-bus configurations and includes a personality module and 180W power supply
- UltraSCSI shelf supports: seven 3.5-inch hard disk drives, or one 5.25-inch device and four 3.5-inch hard disk drives, or two 5.25-inch devices and one 3.5-inch hard disk drive
- Installation of redundant power supply reduces number of 3.5-inch drive slots by one

UltraSCSI single-ended pedestal, single-bus personality module, 180W power supply	DS-BA356-KF
UltraSCSI pedestal, single-channel differential personality module, 180W power supply	DS-BA356-KH
180W power supply, includes 120V North American and 240V IEC power cord	CK-BA35X-HH

#### UltraSCSI StorageWorks BA36R Shelf – Requires selection of UltraSCSI adapter and SCSI cable

- StorageWorks Shelf supports seven 3.5-inch x 1.6-inch hard disk drives; with addition of redundant power supply, only six drives are supported
- StorageWorks shelf kits are mounted back-to-back in M-Series cabinets

StorageWorks UltraSCSI single-bus shelf kit	BA36R-RC
StorageWorks UltraSCSI split-bus shelf kit	BA36R-RD

#### StorageWorks Model 4314R and Model 4354R Universal Drive Shelves

- StorageWorks Model 4314R and 4354R Ultra3 SCSI (LVD) single-bus and split-bus Universal drive shelves; refer to StorageWorks Enclosure 4300 Family QuickSpecs when configuring shelves. When selecting a DS-SL13R-xx split-bus shelf, order two 3X-KZPCA-AA adapters with BN38C-xx cables, or one 3X-KZPEA-DB with BN37A-xx cables. Model 43xx shelves are compatible with Wide Ultra2 or Ultra3 (LVD) adapters only. Note that the depth of a DS-SL13R-xx shelf does not allow front and rear mounting. 3X-KZPEA-DB adapter does not support SDLT tapes.

StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, for North America and International use, except Japan (190209-001)	DS-SL13R-AA (All regions except Japan)
StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, Japan	190209-291 (U.S./Canada orders for Japan variant)
StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, Japan	DS-SL13R-AJ (Non U.S./Canada orders for Japan variant)
StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, for North America and International use, except Japan (190211-001)	DS-SL13R-BA (All regions except Japan)
StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, Japan	190211-291 (U.S./Canada orders for Japan variant)
StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, Japan	DS-SL13R-BJ (Non U.S./Canada orders for Japan variant)

## Options

### Step 7 – External Storage – Optional (continued)

<b>StorageWorks Model 4314T Standalone Enclosure for Universal Drives</b>	Model 4314T Ultra3 SCSI, single-bus tower enclosure, U.S.	190210-001 (U.S./Canada orders) DS-SL13T-AA (Other country orders)
	Model 4314T Ultra3 SCSI, single-bus tower enclosure, International	190210-B31 (U.S./Canada orders) DS-SL13T-AB (Other country orders)
	Model 4314T Ultra3 SCSI, single-bus tower enclosure, Japan	190210-291 (U.S./Canada orders) DS-SL13T-AJ (Other country orders)
<b>StorageWorks Model 4314 Options</b>	StorageWorks enclosure redundant power supply	119826-B21 (U.S./Canada orders) DS-SE2UP-AA (Other country orders)

### Step 8 – Storage Devices – Optional

#### UltraSCSI Configuration Rules

- 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)
- UltraSCSI and Fast10 drives can be mixed in DS-BA356 top gun blue UltraSCSI shelf; UltraSCSI adapter negotiates maximum transfer speed of drives

<b>Disk Drives</b> (Supported in Model 4314R, Model 4354R, or Model 4314T Universal Drive Shelves)	18.2-GB Ultra3 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A0585-AA
	18.2-GB Ultra3 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A1543-AA
	36.4-GB Ultra3 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A0919-AA
	36.4-GB Ultra3 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3079-AA
	72.8-GB Ultra3 (LVD) 10,000 rpm 1-inch Universal disk drive	3R-A3050-AA
<b>Disk Drives</b> (Supported in StorageWorks BA356/BA36R Shelves)	9.1-GB UltraSCSI 10,000 rpm disk drive	DS-RZ1DD-VW
	18.2-GB UltraSCSI 10,000 rpm disk drive	DS-RZ1ED-VW
	36.4-GB UltraSCSI 10,000 rpm disk drive	DS-RZ1FC-VW

#### Tape Drives

- Tape drives require single-ended UltraSCSI adapter and country-specific power cord
- For more information on Compaq tape drives, see <http://www.compaq.com/products/storageworks/sitemap.html#tapedrives>  
**NOTE:** This website is available in English only.

<b>AIT Tape Drives</b>	35/70-GB 8 mm AIT LVD tabletop tape drive, North America; requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter	216885-001
	35/70-GB 8 mm AIT LVD tabletop tape drive, International; requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter	216885-B31
	35/70-GB 8 mm AIT LVD tabletop tape drive, Japan; requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter	216885-291
	35/70-GB 8 mm AIT SCSI tabletop tape drive with 120V North American power cord; requires 3X-KZPCA-AA or KZPBA-CA SCSI adapter or 3X-KZPEA-DB LVD adapter	388507-001
	35/70-GB 8 mm AIT SCSI tabletop tape drive, International; requires 3X-KZPCA-AA or KZPBA-CA SCSI adapter or 3X-KZPEA-DB LVD adapter	388507-B31
	50/100-GB 8 mm AIT SCSI tabletop tape drive with 120V North American power cord; requires 3X-KZPCA-AA Wide Ultra2 (LVD) adapter or 3X-KZPEA-DB LVD adapter	157767-001
	50/100-GB 8 mm AIT SCSI tabletop tape drive, International; requires 3X-KZPCA-AA Wide Ultra2 (LVD) adapter or 3X-KZPEA-DB LVD adapter	157767-B31
	35/70-GB AIT hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves	3R-A2396-AA
	50/100-GB AIT hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves	3R-A2779-AA

## Options

### Step 8 – Storage Devices – Optional (continued)

AIT Tape Libraries	SSL2020 AIT library with one AIT 50-GB drive and 20 slots, rackmount, requires 3X-KZPCA-AA or 3X-KZPEA-DB adapter	175196-B21
	SSL2020 AIT library with two AIT 50-GB drives and 20 slots, rackmount, requires 3X-KZPCA-AA or 3X-KZPEA-DB adapter	175196-B22
	Tabletop SSL2020 AIT library with one AIT 50-GB drive and 20 slots requires 3X-KZPCA-AA LVD adapter or 3X-KZPEA-DB adapter	175195-B21
	Tabletop SSL2020 AIT library with two AIT 50-GB drives and 20 slots, requires 3X-KZPCA-AA LVD adapter or 3X-KZPEA-DB adapter	175195-B22

DAT Tape Drives	DAT 12/24-GB 4 mm narrow single-ended tabletop SCSI tape drive with 120V North American power cord; requires BN31W-xx SCSI cable and KZPBA-CA or KZPCM-DA adapter	DS-TLZ10-DB
	DAT 20/40-GB 4 mm Wide Ultra2 (LVD) tabletop SCSI tape drive with 120V North American power cord; requires 3X-KZPCA-AA Wide Ultra2 (LVD) adapter or 3X-KZPEA-DB Ultra3 (LVD) adapter	157770-001
	DAT 20/40-GB 4 mm Wide Ultra2 (LVD) tabletop SCSI tape drive, International; requires 3X-KZPCA-AA Wide Ultra2 (LVD) adapter or 3X-KZPEA-DB Ultra3 (LVD) adapter	157770-B31
	DAT 20/40-GB autoloader external, North America	166505-001
	DAT 20/40-GB auto loader external, International; requires BN31W-xx SCSI cable and KZPBA-CA or KZPCM-DA adapter or 3X-KZPEA-DB Ultra3 (LVD) adapter	166505-B31
	DAT 20/40-GB autoloader external, Japan	166505-291
	DAT 20/40-GB DDS4 hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves	3R-A2780-AA

### Removable Media Devices for StorageWorks Shelves

- For maximum performance, tape libraries must be configured with Fast Wide Differential (FWD) controllers for tape backup
- For more information on Compaq tape drives, see <http://www.compaq.com/products/storageworks/sitemap.html#tapedrives>  
**NOTE:** This website is available in English only.

AIT Tape Drives	AIT 35/70-GB 8 mm SCSI tape drive in 3.5-inch StorageWorks carrier (BA36R or BA356 shelves)	DS-AIT35-VW
	SSL2020 AIT library with one AIT 50-GB drive and 20 slots, tabletop, LVD	175195-B21
	SSL2020 AIT library with two AIT 50-GB drives and 20 slots, tabletop, LVD	175195-B22
	SSL2020 AIT library with one AIT 50-GB drive and 20 slots, rackmount, LVD	175196-B21
	SSL2020 AIT library with two AIT 50-GB drives and 20 slots, rackmount, LVD	175196-B22

DAT Tape Drives	DAT 12/24-GB 4 mm narrow SCSI tape drive in StorageWorks carrier (BA36R or BA356 shelves)	DS-TLZ10-VA
-----------------	---	-------------

DLT/SDLT Tape Drives	DLT8000 40/80-GB tape drive in StorageWorks carrier (BA36R or BA356 shelves)	DS-TZ90N-VW
	DLT8000 40/80-GB carbon black internal tape drive for use in LVD tape enclosures	146196-B22
	DLT8000 40/80-GB carbon black tabletop drive, U.S./International	146197-B23
	DLT8000 40/80-GB carbon black tabletop drive, Japan	146197-293
	DLT 20/40-GB single-ended tape drive in StorageWorks carrier (BA36R or BA356 shelves)	TZ88N-VA
	SDLT 110/220-GB internal tape drive for use in LVD tape enclosures	192106-B25
	SDLT 110/220-GB tabletop drive, U.S.	192103-002
	SDLT 110/220-GB tabletop drive, International	192103-B32
SDLT 110/220-GB tabletop drive, Japan	192103-292	

## Options

### Step 8 – Storage Devices – Optional (continued)

<b>DAT Autoloaders</b>	DDS4 20/40-GB eight-cartridge internal DAT autoloader	166504-B21
	DDS4 20/40-GB eight-cartridge tabletop DAT autoloader, U.S.	166505-001
	DDS4 20/40-GB eight-cartridge tabletop DAT autoloader, International	166505-B31
	DDS4 20/40-GB eight-cartridge tabletop DAT autoloader, Japan	166505-291
<b>AIT Autoloaders</b>	AIT 35/70-GB eight-cartridge rackmount autoloader	282175-001
	AIT 35/70-GB eight-cartridge tabletop autoloader	282175-002
	AIT rackmount kit for autoloader	284930-001
<b>AIT Libraries</b>	AIT 50/100-GB SSL2020 tabletop library with one drive	175195-B21
	AIT 50/100-GB SSL2020 tabletop library with two drives	175195-B22
	AIT 50/100-GB SSL2020 rackmount library with one drive	175196-B21
	AIT 50/100-GB SSL2020 rackmount library with two drives	175196-B22
	<b>NOTE:</b> 3X-KZPEA-DB does not support SDLT tapes/libraries.	
<b>DLT Tape Libraries</b>	MSL5026DLX or MSL5026SL, DLT/SDLT rackmount library, 0 drives – requires rackmount kit (254795-001)	231979-B21
	MSL5026SL, SDLT tabletop library with one 110/220-GB SDLT tape drive, LVD	231822-B21
	MSL5026SL, SDLT tabletop library with two 110/220-GB SDLT tape drives, LVD	231822-B22
	MSL5026SL, SDLT rackmount library with one 110/220-GB SDLT tape drive, LVD – requires rackmount kit (254795-001)	231892-B21
	MSL5026SL, SDLT rackmount library with two 110/220-GB SDLT tape drives, LVD – requires rackmount kit (254795-001)	231892-B22
	MSL5052, 0 drives, LVD, rackmount	255102-B21
	MSL5052SL, two SDLT 110/220-GB drives, LVD, tabletop	249490-B21
	MSL5052SL, two SDLT 110/220-GB drives, LVD, rackmount	249491-B21
	ESL9198 DLX enterprise tape library with two 40/80-GB tape drives, 198 slots (194993-B24/-B28 for four or eight tape drives); requires 3X-KZPCA-AA adapter	194993-B21
	ESL9198 DLX enterprise tape library with four 40/80-GB tape drives, 198 slots; requires 3X-KZPCA-AA adapter	194993-B24
	ESL9198 DLX enterprise tape library with eight 40/80-GB tape drives, 198 slots; requires 3X-KZPCA-AA adapter	194993-B28
	ESL9198SL SDLT tape library with four 110/220-GB SDLT tape drives, 198 slots requires 3X-KZPCA-AA adapter	234618-B21
	ESL9198SL SDLT tape library with eight 110/220-GB SDLT tape drives, 198 slots requires 3X-KZPCA-AA adapter	234618-B22
	ESL9326SL LVD with six SDLT 110/220-GB drives	234615-B21
	ESL9326SL LVD with eight SDLT 110/220-GB drives	234615-B22
	ESL9326SL LVD with 16 SDLT 110/220-GB drives	234615-B26
	<b>External Tape Drive Enclosures (for rackmount configurations)</b>	DLT tape array III Model 0, carbon black enclosure, supports up to four DLT/SDLT internal drives
3U rackmount tape Model 0 enclosure, supports up to two DLT/SDLT full height drives or four DAT/AIT half height drives		274338-B21
Rackmount kit for 3U tape enclosure and H9Axx series cabinets		3R-A3804-AA
5U rackmount tape Model 0 enclosure		274339-B21

## Options

### Step 8 – Storage Devices – Optional (continued)

<b>Internal Drives for Above Tape Enclosures</b>	DLT 4000 20/40-GB tape drive	340743-B22
	DLT 8000 40/80-GB carbon black tape drive	146197-B22
	SDLT 110/220-GB carbon black internal tape drive	192106-B25
	DAT 20/40-GB carbon black internal DDS4 tape drive	157769-B22
	AIT 35/70-GB carbon black internal tape drive	216884-B21
	AIT 50/100-GB carbon black internal tape drive	157766-B22
	DAT 20/40-GB DDS4 eight-cartridge autoloader	166504-B21
	AIT 35-GB eight-cartridge autoloader	282175-001
<b>Modular Data Routers</b>	The following Modular Data Routers are supported with MSL5000 and ESL9000 tape libraries:	
	One Fibre channel x 2 HVD Data Router (3R-A2673-AA)	218240-B21
	One Fibre channel x 2 LVD Data Router (3R-A2774-AA)	218241-B21
	Two Fibre channel x 4 HVD Data Router (3R-A3292-AA)	163082-B21
	Two Fibre channel x 4 LVD Data Router (3R-A3312-AA)	163083-B21
	Two Fibre channel x 4 LVD Data Router (3R-A3740-AA) (Tru64 UNIX only)	262653-B21
	Two Fibre channel x 4 HVD Data Router (3R-A3741-AA) (Tru64 UNIX only)	262654-B21
<b>StorageWorks Fibre Channel Switches</b>	Fibre Channel SAN Switch, 8 ports with Fabric Operating Software	158222-B21 (U.S./Canada orders) DS-DSGGB-AA (Other country orders)
	Fibre Channel SAN Switch, 16 ports with Fabric Operating Software	158223-B21 (U.S./Canada orders)
	<b>NOTE:</b> For more information on above switches, refer to <a href="http://www.compaq.com/products/quickspecs/10457_na/10457_na.HTML">http://www.compaq.com/products/quickspecs/10457_na/10457_na.HTML</a>	DS-DSGGB-AB (Other country orders)
	<b>NOTE:</b> This website is available in English only.	
	Fibre Channel SAN Switch 8-EL – refer to	176219-B21 (U.S./Canada orders)
	<b>NOTE:</b> For more information on above switches, refer to <a href="http://www.compaq.com/products/quickspecs/10647_na/10647_na.HTML">http://www.compaq.com/products/quickspecs/10647_na/10647_na.HTML</a>	DS-DSGGC-AA (Other country orders)
	<b>NOTE:</b> This website is available in English only.	
	Fibre Channel SAN Switch 16-EL – refer to	212776-B21 (U.S./Canada orders)
	<b>NOTE:</b> For more information on above switches, refer to <a href="http://www.compaq.com/products/quickspecs/10735_na/10735_na.HTML">http://www.compaq.com/products/quickspecs/10735_na/10735_na.HTML</a>	DS-DSGGC-AB (Other country orders)
	<b>NOTE:</b> This website is available in English only.	
Fibre Channel Director Class switch – 64 ports (Tru64 UNIX and OpenVMS)	DS-DMGGD-AA	
Fibre Channel SAN Switch – 2 GB, 16-ports, two power supplies (Tru64 UNIX and OpenVMS) – requires Tru64 UNIX V5.1A patch kit: T64V51AB01AS0001-20020116.tar	287055-B21 (U.S./Canada orders)	
	DS-DSGGD-BA (Other country orders)	

## Options

### Step 9 –UltraSCSI RAID Array Controllers and UltraSCSI RAID Packaged Solutions – Optional

External Storage Solutions/ Controllers	Modular Array 8000 Fibre Channel RAID storage solution, 60 Hz; includes one HSG80 controller with 256-MB cache, one M2200 controller shelf, three dual-bus disk shelves, two I/O ports, two power supplies	175992-B21 (U.S./Canada orders)
		DS-SWXEB-CA (Other country orders)
	Modular Array 8000 Fibre Channel RAID storage solution, 50 Hz; includes one HSG80 controller with 256-MB cache, one M2200 controller shelf, three dual-bus disk shelves, two I/O ports, two power supplies	175992-B22 (U.S./Canada orders)
		DS-SWXEB-CB (Other country orders)
	Enterprise Modular Array 12000 Fibre Channel RAID storage solution, 60 Hz	175993-B21
	Enterprise Modular Array 12000 Fibre Channel RAID storage solution, 50 Hz	175993-B22
	Enterprise Virtual Array Model 2C6D 60-Hz 42U opal storage cabinet, M3220 controller assembly with dual HSV110 controllers, six M5214 dual FC loop 14-bay drive enclosures	234345-B21
	Enterprise Virtual Array Model 2C6D 50-Hz 42U opal storage cabinet, M3220 controller assembly with dual HSV110 controllers, six M5214 dual FC loop 14-bay drive enclosures	234345-B22
	Enterprise Virtual Array Model 2C12D 60-Hz, includes 42U opal storage cabinet, M3220 controller assembly with dual HSV110 controllers, 12 M5214 dual FC loop 14-bay drive enclosures	234346-B21
	Enterprise Virtual Array Model 2C12D 60-Hz, includes 42U opal storage cabinet, M3220 controller assembly with dual HSV110 controllers, 12 M5214 dual FC loop 14-bay drive enclosures	234346-B22
	Enterprise Virtual Array Model 8C8D 60-Hz, includes 42U opal storage cabinet, four M3220 controller assembly with eight HSV110 controllers, eight M5214 dual FC loop 14-bay drive enclosures	239782-001
	Enterprise Virtual Array Model 8C8D 50-Hz, includes 42U opal storage cabinet, four M3220 controller assembly with eight HSV110 controllers, eight M5214 dual FC loop 14-bay drive enclosures	249977-B21
	<b>NOTE:</b> For Modular Array 8000 and Enterprise Modular Array 12000 configuration and ordering information, see <a href="http://www.compaq.com/products/storageworks/raidstoragesystems.html">http://www.compaq.com/products/storageworks/raidstoragesystems.html</a>	
	<b>NOTE:</b> This website is available in English only.	
	Fibre Channel controller (HSG80), includes 64-MB cache; each HSG80 requires 128697-B21 HSG80 ACS V8.4F software kit for RAID Array and Enterprise Storage Array solutions	380671-B21
	Fibre Channel controller (HSG80), includes 256-MB cache; each HSG80 requires 128697-B21 HSG80 ACS V8.4F software kit for RAID Array and Enterprise Storage Array solutions	380672-B21

## Options

### Step 9 –UltraSCSI RAID Array Controllers and UltraSCSI RAID Packaged Solutions – Optional (*continued*)

#### RAID Array 3000 Rackmount Controller Shelf

- Selection of RA3000 Solutions Software Kit is required
- Supported SCSI adapter: 3X-KZPBA-CC PCI 1-port UltraSCSI differential adapter

RA3000 rackmount controller shelf, blue, with one controller, 110V DS-SWXRA-GH

**Includes:** UltraSCSI BA356 controller shelf, one HSZ22 2-channel controller with 16-MB cache, integrated Environmental Monitoring Unit (EMU), two 180W power supplies, two dual-port host differential UltraSCSI I/O SBBs, dual-channel UltraSCSI single-ended personality modules, one 120V 1000VA rackmount UPS, 5-m host SCSI cable (BN37A-05), BN38E-0B adapter, UPS serial cable, PC connection serial cable (DB-9), two 68-pin HD tri-link adapters (H8861-AA), two North American power cords, and RETMA mounting bracket (disk shelves and disks not included)

**Requires:** Solutions Software Kit for platform, host adapter, RA3000 disk shelf, and disks

**Options:** Second HSZ22 controller, up to four additional RA3000 disk shelves, cache memory upgrade

RA3000 rackmount controller shelf, blue, with one controller, 230V DS-SWXRA-GK

**Includes:** UltraSCSI BA356 controller shelf, one HSZ22 2-channel controller with 16-MB cache, integrated Environmental Monitoring Unit (EMU), two 180W power supplies, two dual-port host differential UltraSCSI I/O SBBs, dual-channel UltraSCSI single-ended personality modules, one 230V 1000VA rackmount UPS, 5-m host SCSI cable (BN37A-05), BN38E-0B adapter, UPS serial cable, PC connection serial cable (DB-9), two 68-pin HD tri-link adapters (H8861-AA), RETMA mounting bracket (disk shelves and disks not included)

**Requires:** Solutions Software Kit for platform, two country-specific power cords, host adapter, RA3000 disk shelf, and disks

**Options:** Second HSZ22 controller, up to four additional RA3000 disk shelves, cache memory upgrade

#### RAID Array 3000 Rackmount Disk Shelf

- Select one to four disk shelves
- Third and fourth DS-SWXRA-GN disk shelf ordered will be installed in rear of M-Series cabinet; rear mounted shelves require that a 2-meter BN37A-02 SCSI cable be ordered

RA3000 rackmount disk shelf, blue, includes UltraSCSI BA356 disk shelf, two 180 W DS-SWXRA-GN

power supplies, single-ended UltraSCSI personality card, one half meter SCSI cable (BN37A-0E), two North American power cords, and RETMA mounting bracket (disks not included); order two country-specific power cords for non-North American use

#### HSZ22 Controller

- Note that second HSZ22 controller ordered is field installed only, not factory installed; requires BN37A-0E SCSI jumper cable be ordered separately

Second HSZ22 controller with 16-MB cache and two 16-MB SIMMs for mirror cache, DS-HSZ22-AA

one BN37A-05 5-m UltraSCSI cable, one BN38E-0B cable adapter – field installable only; note that second HSZ22 controller does not require additional Solution Software Kit

Second HSZ22 controller with 32-MB cache and two 32-MB SIMMs for mirror cache, DS-HSZ22-AB

one BN37A-05 5-m UltraSCSI cable, one BN38E-0B cable adapter – field installed only; note that second HSZ22 controller does not require additional Solution Software Kit

## Options

### Step 9 – UltraSCSI RAID Array Controllers and UltraSCSI RAID Packaged Solutions – Optional (*continued*)

#### RA3000 Solutions Software Kit

- StorageWorks Command Console (SWCC) software; includes installation scripts and installation documentation

RA3000 Solutions Software Kit for Tru64 UNIX	QB-5TWAB-SA
RA3000 Solutions Software Kit for OpenVMS	QB-5TWAC-SA

#### HSG80 External Controllers

Fibre Channel controller (DS-HSG80-BJ), includes 2-MB cache expandable to 128 MB; requires 128697-B21 HSG80 ACS V8.4F software kit or 128698-B21 V8.4P software kit for each HSG80 ordered	380672-B21
Fibre Channel controller (DS-HSG80-BH), includes 64-MB cache expandable to 128 MB; requires 128697-B21 HSG80 ACS V8.4F software kit or 128698-B21 V8.4P software kit for each HSG80 ordered	380671-B21

#### RA3000 Pedestals

RA3000 UltraSCSI seven SBB slot pedestal cabinet, blue-gray, 230 volts, includes one DS-HSZ22-A controller, 16-MB cache, two host ports, two device ports, slot for second DS-HSZ22-AA, two redundant power supplies 204 watts with fans, one BN37A-05 cable, one BN38E-0B adapter, one serial cable, on UPS, two North American power cords	DS-SWXRA-GC
RA3000 UltraSCSI seven SBB slot pedestal, blue-gray, 120/230 volts, includes two redundant power supplies 204 watts with fans, one BN37A-01 cable, two country power cords	DS-SWXRA-GD

#### ESA 10000, RAID Array 7000, RAID Array 8000

- Enterprise Storage Array 10000 and RAID Array 7000 (HSZ70) product sets are supported on AlphaServer DS20E systems
- Supported SCSI adapter for HSZ80/HSZ70 – 3X-KZPBA-CC PCI 1-port UltraSCSI differential adapter
- Supported SCSI adapter for HSG80 – KGPSA-BC PCI 1-port Fiber-Channel adapter

### Step 10 – Storage Adapters/Controllers

**NOTE:** Refer to the following chart when configuring adapters, shelves, and disks.

#### AlphaServer DS20E Configuration Chart for Storage Adapters

Storage Adapter	Shelf	Disk Drive	Tru64 UNIX	OpenVMS
3X-KZPCA-AA	BA610-6D DS-SL13R-xx	3R-A0xxx-AA 1-inch Universal 3R-A1xxx-AA 1-inch Universal 3R-A3xxx-AA 1-inch Universal	V4.0F or higher	V7.2-1 or higher
3X-KZPEA-DB	BA610-6D DS-SL13R-xx	3R-A0xxx-AA 1-inch Universal 3R-A1xxx-AA 1-inch Universal 3R-A3xxx-AA 1-inch Universal	V5.1 or higher	V7.2.2 or higher
KZPCM-DA	BA36R-xx	DS-RZ1xx-VW	V4.0F or higher	V7.2-1 or higher
KZPBA-CA	BA36R-xx	DS-RZ1xx-VW	V4.0F or higher	V7.2-1 or higher

#### AlphaServer DS20E Configuration Chart for Storage Controllers

RAID Controller	Shelf	Disk Drive	Tru64 UNIX	OpenVMS
KZPAC-AA/CA/CB	BA36R-xx	DS-RZ1xx-VW	V4.0F or higher	V7.2-1 or higher
DS-KZPCC-AC/CE	BA610-6D DS-SL13R-xx	3R-A0xxx-AA 1-inch Universal 3R-A1xxx-AA 1-inch Universal 3R-A3xxx-AA 1-inch Universal	V5.1A or higher	-

## Options

### Step 10 – Storage Adapters/Controllers (continued)

	Maximum # Supported		
	Tru64 UNIX	OpenVMS	
PCI Fibre Channel adapter (KGPSA-CA), (uses one slot)	4	4	DS-KGPSA-CA 168794-B21
PCI to 2-Gbit Fibre Channel adapter, 64-bit/33-MHz, single-channel	4	4	DS-KGPSA-DA 261329-B21
Fibre Channel cable (BNGBX-xx) xx=02, 05, 15, 30, 50 meters x=1, 2, 3, 4, 5			234457-B2x
PCI 1-port Ultra2 (LVD) SCSI adapter, 32-bit, single-channel (uses one PCI slot); includes internal 68-pin and external 68-pin HD connectors; requires BN38C-xx cable to connect adapter to Ultra2 shelf; HSZxx RAID controllers not supported. OpenVMS V7.1-2 requires Tima Kit: DEC-AXPVMS-VMS712_UPDATE-V0300—4.PCSI; Tru64 UNIX V4.0F requires Patch Kit2 BL13: DUV40FAS0002-19991116.tar	4	4	3X-KZPCA-AA
68-pin HD male-to-VHDCI male UltraSCSI cable; xx = 02, 03, 05, 10, 20, 25 m			BN38C-xx
PCI 2-port UltraSCSI single-ended adapter and 10/100 Mb Ethernet combo adapter (uses one PCI slot); includes internal 68-pin and 50-pin HD connectors and two external 68-pin VHDCI SCSI connectors, requires BN37A-xx cable to connect to single-ended UltraSCSI shelf	4	4	KZPCM-DA
VHDCI male-to-VHDCI male UltraSCSI cable, xx = 02, 2E [2.5], 03, 05, 10, 20 m			BN37A-xx
PCI 1-port UltraSCSI single-ended adapter (uses one PCI slot); includes internal 68-pin and 50-pin HD connectors and external 68-pin HD connector, requires BN38C-xx cable (2 to 20 m) to connect to single-ended UltraSCSI shelf	4	4	KZPBA-CA
PCI 1-port UltraSCSI differential adapter (uses one PCI slot); includes external 68-pin HD connector, requires BN38C-xx cable (2 - 25 meter) to connect adapter to differential UltraSCSI shelf or RAID controller	4	4	3X-KZPBA-CC
68-pin HD male-to-VHDCI male UltraSCSI cable; xx = 02, 03, 05, 10, 20, 25 m			BN38C-xx
PCI 2-channel multimode Ultra3 LVD SCSI adapter, VHDCI (only supported in dual-bus shelves) <b>NOTE:</b> Patch kit required, kit available at <a href="http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/">http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/</a> <b>NOTE:</b> This website is available in English only. <b>NOTE:</b> No shared SCSI or SDLT tape/library support.	4 V5.1 or higher	4 V7.2-2 or higher	3X-KZPEA-DB

## Options

### Step 10 – Storage Adapters/Controllers (continued)

	Maximum # Supported		
	Tru64 UNIX	OpenVMS	
PCI 3-channel Ultra2 LVD RAID controller, 64-bit, 64-MB cache <b>NOTES:</b> <ul style="list-style-type: none"> <li>Supported with BA610-6D, BA356 DS-SL13R-xx or DS-SSL14-Rx shelves only.</li> <li>BA610-6D Nile Card must be at rev 0B to support internal RAID.</li> <li>When installed in BA356 shelves, part number DS-BA35X-FC is required for non-factory installations. Graphics card is required to run the DS-KZPCC-CE console utilities (SMOR) with SRM console versions lower than V6.0 or, alternatively can be run via serial line and terminal emulation software for SRM V6.0 or higher. PB2GA-JC/JD graphics cards are not supported.</li> <li>EV6 systems not supported.</li> <li>Tru64 UNIX V4.0F requires NHD3 and Patch Kit 4 (BL15) or later Tru64 UNIX V5.1 requires Patch Kit 3 (BL17) and Early Release Patch C462.               <ul style="list-style-type: none"> <li>Patch Kit 3 (BL17) is located at: T64V5117-C0046202-11060-Manual-ER-20010615.tar</li> <li>Patch C462.02 is located at: <a href="http://ftp1.support.compaq.com/public/unix/v5.1/">http://ftp1.support.compaq.com/public/unix/v5.1/</a></li> </ul> </li> <li><b>NOTE:</b> This website is available in English only.</li> <li>TruCluster™ V5.1 (restricted to non-shared buses only)</li> </ul>	2 with SRM V6.0 3 with SRM V6.1 V4.0F/4.0G/5.1/5.1A	-	DS-KZPCC-CE
PCI 1-channel Ultra2 LVD backplane RAID controller, 64-bit, 16-MB cache <b>NOTES:</b> <ul style="list-style-type: none"> <li>Supported with BA610-6D, BA356 and DS-SL13R-xx shelves only.</li> <li>When installed in BA356 shelves, part number DS-BA35X-FC is required for non-factory installations.</li> <li>Graphics card is required to run the DS-KZPCC-AC console utilities (SMOR) with SRM console versions lower than V6.0 or, alternatively can be run via serial line and terminal emulation software for SRM V6.0 or higher. PB2GA-JC/JD graphics cards are not supported.</li> <li>EV6 systems not supported.</li> <li>Tru64 UNIX V4.0F requires NHD3 and Patch Kit 4 (BL15) or later</li> <li>Tru64 UNIX V5.1 requires Patch Kit 3 (BL17) and Early Release Patch C462.               <ul style="list-style-type: none"> <li>Patch Kit 3 (BL17) is located at: T64V5117-C0046202-11060-Manual-ER-20010615.tar</li> <li>Patch C462.02 is located at: <a href="http://ftp1.support.compaq.com/public/unix/v5.1/">http://ftp1.support.compaq.com/public/unix/v5.1/</a></li> </ul> </li> <li><b>NOTE:</b> This website is available in English only.</li> <li>TruCluster V5.1 (restricted to non-shared buses only)</li> </ul>	2 with SRM V6.0 3 with SRM V6.1 V4.0F/4.0G/5.1/5.1A	-	DS-KZPCC-AC
PCI 1-port UltraSCSI RAID controller with 4-MB cache memory, includes RAID Array 230/Plus Subsystem software and documentation kit and VHDCI female connector; tape drives not supported – 18.2GB or higher disk drives not supported on KZPAC-xx RAID controllers	4	4	KZPAC-AA
PCI 3-port UltraSCSI RAID controller with 4-MB cache memory (uses one PCI slot), includes RAID Array 230/Plus subsystem software and documentation kit; tape drives not supported; 18.2-GB disk drives not supported; SCSI cable required for each active port; requires BN37X-xx cable (.3 to 20 m) to connect to single-ended UltraSCSI shelf, and BN31K-0E for external third port connection	2	2	KZPAC-CA
Same as KZPAC-CA with 8-MB cache memory	2	2	KZPAC-CB
Cache battery backup for KZPAC controller			KZPSC-UB
VHDCI male-to-VHDCI male UltraSCSI cable: xx = 02, 2E [2.5], 03, 05, 10, 20, 25 m <b>NOTE:</b> Manufacturing may substitute BN37A-02 cable for specific cabinet configurations.			BN37A-xx
SCSI cable/bulkhead assembly kit, supports one third-port connection from KZPAC-CA/CB, allows external connection of one third port			BN31K-0E
SCSI cable/bulkhead assembly kit, supports two third-port connections from KZPAC-CA/CB, allows external connection of two third ports			KZPAC-SB

## Options

### Step 11 – M-Series Cabinets – Optional

M-Series enclosures require selection of the following items:

- H9A10 or H9A15 cabinet, 120V or 240V
- Rack kit for each system
- H9A10 or H9A15 rear cabinet extender
- Cabinet front door based on cabinet height
- Factory integration
- Ballast kit if one or two systems are ordered for the H9A15 cabinet
- Power cord

**NOTE:** For more information on M-Series Cabinet Enclosures, see <http://www.compaq.com/alphaserver/products/M-Series/index.html>

**NOTE:** This website is available in English only.

### Cabinet Configuration Chart for AlphaServer DS20E (5U) with BA356 (4U) or DS-SL13R (3U) StorageWorks Shelves

- Disk shelves cannot be mixed in same cabinet

Cabinet	Rack Kit	Cabinet Height/Space	Systems	BA356 Shelves	DS-SL13R Shelves	Ballast Kit
H9A10-MC/MD	3X-BA56R-RC	67-inch/34U	1	6	8	-
			2	6	7	-
			3	6	5	-
			4	6	4	-
			5	2	2	-
			6	0	0	-
H9A15-MC/MD	3X-BA56R-RC	79-inch/ 41U	1	6	8	1
			2	6	7	1
			3	6	7	-
			4	6	6	-
			5	6	4	-
			6	4	2	-

### Cabinet Configuration Chart for AlphaServer DS20E (5U) with StorageWorks RA3000 and Disk Shelves (12U)

- 12U of vertical cabinet space is reserved for one RA3000 controller shelf and up to five disk shelves mounted in top of cabinet, front to back; an additional 2U of vertical space is required for RA3000 controller shelf UPS.
- Disk shelves can be a combination of RA3000 DS-SWXRA-GN disk shelves and StorageWorks BA36R-RC/RD disk shelves.
- RA3000 controller shelf supports a maximum of four DS-SWXRA-GN disk shelves; third and fourth DS-SWXRA-GN disk shelf ordered will be installed in rear of M-Series cabinet; rear mounted shelves require that a 2-meter SCSI cable (BN37A-02) be ordered separately.
- Systems are supported in remaining vertical space.

Cabinet	Mounting Kit	Cabinet Height/Space	Systems	RA3000 + Shelves	Ballast Kit
H9A10-MC/MD	3X-BA56R-RC	67-inch/34U	1	1 + 5	-
			2	1 + 5	-
			3	1 + 5	-
H9A15-MC/MD	3X-BA56R-RC	79-inch/41U	1	1 + 5	1
			2	1 + 5	1
			3	1 + 5	-
			4	1 + 5	-

## Options

### Step 11 – M-Series Cabinets – Optional (*continued*)

<b>M-Series Cabinets</b>	67-inch cabinet with 59.5-inch or 34U of usable vertical space, 120V dual-24A controller, each with 10 NEMA 5-15R outlets, input power plug NEMA L5-30P, Americas, Asia Pacific; includes rear door and top fan tray	H9A10-MC
	67-inch cabinet with 59.5-inch or 34U of usable vertical space, 240V dual-16A controller, each with 12 IEC C13 outlets, input power plug IEC 309, 16A, Europe; includes rear door and top fan tray	H9A10-MD
	79-inch cabinet with 71.7-inch or 41U of usable vertical space, 120V dual-24A controller, each with 10 NEMA 5-15R outlets, input power plug NEMA L5-30P, Americas, Asia Pacific; includes rear door and top fan tray	H9A15-MC
	79-inch cabinet with 71.7-inch or 41U of usable vertical space, 240V dual-16A controller, each with 12 IEC C13 outlets, input power plug IEC 309, 16A, Europe; includes rear door and top fan tray	H9A15-MD
<b>Rear Cabinet Extender</b> – Requires selection of one cabinet extender for each H9A10 or H9A15 cabinet	Rear cabinet extender, top gun blue, for H9A10-MC/MD cabinets	H9C10-TE
	Rear cabinet extender, top gun blue, for H9A15-MC/MD cabinets	H9C15-TE
<b>Cabinet Front Door</b> – Requires selection of door based on cabinet height	Front door, top gun blue, for H9A10-MC/MD cabinet enclosure	H9C10-TF
	Front door, top gun blue, for H9A15-MC/MD cabinet enclosure	H9C15-TF
<b>Factory Integration</b> – Required	Factory Integration of systems and storage devices assembled and configured in cabinet enclosure in predefined locations	YS-ASCAA-AA
<b>Ballast Kit</b> – Required only if one system is ordered for the H9A15 cabinet		
<ul style="list-style-type: none"> <li>Ballast is added to a cabinet at particular locations for specific configurations to meet safety regulations for installation, operation, and service; see Cabinet Configuration Chart</li> </ul>		
	Two 35 to 40 lb steel plates	H9C10-MC
<b>Rackmount Power Cord</b> – Required for each system	U.S./Canada	BN20Z-4E
	Non-U.S.	BN35S-4E
	Japan, 2.5-meter	3X-BN46D-4E
<b>Shelves Supported in M-Series Cabinets</b> – Optional	UltraSCSI single-ended RETMA rack, single-bus personality module, 180W power supply	BA36R-RC
	UltraSCSI single-ended RETMA rack, split-bus personality module, 180W power supply	BA36R-RD
	180W power supply, includes 120V North American and 240V IEC power cord	CK-BA35X-HH
	StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, North America and International use except Japan (190209-001)	DS-SL13R-AA (All regions except Japan)
	StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, Japan	190209-291 (U.S./Canada orders for Japan variant)
		DS-SL13R-AJ (Non U.S./Canada orders for Japan variant)
	StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, North America and International use except Japan (190211-001)	DS-SL13R-BA (All regions except Japan)
StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, Japan	190211-291 (U.S./Canada orders for Japan variant) DS-SL13R-BJ (Non U.S./Canada orders for Japan variant)	

### CustomSystems Support

- Cabinets containing systems and storage must be assembled by qualified assemblers: Compaq Manufacturing
- For custom integration of systems

## Options

### Step 12 – Graphics Adapters – Optional

- RAID Configuration Utility is accessible via console port for Tru64 UNIX and OpenVMS systems; optional graphics capability available
- Select graphics adapter, monitor, mouse, and country-specific keyboard if required

	Maximum # Supported		
	Tru64 UNIX	OpenVMS	
3Dlabs Oxygen VX1 32-MB PCI 2D graphics adapter <b>NOTE: Only VX1 cards can be used in a multihead environment.</b>	4	4	SN-PBXGF-AB
PowerStorm 4D51T advanced 3D graphics accelerator	4	-	SN-PBXGI-AD
PowerStorm 300 3D multi-head graphics accelerator with 15-MB frame buffer memory and 16-MB texture memory	4	4	SN-PBXGD-AD
PowerStorm 350 3D multi-head graphics accelerator with 30-MB frame buffer memory and 32-MB texture memory	4	4	SN-PBXGD-AE
PCI combo adapter - See Step 7	1	1	3X-DEPVZ-AA

### Step 13 – Monitors – Optional

- RAID Configuration Utility is accessible via the console port for Tru64 UNIX and OpenVMS systems; optional graphics capability is available
- Graphics monitors other than those listed can be used if compatible with SVGA graphics ordered with system
- Country-specific power cord is required for all monitors; if not included, order power cord as appropriate
- Video extension cable required if monitor is located more than 1-meter from server
- Monitors will ship with, but not be integrated with systems
- At least one video cable, 1.8-meter length, is included with all variants of monitors

<b>Carbon/Silver Monitors</b>	V570 15-inch (13.8-inch viewable image size) multiple-scan color monitor, VGA to 1024 x 768 @85 Hz, 0.28 mm DP, MPRII/Energy Star Compliant, Northern Hemisphere with NA power cord, VGA cable	3R-A3383-AA 228113-001
	Same as above with Euro-power cord, TCO99	3R-A3384-AA 228113-021
	Same as above, APD, no power cord, MPRII	3R-A3385-AA 228113-B22
	Same as above, PRC, with power cord, CCIB	3R-A3386-AA 228113-AA1
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord	3R-A3387-AA 228113-011
	Same as above, Equatorial, for Latin America with NA power cord	3R-A3704-AA 228113-B29
	P720 17-inch (16-inch viewable image size) auto-scanning color monitor, Diamondtron NF, 0.25 mm aperture grille pitch, VGA to 1280 x 1024 @85 Hz, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with NA power cord, VGA cable	3R-A3388-AA 244373-001
	Same as above, with Euro-power cord	3R-A3389-AA 244373-021
	Same as above, APD, no power cord	3R-A3390-AA 244373-B24
	Same as above, PRC, with power cord, CCIB	3R-A3391-AA 244373-AA1
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord	3R-A3392-AA 244373-011

## Options

### Step 13 – Monitors – Optional (continued)

	P920 19-inch (18-inch viewable image size) auto-scanning color monitor, Diamondtron NF, 0.24 mm aperture grille pitch, VGA to 1600 x 1200 @85 Hz, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with NA power cord, VGA cable	3R-A3393-AA 244375-001
	Same as above, with Euro power cord	3R-A3394-AA 244375-021
	Same as above, PRC, with power cord, CCIB	3R-A3396-AA 244375-AA1
	Same as above, Southern Hemisphere, 0.25 to 0.27 mm aperture grille pitch, with Australia/New Zealand power cord	3R-A3397-AA 244375-011
	P1220 22-inch (20-inch viewable image size) auto-scanning color monitor, Diamondtron NF, 0.24 mm aperture grille pitch, VGA to 1792 x 1344 @85Hz, dual video input, USB Hub, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with NA power cord, VGA cable	3R-A3398-AA 244374-001
	Same as above, with Euro power cord	3R-A3399-AA 244374-021
	Same as above, APD, no power cord	3R-A3400-AA 244374-B24
	Same as above, PRC, with power cord, CCIB	3R-A3401-AA 244374-AA1
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord	3R-A3402-AA 244374-011
<b>Carbon/Silver Flat Panel Monitors</b>	TFT8030, 18.1-inch (18-inch viewable image size) TFT flat panel monitor, 0.28 mm pixel pitch, 1280 x 1024 @75 Hz, multi-mode support, MPRII/TCO99/Energy Star compliant, six video input connectors (two VGA, two DVI-I, one S-video, and one C-video), NA power cord, VGA and DVI-I cables	3R-A3511-AA 234362-001
	TFT5030, 15.1-inch (15-inch viewable image size) TFT flat panel monitor, 0.30 mm pixel pitch, 1024 x 768 @75 Hz, multi-mode support, MPRII/TCO99/Energy Star compliant, two video input connectors (one VGA and one DVI-I), NA power cord, VGA and DVI-I cables	3R-A3353-AA 228134-001
<b>Video Extension Cable</b>	6-foot/1.8-meter video extension cable	BN39C-02
<b>Monitor Power Cords</b>	North American, 120V, 75-inch	BN26J-1K
	Australia, New Zealand, 2.5-meter	103541-511 (U.S./Canada orders)
		BN19H-2E (Other country orders)
	Central Europe, 2.5-meter	BN19C-2E
	Denmark, 2.5-meter	103541-481 (U.S./Canada orders)
		BN19K-2E (Other country orders)
	Egypt, India, South Africa, 2.5-meter	103541-AR1 (U.S./Canada orders)
		BN19S-2E (Other country orders)
	Israel, 2.5-meter	BN18L-2E
	Italy, 2.5-meter	103541-461 (U.S./Canada orders)
		BN35M-02 (Other country orders)
	Japan, 2.5-meter	3X-BN46F-02

## Options

### Step 13 – Monitors – Optional (continued)

Monitor Power Cords (continued)	Switzerland, 2.5-meter	103541-511 (U.S./Canada orders)
		BN19E-2E (Other country orders)
	UK, Ireland, 2.5-meter	BN19A-2E

### Step 14 – Networks and Communications – Optional

- Reference individual product information for operating system support.
- See Step 2 for mandatory supported Ethernet adapters

	Maximum # Supported		
	Tru64 UNIX	OpenVMS	
PCI 1-port 10/100-Mb Ethernet adapter (Twisted Pair)	4	4	3X-DE600-AA
PCI 2-port 10/100 Mbit, Fast Ethernet adapter, UTP, maximum two per system, maximum eight 10/100 Ethernet ports per system	2	2	3X-DE602-AA
FE FX daughter card for 3X-DE602-AA (3X-DE602-AA is a prerequisite) maximum eight 10/100 Ethernet ports supported per system	2	2	3X-DE602-FA
PCI 2-port 10/100 Mbit Fast Ethernet adapter, UTP, maximum two per system, maximum eight 10/100 Ethernet ports per system	2	2	3X-DE602-BB
PCI 2-port 10/100 Mbit, UTP, Ethernet add-on daughter card for 3X-DE602-BB, maximum two per system, maximum eight 10/100 Ethernet ports per system	2	2	3X-DE602-TA
PCI Gigabit Ethernet adapter, SC connectors, MMF, no boot support	2	1	DEGPA-SA
PCI 2-port 10/100 Mbit Fast Ethernet adapter, UTP, maximum eight 10/100 Ethernet ports per system	2	2	3X-DE602-BB
2-port 10/100 Mbit, UTP, Ethernet add-on daughter card for 3X-DE602-BB, maximum eight 10/100 Ethernet ports per system	2	2	3X-DE602-TA
SC-to-SC dual fiber optic cable			BN34B-xx
PCI Gigabit Ethernet adapter, UTP, no boot support	2	2	DEGPA-TA
PCI FDDI adapter, single attachment station (SAS), multi-mode fiber (MMF), SC connector	2	2	3X-DEFPA-AC
PCI FDDI adapter, DAS, MMF, SC connector	2	2	3X-DEFPA-DC
MIC-SC dual fiber optic cable			BN34D-xx
SC-to-SC dual fiber optic cable			BN34B-xx
PCI FDDI adapter, SAS, TP-PMD, requires BN25H-03 cable	2	2	3X-DEFPA-UC
PCI FDDI dual adapter, DAS, TP-PMD, requires BN25H-03 cable	2	2	3X-DEFPA-MC
3-meter (9.8-foot) FDDI cross-over cable			BN25H-03
PCI 4-port asynchronous controller; maximum two PBXDA-Ax controllers per system	4	2	PBXDA-AA
PCI 8-port asynchronous controller, cable included; maximum two PBXDA-Ax controllers per system	4	2	PBXDA-AB
PCI 16-port asynchronous controller, cable included; maximum two PBXDA-Ax controllers per system	4	2	PBXDA-AC
PCI-to-ATM 155 Mb adapter – Fiber	4	4	3X-DAPBA-FA
PCI-to-ATM 155 Mb adapter – UTP	4	4	3X-DAPBA-UA
PCI-to-ATM 622 Mb adapter – Fiber	2	2	3X-DAPCA-FA
PCI-to-dual port synchronous controller	4	4	3X-PBXDD-AA
PCI-to-quad port synchronous controller	4	4	3X-PBXDD-AB
Asynchronous multi-port MUX expander XEM			CXI01-AB

## Options

### Step 15 – MEMORY CHANNEL – Optional

<b>Tru64 UNIX Systems</b> (V5.0A and later)	<ul style="list-style-type: none"> <li>Each system node in the cluster requires a TruCluster Server license (QL-6BRAC-AA)</li> </ul>
<b>Tru64 UNIX Systems</b> (V4.0G and earlier)	<ul style="list-style-type: none"> <li>Requires a minimum of Tru64 UNIX V4.0F with TruCluster V1.6 or later</li> <li>Each system node in the cluster requires a TruCluster Production Server (QB-3RLAE-AA) or TruCluster MEMORY CHANNEL software license (QB-4ZCAE-AA)</li> <li>TruCluster MEMORY CHANNEL license (QB-4ZCAG-AA), normally used for high performance technical computing applications, not required if systems have a TruCluster Production Server license (QB-3RLAE-AA)</li> </ul>
<b>OpenVMS Systems</b>	<ul style="list-style-type: none"> <li>Requires OpenVMS V7.1-2 or later and OpenVMS Cluster license (QL-MUZAC-AA)</li> </ul>
<b>Configuring Information</b>	<ul style="list-style-type: none"> <li>Up to two PCI to System Area Network adapters (CCMAB-AA) are supported in a single system</li> <li>Two-node clusters can be configured by ordering a CCMAB-AA for each system and one BN29B-04 or BN29B-10 cable; the cable connects directly to the CCMAB-AA in each system</li> <li>For three or four system nodes, order one CCMAB-AA adapter, one BN29B-04 or BN29B-10 cable and one CCMHB-AA; make connections from the CCMAB-AA in a system to the CCMHB-AA</li> <li>CCMHB-AA includes four CCMLB-AA line cards and supports up to four nodes; expansion up to eight system nodes can be achieved by adding up to four additional CCMLB-AA line cards</li> <li>If two CCMAB-AA's are configured in each system, a second CCMHB-AA is required for three or more nodes; in two-node clusters, the CCMAB-AA's may be directly connected</li> </ul>

<b>MEMORY CHANNEL Controller</b>	PCI System Area Network Controller, maximum two	CCMAB-AA
	System Area Network Hub with four line cards; includes BN19P-2E power cord for Canada, Japan, and US operations—for other regions, order appropriate power cord from list below	CCMHB-AA
	Expansion line card for CCMHB hub	CCMLB-AA
	4-meter cable for CCMAB and CCMHB	BN39B-04
	10-meter cable for CCMAB and CCMHB	BN39B-10
	Copper-to-single mode fiber optic converter – 5V (clock not affected)	CCMFB-AA

<b>MEMORY CHANNEL Power Cords</b>	Australia, New Zealand	103541-011 (U.S./Canada orders)
		BN19H-2E (Other country orders)
	Central Europe	BN19C-2E
	Denmark	103541-481 (U.S./Canada orders)
		BN19K-2E (Other country orders)
	Egypt, India	103541-AR1 (U.S./Canada orders)
		BN19S-2E (Other country orders)
	Ireland, United Kingdom	BN19A-2E
	Israel	BN18L-2E

## Options

### Step 15 – MEMORY CHANNEL – Optional (continued)

MEMORY CHANNEL Power Cords Italy (continued)		103541-461 (U.S./Canada orders)
		BN35M-02 (Other country orders)
Switzerland		(103541-511 (U.S./Canada orders)
		BN19E-2E (Other country orders)

### Step 16 – Keyboards, Mouse, Power Cords, Documentation

- Keyboard and mouse are not included with system and must be ordered separately
- All keyboards listed may not be available in all geographies
- Select an opal OpenVMS keyboard and mouse for use with VT5xx text terminals.

Keyboard/Language	Opal	Carbon	
	OpenVMS	Tru64 UNIX	OpenVMS
U.S./English keyboard	LK461-A2	3R-LKQ48-AA	3X-LK462-A2
Arabic keyboard	-	3R-LKQ48-BR	-
Belgian keyboard	LK461-AB	3R-LKQ48-AB	3X-LK462-AB
BHCSY keyboard	-	3R-LKQ48-AX	-
Canadian/English keyboard	LK461-AQ	-	3X-LK462-AQ
Canadian/French keyboard	LK461-AC	3R-LKQ48-AC	3X-LK462-AC
Cyrillic keyboard (Russian)	LK461-BT	3R-LKQ48-BT	3X-LK462-BT
Czech keyboard	LK461-BV	3R-LKQ48-BV	3X-LK462-BV
Danish keyboard	LK461-AD	3R-LKQ48-AD	3X-LK462-AD
Dutch keyboard	LK461-AH	3R-LKQ48-AH	3X-LK462-AH
Finnish keyboard	LK461-AF	3R-LKQ48-AF	3X-LK462-AF
French keyboard	LK461-AP	3R-LKQ48-AP	3X-LK462-AP
German keyboard	LK461-AG	3R-LKQ48-AG	3X-LK462-AG
Greek keyboard	LK461-BH	3R-LKQ48-BH	3X-LK462-BH
Hebrew keyboard	LK461-AT	3R-LKQ48-AT	3X-LK462-AT
Hungarian keyboard	LK461-BQ	3R-LKQ48-BQ	3X-LK462-BQ
International keyboard	-	3R-LKQ48-BA	-
Italian keyboard	LK461-AI	3R-LKQ48-AI	3X-LK462-AI
Japanese keyboard	-	3R-LKQ48-AJ	-
Korean keyboard	-	3R-LKQ48-BK	-
Latin-American keyboard	-	3R-LKQ48-AR	-
Norwegian keyboard	LK461-AN	3R-LKQ48-AN	3X-LK462-AN
Polish keyboard	LK461-BP	3R-LKQ48-BP	3X-LK462-BP
Portuguese keyboard	LK461-AV	3R-LKQ48-AV	3X-LK462-AV
Romanian keyboard	LK461-BL	-	3X-LK462-BL
Simplified Chinese keyboard	-	3R-LKQ48-CV	-
Slovak keyboard	LK461-CZ	3R-LKQ48-CZ	3X-LK462-CZ
Spanish keyboard	LK461-AS	3R-LKQ48-AS	3X-LK462-AS
Swedish keyboard	LK461-AM	3R-LKQ48-AM	3X-LK462-AM
Swiss/French keyboard	LK461-AK	3R-LKQ48-AK	3X-LK462-AK
Swiss/German keyboard	LK461-AL	-	3X-LK462-AL
Traditional Chinese keyboard	-	3R-LKQ48-BI	-
Thai keyboard	-	3R-LKQ48-CB	-
Turkish keyboard	LK461-BU	3R-LKQ48-BU	3X-LK462-BU
Turkish/French keyboard	LK461-BW	-	3X-LK462-BW
UK keyboard	-	3R-LKQ48-AE	-
Yugoslavian keyboard	LK461-BY	-	3X-LK462-BY

## Options

### Step 16 – Keyboards, Mouse, Power Cords, Documentation (continued)

Mouse	3-button mouse – opal	SN-PBQWS-WA
	3-button mouse – carbon	3R-A3480-AA
Keyboard or Mouse Extension Cable	6-foot/1.8-meter keyboard or mouse extension cable; to extend both keyboard and mouse order two cables	3X-BC34A-06

### Step 17 – Console Terminal – Optional

<ul style="list-style-type: none"> <li>Any terminal can be used as a console device</li> <li>Third-party console devices require an EIA-232 25-pin DSUB connector</li> </ul>	
VT510 video terminal; requires H8575-x cable	VT510-xx
Console cable, female connector	H8575-A
Console cable, male connector	H8575-D
Console cable, male connector (IBM compatible)	H8575-E

### Step 18 – Software – Required selection of media and documentation for first system on site

- Software Processor Code = E

Tru64 UNIX	<ul style="list-style-type: none"> <li>AlphaServer DS20E Tru64 UNIX systems include Unlimited User license, Server Extension license, Internet Express, iPlanet Directory Server, iPlanet Enterprise Server, and Compaq Secure Web Server</li> <li>AlphaStation DS20E Tru64 UNIX systems include Base 2-user</li> </ul>
------------	---

When using Tru64 UNIX V5.0a or later	Tru64 UNIX media and online documentation on CD-ROM	QA-6ADAA-H8
	Tru64 UNIX full hard copy documentation	QA-6ADAA-GZ
	Tru64 UNIX Unlimited User license	QL-MT7AE-AA
	StorageWorks Software Package, with licenses for Logical Storage Manager and AdvFS Utilities	QB-5RXAE-AA
	TruCluster Server license	QL-6BRAC-AA
	Advanced Server for Tru64 UNIX, 25 client concurrent use license	QL-5U29M-3D
	Advanced Server for Tru64 UNIX, 50 client concurrent use license	QL-5U29M-3E
	Advanced Server for Tru64 UNIX, 100 client concurrent use license	QL-5U29M-3F
	Advanced Server for Tru64 UNIX, 250 client concurrent use license	QL-5U29M-3G
	Advanced Server for Tru64 UNIX, 500 client concurrent use license	QL-5U29M-3H
	Layered products media and documentation for Tru64 UNIX on CD-ROM	QA-054AA-H8
	DECnet/OSI end-system license for Tru64 UNIX	QL-MTJAE-AA
DECnet/OSI extended function license for Tru64 UNIX	QL-MTKAE-AA	

When using Tru64 UNIX V4.0G or earlier	Tru64 UNIX media and online documentation on CD-ROM	QA-MT4AA-H8
	Tru64 UNIX full hard copy documentation	QA-MT4AA-GZ
	Tru64 UNIX Unlimited User license	QL-MT7AE-AA
	StorageWorks Software Package, with licenses for Logical Storage Manager and AdvFS Utilities	QB-5RXAE-AA
	TruCluster Available Server license	QL-05SAC-AA
	TruCluster Production Server license	QB-3RLAE-AA
	Tru64 UNIX Driver for MEMORY CHANNEL license	QB-4ZCAE-AA
	Advanced Server for Tru64 UNIX, 25 client concurrent use license	QL-5U29M-3D
	Advanced Server for Tru64 UNIX, 50 client concurrent use license	QL-5U29M-3E

## Options

**Step 18 – Software** – Required selection of media and documentation for first system on site (*continued*)

<b>When using Tru64 UNIX V4.0G or earlier</b> ( <i>continued</i> )	Advanced Server for Tru64 UNIX, 100 client concurrent use license	QL-5U29M-3F
	Advanced Server for Tru64 UNIX, 250 client concurrent use license	QL-5U29M-3G
	Advanced Server for Tru64 UNIX, 500 client concurrent use license	QL-5U29M-3H
	Layered products media and documentation for Tru64 UNIX on CD-ROM	QA-054AA-H8
	DECnet/OSI end-system license for Tru64 UNIX	QL-MTJAE-AA
	DECnet/OSI extended function license for Tru64 UNIX	QL-MTKAE-AA
	Open3D for Tru64 UNIX on CD-ROM, includes graphics drivers	QA-0AFAA-H8

### OpenVMS

- AlphaServer DS20E OpenVMS systems include Base license with System Manager license and Compaq Enterprise Integration Server Package for OpenVMS Revision V3.1
- AlphaStation DS20E OpenVMS systems include Base license, Concurrent Use 1-user license, NAS 150 Client license, and Compaq Open3D license
- Compaq Enterprise Integration Package includes licenses for TCP/IP Services for OpenVMS, DECwindows Motif for OpenVMS Alpha, DECprint Supervisor for OpenVMS Alpha Plus, DECprint Supervisor for OpenVMS Open, DECnet-Plus for OpenVMS Alpha End System, Archive/Backup System for OpenVMS Management Tools, Archive/Backup Agent for *Windows NT*<sup>™</sup>, OpenVMS Disk Services for Windows NT, Office Server for OpenVMS, PATHWORKS 32, PATHWORKS V6 for OpenVMS – Advanced Server, and Compaq Office Server Client Access License

OpenVMS V7.1-2 media and online documentation on CD-ROM	QA-MT1AR-H8
OpenVMS media and online documentation on CD-ROM	QA-MT1AA-H8
OpenVMS hard copy documentation	QA-001AA-GZ
Layered products media and documentation for OpenVMS on CD-ROM	QA-03XAA-H8
Open3D for OpenVMS on CD-ROM, includes graphics drivers	QA-0ADAA-H8

- OpenVMS Concurrent Use licenses provide the right to interactively use the operating system by the specified number of concurrent users on a designated OpenVMS system. OpenVMS Concurrent Use licenses can be moved from one system to another at user discretion and can be shared in a mixed OpenVMS VAX and OpenVMS Alpha cluster.
- OpenVMS Traditional Unlimited Use license is system specific and can only be used on one single system at a time. It cannot be shared between systems or in an OpenVMS VAX or OpenVMS Alpha Cluster.

Concurrent Use 1-user license	QL-MT3AA-3B
Concurrent Use 2-user license	QL-MT3AA-3C
Concurrent Use 4-user license	QL-MT3AA-3D
Concurrent Use 8-user license	QL-MT3AA-3E
Concurrent Use 16-user license	QL-MT3AA-3F
Concurrent Use 32-user license	QL-MT3AA-3G
Concurrent Use 64-user license	QL-MT3AA-3H
Concurrent Use 128-user license	QL-MT3AA-3J
Concurrent Use 256-user license	QL-MT3AA-3K
OpenVMS Cluster license for Alpha systems	QL-MUZAC-AA
OpenVMS Cluster Client license for Alpha systems	QL-3MRAC-AA
OpenVMS Cluster Client to Full VMS Cluster Migration license	QL-6J7AC-AA
DECnet extended function license for OpenVMS	QL-MTGAE-AA
DECnet end-system to extended function upgrade license for OpenVMS	QL-MTHAE-AA
OpenVMS Volume Shadowing license	QL-2A1AE-AA

## Options

### Step 19 – Hardware and Software Support Services

---

- Select one of the optional *CarePaq™* Priority Service Packages described below that best supports the customer's operational requirements for system availability.

---

#### CarePaq Priority Services

- CarePaq Priority Services are available for AlphaServer/AlphaStation systems running Tru64 UNIX or OpenVMS operating systems. Priority Services are designed for the growing number of customers who need support beyond the basic warranty. Five packages are offered - Priority, Priority 24, Priority Silver, Priority Gold, and Priority Executive with coverage for both Principal servers/stations and SSPs (Subsequent System Packages) – that meet a full range of customer support requirements.

---

#### Program Features – Principal Server

---

##### Priority

- 9 x 5 HW/SW support
- 4-hour response on-site hardware support
- 2-hour response for Bronze software support
- License Subscription for Compaq O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Condist update distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Condist can be ordered separately.)

---

##### Priority 24

- 24 x 7 HW/SW support
- Named HW engineer
- 4-hour response on-site hardware support
- 2-hour response for Bronze software support
- License Subscription for Compaq O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Condist update distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Condist can be ordered separately.)

---

##### Priority Silver

- 24 x 7 HW Support with Named Engineer, 4-hour response
- 24 x 7 Silver SW Support - Named Account Rep, 1-hour response Monday – Friday, 8AM-5PM local time; 2-hour response remaining hours
- License Subscription for Compaq O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Condist update distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Condist can be ordered separately.)
- Technical newsletter and SW activity review
- Proactive Patch Notification
- One (1) System Healthcheck per year

---

##### Priority Gold

- 24 x 7 HW support with Named Engineer, 4-hour response for on-site support
- 24 x 7 Gold SW support - Named Account Rep
- 30-minute callback (critical); 1-hour callback (non-critical)
- License Subscription for Compaq O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Condist update distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Condist can be ordered separately.)
- Technical newsletter, SW activity review and 10 hours Upgrade impact planning
- Proactive Revision Management
- Two (2) System Healthchecks per year
- Mandatory pre-qualification required

## Options

### Step 19 – Hardware and Software Support Services *(continued)*

#### Program Features – Principal Server *(continued)*

##### Priority Gold Executive

- 24 x 7 HW support with Named Engineer, two-hour response for on-site support
- 24 x 7 Gold SW support - Named Account Rep
- 30-minute callback (critical); one-hour callback (non-critical)
- License Subscription for Compaq O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Software update distribution on CD-ROM: OpenVMS or Tru64 UNIX and their layered products (Layered products not included on Condist can be ordered separately.)
- Technical newsletter, SW activity review and 10 hours Upgrade impact planning
- Proactive Revision Management
- Two (2) System Healthchecks per year
- Customer site must be within 25 miles of a Compaq service location
- Mandatory pre-qualification required

#### Program Features – Additional Services

##### SSPs (Subsequent System Packages)

- For Priority, Priority 24, Priority Silver, Priority Gold, and Priority Gold Executive
- HW Support at same level as corresponding package for Principal server/station
- License Subscription: Compaq O/S (where applicable)
- Telephone support through Principal server/station covered by full support package

##### Installation

- Preinstallation review
- Unpacking of equipment
- Assemble and test
- Basic product usage info
- No software installation added

##### Installation & Startup Compaq O/S

- Preinstallation review
- Unpacking of equipment
- Assemble and test
- Basic product usage info
- Install operating systems
- Product configuration
- Print and network access
- Orientation

Model/CarePaq Priority Service	Principal Server/Station 1 year	Principal Server/Station 3 years	Subsequent Systems 1 year	Subsequent Systems 3 years
<b>AlphaServer/AlphaStation DS20E</b>				
Priority	FP-A01MA-12	FP-A01MA-36	FP-A21MA-12	FP-A21MA-36
Priority 24	FP-A02MA-12	FP-A02MA-36	FP-A22MA-12	FP-A22MA-36
Priority Silver	FP-A04MA-12	FP-A04MA-36	FP-A24MA-12	FP-A24MA-36
Priority Gold	FP-A08MA-12	FP-A08MA-36	FP-A28MA-12	FP-A28MA-36
Priority Gold Exec.	FP-A09MA-12	FP-A09MA-36	FP-A29MA-12	FP-A29MA-36
Installation	FP-AINST-MA	FP-AINST-MA	FP-AINST-MA	FP-AINST-MA
Installation & Startup	FP-ASTAR-MA	FP-ASTAR-MA	FP-ASTAR-MA	FP-ASTAR-MA

#### NOTES:

- AlphaServer/AlphaStation DS20E systems include three years hardware warranty with 5x9, on-site Next Business Day response.
- New Compaq hardware options internal to the AlphaServer/AlphaStation enclosure receive the same warranty or service level as purchased with the server or station.
- External storage devices/cabinets carry their own level of warranty and should be quoted separately for uplifted warranty services (CarePaq Priority Service).
- In addition to the CarePaq Priority Services, uplifted warranty Supplemental Services are available for separate hardware and software support. For more information on Hardware and Software Supplemental Services and other Compaq service options available for AlphaServer systems and AlphaStation systems, consult your Sales Account Manager or visit <http://www.compaq.com/services/>. **NOTE:** This website is available in English only.

## Technical Specifications

<b>Pedestal</b>	<b>Dimensions (H x W x D)</b>	18.5 x 8.85 x 27.5 in/47 x 22.5 x 69.9 cm			
	<b>Shipping Dimensions</b>	24 x 26.25 x 40 in/61 x 66 x 101.6 cm			
	<b>Weight</b>	Typical Configuration	80 lb/36 kg		
		Maximum Configuration	88 lb/40 kg		
	<b>Shipping Weight</b>	Nominal	100 lb/45 kg		
		Maximum	110 lb/50 kg		
	<b>Clearances</b>		<b>Operating</b>	<b>Service</b>	
			Front	15 in/ 38.1 cm	15 in/ 38.1 cm
			Rear	6 in/15 cm	29.5 in/75 cm
			Left Side	None	None
Right Side			None	None	

<b>Rackmount</b>	<b>Dimensions (H x W x D)</b>	8.75 x 17.5 x 26 in/22.2 x 44.5 x 66 cm (5U)		
	<b>Shipping Dimensions</b>	24 x 26.25 x 40 in/61 x 66 x 101.6 cm		
	<b>Weight</b>	When lifting	Nominal	80 lb/36 kg
			Maximum	86 lb/39 kg
		Total added to cabinet (brackets, slides, cables):	Nominal	84 lb/38 kg
			Maximum	88 lb/40 kg
	<b>Shipping Weight</b>	Nominal	100 lb/45 kg	
		Maximum	110 lb/50 kg	
	<b>Clearances</b>	<b>Operating</b>	<b>Service</b>	
		See specific cabinet requirements	Minimum 4 ft/121.9 cm, 28 in/71 cm withdrawal on rails	

<b>Cabinet</b>		<b>H9A10 M-Series</b>	<b>H9A15 M-Series</b>
	<b>Dimensions (H x W x D)</b> (Depth includes rear door extender)	67 x 23.6 x 41.5 in/ 170 x 60 x 105.4 cm	79 x 23.6 x 41.5 in/ 200 x 60 x 105.4 cm
	<b>Shipping Dimensions</b>	73 x 36 x 48 in/ 185.5 x 91.5 x 122 cm	85 x 36 x 48 in/ 216 x 91.5 x 122 cm
	<b>Weight</b>	Configuration dependent	
	<b>Shipping Weight</b>	Nominal: 946 lb/430 kg	Nominal: 1,056 lb/550 kg
Maximum: 1,375 lb/625 kg		Maximum: 1,408 lb/640 kg	

## Technical Specifications

System Unit	ENVIRONMENTAL				
	Temperature	Operating (Tower, Rackmount)	50° to 95°F/10° to 35°C		
		Non-operating	Not tested		
		Storage (60 days)	-40° to -151°F/-40 to -66°C		
		Rate of change	20°F/hr/11°C/hr		
	<b>NOTE:</b> Maximum operating temperature at sea level; reduce by 1.8°F (1°C) for each 600m (2,000 ft) above sea level.				
	Humidity	Operating	20% to 80%		
		Non-operating	20% to 80%		
		Storage (60 days)	10% to 95%		
		Rate of change	20% hr		
	Maximum Wet Bulb Temperature	Operating	82°F/28°C		
Storage (60 days)		115°F/46°C			
Maximum Dew Point Temperature	Operating	36°F/2°C			
Heat Dissipation	Tower	Nominal	550W, 1,878 BTU/hr		
		Maximum	780W, 2,664 BTU/hr		
	H9A10/H9A15 Cabinets	Configuration dependent			
Air Flow and Quality	Intake location	Front			
	Exhaust location	Rear Tower, Pedestal, Rack; Rear/top H9A10/H9A15			
	Particle size	N/A			
	Concentration	N/A			
Altitude (unpressurized)	Operating	10,000 ft/3,037m			
	Non-operating	40,000 ft/12,192m			
<b>NOTE:</b> Higher altitudes are possible if maximum operating temperature is reduced (see Temperature); other restrictions may apply such as maximum permissible altitude for hard drives.					
<b>ACOUSTICS</b> (Declared values per ISO 9296 and ISO 7779)					
Acoustics		L <sub>WA</sub> d3B	L <sub>nAm5</sub> dBA (bystander position)		
	Idle	5.8	44		
	Operating	6.3	49		
<b>NOTE:</b> Current values for specific configurations are available from Compaq, note that 1 B = 10 dBA.					
Vibration	Operating	10 to 500 Hz .1 G peak			
	Non-operating	1.03 Grms 5-300 Hz			

## Technical Specifications

System Unit <i>(continued)</i>		ELECTRICAL (Power supplies are universal, PFC, auto ranging, 100/240 VAC)		
<b>Nominal Voltage (VAC)</b>		100	120	200 to 240
<b>Voltage Range (VAC)</b> (temporary condition)		90 to 100	110 to 128	180-250
<b>Power Source Phase</b>		Single	Single	Single
<b>Nominal Frequency (Hz)</b>		50/60	50/60	50/60
<b>Frequency Range (Hz)</b>		49 to 51/59 to 61	49 to 51/59 to 61	49 to 51/59 to 61
<b>RMS Current</b>				
<b>Pedestal and Rackmount</b>	Single power cord	7.5A	6.0A	3.8A
	Maximum VA	780	765	730
<b>M-Series Cabinet</b> (Configuration dependent)	Nominal voltage (VAC)	100	120	220-240
	Each power cord	24A	24A	16A
<b>Power Cords</b>				
<b>Pedestal</b>	1 (75 in/190 cm)	IEC 320 C13 to NEMA 5-15 (North America) or IEC 320 C13 to country-specific		
<b>Rackmount</b>	1 (14 ft 10 in/452 cm)	IEC 320 C13 to NEMA 5-15 (North America) or IEC 320 C13 to IEC 320 C14 (other countries)		
<b>Cabinet</b>	2 (10 ft 10 in/330 cm)	120V non-removable NEMA L5-30P or 200-240V non-removable IEC 309		
<b>Regulatory</b>	Agency Approvals	UL: Listed to UL1950 (3rd edition) CSA: Certified to CAN/CSA-C22.2 No. 950-M95 TUV: EN 60950/A4: 1997 VDE 0805 GS marked FCC: Part 15.B Class A (EV6 500 MHz) FCC: Part 15.B Class B (EV67 667 MHz) CE: EN55022, EN50082 VCCI Class II ITE BCIQ: CISPR22, CNS13438 C-Tick: CISPR22, AS/NZS 3548 Reviewed to AS/NZ 3260:1993 Australian/New Zealand Standard EN 60950/A4: 1997 European Norm IEC 950 (2nd edition, 4th amend)		

©2002 Compaq Information Technologies Group, L.P. All rights reserved. Compaq, the Compaq logo, AlphaServer, AlphaStation, Insight Manager, Tru64, OpenVMS, StorageWorks, CarePac, and TruCluster are trademarks of Compaq Information Technologies Group, L.P. in the U.S. and/or other countries. Windows NT is a trademark of Microsoft Corporation in the U.S. and/or other countries. UNIX is a trademark of The Open Group in the U.S. and/or other countries. All other product names mentioned herein may be trademarks of their respective companies.

Compaq shall not be liable for technical or editorial errors or omissions contained herein. The information is provided "as is" without warranty of any kind and is subject to change without notice. The warranties for Compaq products are set forth in the express limited warranty statements accompanying such products. Nothing herein should be construed as constituting an additional warranty.