

QUICKSPECS

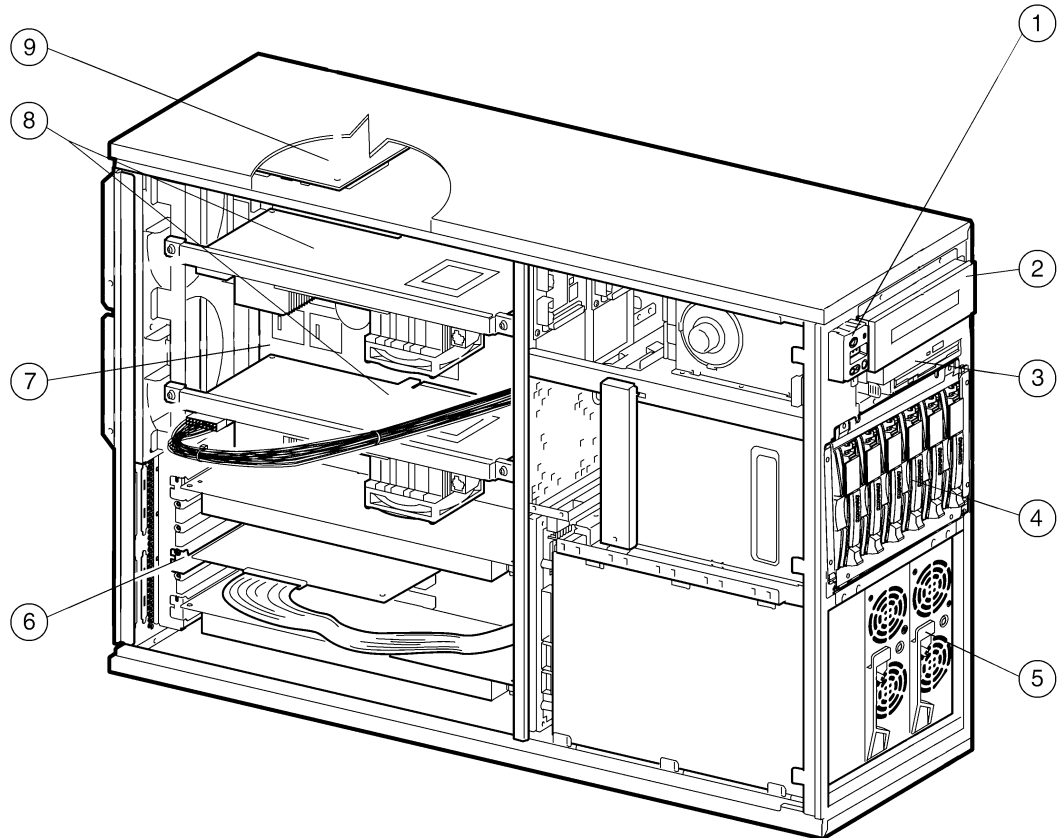
Compaq AlphaServer DS20E
Compaq AlphaStation DS20E

Overview

AT A GLANCE

AlphaServer/AlphaStation DS20E
Systems include:

- Alpha 21264 500-MHz or 667-MHz processor (dual processor capability)
- 4-MB level 2 writeback cache per 500-MHz processor or 8-MB L2 DDR cache per 667-MHz 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 | |

QUICKSPECS

Compaq *AlphaServer* DS20E
Compaq *AlphaStation* DS20E

Standard Features

Processor

Alpha 21264 500-MHz or 667-MHz processor

Cache Memory

4-MB level 2 writeback cache per 500-MHz processor

8-MB level 2 dual data rate cache per 667-MHz processor

Upgradability

System upgradable to dual processing

Memory

Standard 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

Expansion Ports

Parallel 1

Serial 2

Pointing Device (Mouse) 1

Graphics 1

Keyboard 1

SCSI knockouts on rear of chassis 6

Form Factor

Rackmount or Tower

Manageability

Compaq Insight Manager

Standard Features

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 (V5.0A), Base license, Unlimited User license, Server Extension license, Open Source Internet Solutions and iPlanet Web Server – Enterprise Edition 4.0. AlphaStation DS20E Tru64 UNIX systems include pre-installed software (V5.0A), 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 V3.0A

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	500 MHz	256 MB / 4 MB	DA-56NRB-DA
Tru64 UNIX	500 MHz	512 MB / 4 MB	DA-56NRB-EA
Tru64 UNIX	500 MHz	1 GB / 4 MB	DA-56NRB-FA
Tru64 UNIX	667 MHz	256 MB / 8 MB	DA-56PAA-DA
Tru64 UNIX	667 MHz	512 MB / 8 MB	DA-56PAA-EA
Tru64 UNIX	667 MHz	1 GB / 8 MB	DA-56PAA-FA

OpenVMS	500 MHz	256 MB / 4 MB	DY-56NRB-DA
OpenVMS	500 MHz	512 MB / 4 MB	DY-56NRB-EA
OpenVMS	500 MHz	1 GB / 4 MB	DY-56NRB-FA
OpenVMS	667 MHz	256 MB / 8 MB	DY-56PAA-DA
OpenVMS	667 MHz	512 MB / 8 MB	DY-56PAA-EA
OpenVMS	667 MHz	1 GB / 8 MB	DY-56PAA-FA

AlphaStation DS20E Systems

Tru64 UNIX	500 MHz	256 MB / 4 MB	DA-56NRB-DW
Tru64 UNIX	500 MHz	512 MB / 4 MB	DA-56NRB-EW
Tru64 UNIX	500 MHz	1 GB / 4 MB	DA-56NRB-FW
Tru64 UNIX	667 MHz	256 MB / 8 MB	DA-56PAA-DW
Tru64 UNIX	667 MHz	512 MB / 8 MB	DA-56PAA-EW
Tru64 UNIX	667 MHz	1 GB / 8 MB	DA-56PAA-FW

OpenVMS	500 MHz	256 MB / 4 MB	DY-56NRB-DW
OpenVMS	500 MHz	512 MB / 4 MB	DY-56NRB-EW
OpenVMS	500 MHz	1 GB / 4 MB	DY-56NRB-FW
OpenVMS	667 MHz	256 MB / 8 MB	DY-56PAA-DW
OpenVMS	667 MHz	512 MB / 8 MB	DY-56PAA-EW
OpenVMS	667 MHz	1 GB / 8 MB	DY-56PAA-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

Options

Step 2 – Select mandatory options *(continued)*

Step 2b – Disk Drive Cage – Mandatory

- Systems support one disk drive cage; disk drive cage supports four or 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 system
- 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 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 6/500-MHz or 6/667-MHz CPU included, one additional CPU supported, second CPU must be the same speed. 500-MHz system can be upgraded to 667-MHz system by swapping out the 500-MHz CPU(s).
- | | |
|---|----------|
| 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-BB |
| SMP upgrade includes one 6/667-MHz CPU with 8-MB cache and OpenVMS SMP license | KN311-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 |
|------------------------------|-------------|

Step 6 – Internal 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
SCSI cable with one connector and active terminator to connect optional PCI adapter to 5.25" device	3X-BC56C-2F

Step 7 – 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.digital.com/alphaserver/products/m-series/index.html

Options

Step 7 – M-series Cabinets – Optional (*continued*)

Cabinet Configuration Chart for AlphaServer DS20E (5U) with StorageWorks Shelves (4U)

Cabinet	Rack Kit	Cabinet Height/Space	Systems	Shelves	Ballast Kit
H9A10-MC/MD	3X-BA56R-RC	56" / 32U	1	6	-
			2	6	-
			3	6	-
			4	6	-
			5	2	-
			6	0	-
H9A15-MC/MD	3X-BA56R-RC	66.5" / 39U	1	6	1
			2	6	1
			3	6	-
			4	6	-
			5	6	-
			6	4	-

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 7 – 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 – Required 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 – Required 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

<ul style="list-style-type: none"> • 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 7 – 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

Compaq CustomSystems Support

- Cabinets containing systems and storage must be assembled by qualified assemblers: Compaq Manufacturing, Compaq CustomSystems, or an authorized Compaq Certified Integration Partner.
- For custom integration of systems, options, cabinet expansion offerings, and additional Compaq and third party devices, or for other cabinets, doors, and trim kits of a different color, contact Compaq CustomSystems at 1-800-AT COMPAQ, or your local authorized Compaq Certified Integration Partner.

Step 8 – External Storage – 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 StorageWorks 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 |

Tabletop Tape Drives

- Tape drives require single-ended UltraSCSI adapter and country-specific power cord
- | | |
|---|-------------|
| 12/24-GB 4-mm DAT narrow single-ended tabletop SCSI tape, includes 120V North American power cord, requires BN31W-xx SCSI cable | DS-TLZ10-DB |
| 35/70-GB DLT single-ended tabletop tape drive, requires BN21K-xx SCSI cable | DS-TZ89N-TA |
| 40/80-GB DLT single-ended tabletop tape drive | 146197-B21 |
| 40/80-GB DLT single-ended tabletop tape drive (Japan) | 146197-291 |
| 50/100-GB US AIT tabletop tape drive (includes SCSI cable and power cord) | 157767-001 |
| 50/100-GB International AIT tabletop tape drive (includes SCSI cable and power cord) | 157767-B31 |
| 50/100-GB Japan AIT tabletop tape drive (includes SCSI cable and power cord) | 157767-291 |

Options

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

Storage Controllers/Adapters for External StorageWorks Shelves

- Storage controllers require Tru64 UNIX V4.0F or OpenVMS V7.1-2

Note: The following controllers are only supported with StorageWorks shelves (not supported with the 3X-BA611-4D or BA610-6D disk drive cage)

	Maximum # Supported		
	Tru64 UNIX	OpenVMS	
PCI Fibre Channel adapter (KGPSA-CA), (uses one slot)	4	4	168794-B21
Fibre Channel cable (BNGBX-xx) xx=02, 05, 15, 30, 50 meters xx=1, 2, 3, 4, 5			234457-B2x
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
PCI 1-port UltraSCSI RAID controller with 4-MB cache memory (uses one PCI slot), includes RAID Array 230/Plus subsystem software and documentation kit; includes VHDCI female connector; tape drives not supported; 18.2-GB disk drives not supported, requires BN37A-xx cable (.3 to 20 m) to connect to single-ended UltraSCSI shelf	4	4	KZPAC-AA
PCI 3-port UltraSCSI RAID controller with 4-MB cache memory (uses one PCI slot), includes RAID Array 230/Plus subsystem software and documentation kit; tape drives not supported; 18.2-GB disk drives not supported; SCSI cable required for each active port; requires BN37X-xx cable (.3 to 20 m) to connect to single-ended UltraSCSI shelf, and BN31K-0E for external third port connection	2	2	KZPAC-CA
Same as KZPAC-CA with 8-MB cache memory	2	2	KZPAC-CB
Cache battery backup for KZPAC controller			KZPSC-UB
Factory configured RAID of KZPAC with StorageWorks shelves Note: Factory configured RAID sets for disks in single-bus StorageWorks shelves connected to KZPAC require completion of questionnaire located at http://www.digital.com/alphaserver/fcr			YS-ASDRD-BA
VHDCI male-to-VHDCI male UltraSCSI cable; xx = 02, 2E [2.5], 03, 05, 10, 20, 25 m 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

Options

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

Removable Media Devices for External StorageWorks Shelves

• For maximum performance, tape libraries must be configured with Fast Wide Differential (FWD) controllers for tape backup	
12/24-GB 4 mm DAT narrow SCSI tape drive in StorageWorks carrier	DS-TLZ10-VA
35/70-GB DLT single-ended tape drive in StorageWorks carrier	DS-TZ89N-VW
40/80-GB DLT single-ended tape drive in StorageWorks carrier	DS-TZ90N-VW
35/70-GB AIT tape drive in StorageWorks carrier	DS-AIT35-VW
536-MB solid state disk drive in StorageWorks carrier	DS-EZ454-VW
1.6-GB solid state disk drive in StorageWorks carrier	DS-EZ716-VW
3.2-GB solid state disk drive in StorageWorks carrier	DS-EZ832-VW
600-MB 32X CD-ROM drive in StorageWorks carrier	DS-RRD47-VA

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
Factory configured RAID of rackmounted BA370/HSZ70	YS-ASCRD-AA

Note: Factory configured RAID sets for disks in rackmounted BA370 StorageWorks shelf controlled by one or two HSZ70s require completion of questionnaire located at <http://www.digital.com/alphaserver/fcr>

StorageWorks Shelf – Requires selection of UltraSCSI adapter and SCSI cable

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

Disk Drives (Supported in StorageWorks Shelf)

9.1-GB 7,200 rpm UltraSCSI drive	DS-RZ1DA-VW
9.1-GB 10,000 rpm UltraSCSI drive	DS-RZ1DD-VW
18.2-GB 7,200 rpm UltraSCSI drive	DS-RZ1EA-VW
18.2-GB 10,000 rpm UltraSCSI drive	DS-RZ1ED-VW
36.4-GB 10,000 rpm UltraSCSI drive	DS-RZ1FC-VW

Note: A maximum of six 18.2-GB and 36.4-GB 10,000 rpm drives can be configured in a StorageWorks shelf.

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

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 is currently not supported on Tru64 UNIX V5.0A or V5.1	
RA3000 rackmount controller shelf, blue, with one controller, 110V	DS-SWXRA-GH
Includes: UltraSCSI BA356 controller shelf, one HSZ22 2-channel controller with 16-MB cache, integrated Environmental Monitoring Unit (EMU), two 180W power supplies, two dual-port host differential UltraSCSI I/O SBBs, dual-channel UltraSCSI single-ended personality modules, one 120V 1000VA rackmount UPS, 5-m host SCSI cable (BN37A-05), BN38E-0B adapter, UPS serial cable, PC connection serial cable (DB-9), two 68-pin HD tri-link adapters (H8861-AA), two North American power cords, and RETMA mounting bracket (disk shelves and disks not included)	
Requires: Solutions Software Kit for platform, host adapter, RA3000 disk shelf, and disks	
Options: Second HSZ22 controller, up to four additional RA3000 disk shelves, cache memory upgrade	

Options

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

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

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

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

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

RAID Array 3000 Rackmount Disk Shelf

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

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 DS-SWXRA-GN

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/HSZ80 External Controllers

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

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

UltraSCSI controller (DS-HSZ80-AH), includes 64-MB cache expandable to 128 MB; requires 400569-001 for Tru64 UNIX or 400571-001 for OpenVMS 400564-B21

UltraSCSI controller (DS-HSZ80-AJ), includes 256-MB cache expandable to 512 MB; requires 400569-001 for Tru64 UNIX or 400571-001 for OpenVMS 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 – 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
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	3	-	SN-PBXGD-AD
PowerStorm 350 3D multi-head graphics accelerator with 30-MB frame buffer memory and 32-MB texture memory	3	-	SN-PBXGD-AE

Step 11 –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
- Selection of a video extension cable and country-specific power cord is mandatory for all monitors

15" Corporate Series auto-scan color monitor, VGA to 1024 x 768 @ 85 Hz; Northern Hemisphere without power cord	3R-VRQV5-24
Same as above except Southern Hemisphere without power cord	3R-VRQV5-11
17" (16.0" viewable image size) professional series auto-scanning color monitor, Trinitron CRT, 0.25mm aperture grill pitch, VGA to 1280 x 1024 @75 Hz, TCO 99, MPR-II, Energy Star, attached 1.8-m video cable; Northern Hemisphere without power cord	3R-VRQP7-24
Same as above except Southern Hemisphere without power cord	3R-VRQP7-23
21" (19.6" viewable image size) auto-scanning color monitor, Trinitron CRT, 0.28mm aperture grill pitch, VGA to 1600 x 1200 @85 Hz NI, TCO 95, Energy Star, includes 1.8-m video cable; Northern Hemisphere without power cord	3R-VRQP1-24
Same as above except Southern Hemisphere without power cord	3R-VRQP1-23

Video Extension Cable

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

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 12 – 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 FDDI adapter, single attachment station (SAS), multi-mode fiber (MMF), SC connector	2	2	3X-DEFPA-AC
PCI FDDI adapter, DAS, MMF, SC connector	2	2	3X-DEFPA-DC
MIC-SC dual fiber optic cable			BN34D-xx
SC-to-SC dual fiber optic cable			BN34B-xx
PCI FDDI adapter, SAS, TP-PMD, requires BN25H-03 cable	2	2	3X-DEFPA-UC
PCI FDDI dual adapter, DAS, TP-PMD, requires BN25H-03 cable	2	2	3X-DEFPA-MC
3m (9.8") FDDI cross-over cable			BN25H-03
PCI 4-port asynchronous controller; maximum two PBXDA-Ax controllers per system	2	2	PBXDA-AA
PCI 8-port asynchronous controller, cable included; maximum two PBXDA-Ax controllers per system	2	2	PBXDA-AB
PCI 16-port asynchronous controller, cable included; maximum two PBXDA-Ax controllers per system	2	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	-	3X-DAPBA-FA
PCI-to-ATM 155 Mb adapter - UTP	4	-	3X-DAPBA-UA
PCI-to-ATM 622 Mb adapter - Fiber	2	-	3X-DAPCA-FA
Asynchronous multi-port MUX expander XEM			CXI01-AB

Step 13 – 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)

Options

Step 13 – 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 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

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

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

Step 14 – Keyboards

- 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

Options

Step 14 – Keyboards (continued)

	Tru64 UNIX	OpenVMS
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

17-04016-01

Step 15 – 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

Options

Step 16 – 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, Open Source Internet Solutions, and iPlanet Web Server – Enterprise Edition 4.0
- 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
Open Source Internet Solutions for Tru64 UNIX	QB-3NCAA-SA
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
Open Source Internet Solutions for Tru64 UNIX	QB-3NCAA-SA
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 16 – 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 Compaq Enterprise Integration Server Package for OpenVMS Revision V3.0A
- AlphaStation DS20E OpenVMS systems include Base license, Concurrent Use 1-user license, NAS 150 Client license, and Compaq Open3D license
- Compaq Enterprise Integration Package includes licenses for TCP/IP Services for OpenVMS, DECwindows Motif for OpenVMS Alpha, DECprint Supervisor for OpenVMS Alpha Plus, DECprint Supervisor for OpenVMS Open, DECnet-Plus for OpenVMS Alpha End System, Archive/Backup System for OpenVMS Management Tools, Archive/Backup Agent for Windows NT, OpenVMS Disk Services for Windows NT, Office Server for OpenVMS, PATHWORKS 32, PATHWORKS V6 for OpenVMS – Advanced Server, and DIGITAL Office Server Client Access License

OpenVMS V7.1-2 media and online documentation on CD-ROM QA-MT1AR-H8

OpenVMS V7.2-1 media and online documentation on CD-ROM QA-MT1AT-H8

OpenVMS media and online documentation on CD-ROM QA-MT1AA-H8

OpenVMS hard copy documentation QA-001AA-GZ

Layered products media and documentation for OpenVMS on CD-ROM QA-03XAA-H8

Open3D for OpenVMS on CD-ROM, includes graphics drivers QA-0ADAA-H8

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

Concurrent Use 1-user license QL-MT3AA-3B

Concurrent Use 2-user license QL-MT3AA-3C

Concurrent Use 4-user license QL-MT3AA-3D

Concurrent Use 8-user license QL-MT3AA-3E

Concurrent Use 16-user license QL-MT3AA-3F

Concurrent Use 32-user license QL-MT3AA-3G

Concurrent Use 64-user license QL-MT3AA-3H

Concurrent Use 128-user license QL-MT3AA-3J

Concurrent Use 256-user license QL-MT3AA-3K

OpenVMS Cluster license for Alpha systems QL-MUZAC-AA

OpenVMS Cluster Client license for Alpha systems QL-3MRAC-AA

OpenVMS Cluster Client to Full VMS Cluster Migration license QL-6J7AC-AA

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 17 – Hardware and Software Supplemental Support Services

- Systems include 3-year hardware warranty, on-site, with 5 x 9, 24-hour response time; select optional Hardware Supplemental Support Services if required
- Options ordered as part of "Initial System Sale" take on warranty of the enclosure; options added after "Initial System Sale" take on warranty of enclosure until enclosure warranty ends
- All unique AlphaServer DS20E options have a minimum of 1-year Return-to-Compaq warranty

Hardware Supplemental Support –Americas and Asia Pacific only

	1-GB memory or less	More than 1-GB memory
5 x 9, 4-hour response time	FM-TC4HR-36	FM-TF4HR-36
5 x 12, 4-hour response time	FM-TC512-36	FM-TF512-36
6 x 16, 4-hour response time	FM-TC616-36	FM-TF616-36
7 x 24, 4-hour response time	FM-TC724-36	FM-TF724-36
Years 1-5, next day, onsite	FM-TCXHW-60	FM-TFXHW-60
Years 1-5, 5 x 9, 4-hour response time	FM-TC4HR-60	FM-TF4HR-60
Years 1-5, 5 x 12, 4-hour response time	FM-TC512-60	FM-TF512-60
Years 1-5, 6 x 16, 4-hour response time	FM-TC616-60	FM-TF616-60
Years 1-5, 7 x 24, 4-hour response time	FM-TC724-60	FM-TF724-60

Installation Services

Hardware product installation for DS20E	FM-TC12X-IN
Add-on memory installation for DS20E	FM-TCMEM-IN
Add-on CPU installation for DS20E	FM-TCSMP-IN

Software Supplemental Support — Americas and Asia Pacific only

- Systems include 90-day Conformance to SPD and Telephone Advisory Support; select optional Software Supplemental Support Services if required
- Software service upgrades for Tru64 UNIX include advisory and remedial software support with new version license rights for operating system for time period indicated
- Software service upgrades for OpenVMS include advisory and remedial software support with new version license rights for operating system and Enterprise Integration Package for time period indicated
- Software service upgrades for SMP upgrades running Tru64 UNIX or OpenVMS include new version license rights for Tru64 UNIX or OpenVMS SMP Upgrades for time period indicated; one required for each SMP upgrade

	Tru64 UNIX	OpenVMS
5X9 12-month Software Supplemental Support	FM-D20U9-12	FM-D20V9-12
5X9 36-month Software Supplemental Support	FM-D20U9-36	FM-D20V9-36
5X9 60-month Software Supplemental Support	FM-D20U9-60	FM-D20V9-60
7X24 12-month Software Supplemental Support	FM-D20US-12	FM-D20VS-12
7X24 36-month Software Supplemental Support	FM-D20US-36	FM-D20VS-36
7X24 60-month Software Supplemental Support	FM-D20US-60	FM-D20VS-60
12-month Software Supplemental Support – DS20E SMP Upgrade	FM-D20UP-12	FM-D20VP-12
36-month Software Supplemental Support – DS20E SMP Upgrade	FM-D20UP-36	FM-D20VP-36
60-month Software Supplemental Support– DS20E SMP Upgrade	FM-D20UP-60	FM-D20VP-60

QUICKSPECS

Compaq *AlphaServer* DS20E
Compaq *AlphaStation* DS20E

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

QUICKSPECS

Compaq AlphaServer DS20E
Compaq AlphaStation DS20E

Technical Specifications

Cabinet

	H9A10 M-Series	H9A15 M-Series
Dimensions (HxWxD)	67 x 23.6 x 43.27 in/ 170 x 60 x 110 cm	79 x 23.6 x 35.4 in/ 200 x 60 x 90 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	1000 lbs/450 kg
Shipping Weight	Configuration dependent, maximum payload 1,000 lbs	1056 lbs/550 kg (normal) 1,408 lbs/640 kg (maximum)

System Unit

Environmental

Temperature

Operating (Tower, Rackmount) ¹	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

Relative 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
Storage (60 days)	Not tested

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

Operating ²	10,000 f/3,037m
Non-operating	40,000 ft/12,192m

Acoustics (Declared values per ISO 9296 and ISO 7779)

Acoustics³

	L _{WA} d3B	L _{nA} m5dBA (bystander position)
Idle	5.8	44
Operating	6.3	49

Vibration

Operating	10-500 Hz .1 G peak
Non-operating	1.03 Grms 5-300 Hz

QUICKSPECS

Compaq AlphaServer DS20E
Compaq AlphaStation DS20E

Technical Specifications

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 (maximum steady state)			
<i>Pedestal and Rackmount</i>			
Single power cord	7.5A	6.0A	3.8A
Maximum VA	780	765	730
<i>M-series Cabinet</i> (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 (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
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)

¹ Maximum operating temperature at sea level; reduce by 1.8°F (1°C) for each 600m (2,000 ft) above sea level.

² Higher altitudes are possible if maximum operating temperature is reduced (see Temperature); other restrictions may apply such as maximum permissible altitude for hard drives.

³ Current values for specific configurations are available from Compaq, note that 1 B = 10 dBA.