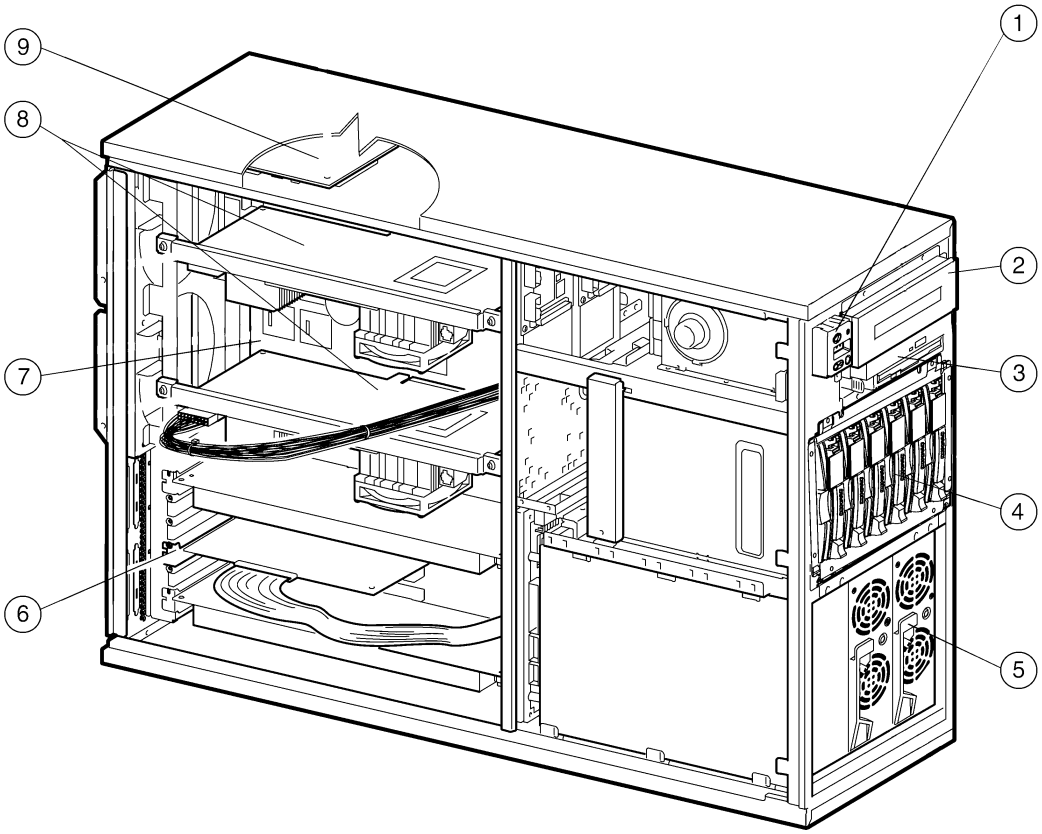
Overview

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 876 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 HP Services, including a three-year on-site limited warranty. Certain restrictions and exclusions apply. For details, consult the Product Information Centre at 1-888-882-6672.



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

Standard Features

Processor	Alpha 21264 667-MHz or 833-MHz processor	
Cache Memory	8-MB level 2 dual data rate cache per processor	
Upgradability	System upgradable to dual processing	
Memory	Minimum	512-MB or 1-GB ECC SDRAM memory standard
	Maximum	4 GB
Network Controller	Choice of Ethernet controllers	
Expansion	I/O (Total)	6
	PCI	5
	Shared PCI/ISA	1
Storage Controller	Choice of storage controllers	
Storage	Diskette Drive	1.44 MB
	CD-ROM	24X Max IDE CD-ROM Drive
	Internal Hard Drives	Choice of 18.2-GB, 36.4-GB, 72.8-GB, or 146-GB drives
	Maximum Internal Storage	876 GB
Interfaces	Parallel	1
	Serial	2
	Pointing Device (Mouse)	1
	Keyboard	1
	SCSI knockouts on rear of chassis	6
	Parallel	1
Form Factor	Rackmount or Tower	
Manageability	Compaq *Insight Manager*™	
Power Supply	Two 375-Watt hot plug power supplies, standard; optional third N+1 for redundancy Hot plug redundant power supply support; hot plug fan support	
OS Support	AlphaServer DS20E *Tru64*™ UNIX™ systems include pre-installed software (V5.1B), Base license, Unlimited User license, Server Extension license, Internet Express, and Secure Web Server AlphaStation DS20E Tru64 UNIX systems include pre-installed software (V5.1B), 2-user Base license AlphaServer DS20E OpenVMS™ systems include pre-installed software (V7.3-1), Base license with System Manager license, and Enterprise Integration Server License Package for OpenVMS V3.1 AlphaStation DS20E OpenVMS systems include pre-installed software (V7.3-1), Base license, Concurrent Use 1-user license, and NAS 150 Client license Minimum OS support: Tru64 UNIX V4.0F, OpenVMS V7.1-2 or V7.2-1	
Service and Support	HP 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. Certain restrictions and exclusions apply. For details, consult the Product Information Centre at 1-888-882-6672.	

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.

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 9000 Series 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) **NOTE**: Patch kit required, kit available at http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/ **NOTE**: This Web site is available in English only. No shared bus support with OpenVMS. No shared tape/library support with OpenVMS or Tru64 UNIX. 3X-KZPEA-DB adapter supports shared bus using hard disk drives under Tru64 UNIX V5.1A with PK4 and NHD5 or V5.1B and TruCluster V5.1B with Initial Patch Kit installed; supports maximum of two nodes per shared bus; requires 3X-BN55A-01 Y-cable and connector plug assembly, and 3X-H32CT-AA external LVD terminator per shared bus. NOTE: Tru64 UNIX Initial Patch Kit for V5.1B located at: http://ftp1.support.compaq.com/public/unix/5.1b	3X-KZPEA-DB
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
PCI 1-channel Ultra2 LVD backplane RAID controller, 64-bit, 16-MB cache **NOTES**: Supported with BA610-6D, BA356, and DS-SL13R-xx or DS-SSL14-RX shelves only. 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-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. EV6 systems not supported. Platform part numbers supported in: DA-56PAB-EA/FA/EW/FW and DA-56RAA-EA/FA/EW/FW. Specific patches required for specific revs of operating system. See DS-KZPCC-AC/CE QuickSpecs for latest details and other configuration information. 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. - Patch Kit 3 (BL17) located at: T64V5117-C0046202-11060-Manual-ER-20010615.tar - Patch C462.02 located at: http://ftp1.support.compaq.com/public/unix/v5.1/ **NOTE**: This Web site is available in English only. DS-KZPCC-AC/CE RAID controllers support standalone and cluster configurations; no support as boot device or primary device in cluster configurations; TruCluster V5.1 (restricted to non-shared buses only)	DS-KZPCC-AC

Options

Step 2 – Select mandatory options *(continued)*

Step 2c – SCSI Adapter – Mandatory *(continued)*

PCI 3-channel Ultra2 LVD RAID controller, 64-bit, 64-MB cache **NOTES**: Supported with BA610-6D, BA356 and DS-SL13R-xx or DS-SSL14-RX shelves only. 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-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. EV6 systems not supported. Platform part numbers supported in: DA-56PAB-EA/FA/EW/FW and DA-56RAA-EA/FA/EW/FW. Specific patches required for specific revs of operating system. See DS-KZPCC-AC/CE QuickSpecs for latest details and other configuration information. 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. - Patch Kit 3 (BL17) located at: T64V5117-C0046202-11060-Manual-ER-20010615.tar - Patch C462.02 located at: http://ftp1.support.compaq.com/public/unix/v5.1/ DS-KZPCC-AC/CE RAID controllers support standalone and cluster configurations; no support as boot device or primary device in cluster configurations; TruCluster V5.1 (restricted to non-shared buses only)	DS-KZPCC-CE
PCI 2-channel Ultra160 SCSI backplane RAID controller, 128-MB cache, requires use of Ultra160 SCSI cables (uses one PCI slot); requires connection to BA610-6D disk card cage or DS-SL13R-xx Universal StorageWorks shelf. Restricted to Hose One slot (furthest away from memory). Platform part numbers supported in: DY-56PAB-EA/FA/EW/FW and DY-56RAA-EA/FA/EW/FW. Host based volume shadowing or shared bus not supported. Tru64 UNIX support: TruCluster support is restricted to non-shared buses only. Reguires V5.1B with Initial Patch Kit located at: http://ftp1.support.compaq.com/public/unix/51b. Tru64 UNIX V5.1A support requires patch kit located at: http://ftp1.support.compaq.com/public/unix/V5.1a	3X-KZPDC-BE
PCI 4-channel Ultra160 SCSI backplane RAID controller, 256-MB cache, ADG Standard, requires use of Ultra160 SCSI cables (uses one PCI slot); requires connection to BA610-6D disk card cage or DS-SL13R-xx Universal StorageWorks shelf. Restricted to Hose One slot (furthest away from memory). Platform part numbers supported in: DY-56PAB-EA/FA/EW/FW and DY-56RAA-EA/FA/EW/FW. Host based volume shadowing or shared bus not supported. Tru64 UNIX support: TruCluster support is restricted to non-shared buses only. Reguires V5.1B with Initial Patch Kit located at: http://ftp1.support.compaq.com/public/unix/51b. Tru64 UNIX V5.1A support requires patch kit located at: http://ftp1.support.compaq.com/public/unix/V5.1a **NOTE**: These Web sites are available in English only.	3X-KZPDC-DF

Options

Step 2 – Select mandatory options *(continued)*

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

- Selection of one disk drive is mandatory

18.2-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3848-AA
36.4-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3838-AA
36.4-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3849-AA
72.8-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3839-AA
72.8-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3851-AA
146-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3841-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 14 for additional networking options

PCI (32-bit, 33-MHz) single-port 10/100 Ethernet (UTP/RJ45) NIC Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables, maximum four per system.	3X-DE600-AA
Single-port 100 Mbps (MMF/duplex-SC) add-on daughter card for use with the 3X-DE602-BB. The combined 3X-DE602-BB and 3X-DE602-FA provides two 10/100 (UTP/RJ45s) and one 100Mbps (MMF/SC) ports in a single PCI slot option. **NOTE**: 3X-DE602-FA **cannot** be used standalone. Maximum two per system, maximum eight 10/100 Ethernet ports per system. Use BN34A or BN34B cables.	3X-DE602-FA
PCI (32/64-bit, 33-MHz to 66-MHz) dual-port 10/100 Ethernet (UTP/RJ45s) NIC and Base Module. (One 3X-DE602-TA or 3X-DE602-FA optional add-on daughter card can be combined with this module.) Maximum two per system, maximum eight 10/100 Ethernet ports per system. **NOTE**: Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	3X-DE602-BB
Dual-port 10/100 Ethernet (UTP/RJ45) add-on daughter card for use with the 3X-DE602-BB only. The combined 3X-DE602-BB and 3X-DE602-TA modules provide four 10/100 (UTP/RJ45s) ports in a single PCI slot option; allows for a maximum of 16 ports per system. Maximum two per system, maximum eight 10/100 Ethernet ports per system. **NOTE**: 3X-DE602-TA **cannot** be used standalone. OpenVMS V7.3 requires Tima Kit: - DEC-AXPVMS-VMS73_LAN-V0100—4.PCSI Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	3X-DE602-TA
Cable for 10BaseT twisted pair connection	BN25G-xx

Options

Step 2 – Select mandatory options *(continued)*

Step 2f – Power Cords – Mandatory

- Selection of one power cord is mandatory for all systems.

Pedestal Power Cords	North America, 120V, 75-inch	BN26J-1K
	North America, 200 to 240V, 75-inch	BN18J-1K
	Australia, New Zealand, 2.5-metre (103541-511)	BN19H-2E
	Central Europe, 2.5-metre	BN19C-2E
	Denmark, 2.5-metre (103541-481)	BN19K-2E
	Egypt, India, South Africa, 2.5-metre (103541-AR1)	BN19S-2E
	Israel, 2.5-metre	BN18L-2E
	Italy, 2.5-metre (103541-461)	BN35M-02
	Japan, 2.5-metre	3X-BN46F-02
	Switzerland, 2.5-metre (103541-511)	BN19E-2E
	UK, Ireland, 2.5-metre	BN19A-2E
Rackmount Power Cords	U.S./Canada	BN20Z-4E
	Non-U.S.	BN35S-4E
	Japan, 2.5-metre	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

Options

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, or 3X-KZPEA-DB Ultra3 (LVD) adapter, and SCSI cable 3X-BC56C-2F For optimum performance it is recommended that Ultra2 capable devices be connected to at least an Ultra2 capable adapter.

DAT 12/24-GB 4 mm SCSI tape drive (TLZ10) 5.25-inch half-height, top gun blue	TLZ10-LB
DAT 5.25-inch half-height 20/40-GB 4 mm Ultra2 (LVD) SCSI tape drive, top gun blue	3X-SD20X-LB
AIT 5.25-inch half-height 35/70-GB 8 mm Wide UltraSCSI tape drive, top gun blue	3X-SZ35X-LB
AIT 5.25-inch half-height 50/100-GB 8 mm Ultra2 (LVD) SCSI tape drive, top gun blue	3X-SZ50X-LB
AIT 5.25-inch half-height 35/70-GB 8 mm LVD UltraSCSI tape drive, carbon black; requires 3X-KZPCA-AA or 3X-DEPVZ-AA LVD adapter	3R-A2392-AA
AIT 5.25-inch half-height 100/200-GB 8-mm Ultra3 SCSI tape drive; supported with 3X-DEPVZ-AA, 3X-KZPEA-DB, and 3X-KZPCA-AA adapters, carbon black	3R-A3623-AA
AIT 35/70-GB hot-plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves, requires 3X-KZPCA-AA, 3X-DEPVZ-AA LVD, or 3X-KZPEA-DB adapter	3R-A2396-AA
AIT 50/100-GB hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves, requires 3X-KZPCA-AA, 3X-DEPVZ-AA LVD, or 3X-KZPEA-DB adapter	3R-A2779-AA
AIT 100/200-GB hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves; supported with 3X-DEPVZ-AA, 3X-KZPEA-DB, and 3X-KZPCA-AA adapters	3R-A3621-AA
DAT 20/40-GB DDS4 hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves, requires 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

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 shared tapes/libraries

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
StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, Japan (190209-291)	DS-SL13R-AJ
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
StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, Japan (190211-291)	DS-SL13R-BJ

Options

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

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

Step 8 – Storage Devices – Optional

Disk Drives (Supported in Model 4314R, Model 4354R, or Model 4314T Universal Drive Shelves)	18.2-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3848-AA
	36.4-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3838-AA
	36.4-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3849-AA
	72.8-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3839-AA
	72.8-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3851-AA
	146-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3841-AA
AIT Tape Drives (Internal)	AIT 5.25-inch half-height 35/70-GB 8-mm Wide UltraSCSI tape drive, top gun blue; requires single ended UltraSCSI adapter or Ultra2 adapter (KZPBA-CA, 3X-DEPVZ-AA, KZPCM-DA, or 3X-KZPCA-AA) and SCSI cable (3X-BC56C-2F)	3X-SZ35X-LB
	AIT 5.25-inch half-height 50/100-GB 8-mm Ultra2 (LVD) SCSI tape drive, top gun blue; requires Ultra2 (LVD) adapter and SCSI cable (3X-BC56C-2F)	3X-SZ50X-LB
AIT Tabletop Tape Drives	AIT 35/70-GB 8-mm LVD tabletop tape drive, North America carbon black; requires LVD adapter	216885-001
	Same as above, International	216885-B31
	Same as above, Japan	216885-291
	AIT 50/100-GB 8-mm SCSI tabletop tape drive with 120V North America power cord, carbon black; requires Ultra2 (LVD) adapter	157767-002
	Same as above, International	157767-B32
	Same as above, Japan	157767-292
	AIT 100/200-GB 8-mm SCSI tabletop tape drive with 120V North America power cord	249160-001
	Same as above, International	249160-B31

Options

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

AIT Hot-plug Tape Drives	• AIT hot-plug tape drives require two Universal slots	
	AIT 35/70-GB hot-plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves	3R-A2396-AA
	AIT 50/100-GB hot-plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves	3R-A2779-AA
	AIT 100/200-GB hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves; supported with 3X-DEPVZ-AA, 3X-KZPEA-DB, and 3X-KZPCA-AA adapters	3R-A3621-AA
AIT Autoloaders	AIT 35-GB tabletop autoloader, 8 cartridge, U.S.	292355-001
	Same as above, International	292355-B31
	AIT 35-GB rackmount autoloader, 8 cartridge, U.S.	280349-001
	Same as above, International	280349-B31
	AIT Rail kit for rackmount autoloader	284930-001
AIT Tape Libraries	SSL2020 AIT tabletop library with one AIT 50-GB drive and 20 slots, LVD	175195-B21
	SSL2020 AIT tabletop library with two AIT 50-GB drives and 20 slots, LVD	175195-B22
	SSL2020 AIT rackmount library with one AIT 50-GB drive and 20 slots, LVD	175196-B21
	SSL2020 AIT rackmount library with two AIT 50-GB drives and 20 slots, LVD	175196-B22
DAT Tape Drives (Internal)	DAT 12/24-GB 4-mm 5.25-inch half-height SCSI tape drive, top gun blue; requires single-ended UltraSCSI or Ultra2 adapter (KZPBA-CA, 3X-DEPVZ-AA, 3X-KZPCA-AA, or KZPCM-DA) and SCSI cable (3X-BC56C-2F)	TLZ10-LB
	DAT 20/40-GB 4-mm 5.25-inch half-height Ultra2 (LVD) SCSI tape drive, top gun blue; requires Ultra2 (LVD) adapter and SCSI cable (3X-BC56C-2F)	3X-SD20X-LB
	DAT 12/24-GB 4-mm narrow SCSI tape drive in StorageWorks carrier	DS-TLZ10-VA
	DAT 12/24-GB 4-mm narrow single-ended tabletop SCSI tape, includes 120V North America power cord, requires BN31W-xx SCSI cable for the 3X-KZPCA-AA; 3X-KZPEA-DB requires BN31W-xx SCSI cable plus BN38B-01 cable	DS-TLZ10-DB
DAT Tabletop Tape Drives	DAT 20/40-GB 4-mm Wide Ultra2 (LVD) tabletop SCSI tape drive with 120V North America power cord, carbon black; requires Ultra2 (LVD) adapter	157770-002
	Same as above, International	157770-B32
	Same as above, Japan	157770-292
DAT Hot-plug Tape Drive	DAT 20/40-GB DDS4 hot-plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves	3R-A2780-AA
DAT Autoloaders	DAT 20/40-GB auto loader external; requires BN31W-xx SCSI cable and 3X-KZPCA-AA, or 3X-DEPVZ-AA adapter, North America	166505-001
	Same as above, International	166505-B31
	Same as above, Japan	166505-291

Options

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

DLT/SDLT Tabletop Tape Drives	**NOTE**: 3X-KZPEA-DB does not support shared tapes/libraries.	
	DLT8000 tabletop 40/80-GB DLT external tape drive, carbon black – requires 3X-KZPCA-AA LVD adapter – U.S.	146197-B23
	Same as above – Japan	146197-292
	SDLT tabletop 110/220-GB external tape drive, carbon black– requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter – U.S.	192103-002
	Same as above – International	192103-B32
	Same as above – Japan	192103-292
	SDLT tabletop 160/320-GB external tape drive, carbon black – requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter – U.S.	257319-001
	Same as above – International	257319-B31
	Same as above –Japan	257319-291

DLT/SDLT Tape Libraries	**NOTE**: 3X-KZPEA-DB does not support shared tapes/libraries.	
	Rackmount kit for H9Axx M-Series cabinets – required for mounting MSL5000 series in M-Series cabinets	254795-001
	MSL5026DLX, DLT tabletop library with 1 40/80-GB DLT tape drive, LVD	231821-B21
	MSL5026DLX, DLT tabletop library with 2 40/80-GB DLT tape drives, LVD	231821-B22
	MSL5026DLX or MSL5026SL, DLT/SDLT rackmount library, 0 drives – requires rackmount kit (254795-001)	231979-B21
	MSL5026DLX, DLT rackmount library with 1 40/80-GB DLT tape drive, LVD – requires rackmount kit (254795-001)	231891-B21
	MSL5026DLX, DLT rackmount library with 2 40/80-GB DLT tape drives, LVD – requires rackmount kit (254795-001)	231891-B22
	MSL5026SL, SDLT tabletop library with 1 110/220-GB SDLT tape drive, LVD	231822-B21
	MSL5026SL, SDLT tabletop library with 2 110/220-GB SDLT tape drives, LVD	231822-B22
	MSL5026SL, SDLT rackmount library with 1 110/220-GB SDLT tape drive, LVD – requires rackmount kit (254795-001)	231892-B21
	MSL5026SL, SDLT rackmount library with 2 110/220-GB SDLT tape drives, LVD – requires rackmount kit (254795-001)	231892-B22
	MSL5026SL, SDLT tabletop library with one 110/220-GB SDLT tape drive, LVD (Graphite)	302511-B21
	MSL5026SL, SDLT tabletop library with two 110/220-GB SDLT tape drives, LVD (Graphite)	302511-B22
	MSL5026SL, SDLT rackmount library with one 110/220-GB SDLT tape drive, LVD (Graphite)	302512-B21
	MSL5026SL, SDLT rackmount library with two 110/220-GB SDLT tape drives, LVD (Graphite)	302512-B22

Options

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

DLT/SDLT Tape Libraries *(continued)*	MSL5026S2, SDLT2 tabletop library with one 160/320-GB SDLT tape drive, LVD	293473-B21
	MSL5026S2, SDLT2 tabletop library with two 160/320-GB SDLT tape drives, LVD	293473-B22
	MSL5026S2 SDLT rackmount library, 0 drives, LVD – requires rackmount kit (254795-001)	293472-B21
	MSL5026S2, SDLT2 rackmount library with one 160/320-GB SDLT tape drive, LVD	293472-B22
	MSL5026S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive, LVD	293472-B23
	MSL5026S2, SDLT2 rackmount library with one 160/320-GB SDLT tape drive with Fibre Channel, LVD	293472-B24
	MSL5026S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive with Fibre Channel, LVD	293472-B25
	MSL5052, 0 drives, LVD, rackmount	255102-B21
	MSL5052SL SDLT tabletop library with 2 110/220-GB drives, LVD	249490-B21
	MSL5052SL SDLT rackmount library with 2 110/220-GB drives, LVD – requires rackmount kit (254795-001)	249491-B21
	MSL5052SL SDLT 110/220-GB drive field upgrade, LVD	231823-B22
	MSL5052S2, SDLT2 tabletop library with two 160/320-GB SDLT tape drives, LVD, graphite	293476-B21
	MSL5052S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive, LVD	293474-B21
	MSL5052S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive with Fibre Channel, LVD	293474-B24
	ESL9322S2 SDLT2 tape library, two 160/320GB SDLT tape drives, 222 slots – requires 3X-KZPCA-AA adapter	293409-B22
	ESL9322S2 SDLT2 tape library, eight 160/320GB SDLT tape drives, 222 slots – requires 3X-KZPCA-AA adapter	293409-B28
	ESL9322S2 SDLT2 tape library, two 160/320GB SDLT tape drives, 322 slots – requires 3X-KZPCA-AA adapter	293410-B22
	ESL9322S2 SDLT2 tape library, eight 160/320GB SDLT tape drives, 322 slots – requires 3X-KZPCA-AA adapter	293410-B28
	ESL9326SL SDLT tape library with six 110/220-GB SDLT tape drives, LVD	234615-B21
	ESL9326SL SDLT tape library with eight 110/220-GB SDLT tape drives, LVD	234615-B22
	ESL9326SL SDLT tape library with 16 110/220-GB SDLT tape drives, LVD	234615-B26

Options

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

3U Rackmount Tape Drive Enclosure	3U LVD Rackmount Tape Drive Enclosure for use in H9Axx M-Series Cabinets, 0 drives, carbon black,	274338-B21
	Rackmount Kit for H9Axx Series Cabinets, carbon black – required for mounting 3U Rackmount Tape Drive Enclosure in M-Series cabinet	3R-A3804-AA
	NOTE: The 3U Tape Drive Enclosure supports up to four internal half-height removable devices, or up to two full height devices. Select up to four AIT or DAT devices, or two DLT/SDLT devices with 3U Rackmount Tape Drive Enclosure (274338-B21), or select preconfigured configurations listed below.	
	AIT 35/70-GB 3U tape drive, requires 3X-KZPCA-AA LVD adapter, carbon black	216884-B21
	AIT 50/100-GB 3U tape drive, requires 3X-KZPCA-AA LVD adapter, carbon black (157766-B22)	3R-A3753-AA
	DAT 20/40-GB 3U tape drive, requires 3X-KZPCA-AA LVD adapter, carbon black (157769-B22)	3R-A3752-AA
	DLT8000 40/80-GB tape drive, requires 3X-KZPCA-AA LVD adapter	146196-B22
	SDLT 110/220-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter	192106-B25
	SDLT 160/320-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter, carbon black	257319-B21
	Preconfigured Configurations	
	AIT 50-GB 3U rackmount kit, carbon black	274333-B21
	DLT 40/80-GB, 3U rackmount kit, carbon black	274332-B21
	DLT 40/80-GB, dual-drive, 3U rackmount kit, carbon black	274335-B21
	SDLT 110/220-GB, 3U rackmount kit, carbon black	274331-B21
	SDLT 110/220-GB, dual-drive, 3U rackmount kit, carbon black	274334-B21
5U Rackmount Tape Drive Enclosure	5U LVD Rackmount Tape Drive Enclosure, carbon black, for use in H9Axx M-Series Cabinets, 0 drives	274339-B21
	Rackmount Kit for H9Axx Series Cabinets, carbon black – required for mounting 5U Rackmount Tape Drive Enclosure in M-Series cabinet	254795-001
	NOTE: The 5U Rackmount Tape Drive Enclosure supports four full-height devices; select up to four DLT or SDLT devices with 274339-B21, or select preconfigured configurations listed below.	
	DLT8000 40/80-GB tape drive, requires 3X-KZPCA-AA LVD adapter, carbon black	146196-B22
	SDLT 110/220-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter, carbon black	192106-B25
	SDLT 160/320-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter, carbon black	257319-B21
	Preconfigured Configurations	
	SDLT 110/220-GB Tape Array III, 5U rackmount kit, carbon black	274336-B21
	DLT 40/80-GB Tape Array III, 5U rackmount kit, carbon black	274337-B21
	DLT Tape Array III Model 0 enclosure, U.S.	168047-001
	Same as above, International	168047-B31
	Same as above, Japan	168047-291
	DAT 12/24-GB 4-mm narrow SCSI tape drive in StorageWorks carrier	DS-TLZ10-VA

Options

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

Network Storage Routers	**NOTE**: The following Network Storage Routers are supported with MSL5000 and ELS9000 tape libraries:	
	NSR e1200 One Fibre Channel x 2 LVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS, carbon black (262672-B21)	3R-A3746-AA
	NSR e2400 Two Fibre Channel x 4 LVD FC to SCSI Data Router with card cage, Tru64 UNIX and OpenVMS, carbon black (262665-B21)	3R-A3935-AA
	NSR e2400 Two Fibre Channel x 4 LVD FC to SCSI Data Router with no card cage, Tru64 UNIX and OpenVMS, carbon black (262664-B21)	3R-A3745-AA
	NSR N1200 One Fibre Channel x 2 LVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS, supports tape drives and tape libraries (280823-B21)	3R-A3747-AA
	NSR m2402 Two Fibre Channel x 4 LVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS (262653-B21)	3R-A3740-AA
	NSR m2402 Two Fibre Channel x 4 HVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS (262654-B21)	3R-A3741-AA
UltraSCSI Hubs	UltraSCSI hub with three differential ports, no single-ended ports, consists of two host ports and one storage port in 3.5-inch SBB, UltraSCSI cables not included	DS-DWZZH-03
	UltraSCSI hub with five differential ports, no single-ended ports, consists of four host ports and one storage port in 3.5-inch SBB, UltraSCSI cables not included	DS-DWZZH-05
StorageWorks Fibre Channel Switches	Fibre Channel SAN Switch, 8 ports, 2 Gb, with Fabric Operating Software (Tru64 UNIX and OpenVMS) – requires Tru64 UNIX V5.1A patch kit: T64V51AB01AS0001-20020116.tar (258707-B21)	DS-DSGGD-AC
	Fibre Channel SAN Switch, 16 ports, 2 Gb, with Fabric Operating Software (Tru64 UNIX and OpenVMS) – requires Tru64 UNIX V5.1A patch kit: T64V51AB01AS0001-20020116.tar (283056-B21)	DS-DSGGD-AD
	Fibre Channel SAN Switch, 16 ports, 2-Gb, with Fabric Operating Software, two power supplies (Tru64 UNIX and OpenVMS) – requires Tru64 UNIX V5.1A patch kit: T64V51AB01AS0001-20020116.tar (287055-B21)	DS-DSGGD-BA
	Fibre Channel 2-Gb 64-port Core Switch, with Fabric Operating software	DS-DSGGE-AB
	Long wave GBIC (127508-B21)	DS-DSGGA-MA
	Short wave optical GBIC (380561-B21)	DS-DXGGA-SA
McData 64-port Fibre Channel SAN Director Class Switches	SAN Director 64 (1 GB) 32 ports, base model	DS-DMGGD-AA
	SAN Director Connectivity Manager Kit	DS-DMGGO-AA
	SAN Director 2 Gb, 64 ports	DS-DMGGD-BA
	SAN Edge Switch 2 Gb, 32 ports	DS-DMGGE-BC
	SAN Edge Switch 2 Gb, 16-ports	DS-DMGGE-BB
	NOTE: Connection for, or between, 1-Gb and/or 2-Gb SAN switches requires different cables. Refer to the Switches, Hubs, and Interconnects QuickSpecs at: http://www.compaq.com/products/quickspecs/North_America/10490.html	
	NOTE: This Web site is available in English only.	
Fibre Channel Disk Drives	36-GB 10K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (238590-B21)	3R-A3239-AA
	72-GB 10K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (238921-B21)	3R-A3260-AA
	36-GB 15K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (236205-B21)	3R-A3210-AA
Fibre Channel Hubs	Unmanaged Fibre Channel 7-port Storage Hub, International (Tru64 UNIX only) (234453-B31)	DS-SWXHB-I7
	Unmanaged Fibre Channel 7-port Storage Hub, Japan (Tru64 UNIX only) (234453-291)	DS-SWXHB-J7
	Unmanaged Fibre Channel 7-port Storage Hub, North America (Tru64 UNIX only) (234453-001)	DS-SWXHB-07

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

External Storage Solutions/Controllers	Enterprise Virtual Array Model 2C6D-B 60-Hz, includes 41U graphite storage cabinet, M3220 controller assembly with dual HSV110 controllers, six M5214 dual-redundant FC loop 14-bay drive enclosures, four 12-port FC loop switches; requires DS-KGPSA-xx (283198-B21)	DS-SV110-JA
	Enterprise Virtual Array Model 2C6D-B 50-Hz, includes 41U graphite storage cabinet, M3220 controller assembly with dual HSV110 controllers, six M5214 dual-redundant FC loop 14-bay drive enclosures, four 12-port FC loop switches; requires DS-KGPSA-xx (283198-B22)	DS-SV110-JB
	Enterprise Virtual Array Model 2C12D-B 60-Hz, includes 41U graphite storage cabinet, M3220 controller assembly with dual HSV110 controllers, twelve M5214 dual redundant FC loop 14-bay drive enclosures, four 12-port FC loop switches; requires DS-KGPSA-xx (283199-B21)	DS-SV110-KA
	Enterprise Virtual Array Model 2C12D-B 50-Hz, includes 41U graphite storage cabinet, M3220 controller assembly with dual HSV110 controllers, twelve M5214 dual-redundant FC loop 14-bay drive enclosures, four 12-port FC loop switches; requires DS-KGPSA-xx (283199-B22)	DS-SV110-KB
	Enterprise Virtual Array Model 8C8D 60-Hz, includes 41U graphite storage cabinet, four M3220 controller assembly with eight HSV110 controllers, eight M5214 dual FC loop 14-bay drive enclosures; requires DS-KGPSA-xx (283263-B21)	DS-SV110-LA
	Enterprise Virtual Array Model 8C8D 50-Hz, includes 41U graphite storage cabinet, four M3220 controller assembly, with eight HSV110 controllers, eight M5214 dual FC loop 14-bay drive enclosures; requires DS-KGPSA-xx (283263-B22)	DS-SV110-LB
	Enterprise Virtual Array Model 0C6D-B 60-Hz, includes 41U graphite storage cabinet, six M5214 dual-redundant FC loop 14-bay drive enclosures, twelve 16.4-feet/5-metre interconnect cables (to 2C12D-B); requires DS-KGPSA-xx (283264-B21)	DS-SV110-MA
	Enterprise Virtual Array Model 0C6D-B 50-Hz, includes 41U graphite storage cabinet, six M5214 dual-redundant FC loop 14-bay drive enclosures, twelve 16.4-feet/5-metre interconnect cables (to 2C12D-B); requires DS-KGPSA-xx (283264-B22)	DS-SV110-MB
	Enterprise Virtual Array Model 0C12D-B 60-Hz, includes 41U graphite storage cabinet, twelve M5214 dual-redundant FC loop 14-bay drive enclosures, twenty-four 16.4-feet/5-metre interconnect cables (to two 2C12D-B's); requires DS-KGPSA-xx (283265-B21)	DS-SV110-NA
	Enterprise Virtual Array Model 0C12D-B 50-Hz, includes 41U graphite storage cabinet, twelve M5214 dual-redundant FC loop 14-bay drive enclosures, twenty-four 16.4-feet/5-metre interconnect cables (to two 2C12D-B's); requires DS-KGPSA-xx (283265-B22)	DS-SV110-NB
SAN Solutions Kits	Tru64 UNIX SAN Solutions Kit for Enterprise Virtual Array V2.0 (250193-B22) **NOTE**: V5.1 requires Patch Kit 3: T64V51B19AS0005-20020411.tar V5.1A requires Patch Kit 3: T64V51AB03AS0003-20020827.tar	QB-6RPAB-SB
	OpenVMS SAN Solutions Kit for Enterprise Virtual Array V2.0 (250194-B22) **NOTE**: V7.2-2 requires Tima Kit: DEC-AXPVMS-VMS722_FIBRE_SCSI-V0200 V7.3 requires Tima Kit: DEC-AXPVMS-VMS73_FIBRE_scsi-V0300	QB-6RPAC-SB

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

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)	DS-SWXEB-CA
	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)	DS-SWXEB-CB
	Enterprise Modular Array 12000 Fibre Channel RAID storage solution, 60 Hz (175993-B21)	DS-SWXEB-DA
	Enterprise Modular Array 12000 Fibre Channel RAID storage solution, 50 Hz (175993-B22)	DS-SWXEB-DB
	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
	NOTE: For Modular Array 8000 and Enterprise Modular Array 12000 configuration and ordering information, see http://www.compaq.com/products/storageworks/raidstoragesystems.html **NOTE**: This Web site is available in English only.	

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

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-metre BN37A-02 SCSI cable be ordered

RA3000 rackmount disk shelf, blue, includes UltraSCSI BA356 disk shelf, two 180W power supplies, single-ended UltraSCSI personality card, one half metre SCSI cable (BN37A-0E), two North America power cords, and RETMA mounting bracket (disks not included); order two country-specific power cords for non-North America use	DS-SWXRA-GN

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

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

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 (HSG80), includes 256-MB cache, requires following firmware: 8.6-4F ACS FW (222318-B22, QB-6BUAA-SD), one per controller 8.6-4S ACS FW (222364-B22, QB-6ENAA-SC), one per controller 8.6-4P ACS FW (222316-B22, QB-6CAAA-SD), one per controller Requires Tru64 UNIX software: 222320-B23, QB-65RAB-SE, one per controller Requires OpenVMS software: 222321-B22, QB-65RAC-SD, one per controller	DS-HSG80-BK
Additional 256-MB cache for HSG80 (380674-B21)	DS-HSDIM-AC
Single cache battery, one per HSG80 controller (135823-B21)	DS-SE2CS-CB
Model 2200 controller shelf for HSG80 controller (DS-SE2ZS-C8) – includes dual power supplies and power cables	135820-B21

StorageWorks Disk Array Family

NOTE: The HP StorageWorks Disk Array Family, specifically the XP128 and XP1024, are now supported on AlphaServer DS20E systems. For product and ordering information, refer to the following Web pages:
http://www.hp.com/products1/storage/products/disk_arrays/highend/xp1024/index.html
http://www.hp.com/products1/storage/products/disk_arrays/highend/xp128/index.html
NOTE: These Web sites are available in English only.
The following part numbers have been assigned for reference purposes only:

3R-A4417-AA	A7876A	XP128 Disk Array Control Frame
3R-A4418-AA	A7906A	XP1024 Disk Array Control Frame

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 America 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 Nile card (010615-001) minimum revision 0B required to support internal RAID. Graphics card required to run console utilities. Platform part numbers supported in: DA-56PAB-EA/FA/EW/FW and DA-56RAA-EA/FA/EW/FW. Specific patches required for specific revs of operating system – see DS-KZPCC-AC/CE QuickSpecs for details. DS-KZPCC-AC/CE RAID controllers support standalone and cluster configurations; no support as boot device in cluster configurations; TruCluster V5.1 (restricted to non-shared buses only).	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	-
3X-KZPDC-BE/DF - Platform part numbers supported in: DY-56PAB-EA/FA/EW/FW and DY-56RAA-EA/FA/EW/FW. Restricted to Hose One slot (furthest away from memory). Host based volume shadowing or shared bus not supported. Tru64 UNIX support: TruCluster support is restricted to non-shared buses only. Reguires V5.1B with Initial Patch Kit located at: http://ftp1.support.compaq.com/public/unix/51b. Tru64 UNIX V5.1A support requires patch kit located at: http://ftp1.support.compaq.com/public/unix/V5.1a **NOTE**: These Web sites are available in English only.	BA610-6D DS-SL13R-xx	3R-A0xxx-AA 1-inch Universal 3R-A1xxx-AA 1-inch Universal 3R-A3xxx-AA 1-inch Universal	V5.1B/V5.1A	V7.3-1

Options

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

		Maximum # Supported		
		Tru64 UNIX	**OpenVMS**	
Fibre Channel	PCI Fibre Channel adapter (KGPSA-CA), (uses one slot) (168794-B21)	4	4	DS-KGPSA-CA
	PCI to 2–Gbit Fibre Channel adapter, 64-bit/33-MHz, single-channel (261329-B21)	4	4	DS-KGPSA-DA
	Fibre Channel cable (BNGBX-xx) xx=02, 05, 15, 30, 50 metres x=1, 2, 3, 4, 5			234457-B2x
SCSI	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 metres			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 metres			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 metres) 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 metre) 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 metre			BN38C-xx
Multimode	PCI 2-channel multimode Ultra3 LVD SCSI adapter, VHDCI (only supported in dual-bus shelves) **NOTE**: Patch kit required, kit available at http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/ **NOTE**: This website is available in English only. **NOTE**: No shared bus support with OpenVMS. No shared tape/library support with OpenVMS or Tru64 UNIX. 3X-KZPEA-DB adapter supports shared bus using hard disk drives under Tru64 UNIX V5.1A with PK4 and NHD5 or V5.1B and TruCluster V5.1B with Initial Patch Kit installed; supports maximum of two nodes per shared bus; requires 3X-BN55A-01 Y-cable and connector plug assembly, and 3X-H32CT-AA external LVD terminator per shared bus. NOTE: Tru64 UNIX Initial Patch Kit for V5.1B located at: http://ftp1.support.compaq.com/public/unix/5.1b. **NOTE**: These Web sites are available in English only.	4 (V5.1 or higher)	4 (V7.2-2 or higher)	3X-KZPEA-DB

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

		Maximum # Supported		
		Tru64 UNIX	**OpenVMS**	
RAID	PCI 3-channel Ultra2 LVD RAID controller, 64-bit, 64-MB cache **NOTES**: Supported with BA610-6D, BA356 DS-SL13R-xx or DS-SSL14-Rx shelves only. BA610-6D Nile Card must be at rev 0B to support internal RAID. 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. EV6 systems not supported. Platform part numbers supported in: DA-56PAB-EA/FA/EW/FW and DA-56RAA-EA/FA/EW/FW. Specific patches required for specific revs of operating system. See DS-KZPCC-AC/CE QuickSpecs for latest details and other configuration information. 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. - Patch Kit 3 (BL17) located at: T64V5117-C0046202-11060-Manual-ER-20010615.tar - Patch C462.02 located at: http://ftp1.support.compaq.com/public/unix/v5.1/ **NOTE**: This Web site is available in English only. DS-KZPCC-AC/CE RAID controllers support standalone and cluster configurations; no support as boot device in cluster configurations; TruCluster V5.1 (restricted to non-shared buses only)	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 **NOTES**: Supported with BA610-6D, BA356 and DS-SL13R-xx or DS-SSL14-RX shelves only. 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-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. EV6 systems not supported. Platform part numbers supported in: DA-56PAB-EA/FA/EW/FW and DA-56RAA-EA/FA/EW/FW. Specific patches required for specific revs of operating system. See DS-KZPCC-AC/CE QuickSpecs for latest details and other configuration information. 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. - Patch Kit 3 (BL17) located at: T64V5117-C0046202-11060-Manual-ER-20010615.tar - Patch C462.02 located at: http://ftp1.support.compaq.com/public/unix/v5.1/ **NOTE**: This Web site is available in English only. DS-KZPCC-AC/CE RAID controllers support standalone and cluster configurations ; no support as boot device in cluster configurations; TruCluster V5.1 (restricted to non-shared buses only)	2 with SRM V6.0 3 with SRM V6.1 (V4.0F/4.0G/ 5.1/5.1A)	-	DS-KZPCC-AC

Options

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

		Maximum # Supported		
		Tru64 UNIX	**OpenVMS**	
RAID *(continued)*	PCI 2-channel PCI to Ultra3, 64-bit, 66-MHz, LVD Ultra160 backplane RAID controller with 128-MB cache (uses one PCI slot); requires connection to DS-SL13R-xx shelves or BA610-6D card cage. **NOTE**: Restricted to Hose One slot (furthest away from memory). Supported in systems with part numbers – DY-56PAB-EA/FA/EW/FW and DY-56RAA-EA/FA/EW/FW. No host-based volume shadowing or shared bus support under OpenVMS Tru64 UNIX support: TruCluster support is restricted to non-shared buses only. Reguires V5.1B with Initial Patch Kit located at: http://ftp1.support.compaq.com/public/unix/51b. Tru64 UNIX V5.1A support requires patch kit located at: http://ftp1.support.compaq.com/public/unix/V5.1a **NOTE**: These Web sites are available in English only.	1 V5.1B/V5.1A	1	3X-KZPDC-BE
	PCI 4-channel PCI to Ultra3, 64-bit, 66MHz, LVD Ultra160 backplane RAID controller with 256-MB cache (uses one PCI slot); requires connection to DS-SL13R-xx shelves or BA610-6D card cage. **NOTE**: Restricted to Hose One slot (furthest away from memory). Supported in systems with part numbers – DY-56PAB-EA/FA/EW/FW and DY-56RAA-EA/FA/EW/FW. No host-based volume shadowing or shared bus support under OpenVMS Tru64 UNIX support: TruCluster support is restricted to non-shared buses only. Reguires V5.1B with Initial Patch Kit located at: http://ftp1.support.compaq.com/public/unix/51b. Tru64 UNIX V5.1A support requires patch kit located at: http://ftp1.support.compaq.com/public/unix/V5.1a **NOTE**: These Web sites are available in English only.	1 V5.1B/V5.1A	1	3X-KZPDC-DF
	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 – 18.2-GB 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 metres) 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 metres **NOTE**: 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
PCI CI Adapter	PCI CI adapter for OpenVMS systems only; requires two 5.0V PCI slots and CI cable for each adapter	-	1	CIPCA-BA
	CI cable xx=10, 20,45 metres	-	1	BNCIA-xx

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.copaql.com/alphaserver/products/M-Series/index.html
NOTE: This Web site is available in English only.

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

- Disk shelves cannot be mixed in same cabinet

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

M-Series Cabinets	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
Rear Cabinet Extender – 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
Cabinet Front Door – 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
Factory Integration – Required	Factory Integration of systems and storage devices assembled and configured in cabinet enclosure in predefined locations	YS-ASCAA-AA

Ballast Kit – Required only if one system is ordered for the H9A15 cabinet

- 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

	Two 35 to 40 lb steel plates	H9C10-MC
Rackmount Power Cord – Required for each system	U.S./Canada	BN20Z-4E
	Non-U.S.	BN35S-4E
	Japan, 2.5-metre	3X-BN46D-4E
Shelves Supported in M-Series Cabinets – Optional	StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, North America and International use except Japan (190209-001)	DS-SL13R-AA
	StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, Japan (190209-291)	DS-SL13R-AJ
	StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, North America and International use except Japan (190211-001)	DS-SL13R-BA
	StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, Japan (190211-291)	DS-SL13R-BJ

CustomSystems Support

- Cabinets containing systems and storage must be assembled by qualified assemblers: HP 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
- Open3D license ships with PowerStorm 4D51T and PowerStorm 300/350 graphics accelerators; Open3D drivers and libraries ship with either the operating system or graphics accelerator.

	Maximum # Supported		
	Tru64 UNIX	**OpenVMS**	
3Dlabs Oxygen VX1 32-MB PCI 2D graphics adapter **NOTE**: Only VX1 cards can be used in a multihead environment.	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
- Video extension cable required if monitor is located more than 1-metre from server
- Monitors will ship with, but not be integrated with systems
- A video cable, 6-foot/1.8-metre length, is included with all variants of monitors

Carbon/Silver Monitors	V7550 17-inch (16–inch viewable image size) flat-faced shadow mask colour monitor, two-tone (carbon/silver), 0.25mm dot pitch, VGA to 1024 x 768 @85 Hz, MPRII/TCO99/Energy Star compliant, Northern Hemisphere with NA power cord, VGA cable	3R-A4002-AA
	Same as above, with Euro power cord	3R-A4201-AA
	Same as above, APD, no power cord	3R-A4202-AA
	Same as above, with PRC power cord, CCIB	3R-A4446-AA
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord	3R-A4203-AA
	P930 19-inch (18-inch viewable image size) auto-scanning colour 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-A4215-AA
	Same as above, with Euro power cord	3R-A4391-AA
	Same as above, Taiwan, with NA power cord	3R-A4392-AA
	Same as above, with PRC power cord, CCIB	3R-A4394-AA
	Same as above, Southern Hemisphere, 0.25 to 0.27 mm aperture grille pitch, with Australia/New Zealand power cord	3R-A4393-AA
	P1130 21-inch (19.8-inch viewable image size) FD Trinitron auto-scanning colour monitor, 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-A4216-AA
	Same as above, with Euro power cord	3R-A4396-AA
	Same as above, Taiwan, no power cord	3R-A4397-AA
	Same as above, with PRC power cord, CCIB	3R-A4400-AA
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord	3R-A4398-AA

Options

Step 13 – Monitors – Optional *(continued)*

Carbon/Silver Flat Panel Monitors	TFT1825, 18-inch (18-inchviewable image size) TFT flat panel monitor, 0.28mm pixel pitch, 1600 x 1200 @60Hz, multi-mode support, MPRII/TCO99/Energy Star compliant, one VGA, one DVI-I input connector. NA power cord, VGA and DVI-I cables	3R-A4292-AA
	TFT1520, 15-inch (15-inch viewable image size) TFT flat panel monitor, 0.297 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-A4249-AA
Video Extension Cable	6-foot/1.8-metre video extension cable	BN39C-02
Monitor Power Cords	North America, 120V, 75-inch	BN26J-1K
	Australia, New Zealand, 2.5-metre (103541-511)	BN19H-2E
	Central Europe, 2.5-metre	BN19C-2E
	Denmark, 2.5-metre (103541-481)	BN19K-2E
	Egypt, India, South Africa, 2.5-metre (103541-AR1)	BN19S-2E
	Israel, 2.5-metre	BN18L-2E
	Italy, 2.5-metre (103541-461)	BN35M-02
	Japan, 2.5-metre	3X-BN46F-02
	Switzerland, 2.5-metre (103541-511)	BN19E-2E
	UK, Ireland, 2.5-metre	BN19A-2E

Options

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**	
Ethernet 10/100			
PCI (32-bit, 33-MHz) single-port 10/100 Ethernet (UTP/RJ45) NIC Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	4	4	3X-DE600-AA
Single-port 100Mbps (MMF/duplex-SC) add-on daughter card for use with 3X-DE602-BB. The combined 3X-DE602-BB 3X-DE602-FA provides two 10/100 (UTP/RJ45s) and one 100Mbps (MMF/SC) ports in a single PCI slot option. **NOTE**: The 3X-DE602-TA cannot be used standalone. Use BN34A or BN34B cables.	2	2	3X-DE602-FA
PCI (32-/64-bit, 33-/66-MHz) dual-port 10/100 Ethernet (UTP/RJ45s) NIC and Base Module. (One 3X-DE602-TA or 3X-DE602-FA optional add-on daughter card can be combined with this module.) Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	2	2	3X-DE602-BB
Dual-port 10/100 Ethernet (UTP/RJ45) add-on daughter card for use with the 3X-DE602-BB only. The combined 3X-DE602-BB and 3X-DE602-TA modules provide four 10/100 (UTP/RJ45s) ports in a single PCI slot option; allows for a maximum of 16 ports per system. **NOTE**: The 3X-DE602-TA cannot be used as standalone. OpenVMS V7.3 requires Tima Kit: - DEC-AXPVMS-VMS73_LAN-V0100—4.PCSI OpenVMS V7.2-2H1 requires OpenVMS Tima Kit located at: - http://ftp.support.compaq.com/patches/.new/openvms.shtml **NOTE**: This Web site is available in English only. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	2	2	3X-DE602-TA
PCI (32-/64-bit, 33-/66-MHz) single-port 1000 Mbps (MMF/SC) NIC; no on-board Boot-ROM support. Use BN34A or BN34B cables.	2	1	DEGPA-SA
PCI (32-/64-bit, 33-/66-MHz) single-port 10/100/1000 (UTP/RJ45) Gigabit NIC, copper; no on-board Boot-ROM support. **NOTE**: Requires minimum version of Tru64 UNIX V5.0A, Patch kit 2: - T64V50AAS0002-20001004.tar Requires minimum version of OpenVMS V7.2-2; OpenVMS V7.3 requires Patch kit: - DEC-AXPVMS-VMS73_LAN-V0100—4.PCSI Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	2	2	DEGPA-TA
Multi-function Ethernet 10/100			
PCI (32-bit, 33-MHz) multi-function (single-port 10/100 Ethernet UTP/RJ45, Ultra2 LVD SCSI, and 2D graphics) adapter **NOTE**: No support for multi-head graphics. OpenVMS V7.2-2 requires OpenVMS Tima Kit located at: - http://ftp.support.compaq.com/patches/.new/openvms.shtml **NOTE**: This Web site is available in English only. Tru64 UNIX V5.1 requires Patch Kit 3: - T64V51AS0003-20010413.tar - Tru64 UNIX V4.0F with NHD2 - TruCluster V5.1 support restricted to non-shared buses Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	1	1	3X-DEPVZ-AA
3X-DEPVZ-AA specific-use 3-metre LVD2 SCSI cable			BN37A-03

Options

Step 14 – Networks and Communications – Optional *(continued)*

	Maximum # Supported		
	Tru64 UNIX	**OpenVMS**	
FDDI			
PCI (32-bit, 33-MHz) to FDDI SAS (MMF/duplex-SC) NIC. Use BN34A, BN34B, or BN34D cables.	2	2	3X-DEFPA-AC
PCI (32-bit, 33-MHz) to FDDI DAS (MMF/duplex-SC) NIC. Use BN34A, BN34B, or BN34D cables.	2	2	3X-DEFPA-DC
FDDI-specific cable - Multimode fiber optic (MMF) 62.5/125um duplex cable with SC-to-MIC connectors. -xx = available lengths: (01, 03, 10) for 1, 3, 10 metres			BN34D-xx
PCI (32-bit, 33-MHz) to FDDI SAS (UTP/RJ45) NIC. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	2	2	3X-DEFPA-UC
PCI (32-bit, 33-MHz) to FDDI DAS (UTP/RJ45s) NIC. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	2	2	3X-DEFPA-MC
ATM			
PCI (32-bit, 33-MHz) to 155 Mbps ATM, copper NIC with RJ45 connector. Use BN25G-xx, or BN26M-xx cables.	4	4	3X-DAPBA-UA
PCI (32-bit, 33-MHz) to 155 Mbps ATM fiber NIC with SC connector. Use BN34B-xx cable.	4	4	3X-DAPBA-FA
PCI (32-bit, 33-MHz) to 622 Mbps ATM fiber NIC with SC connector. Use BN34B-xx cable.	2	2	3X-DAPCA-FA
Asynchronous Communications (ASYNC)			
PCI (32-bit, 33-MHz) to quad-port Async Communications NIC with DB-25 octopus cable	See *Note	See *Note	PBXDA-BA
PCI (32-bit, 33-MHz) to 8-port Async Communications NIC with DB-25 octopus cables	See *Note	See *Note	PBXDA-BB
PCI 16-port asynchronous controller, cable included	See *Note	See *Note	PBXDA-AC

PBXDA-AC Asynchronous Connector Adapters	RJ45 to DB-25 converter cable	CXI01-AC
	RJ45 to DEC MJ11 converter cable (8 pack)	CXI01-AF
	Asynchronous multi-port MUX expander XEM	CXI01-AB

***NOTE**: For details, see the DS20E Supported Options List – http://www.compaq.com/alphaserver/options/asds20e/asds20e_options.html
NOTE: This Web site is available in English only.

Options

Step 14 – Networks and Communications – Optional *(continued)*

	Maximum # Supported		
	Tru64 UNIX	**OpenVMS**	
Synchronous Communications (SYNC)			
PCI (32-bit, 33-MHz) to dual-port intelligent synchronous communications NIC. Requires at least one (maximum two) BN34x synchronous cable listed below.	4	4	3X-PBXDD-AA
PCI (32-bit, 33-MHz) to quad-port intelligent synchronous communications NIC. Requires at least one (maximum four) BN34x synchronous cable listed below.	4	4	3X-PBXDD-AB

Synchronous-Specific Cables	EIA-530 single-port cable	3X-BC34G-06
	V.24/EIA-232 single-port cable	3X-BC34L-06
	V.11/x.21 single-port cable	3X-BC33S-06
	V.35 single-port cable	3X-BC34T-06

Ethernet, FDDI, ATM Multi-use Cables		
Multimode fiber optic (MMF) 62.5/125um duplex cable, with SC-to-ST connectors. –xx = available lengths: (2E, 4E, 01, 03, 10, 20, 30) for 2.4, 4.5, 1, 3, 10, 20, 30 metres		BN34A-xx
Multimode fiber optic (MMF) 62.5/125um duplex cable, with SC-to-SC connectors. -xx = available lengths: (2E, 4E, 01, 03, 10, 20, 30) for 2.4, 4.5, 1, 3, 10, 20, 30 metres		BN34B-xx
Category 5e (4-Unshielded Twisted Pairs/UTP) straight-through cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0B, 0E, 01, 03, 04, 07) for 0.2, 0.5, 1, 3, 4, 7 metres		BN25G-xx
Category 5e (4-Twisted Pairs, Screened/ ScTP) straight-through cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 metres		BN26M-xx
Category 5e (4-Unshielded Twisted Pairs/UTP) Xover cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 metres		BN24Q-xx
Category 5e (4-Twisted Pairs, Screened/ScTP) Xover cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 metres		BN28Q-xx

Step 15 – MEMORY CHANNEL – Optional

Tru64 UNIX Systems
(V5.0A and later)

- Each system node in the cluster requires a TruCluster Server license (QL-6BRAC-AA)

Tru64 UNIX Systems
(V4.0G and earlier)

- Requires a minimum of Tru64 UNIX V4.0F with TruCluster V1.6 or later
- Each system node in the cluster requires a TruCluster Production Server (QB-3RLAE-AA) or TruCluster MEMORY CHANNEL software license (QB-4ZCAE-AA)
- 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)

OpenVMS Systems

- Requires OpenVMS V7.1-2 or later and OpenVMS Cluster license (QL-MUZAC-AA)

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

Configuring Information

- Up to two PCI to System Area Network adapters (CCMAB-AA) are supported in a single system
- Two-node clusters can be configured by ordering a CCMAB-AA for each node and one BN39B-04 or BN39B-10 cable; cable connects directly to CCMAB-AA in each node.
- For a two-node cluster that will not need to be rebooted when adding additional members, order one CCMAB-AA adapter and one BN39B-04 or BN39B-10 cable for each node, and one CCMHB-AA hub for the cluster.
- For three- or four- node clusters, order one CCMAB-AA adapter and one BN39B-04 or BN39B-10 cable for each node, and one CCMHB-AA hub for the cluster
- 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

If nodes must be separated by a distance longer than standard copper cables allow the CCMFB option converts the output of the standard CCMAB controller or CCMLB line card to single-mode fiber optic cable. The fiber optic connection may be up to 2,000 metres long between two CCMAB controllers connected in virtual hub mode, or 3,000 metres between a CCMAB controller and a CCMHB hub. (The connection from the CCMHB hub to a second system may also be 3,000 metres.) The CCMFB option requires a second PCI slot in the system from which it draws power only. It is normally connected to the corresponding CCMAB controller with the short BN39B-01 cable. The CCMFB is also used in the CCMHB hub where it occupies a slot normally used by the CCMLB line card, limiting expansion to four radial fiber optic connections.

- If two CCMAB-AA's are configured in each system, a second CCMHB-AA is required.

MEMORY CHANNEL Controller	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
	1-metre cable for CCMAB and CCMHB	BN39B-01
	4-metre cable for CCMAB and CCMHB	BN39B-04
	10-metre cable for CCMAB and CCMHB	BN39B-10
	Copper-to-single mode fiber optic converter – 5V (clock not affected)	CCMFB-AA

MEMORY CHANNEL Power Cords	Australia, New Zealand (103541-011)	BN19H-2E
	Central Europe	BN19C-2E
	Denmark (103541-481)	BN19K-2E
	Egypt, India (103541-AR1)	BN19S-2E
	Ireland, United Kingdom	BN19A-2E
	Israel	BN18L-2E
	Italy (103541-461)	BN35M-02
	Switzerland (103541-511)	BN19E-2E

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 for use with VT5xx text terminals.

	Opal	**Carbon**	
Keyboard/Language	**OpenVMS**	**Tru64 UNIX**	**OpenVMS**
U.S. keyboard	LK461-A2	3R-LKQ48-BA	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 Q keyboard	LK461-BU	3R-LKQ48-BU	3X-LK462-BU
Turkish F 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 – carbon	3R-A3480-AA
Keyboard or Mouse Extension Cable	6-foot/1.8-metre keyboard or mouse extension cable; to extend both keyboard and mouse order two cables	3X-BC34A-06

Step 17 – Console Terminal – Optional

- Any terminal can be used as a console device
- Third-party console devices require an EIA-232 25-pin DSUB connector

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

- AlphaServer DS20E Tru64 UNIX systems include Unlimited User license, Server Extension license, Internet Express, and Secure Web Server
- AlphaStation DS20E Tru64 UNIX systems include Base 2-user

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 Plus Software Package with licenses for TruCluster Server, Logical Storage Manager, and AdvFS Utilities	QP-6R9AC-AA
	TruCluster Server license	QL-6BRAC-AA
	AdvFS Utilities License	QL-0EGAE-AA
	Logical Storage Manager License	QL-2GVAE-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

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

OpenVMS

- AlphaServer DS20E OpenVMS systems include Base license with System Manager license and Enterprise Integration Server Package for OpenVMS Revision V3.1
- AlphaStation DS20E OpenVMS systems include Base license, Concurrent Use 1-user license, and NAS 150 Client license
- 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*™, OpenVMS Disk Services for Windows NT, Office Server for OpenVMS, PATHWORKS 32, PATHWORKS V6 for OpenVMS – Advanced Server, and 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

- 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 HP 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 HP 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 HP 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 HP 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 HP 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 Hewlett-Packard 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: HP 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 HP O/S	• Preinstallation review • Unpacking of equipment • Assemble and test • Basic product usage info • Install operating systems • Product configuration • Print and network access • Orientation

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

Program Features – Principal Server *(continued)*

Model/CarePaq Priority Service	Principal Server/Station 1 year	Principal Server/Station 3 years	Subsequent Systems 1 year	Subsequent Systems 3 years
AlphaServer/AlphaStation DS20E				
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
English: http://www.compaq.ca/English/service/services.htm
French: http://www.compaq.ca/Francais/service/servicesf.htm.
NOTE: Certain restrictions and exclusions may apply. For details, consult the Product Information Centre at 1-888-882-6672.

Technical Specifications

Pedestal	**Dimensions** (H x W x D)	18.5 x 8.85 x 27.5 in (47 x 22.5 x 69.9 cm)		
	Shipping Dimensions	24 x 26.25 x 40 in (61 x 66 x 101.6 cm)		
	Weight	Typical Configuration	80 lb (36 kg)	
		Maximum Configuration	88 lb (40 kg)	
	Shipping Weight	Nominal	100 lb (45 kg)	
		Maximum	110 lb (50 kg)	
	Clearances		**Operating**	**Service**
		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

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

Cabinet		**H9A10 M-Series**	**H9A15 M-Series**
	Dimensions (H x W x D) (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)
	Shipping Dimensions	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)
	Weight	Configuration dependent	Configuration dependent
	Shipping Weight	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)	
	NOTE: 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	Operating	10,000 ft (3,037m)	
(unpressurized)	Non-operating	40,000 ft (12,192m)	
	NOTE: Higher altitudes are possible if maximum operating temperature is reduced (see Temperature); other restrictions may apply such as maximum permissible altitude for hard drives.		

ACOUSTICS (Declared values per ISO 9296 and ISO 7779)

Acoustics		L_{WAd3}B	L_{nAm5}dBA (bystander position)
	Idle	5.8	44
	Operating	6.3	49
	NOTE: Current values for specific configurations are available from HP, note that 1 B = 10 dBA.		
Vibration	Operating	10 to 500 Hz .1 G peak	
	Non-operating	1.03 Grms 5-300 Hz	

System Unit *(continued)*

ELECTRICAL (Power supplies are universal, PFC, auto ranging, 100/240 VAC)			
Nominal Voltage (VAC)	100	120	200 to 240
Voltage Range (VAC) (temporary condition)	90 to 100	110 to 128	180-250
Power Source Phase	Single	Single	Single
Nominal Frequency (Hz)	50/60	50/60	50/60
Frequency Range (Hz)	49 to 51/59 to 61	49 to 51/59 to 61	49 to 51/59 to 61

RMS Current

Pedestal and Rackmount	Single power cord	7.5A	6.0A	3.8A
	Maximum VA	780	765	730
M-Series Cabinet (Configuration dependent)	Nominal voltage (VAC)	100	120	220-240
	Each power cord	24A	24A	16A

Power Cords

Pedestal	1 (75 in (190 cm))	IEC 320 C13 to NEMA 5-15 (North America) or IEC 320 C13 to country-specific
Rackmount	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)
Cabinet	2 (10 ft 10 in (330 cm))	120V non-removable NEMA L5-30P or 200-240V non-removable IEC 309
Regulatory	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)

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