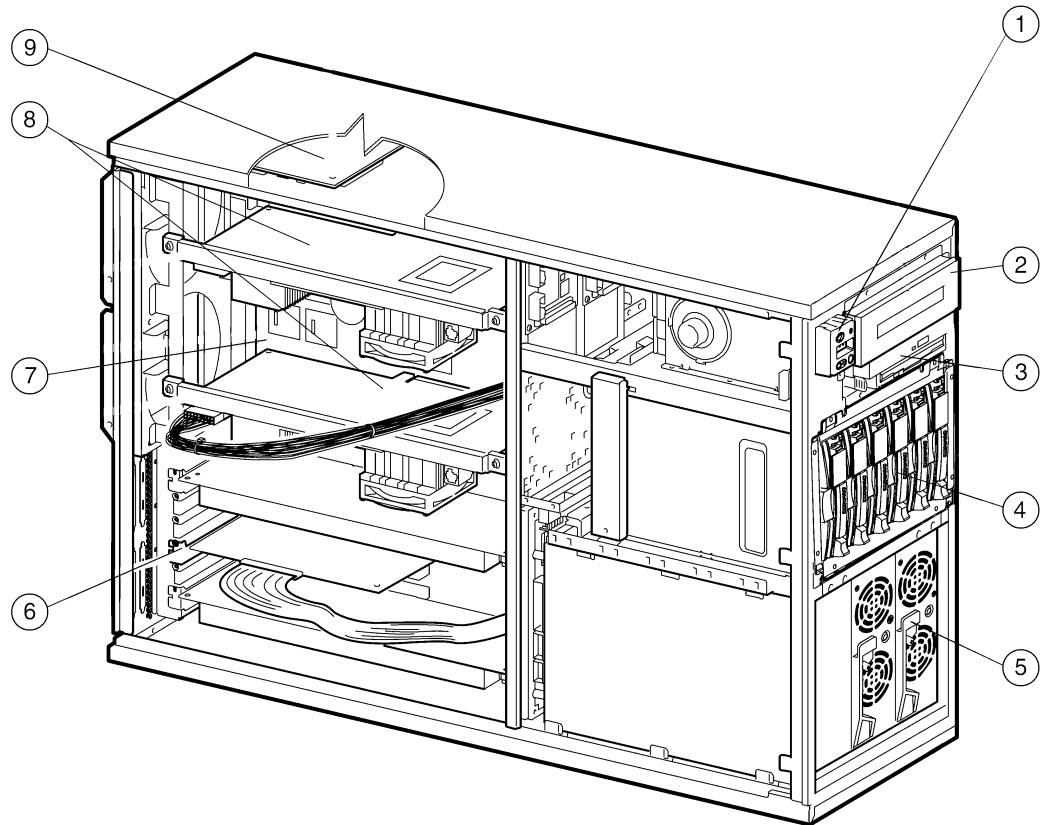


Overview

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
- 256-MB, 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 218 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 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

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	256-MB, 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 9.1-GB, 18.2-GB, or 36.4-GB drives
	Maximum Internal Storage	218 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 (V5.1), 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 (V5.1), 2-user Base license and Compaq Open3D traditional license AlphaServer DS20E OpenVMS systems include pre-installed software (V7.2-1), Base license with System Manager license and Enterprise Integration Server License Package for OpenVMS V3.1 AlphaStation DS20E OpenVMS systems include pre-installed software (V7.2-1), 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	
Service and Support	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
- Ultra2 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 not included

For system integration of options with 6-3 part numbers, contact *CustomSystems*

AlphaServer DS20E Systems			
OS	CPU	Memory / Cache	Order No.
Tru64 UNIX	667 MHz	256 MB / 8 MB	DA-56PAB-DA
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	256 MB / 8 MB	DA-56RAA-DA
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	256 MB / 8 MB	DY-56PAB-DA
OpenVMS	667 MHz	512 MB / 8 MB	DY-56PAB-EA
OpenVMS	667 MHz	1 GB / 8 MB	DY-56PAB-FA
OpenVMS	833 MHz	256 MB / 8 MB	DY-56RAA-DA
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	256 MB / 8 MB	DA-56PAB-DW
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	256 MB / 8 MB	DA-56RAA-DW
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	256 MB / 8 MB	DY-56PAB-DW
OpenVMS	667 MHz	512 MB / 8 MB	DY-56PAB-EW
OpenVMS	667 MHz	1 GB / 8 MB	DY-56PAB-FW
OpenVMS	833 MHz	256 MB / 8 MB	DY-56RAA-DW
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

Options

Step 2 – Select mandatory options *(continued)*

Step 2b – Disk Drive Cage – Mandatory

- Systems support one disk drive cage; disk drive cage supports six 3.5" hard disk drives
6-bay disk drive cage BA610-6D

Step 2c – Ultra2 SCSI Adapter – Mandatory

- Selection of Ultra2 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-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

9.1-GB Ultra2 SCSI 7,200 rpm 1.0" Universal disk drive	3R-A0525-AA
9.1-GB Ultra3 SCSI 10,000 rpm 1.0" Universal disk drive	3R-A0584-AA
9.1-GB Ultra3 SCSI 15,000 rpm 1.0" Universal disk drive	3R-A1542-AA
18.2-GB Ultra2 SCSI 7,200 rpm 1.0" Universal disk drive	3R-A0527-AA
18.2-GB Ultra3 SCSI 10,000 rpm 1.0" Universal disk drive	3R-A0585-AA
18.2-GB Ultra3 SCSI 15,000 rpm 1.0" Universal disk drive	3R-A1543-AA
36.4-GB Ultra3 SCSI 10,000 rpm 1.0" Universal disk drive	3R-A0919-AA
Ultra Universal drive height converter, 4-pack; required for installed base customers with earlier 4-slot drive cages (3X-BA611-4D) when ordering 1.0" 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	3X-DE602-AA
Multi-mode fiber (MMF) add-on daughter card for 3X-DE602-AA	3X-DE602-FA
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"	BN26J-1K
	Australia, New Zealand, 2.5m	BN19H-2E
	Central Europe, 2.5m	BN19C-2E
	Denmark, 2.5m	BN19K-2E
	Egypt, India, South Africa, 2.5m	BN19S-2E
	Israel, 2.5m	BN18L-2E
	Italy, 2.5m	BN19M-2E
	Japan, 2.5m	3X-BN46F-02
	Switzerland, 2.5m	BN19E-2E
	UK, Ireland, 2.5m	BN19A-2E

Rackmount Power Cords	US/Canada	BN20Z-4E
	Non-US	BN35S-4E
	Japan, 2.5m	3X-BN46D-4E

Options

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 6/500-MHz CPU with 4-MB cache and Tru64 UNIX SMP license	KN310-BB
SMP upgrade includes one 6/500-MHz CPU with 4-MB cache and OpenVMS SMP license	KN310-BC
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

256-MB memory option (4 x 64-MB DIMMs)	MS340-CA
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
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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" 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).
For optimum performance it is recommended that Ultra2 capable devices be connected to an Ultra2 adapter.

12/24-GB 4mm DAT SCSI tape drive (TLZ10) 5.25" half-height, top gun blue	TLZ10-LB
5.25" half-height 20/40-GB 4mm DAT Ultra 2 (LVD) SCSI tape drive, top gun blue	3X-SD20X-LB
5.25" half-height 35/70-GB 8mm AIT Wide Ultra SCSI tape drive, top gun blue	3X-SZ35X-LB
5.25" half-height 50/100-GB 8mm AIT Ultra 2 (LVD) SCSI tape drive, top gun blue	3X-SZ50X-LB
5.25" half-height 35/70-GB 8mm 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 or 3X-DEPVZ-AA LVD 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 or 3X-DEPVZ-AA LVD adapter	3R-A2779-AA
20/40-GB DAT DDS4 hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves, 3X-KZPCA-AA LVD adapter	3R-A2780-AA
SCSI cable with one connector and active terminator to connect optional PCI adapter to 5.25" device	3X-BC56C-2F

Options

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" hard disk drives, or one 5.25" device and four 3.5" hard disk drives, or two 5.25" devices and one 3.5" hard disk drive
- Installation of redundant power supply reduces number of 3.5" drive slots by one

UltraSCSI single-ended pedestal, single-bus personality module, 180W power supply	DS-BA356-KF
UltraSCSI single-ended pedestal, split-bus personality module, 180W power supply	DS-BA356-KG
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" x 1.6" 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 Ultra2 SCSI (LVD) single-bus and split-bus Universal drive shelves; refer to Compaq 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. Model 43xx shelves are compatible with Wide Ultra2 (LVD) adapters only. Note that the depth of a DS-SL13R-xx shelf does not allow front and rear mounting.

StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, US	DS-SL13R-AA (190209-001)
StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, International	DS-SL13R-AB (190209-B31)
StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, Japan	DS-SL13R-AJ (190209-291)
StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, US	DS-SL13R-BA (190211-001)
StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, International	DS-SL13R-BB (190211-B31)
StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, Japan	DS-SL13R-BJ (190211-291)

StorageWorks Model 4314T Standalone Enclosure for Universal Drives

Model 4314T Ultra3 SCSI, single-bus tower enclosure, US	DS-SL13T-AA
Model 4314T Ultra3 SCSI, single-bus tower enclosure, International	DS-SL13T-AB
Model 4314T Ultra3 SCSI, single-bus tower enclosure, Japan	DS-SL13T-AJ

StorageWorks Model 4314 Options

StorageWorks enclosure redundant power supply	DS-SE2UP-AA 119826-B21)
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Options

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

Disk Drives (Supported in Model 4314R and Model 4354R Universal Drive Shelves)	9.1-GB Ultra2 SCSI 7,200 rpm 1.0" Universal disk drive	3R-A0525-AA
	9.1-GB Ultra3 SCSI 10,000 rpm 1.0" Universal disk drive	3R-A0584-AA
	9.1-GB Ultra3 SCSI 15,000 rpm 1.0" Universal disk drive	3R-A1542-AA
	18.2-GB Ultra2 SCSI 7,200 rpm 1.0" Universal disk drive	3R-A0527-AA
	18.2-GB Ultra3 SCSI 10,000 rpm 1.0" Universal disk drive	3R-A0585-AA
	18.2-GB Ultra3 SCSI 15,000 rpm 1.0" Universal disk drive	3R-A1543-AA
	36.4-GB Ultra3 SCSI 10,000 rpm 1.0" Universal disk drive	3R-A0919-AA

Disk Drives (Supported in StorageWorks BA356 / BA36R Shelves)	9.1-GB Ultra2 SCSI 7,200 rpm disk drive	DS-RZ1DA-VW
	9.1-GB Ultra3 SCSI 10,000 rpm disk drive	DS-RZ1DD-VW
	18.2-GB Ultra2 SCSI 7,200 rpm disk drive	DS-RZ1EA-VW
	18.2-GB Ultra3 SCSI 10,000 rpm disk drive	DS-RZ1ED-VW
	36.4-GB Ultra3 SCSI 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>

AIT Tape Drives	35/70-GB 8mm AIT LVD tabletop tape drive, North America; requires 3X-KZPCA-AA LVD adapter	216885-001
	35/70-GB 8mm AIT LVD tabletop tape drive, International; requires 3X-KZPCA-AA LVD adapter	216885-B31
	35/70-GB 8mm AIT LVD tabletop tape drive, Japan; requires 3X-KZPCA-AA LVD adapter	216885-291
	35/70-GB 8mm AIT SCSI tabletop tape drive with 120V North American power cord; requires 3X-KZPCA-AA or KZPBA-CA SCSI adapter	388507-001
	35/70-GB 8mm AIT SCSI tabletop tape drive, International; requires 3X-KZPCA-AA or KZPBA-CA SCSI adapter	388507-B31
	50/100-GB 8mm AIT SCSI tabletop tape drive with 120V North American power cord; requires 3X-KZPCA-AA Wide Ultra2 (LVD) adapter	157767-001
	50/100-GB 8mm AIT SCSI tabletop tape drive, International; requires 3X-KZPCA-AA Wide Ultra2 (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

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

Options

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

DAT Drives	12/24-GB 4mm DAT 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
	20/40-GB 4mm DAT Wide Ultra2 (LVD) tabletop SCSI tape drive with 120V North American power cord; requires 3X-KZPCA-AA Wide Ultra2 (LVD) adapter	157770-001
	20/40-GB 4mm DAT Wide Ultra2 (LVD) tabletop SCSI tape drive, International; requires 3X-KZPCA-AA Wide Ultra2 (LVD) adapter	157770-B31
	20/40-GB DAT auto loader external, North America	166505-001
	20/40-GB DAT auto loader external, International; requires BN31W-xx SCSI cable and KZPBA-CA or KZPCM-DA adapter	166505-B31
	20/40-GB DAT auto loader external, Japan	166505-291
	20/40-GB DAT DDS4 hot plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves	3R-A2780-AA
DLT Drives	35/70-GB DLT single-ended tabletop tape drive, requires BN21K-xx SCSI cable and KZPBA-CA or KZPCM-DA adapter	DS-TZ89N-TA
	Tabletop DLT8000 40/80-GB DLT external tape drive; requires 3X-KZPCA-AA LVD adapter	146197-B21
	Tabletop DLT8000 40/80-GB DLT external tape drive, Japan; requires 3X-KZPCA-AA LVD adapter	146197-291
	Tabletop TL881 DLT mini-library with one DLT4000 tape drive; requires HVD KZPBA-CB adapter and SCSI cable	128667-B21
	Tabletop TL881 DLT mini-library with two DLT4000 tape drives; requires HVD KZPBA-CB adapter and SCSI cable	128667-B22
	Tabletop TL891 DLT mini-library with one TZ89N tape drive; requires HVD KZPBA-CB adapter and SCSI cable	120875-B21
Tabletop TL891 DLT mini-library with two TZ89N tape drives; requires HVD KZPBA-CB adapter and SCSI cable	120875-B22	

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>

AIT Drives	35/70-GB 8mm AIT SCSI tape drive in 3.5" StorageWorks carrier (BA36R or BA356 shelves)	DS-AIT35-VW
	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 Drives	12/24-GB 4mm DAT narrow SCSI tape drive in StorageWorks carrier (BA36R or BA356 shelves)	DS-TLZ10-VA
DLT Drives	40/80-GB DLT8000 tape drive in StorageWorks carrier (BA36R or BA356 shelves)	DS-TZ90N-VW
	20/40-GB DLT single-ended tape drive in StorageWorks carrier (BA36R or BA356 shelves)	TZ88N-VA
	35/70-GB DLT single-ended tape drive in StorageWorks carrier (BA36R or BA356 shelves)	DS-TZ89N-VW
DLT Tape Libraries	ESL9326DX DLT Enterprise tape libraries with six 40/80-GB tape drives (161265-B24/-B25/-B26/-B27/-B28 for 8, 10, 12, 14, or 16 tape drives); requires KZPBA-CB	161265-B23
	ESL9198 DLX Enterprise tape libraries with two 40/80-GB tape drives, 198 slots (194993-B24/-B28 for 4 or 8 tape drives); requires 3X-KZPCA-AA	194993-B22
	ESL9326D DLT Enterprise tape library, (International versions, 146205-B21–1446205-B28); requires KZPBA-CB adapter	146205-001
	TL895 DLT tape library with two drives; (349350-B23–349350-B27, 3–7 drives); requires KZPBA-CB adapter	349350-B22
	Rackmount TL881 DLT mini-library with one DLT4000 tape drive; requires KZPBA-CB adapter	128668-B21
	Rackmount TL881 DLT mini-library with two DLT4000 tape drives; requires KZPBA-CB adapter	128668-B22
	Rackmount TL891 DLT mini-library with one TZ89N tape drive; requires KZPBA-CB adapter	120876-B21
	Rackmount TL891 DLT mini-library with two TZ89N tape drives; requires KZPBA-CB adapter	120876-B22

Options

Step 8 – Storage Devices – Optional (continued)

DLT Tape Drive Enclosures (for rackmount configurations)	DLT Tape Array III Model 0 enclosure, US	168047-001
	DLT Tape Array III Model 0 enclosure, International	168047-B31
	DLT Tape Array III Model 0 enclosure, Japan	168047-291
	DLT 4000 tape drive, maximum 4 per DLT tape drive enclosure	340743-B22
	DLT 7000 tape drive, maximum 4 per DLT tape drive enclosure	242520-B21
	DLT 8000 tape drive, maximum 4 per DLT tape drive enclosure	146196-B21
	110/220 GB SDLT tape drive supported in DLT tape drive enclosure	192106-B21

BA370 Rackmount Enclosure

- Mandatory rear cabinet extender ordered for systems installed in M-series cabinets (H9A10 and H9A15) allows two BA370 enclosures to be installed front to back in cabinet.
- Host adapter, RAID Array controller, platform specific Solutions Software Kit, and disk drives must be ordered separately.

BA370 front mount rackmount enclosure with five 180W power supplies, includes RETMA rackmount kit; first BA370 enclosure must be front mounted in cabinet, 20U height	2T-BA370-AS
BA370 rear mount rackmount enclosure with five 180W power supplies, includes RETMA rackmount kit; second BA370 enclosure must be rear mounted in cabinet, 20U height	2T-BA370-AR

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

External Storage Solutions/ Controllers	Modular Array 6000 D14 Fibre Channel RAID storage solution, includes one HSG60 controller with 256-MB cache, one M2100 controller shelf, one dual-bus disk shelf, two I/O ports, two power supplies	187738-B21 (DS-SWXRA-NA)
	Modular Array 6000 S14 Fibre Channel RAID storage solution, includes one HSG60 controller with 256-MB cache, one M2100 controller shelf, two single-bus disk shelves, two I/O ports, and two power supplies	187739-B21 (DS-SWXRA-NB)
	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
	Enterprise Modular Array 12000 Fibre Channel RAID storage solution, 50 Hz	175993-B22
	Note: For Modular Array 6000, Modular Array 8000, and Enterprise Modular Array 12000 configuration and ordering information, see http://www.compaq.com/products/storageworks/raidstoragesystems.html	
	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
	UltraSCSI controller (HSZ80), includes 64-MB cache; requires 400569-001 for Tru64 UNIX or 400571-001 for OpenVMS for RAID Array and Enterprise Storage Array solutions	400564-B21
UltraSCSI controller (HSZ80), includes 256-MB cache; requires 400569-001 for Tru64 UNIX or 400571-001 for OpenVMS for RAID Array and Enterprise Storage Array solutions	400565-B21	

RAID Array 3000 Rackmount Controller Shelf

- Selection of RA3000 Solutions Software Kit is required
- Supported SCSI adapter: KZPBA-CB 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 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	DS-SWXRA-GH
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Options

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

RAID Array 3000 Rackmount Controller Shelf (continued)

<p>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</p>	DS-SWXRA-GK
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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-m BN37A-02 SCSI cable be ordered

<p>RA3000 rackmount disk shelf, blue, includes UltraSCSI BA356 disk shelf, two 180 W 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</p>	DS-SWXRA-GN
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HSZ22 Controller

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

<p>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</p>	DS-HSZ22-AA
<p>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</p>	DS-HSZ22-AB

RA3000 Solutions Software Kit

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

<p>RA3000 Solutions Software Kit for Tru64 UNIX</p>	QB-5TWAB-SA
<p>RA3000 Solutions Software Kit for OpenVMS</p>	QB-5TWAC-SA

HSG80/HSZ80 External Controllers

<p>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</p>	380672-B21
<p>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</p>	380671-B21
<p>UltraSCSI controller (DS-HSZ80-AH), includes 64-MB cache expandable to 128 MB; requires 400569-001 for Tru64 UNIX or 400571-001 for OpenVMS</p>	400564-B21
<p>UltraSCSI controller (DS-HSZ80-AJ), includes 256-MB cache expandable to 512 MB; requires 400569-001 for Tru64 UNIX or 400571-001 for OpenVMS</p>	400565-B21

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 – KZPBA-CB PCI 1-port UltraSCSI differential adapter
- Supported SCSI adapter for HSG80 – KGPSA-BC PCI 1-port Fiber-Channel adapter

Options

Step 10 – Storage Adapters/Controllers

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

AlphaServer DS20E Configuration Chart for Storage Adapters

Adapter	Shelf	Disk Drive	Tru64 UNIX	OpenVMS
3X-KZPCA-AA	BA610-6D DS-SL13R-xx	3R-A0xxx-AA 1.0" Universal 3R-A1xxx-AA 1.0" Universal	V4.0F to V5.1	V7.2-1
KZPCM-DA	BA36R-xx	DS-RZ1xx-VW	V4.0F to V5.1	V7.2-1
KZPBA-CA	BA36R-xx	DS-RZ1xx-VW	V4.0F to V5.1	V7.2-1

AlphaServer DS20E Configuration Chart for Storage Adapters

Adapter	Shelf	Disk Drive	Tru64 UNIX	OpenVMS
KZPAC-AA/CA/CB	BA36R-xx	DS-RZ1xx-VW	V4.0F to V5.1	V7.2-1

	Maximum # Supported		
	Tru64 UNIX	OpenVMS	
PCI Fibre Channel adapter (KGPSA-CA), (uses one slot)	4	4	DS-KGPSA-CA (168794-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 to 25 m) to connect adapter to differential UltraSCSI shelf or RAID controller	4	4	KZPBA-CB
68-pin HD male-to-VHDCI male UltraSCSI cable; xx = 02, 03, 05, 10, 20, 25 m			BN38C-xx

Options

Step 10 – Storage Adapters/Controllers (continued)

	Maximum # Supported		
	Tru64 UNIX	OpenVMS	
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 <i>Note: Manufacturing may substitute BN37A-02 cable for specific cabinet configurations.</i>			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 www.compaq.com/alphaserver/products/m-series/index.html

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

- Disk shelves not to 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	56" / 32U	1	6	8	-
			2	6	7	-
			3	6	5	-
			4	6	4	-
			5	2	2	-
			6	0	0	-
H9A15-MC/MD	3X-BA56R-RC	66.5" / 39U	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-m 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	54.2" / 32U	1	1 + 5	-
			2	1 + 5	-
			3	1 + 5	-
H9A15-MC/MD	3X-BA56R-RC	66.5" / 39U	1	1 + 5	1
			2	1 + 5	1
			3	1 + 5	-
			4	1 + 5	-

Options

Step 11 – M-series Cabinets – Optional (continued)

Cabinet Configuration Chart for AlphaServer DS20E (5U) with StorageWorks BA370 (20U) and Disk Shelves

- 20U of vertical cabinet space is reserved for one front-mounted BA370 rackmount enclosure, or one front-mounted and one rear-mounted BA370 enclosure in top of cabinet, front to back. Note that top fan (1U) is removed from cabinet when BA370 rackmount enclosure is installed.
- Systems and StorageWorks shelves are supported in remaining vertical space; StorageWorks shelves are not supported in rear of cabinet behind a front-mounted BA370 rackmount enclosure.

Cabinet	Rack Kit	Cabinet Height/Space	Systems	BA370	Shelves
H9A10-MC/MD	3X-BA56R-RC	56" / 33U	1	1 (front) or	2
			2	2 (front & back)	0
H9A15-MC/MD	3X-BA56R-RC	66.5" / 40U	1	1 (front) or	6
			2	2 (front & back)	4
			3		0

Note: Installing one BA370 and one system in an H9A15 cabinet requires the mandatory selection of a ballast kit; a ballast kit is not required if two BA370s and one system are installed in H9A15 cabinet.

M-series Cabinets	67" cabinet with 56" or 32U 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" cabinet with 56" or 32U 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" cabinet with 66.5" or 39U 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" cabinet with 66.5" or 39U 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 35-40 lb. Steel plates	H9C10-MC
Rackmount Power Cord – Required for each system	US/Canada	BN20Z-4E
	Non-US	BN35S-4E
	Japan, 2.5m	3X-BN46D-4E

Options

Step 11 – M-series Cabinets – Optional (continued)

Shelves Supported in M-series Cabinets – 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, US	DS-SL13R-AA (190209-001)
	StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, International	DS-SL13R-AB (190209-B31)
	StorageWorks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, Japan	DS-SL13R-AJ (190209-291)
	StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, US	DS-SL13R-BA (190211-001)
	StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, International	DS-SL13R-BB (190211-B31)
	StorageWorks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, Japan	DS-SL13R-BJ (190211-291)

Compaq CustomSystems Support

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

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, and country-specific keyboard if required

	Maximum # Supported		
	Tru64 UNIX	OpenVMS	
ELSA Gloria synergy graphics with 8-MB SGRAM 1600 x 1200, 2D/3D graphics accelerator	3	1	SN-PBXGK-BB
3Dlabs Oxygen VX1 32-MB PCI 2D graphics adapter	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	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

V570 15" (13.8" viewable image size) multiple-scan color monitor with Invar Shadow Mask, VGA to 1024 x 768 @ 75 Hz, 0.28mm AG, TCO99; Northern Hemisphere with NA power cord	3R-A3082-AA
Same as above with Eurocord	3R-A3083-AA
Same as above, APD, no power cord	3R-A3084-AA
V500 15" (13.8" viewable image size) auto-scanning color monitor, VGA to 1024 x 768 @75 Hz, 0.28mm FST, MPRII Southern Hemisphere with Australia/New Zealand power cord	3R-VRQV5-11

Options

Step 13 – Monitors –Optional (continued)

	P710 17" (16" viewable image size) auto-scanning color monitor, Diamondtron NF, 0.25mm aperture grille pitch, VGA to 1280 x 1024 @ 75 Hz, TCO 99; Northern Hemisphere with NA power cord	3R-A2936-AA
	Same as above, APD, no power cord	3R-A2260-AA
	Same as above, PRC with power cord, CCIB	3R-A3335-AA
	Same as above, Northern Hemisphere, with Power Factor Correction and Eurocord, 220V only	3R-A2261-AA
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord	3R-A2263-AA
	TFT8020 18" (18.1" viewable image size) flat panel monitor, 0.28mm DP, 1280 x 1024 @ 75 Hz, TCO 99, US power cord	3R-A0852-AA
	P910 19" (18" viewable image size) auto-scanning color monitor, Diamondtron NF, 0.25mm aperture grille pitch, VGA to 1280 x 1024 @ 85 Hz, TCO 99; Northern Hemisphere with NA power cord	3R-A2935-AA
	Same as above, PRC with power cord, CCIB	3R-A3334-AA
	Same as above, Northern Hemisphere, with power factor correction and Eurocord, 220V only	3R-A2265-AA
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord	3R-A2267-AA
	P1100 21" (19.8" viewable image size) auto-scanning color monitor, 0.28mm aperture grille pitch VGA to 1600 x 1200 @ 85 Hz, Southern Hemisphere with Australia/New Zealand power cord	3R-VRQP1-23
	P1210 22" (20" viewable image size) auto-scanning color monitor, Diamondtron NF, 0.24mm aperture grille pitch, VGA to 1600 x 1200 @ 85 Hz, TCO 99 with power factor correction, Northern Hemisphere with NA power cord	3R-A2934-AA
	Same as above with Eurocord	3R-VRQP2-24
	Same as above, APD, no power cord	3R-A2268-AA
	Same as above, PRC with power cord, CCIB	3R-A3333-AA
Video Extension Cable	Factory Integration of systems and storage devices assembled and configured in cabinet enclosure in predefined locations	YS-ASCAA-AA
Monitor Power Cords	North American, 120V, 75"	BN26J-1K
	Australia, New Zealand, 2.5m	BN19H-2E
	Central Europe, 2.5m	BN19C-2E
	Denmark, 2.5m	BN19K-2E
	Egypt, India, South Africa, 2.5m	BN19S-2E
	Israel, 2.5m	BN18L-2E
	Italy, 2.5m	BN19M-2E
	Japan, 2.5m	3X-BN46F-02
	Switzerland, 2.5m	BN19E-2E
	UK, Ireland, 2.5m	BN19A-2E

Options

Step 14 – Networks and Communications – Optional

- Controllers/adapters require Tru64 UNIX V4.0F or OpenVMS V7.1-2
- See Step 2 for mandatory supported Ethernet adapters

	Maximum # Supported		
	Tru64 UNIX	OpenVMS	
FE FX daughter card for 3X-DE602-AA (3X-DE602-AA is a prerequisite)	2	2	3X-DE602-FA
PCI Gigabit Ethernet adapter, SC connectors, MMF, no boot support	2	1	DEGPA-SA
SC-to-SC dual fiber optic cable			BN34B-xx
PCI Gigabit Ethernet adapter, UTP, no boot support	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
Cache battery backup for KZPAC controller			KZPSC-UB
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
3m (9.8") 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 2-port synchronous controller; maximum two PBXDP-Ax controllers per system	2	2	PBXDP-AA
PCI 4-port synchronous controller; maximum two PBXDP-Ax controllers per system	2	2	PBXDP-AB
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
Asynchronous multi-port MUX expander XEM			CXI01-AB

Options

Step 15 – MEMORY CHANNEL – Optional

Tru64 UNIX Systems (V5.0A and later)	<ul style="list-style-type: none"> Each system node in the cluster requires a TruCluster Server license (QL-6BRAC-AA) 																
Tru64 UNIX Systems (V4.0G and earlier)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Requires OpenVMS V7.1-2 or later and OpenVMS Cluster license (QL-MUZAC-AA) 																
Configuring Information	<ul style="list-style-type: none"> 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 system and one BN29B-04 or BN29B-10 cable; the cable connects directly to the CCMAB-AA in each system 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 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 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 																
MEMORY CHANNEL Controller	<table border="1"> <tbody> <tr> <td>PCI System Area Network Controller, maximum two</td> <td>CCMAB-AA</td> </tr> <tr> <td>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</td> <td>CCMHB-AA</td> </tr> <tr> <td>Expansion line card for CCMHB hub</td> <td>CCMLB-AA</td> </tr> <tr> <td>4-m cable for CCMAB and CCMHB</td> <td>BN39B-04</td> </tr> <tr> <td>10-m cable for CCMAB and CCMHB</td> <td>BN39B-10</td> </tr> </tbody> </table>	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-m cable for CCMAB and CCMHB	BN39B-04	10-m cable for CCMAB and CCMHB	BN39B-10						
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-m cable for CCMAB and CCMHB	BN39B-04																
10-m cable for CCMAB and CCMHB	BN39B-10																
MEMORY CHANNEL Power Cords	<table border="1"> <tbody> <tr> <td>Australia, New Zealand</td> <td>BN19H-2E</td> </tr> <tr> <td>Central Europe</td> <td>BN19C-2E</td> </tr> <tr> <td>Denmark</td> <td>BN19K-2E</td> </tr> <tr> <td>Egypt, India</td> <td>BN19S-2E</td> </tr> <tr> <td>Ireland, United Kingdom</td> <td>BN19A-2E</td> </tr> <tr> <td>Israel</td> <td>BN18L-2E</td> </tr> <tr> <td>Italy</td> <td>BN19M-2E</td> </tr> <tr> <td>Switzerland</td> <td>BN19E-2E</td> </tr> </tbody> </table>	Australia, New Zealand	BN19H-2E	Central Europe	BN19C-2E	Denmark	BN19K-2E	Egypt, India	BN19S-2E	Ireland, United Kingdom	BN19A-2E	Israel	BN18L-2E	Italy	BN19M-2E	Switzerland	BN19E-2E
Australia, New Zealand	BN19H-2E																
Central Europe	BN19C-2E																
Denmark	BN19K-2E																
Egypt, India	BN19S-2E																
Ireland, United Kingdom	BN19A-2E																
Israel	BN18L-2E																
Italy	BN19M-2E																
Switzerland	BN19E-2E																

Options

Step 16 – Keyboards, Power Cords, Documentation

- Keyboards are not included with system and must be ordered separately

	Tru64 UNIX	OpenVMS
U.S./English keyboard	SN-LKQ47-AA	LK461-A2
Arabic keyboard	SN-LKQ47-BR	-
Belgian keyboard	SN-LKQ47-AB	LK461-AB
BHCSY keyboard	SN-LKQ47-AX	-
Canadian/English keyboard	-	LK461-AQ
Canadian/French keyboard	SN-LKQ47-AC	LK461-AC
Cyrillic keyboard	SN-LKQ47-BT	LK461-BT
Czech keyboard	SN-LKQ47-BV	LK461-BV
Danish keyboard	SN-LKQ47-AD	LK461-AD
Dutch keyboard	SN-LKQ47-AH	LK461-AH
Finnish keyboard	SN-LKQ47-AF	LK461-AF
French keyboard	SN-LKQ47-AP	LK461-AP
German keyboard	SN-LKQ47-AG	LK461-AG
Greek keyboard	SN-LKQ47-BH	LK461-BH
Hebrew keyboard	SN-LKQ47-AT	LK461-AT
Hungarian keyboard	SN-LKQ47-BQ	LK461-BQ
International keyboard	SN-LKQ47-BA	-
Italian keyboard	SN-LKQ47-AI	LK461-AI
Korean keyboard	SN-LKQ47-BK	-
Latin-American keyboard	SN-LKQ47-AR	-
Norwegian keyboard	SN-LKQ47-AN	LK461-AN
Polish keyboard	SN-LKQ47-BP	LK461-BP
Portuguese keyboard	SN-LKQ47-AV	LK461-AV
Romanian keyboard	-	LK461-BL
S. Chinese keyboard	SN-LKQ47-CV	-
Slovak keyboard	SN-LKQ47-CZ	LK461-CZ
Spanish keyboard	SN-LKQ47-AS	LK461-AS
Swedish keyboard	SN-LKQ47-AM	LK461-AM
Swiss/French keyboard	SN-LKQ47-AK	LK461-AK
Swiss/German keyboard	-	LK461-AL
Taiwanese keyboard	SN-LKQ47-BI	-
Thai keyboard	SN-LKQ47-CB	-
Turkish keyboard	SN-LKQ47-BU	LK461-BU
Turkish/French keyboard	-	LK461-BW
UK keyboard	SN-LKQ47-AE	-
Yugoslavian keyboard	-	LK461-BY

Keyboard or Mouse Extension Cable	6 ft keyboard or mouse extension cable; to extend both keyboard and mouse order two cables	3X-BC34A-06
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Options

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)	H8975-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, iPlanet Directory Server, iPlanet Enterprise Server, and Compaq Secure Web Server
- AlphaStation DS20E Tru64 UNIX systems include Base 2-user license and Compaq Open3D license

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
Open3D for Tru64 UNIX on CD-ROM, includes graphics drivers	QA-0AFAA-H8

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
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

Options

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

OpenVMS	<ul style="list-style-type: none"> AlphaServer DS20E OpenVMS systems include Base license with System Manager license and Compaq Enterprise Integration Server Package for OpenVMS Revision V3.1 	
	<ul style="list-style-type: none"> AlphaStation DS20E OpenVMS systems include Base license, Concurrent Use 1-user license, NAS 150 Client license, and Compaq Open3D license 	
	<ul style="list-style-type: none"> 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, 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
	<ul style="list-style-type: none"> 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. 	
	<ul style="list-style-type: none"> 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
	DIGITAL Enterprise Integration Server for OpenVMS media and documentation	QA-5LVAA-H8
	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 Compaq AlphaServer/AlphaStation systems running Compaq 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

- 9x5 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)
- Condinst update distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Condinst can be ordered separately.)

Priority 24

- 24x7 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)
- Condinst update distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Condinst can be ordered separately.)

Priority Silver

- 24x7 HW Support with Named Engineer, 4-hour response
- 24x7 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)
- Condinst update distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Condinst can be ordered separately.)
- Technical newsletter and SW activity review
- Proactive Patch Notification
- One (1) System Healthcheck per year

Priority Gold

- 24x7 HW support with Named Engineer, 4-hour response for on-site support
- 24x7 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)
- Condinst update distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Condinst 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)*

Priority Gold Executive	<ul style="list-style-type: none"> • 24x7 HW support with Named Engineer, two-hour response for on-site support • 24x7 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
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Program Features – Additional Services

SSPs (Subsequent System Packages)	<ul style="list-style-type: none"> • 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
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Installation	<ul style="list-style-type: none"> • Pre-installation review • Unpacking of equipment • Assemble and test • Basic product usage info • No software installation added
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Installation & Startup Compaq O/S	<ul style="list-style-type: none"> • Pre-installation review • Unpacking of equipment • Assemble and test • Basic product usage info • Install operating systems • Product configuration • Print and network access • Orientation
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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-A21BA-12	FP-A21BA-36
Priority 24	FP-A02MA-12	FP-A02MA-36	FP-A22BA-12	FP-A22BA-36
Priority Silver	FP-A04MA-12	FP-A04MA-36	FP-A24BA-12	FP-A24BA-36
Priority Gold	FP-A08MA-12	FP-A08MA-36	FP-A28BA-12	FP-A28BA-36
Priority Gold Exec.	FP-A09MA-12	FP-A09MA-36	FP-A29BA-12	FP-A29BA-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 AlphaServers and AlphaStations, consult your Compaq Sales Account Manager or visit <http://www.compaq.com/services/>.

Technical Specifications

Pedestal	Dimensions (HxWxD)	18.5 x 8.85 x 27.5 in/47.0 x 22.5 x 69.9 cm				
	Shipping Dimensions	24 x 26.25 x 40 in/61.0 x 66.0 x 101.6 cm				
	Weight	Typical Configuration	80 lbs/36 kg			
		Maximum Configuration	88 lbs/40 kg			
	Shipping Weight	Nominal	100 lbs/45 kg			
		Maximum	110 lbs/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 (HxWxD)	8.75 x 17.5 x 26 in/22.2 x 44.5 x 66.0 cm (5U)				
	Shipping Dimensions	24 x 26.25 x 40 in/61.0 x 66.0 x 101.6 cm				
	Weight	When lifting	Nominal	80 lbs/36 kg		
			Maximum	86 lbs/39 kg		
		Total added to cabinet (brackets, slides, cables):	Nominal	84 lbs/38 kg		
			Maximum	88 lbs/40 kg		
	Shipping Weight	Nominal	100 lbs/45 kg			
		Maximum	110 lbs/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 (HxWxD) (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				
	Shipping Weight	Nominal: 946 lbs/430 kg Maximum: 1,375 lbs/625 kg	Nominal: 1,056 lbs/550 kg Maximum: 1,408 lbs/640 kg)			

Technical Specifications

System Unit		<i>Environmental</i>	
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	
	<i>Note: Maximum operating temperature at sea level; reduce by 1.8°F (1°C) for each 600m (2,000 ft) above sea level.</i>		
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	Nominal	Maximum	
	Tower	550W, 1,878 BTU/hr	780W, 2,664 BTU/hr
	Pedestal	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	
<i>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.</i>			
Acoustics (Declared values per ISO 9296 and ISO 7779)			
Acoustics	L _{WAd3B}	L _{nAm5dBA} (bystander position)	
	Idle	5.8	44
	Operating	6.3	49
<i>Note: Current values for specific configurations are available from Compaq, note that 1 B = 10 dBA.</i>			
Vibration	Operating	10-500 Hz .1 G peak	
	Non-operating	1.03 Grms 5-300 Hz	
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

Technical Specifications

System Unit <i>(continued)</i>	Electrical <i>(continued)</i>		
	RMS Current		
	<i>Pedestal and Rackmount</i>		
Single power cord	7.5A	6.0A	3.8A
Maximum VA	780	765	730
	<i>M-series Cabinet (configuration dependent)</i>		
Nominal voltage (Vac)	100	120	220-240
Each power cord	24A	24A	16A
	<i>Pedestal and Rackmount</i>		
	Power Cords		
Pedestal	1 (75 in/190 cm)	IEC 320 C13 to NEMA 5-15 (N. America) or IEC 320 C13 to country-specific	
Rackmount	1 (14 ft 10 in/452 cm)	IEC 320 C13 to NEMA 5-15 (N. 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 BCIO: CISPR22, CNS13438 C-Tick: CISPR22, AS/NZS 3548 AS/NZ 3260:1993 Australian/New Zealand Standard EN 60950/A4: 1997 European Norm IEC 950 (2nd edition, 4th amend)	
	Reviewed to		