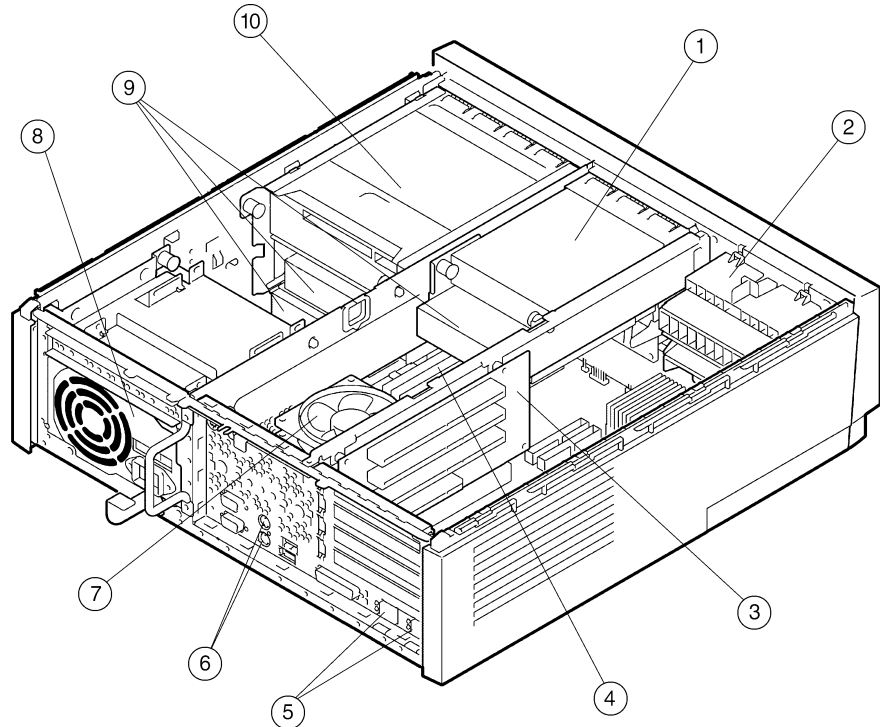


Overview

AT A GLANCE

AlphaServer/AlphaStation DS10 3U
Systems include:

- Alpha processor module with either a 466-MHz or 600-MHz CPU with 2-MB onboard ECC cache
- 256-MB, 512-MB, or 1-GB SDRAM memory – expandable to 2-GB maximum memory capacity
- Onboard dual IDE controller for internal storage
- Onboard dual 10/100 BaseT Ethernet ports
- Four PCI expansion slots – three 64-bit PCI slots and one 32-bit PCI slot
- 1.44-MB diskette drive
- 40X 600-MB CD-ROM drive
- One 5.25" x 1.6" removable media bay or two 3.5" x 1" hard disk drive bays, one 3.5" x 1" hard disk drive bay
- Internal storage capacity up to 109 GB (SCSI)
- Two serial ports: COM1 port is both an RMC port with modem control and a full-duplex asynchronous communications port; COM2 port is a full-duplex asynchronous communications port
- Bi-directional enhanced parallel port
- PS/2-style keyboard port and mouse port
- 300W (120/240V, 60/50 Hz) power supply
- U.S. English documentation
- Tru64™ UNIX or OpenVMS Factory Installed Software
- 90-day software product warranty
- Protected by Compaq Services, including three-year, on-site hardware with next business day response
- Note: Keyboard, power cord, and mouse must be ordered separately



- | | |
|------------------------|-----------------------------|
| 1. Diskette drive | 6. Keyboard and mouse ports |
| 2. Fan | 7. CPU and fan |
| 3. PCI riser card | 8. Power supply |
| 4. Memory boards | 9. Disks |
| 5. Dual Ethernet ports | 10. CD-ROM drive |

Standard Features

Processor

Alpha 21264 466-MHz processor or Alpha 21264A 600-MHz processor

Cache Memory

2-MB onboard cache

Upgradability

Supports upgrades of memory and hard drives
Standard One CPU

Memory

Standard	256 MB, 512 MB, or 1 GB (one memory kit)
Maximum	2 GB (two memory kits, kits include two industry-standard DIMMs with ECC support)

Network Controller

Onboard dual 10/100 BaseT Ethernet ports

Expansion

Storage bays	Five (Diskette drive bay, CD-ROM drive bay, 5.25" x 1.6" removable media bay or two 3.5" x 1" hard disk drive bays, one 3.5" x 1" hard disk drive bay)
PCI slots	Four Full Length slots (three 64-bit, one 32-bit)

Storage

Diskette Drive	1.44-MB diskette drive
CD-ROM	5.25" half height 40X CD-ROM drive
Hard Drives	10-GB, 27-GB, and 30-GB IDE disk drives or 9.1-GB, 18.2-GB, 36.4-GB UltraSCSI disk drives available with optional SCSI controller

Storage Controller

Onboard IDE controller for internal storage, choice of optional storage controllers

Expansion Ports

Parallel	One bi-directional enhanced port
Serial	Two ports, one serial port with full-duplex asynchronous modem control and one RMS dedicated serial port with full-duplex asynchronous modem control
Keyboard	One PS/2-style port
Mouse	One port

Power Supply

300W (120/240V, 60/50 Hz)

Manageability

Compaq Insight Manager

Supported Options

A detailed summary of options supported on the AlphaServer/AlphaStation DS10 is available at http://www.compaq.com/alphaserver/options/asds10/ds10_options.html

Standard Features

OS Support

AlphaServer DS10 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

AlphaStation DS10 Tru64 UNIX systems include pre-installed software (V5.0A), 2-user Base license, and Compaq Open3D traditional license.

AlphaServer DS10 OpenVMS systems include pre-installed software (V7.2-1), Base license with System Manager license and Compaq Enterprise Integration Server License Package for OpenVMS V3.0A.

AlphaStation DS10 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 or OpenVMS V7.1 -2

Service and Support

Protected by Compaq Services, including a three-year, on-site hardware warranty with next business day response. Software warranty is a 90-day telephone advisory. Training, consulting, network integration, software support, comprehensive system maintenance and guaranteed uptime services are also available for customers requiring higher levels of service and support.

Systems/Options

Step 1 – Select system

AlphaServer/AlphaStation DS10 systems require the **mandatory** selection of the following items:

- IDE or SCSI system disk drive
- SCSI adapter and SCSI cable kit required for internal SCSI disks and tape
- Country-specific power cord
- Software media and documentation for first system on site
- Rackmount kit for rackmount systems (See Step 5 – M-series Cabinet Enclosures)
- Minimum OS support: Tru64 UNIX V4.0F or OpenVMS V7.1-2

Notes: Country-specific keyboard and mouse are recommended

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

AlphaServer DS10 Systems

OS	CPU	Memory	PCI Slots	IDE Controller	Ethernet Ports	Hard Drive	Order No.
Tru64 UNIX	466 MHz	256 MB	4	Onboard	Onboard	Mandatory	DA-PB10A-AC
Tru64 UNIX	466 MHz	512 MB	4	Onboard	Onboard	Mandatory	DA-PB10A-AD
Tru64 UNIX	466 MHz	1 GB	4	Onboard	Onboard	Mandatory	DA-PB10A-AE
Tru64 UNIX	600 MHz	256 MB	4	Onboard	Onboard	Mandatory	DA-73BAA-DA
Tru64 UNIX	600 MHz	512 MB	4	Onboard	Onboard	Mandatory	DA-73BAA-EA
Tru64 UNIX	600 MHz	1 GB	4	Onboard	Onboard	Mandatory	DA-73BAA-FA

OpenVMS	466 MHz	256 MB	4	Onboard	Onboard	Mandatory	DY-PB10A-AC
OpenVMS	466 MHz	512 MB	4	Onboard	Onboard	Mandatory	DY-PB10A-AD
OpenVMS	466 MHz	1 GB	4	Onboard	Onboard	Mandatory	DY-PB10A-AE
OpenVMS	600 MHz	256 MB	4	Onboard	Onboard	Mandatory	DY-73BAA-DA
OpenVMS	600 MHz	512 MB	4	Onboard	Onboard	Mandatory	DY-73BAA-EA
OpenVMS	600 MHz	1 GB	4	Onboard	Onboard	Mandatory	DY-73BAA-FA

Linux-Ready	466 MHz	256 MB	4	Onboard	Onboard	Mandatory	DJ-PB10A-BC
Linux-Ready	466 MHz	512 MB	4	Onboard	Onboard	Mandatory	DJ-PB10A-BD
Linux-Ready	466 MHz	1 GB	4	Onboard	Onboard	Mandatory	DJ-PB10A-BE
Linux-Ready	600 MHz	256 MB	4	Onboard	Onboard	Mandatory	DJ-73BAA-DA
Linux-Ready	600 MHz	512 MB	4	Onboard	Onboard	Mandatory	DJ-73BAA-EA
Linux-Ready	600 MHz	1 GB	4	Onboard	Onboard	Mandatory	DJ-73BAA-FA

AlphaStation DS10 Systems

Tru64 UNIX	600 MHz	256 MB	4	Onboard	Onboard	Mandatory	DA-73BAA-DW
Tru64 UNIX	600 MHz	512 MB	4	Onboard	Onboard	Mandatory	DA-73BAA-EW
Tru64 UNIX	600 MHz	1 GB	4	Onboard	Onboard	Mandatory	DA-73BAA-FW

OpenVMS	600 MHz	256 MB	4	Onboard	Onboard	Mandatory	DY-73BAA-DW
OpenVMS	600 MHz	512 MB	4	Onboard	Onboard	Mandatory	DY-73BAA-EW
OpenVMS	600 MHz	1 GB	4	Onboard	Onboard	Mandatory	DY-73BAA-FW

Linux-Ready	600 MHz	256 MB	4	Onboard	Onboard	Mandatory	DJ-73BAA-DW
Linux-Ready	600 MHz	512 MB	4	Onboard	Onboard	Mandatory	DJ-73BAA-EW
Linux-Ready	600 MHz	1 GB	4	Onboard	Onboard	Mandatory	DJ-73BAA-FW

Systems/Options

Step 2 –Mandatory Options

Step 2a– System Disk Drive – Mandatory

- Selection of one system disk drive is mandatory
- DS10 Storage Configuration Rules:
- Systems include 600-MB 40X CD-ROM drive and 1.44-MB diskette drive in dedicated drive slots
 - Systems include three internal storage bays which can be configured as follows:
 - Maximum of three internal disk drives (3.5" x 1" drives) **or**
two internal disk drives (3.5" x 1") and one removable 5.25" half height removable media device
(one 3.5" x 1" hard disk drive is supported in removable media bay)
 - SCSI adapter and SCSI cable kit required for SCSI disks or tapes

IDE Disk Drives

10-GB 7,200 rpm IDE drive	3X-RE56A-BA
27-GB 7,200 rpm IDE drive	3X-RE57A-AA
30-GB 7,200 rpm IDE drive	3X-RE57A-BA

Internal SCSI Disk Drives

9.1-GB 7,200 rpm Ultra2 SCSI drive	DS-RZ2DA-WA
9.1-GB 10,000 rpm Ultra3 SCSI drive	DS-RZ3DD-WA
18.2-GB 7,200 rpm Ultra2 SCSI drive	DS-RZ2EA-WA
18.2-GB 10,000 rpm Ultra2 SCSI drive	DS-RZ2EF-WA
18.2-GB 10,000 rpm Ultra3 SCSI drive	DS-RZ3EF-WA
36.4-GB 10,000 rpm Ultra3 SCSI drive	DS-RZ3FD-WA

Step 2b – Internal SCSI Adapter and Cable Kit – (Internal SCSI disks require SCSI adapter and SCSI cable kit)

SCSI Adapters (for Internal Drives)

PCI 1-channel UltraSCSI single-ended adapter	KZPBA-CA
PCI 1-channel Ultra-2 SCSI adapter (LVD)	3X-KZPCA-AA
PCI combo card: PCI 2-channel UltraSCSI single-ended adapter and 10/100 Mbit Ethernet (Tru64 UNIX and OpenVMS only)	KZPCM-DA
PCI combo card: 1-channel Ultra2 SCSI (LVD) , 2D Graphics, 10/100 Ethernet	3X-DEPVZ-AA
PCI 1-channel UltraSCSI RAID controller (Tru64 UNIX and OpenVMS only)	KZPAC-AA
PCI 3-port UltraSCSI RAID controllers (4-MB/8-MB cache) (Tru64 UNIX V4.0F, OpenVMS V7.2-1)	KZPAC-CA/CB
PCI 1-channel Ultra2 SCSI RAID Controller, 4-MB cache (Linux-Ready Systems only)	SN-KZPBC-AA
PCI 3-channel Ultra2 SCSI RAID Controller, 32-MB cache (Linux-Ready Systems only)	FR-PCTAR-IB
PCI 3-channel Ultra2 SCSI RAID Controller, 64-MB cache (Linux-Ready Systems only)	FR-PCTAR-IC
DS10 SCSI cable kit (connections for three internal drives)	3X-BN50A-03

Step 2c – Power Cords – Mandatory for Desktop and Rackmount Systems

Desktop Power Cords

North America, 2.5 m	3X-BN46K-2E
Australia, New Zealand, 2.5 m	BN19H-2E
Central Europe, 2.5 m	BN19C-2E
China, Australian AS 3112-1981	BN35S-02
China, NA NEMA 5-15 plug	BN35A-01
Denmark, 2.5 m	BN19K-2E
Egypt, India, South Africa, 2.5 m	BN19S-2E
Israel, 2.5 m	BN18L-2E
Italy, 2.5 m	BN19M-2E
Japan, 2.5 m, Dentori approved	3X-BN46G-02
Switzerland, 2.5 m	BN19E-2E
UK, Ireland, 2.5 m	BN19A-2E

Rackmount (M-series Cabinet) Power Cords

US/Canada	BN20Z-4E
Non-US	3X-BN46L-4E
Japan, 2.5m	3X-BN46D-4E

Options

Step 3 –Memory –Optional

- Maximum 2-GB memory
 - Systems include one memory kit; maximum two memory kits per system – Each kit includes two industry-standard DIMMs with ECC support
- | | |
|---|-------------|
| 128-MB memory kit, two 200-pin, 100-MHz, 64-MB DIMMs | 3X-MS310-BA |
| 256-MB memory kit, two 200-pin, 100-MHz, 128-MB DIMMs | 3X-MS310-CA |
| 512-MB memory kit, two 200-pin, 100-MHz, 256-MB DIMMs | 3X-MS310-DA |
| 1-GB memory kit, two 200-pin, 100-MHz, 512-MB DIMMs | 3X-MS310-EA |

Step 4 – Internal Storage (Removable Media) – Optional

- DS10 Storage Configuration Rules:
- Systems include 600-MB 40X CD-ROM drive and 1.44-MB diskette drive in dedicated drive slots
 - Systems include three internal storage bays which can be configured as follows:
 - Three internal disk drives (3.5" x 1" drives) **or**
 - two internal disk drives (3.5" x 1") and one 5.25" half height removable media device (one 3.5" x 1" hard disk drive is supported in removable media bay)
 - SCSI Host Bus adapter and SCSI cable kit required for internal SCSI disks or tapes
- | | |
|--|-------------|
| 12/24-GB DAT 4mm internal SCSI tape drive (requires SN-PBXKP-BA wide-to-narrow SCSI adapter) | TLZ10-LB |
| 4/8-GB DAT 4 mm internal SCSI tape drive (requires SN-PBXKP-BA wide-to-narrow SCSI adapter) | TLZ09-LK |
| 20/40-GB DAT tape drive, top gun blue | 3X-SD20X-LB |
| 35/70-GB AIT tape drive, top gun blue | 3X-SZ35X-LB |
| Wide-to-narrow SCSI adapter | SN-PBXKP-BA |

Step 5 – M-series Cabinets – Optional

- M-series cabinet enclosures support up to 12 DS10 systems (H9A15).
M-series enclosures require selection of the following items:
- H9A11, H9A10, or H9A15 Cabinet, 120V or 240V
 - Cabinet front door based on cabinet height (optional on H9A11 cabinet)
 - Factory integration

Cabinet Configuration Chart for AlphaServer DS10 Rackmount Systems:

- A minimum of two AlphaServer DS10 systems is required in the H9A15 M-series cabinet.
- Each system requires a DS10 M-series Rackmount kit (3X-PBX01-AB).
- Each system requires a rack mount power cord.
- Up to six BA356 shelves supported; shelves cannot be mounted behind DS10 systems.

Note: The number of ballast kits required is driven only by the number of system boxes. Ballast kits are required according to the following chart:

Note: For more information on M-series Cabinet Enclosures, see www.compaq.com/alphaserver/products/m-series/index.html

Options

Step 5 – M-series Cabinets – Optional (continued)

Cabinet Configuration Chart for AlphaServer DS10 (3U) with StorageWorks Shelves(4U)

M-series Cabinet	System Rack Kit per DS10 system	M-series Cabinet Height/Space	DS10 Systems	StorageWorks BA356/DS-SSL14 Disk Shelves	Ballast Kits Required
H9A11-MC/MD	3X-PBX01-AB	35" / 20U	1 or 2	6	2
			3	4	0
			4 or 5	2	0
			6	0	0
H9A10-MC/MD	3X-PBX01-AB	56" / 32U	1 or 2	6	2
			3 or 4	6	1
			5	6	1
			6	4	0
			7	2	0
			8, 9, or 10	0	0
H9A15-MC/MD	3X-PBX01-AB	66.5" / 39U	2 or 3	6	2
			4	6	1
			5	6	1
			6	4	1
			7	2	0
			8 to 12	0	0

Cabinet Configuration Chart for AlphaServer DS10 (3U) Rackmount Systems with 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. The following table considers space requirements for the DS10 system boxes and RA3000.
- For ballast requirements refer back to **Cabinet Configuration Chart for AlphaServer DS10 (3U) with StorageWorks Shelves (4U)**.

M-series Cabinet	System Rack Kit per DS10 system	M-series Cabinet Height/Space	DS10 System	StorageWorks RA3000 + Shelves
H9A11-MC/MD	BA36R-RC/RD	35" / 20U	1	1 + 5
			2	1 + 5
			3	1 + 5
H9A10-MC/MD	BA36R-RC/RD	54.2" / 32U	1	1 + 5
			2	1 + 5
			3	1 + 5
H9A15-MC/MD	BA36R-RC/RD	66.5" / 39U	2	1 + 5
			2	1 + 5
			3	1 + 5
			4	1 + 5

Options

Step 5 – M-series Cabinets – Optional *(continued)*

Cabinet Configuration Chart for AlphaServer DS10 (3U) 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 Configuration Rules for AlphaServer DS10 with BA370 and Disk Shelves

Cabinet	Cabinet Rack Kit for BA370	Cabinet Height/Space	Systems	BA370 Enclosures	Shelves
H9A10-MC/MD	BA36R-RC/RD	54.2" / 32U	1	1 (front) or	2
			2	2 (front & back)	0
H9A15-MC/MD	BA36R-RC/RD	66.5" / 40U	1	1 (front) or	6
			2	2 (front & back)	4
			3		0

Note: Installation of one BA370 and one system in H9A15 cabinet requires 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 Rackmount Kit for DS10

- Rackmount kit must be ordered separately

DS10 M-series rackmount kit

3X-PBX01-AB

M-series Cabinet Descriptions

- 43" cabinet enclosure with 35" or 20U of usable vertical space; 120V 24A controller with 10 NEMA 5-15R outlets, input power plug NEMA L5-30P, Americas, Asia Pacific; includes rear door, H7600-AA power distribution unit, trim kit, and front filler bezel kit H9A11-MC
- 43" cabinet enclosure with 35" or 20U of usable vertical space; 240V 16A controller with 12 IEC C13 outlets, input power plug IEC 309, 16A, Europe; includes rear door, H7600-DB power distribution unit, trim kit, and front filler bezel kit H9A11-MD
- 67" cabinet enclosure with 54.2" or 33U 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, top fan tray, and two H7600-AA power distribution units H9A10-MC
- 67" cabinet enclosure with 54.2" or 33U of usable vertical space; 240V dual-16 A controller, each with 12 IEC C13 outlets, input power plug IEC 309, 16A, Europe; includes rear door, top fan tray, and two H7600-DB power distribution units H9A10-MD
- 79" cabinet enclosure with 66.5" or 40U 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, top fan tray, and two H7600-AA power distribution units H9A15-MC
- 79" cabinet enclosure with 66.5" or 40U of usable vertical space; 240V dual-16A controller, each with 12 IEC C13 outlets, input power plug IEC 309, 16A, Europe; includes rear door, top fan tray, and two H7600-DB power distribution units H9A15-MD

M-series Cabinet Rackmount Kit for DS10 (Refer to the Cabinet Configuration Charts above for configuration rules)

- Rackmount kit must be ordered separately

DS10 M-series rackmount kit

3X-PBX01-AB

M-series Cabinet PDU/Fan/Cable Management Kits

- Kits include PDU, fans, shelf, and cables to serve eight AlphaServer DS10L systems

Power Distribution Unit/Fan/Cable Management Kit (North America)

3X-H7210-AA

Power Distribution Unit/Fan/Cable Management Kit (Europe)

3X-H7210-AB

Power Distribution Unit/Fan/Cable Management Kit (Japan)

3X-H7210-AC

Options

Step 5 – M-series Cabinets – Optional *(continued)*

M-series Cabinet Fan/Cable Management Kits

- Kits include fans, shelf, and cables to serve eight AlphaServer DS10L systems; for use with PDU that ships with cabinet

Fan/Cable Management Kit (North America)	3X-H7210-BA
Fan/Cable Management Kit (Europe)	3X-H7210-BB
Fan/Cable Management Kit (Japan)	3X-H7210-BC

StorageWorks Shelves Supported in M-series Cabinets with Front Doors (H9A10/H9A15)

StorageWorks UltraSCSI single bus, single-ended shelf with 180W power supply and RETMA mounting kit	BA36R-RC
StorageWorks UltraSCSI split bus, single-ended shelf with 180W power supply and RETMA mounting kit	BA36R-RD
180W power supply for redundant power of a BA36R (includes power cord)	CK-BA35X-HH

StorageWorks Shelves supported in M-series Cabinets with Trim Kit (H9A11)

StorageWorks UltraSCSI single bus, single-ended shelf with 180W power supply and RETMA mounting kit, blue bezel	BA35C-AA
StorageWorks UltraSCSI split bus, single-ended shelf with 180W power supply and RETMA mounting kit, blue bezel	BA35C-BA

BA370 Rackmounted Enclosure/Rear Cabinet Extender

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

Note: Rear Cabinet Extender, H9C10-TE or H9C15-TE, is mandatory for second BA370

M-series Cabinet 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

M-series cabinet Front Door – Required selection of door based on cabinet height

Front door, top gun blue, for H9A11-MC/MD cabinet enclosure: selection of front door for H9A11 is optional, cabinet includes front trim kit and filler bezel	H9C11-EB
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

M-series Cabinet Factory Integration – Required

Factory Integration of systems and storage devices assembled and configured in cabinet enclosure for H9A10 or H9A15 cabinet enclosures	YS-ASCAA-AA
Factory Integration of systems and storage devices assembled and configured in cabinet enclosure for H9A11 cabinet enclosures	YS-ASCAA-AB

M-series Cabinet Ballast Kits – As Required

<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 Charts 	
Two 35-40 lb. steel plates	H9C10-MC

M-series Cabinet Rackmount Power Cords – Required for BA370

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

Options

Step 5 – M-series Cabinets – Optional *(continued)*

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 6 – External Storage –Optional

UltraSCSI Configuration Rules

- UltraSCSI configurations require UltraSCSI components (controllers, adapters, shelves, disks, and cables)
- UltraSCSI adapters 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 (KZPBA-CA or KZPCM-DA) 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 |
| 32/64-GB DAT loader in carrier | TLZ9L-VA |
| 32/64-GB tabletop DAT loader | TLZ9L-DB |
| 20/40-GB SCSI (DLT 4000E) tabletop drive (Tru64 UNIX and OpenVMS only) | TZ88N-TA |
| 5, 7, 10, 14-GB 8-mm tabletop, single-ended SCSI | TKZ9F-TA |

Options

Step 6 – External Storage –Optional (continued)

Storage Controllers/Host Bus Adapters for StorageWorks Pedestals and Shelves

- Storage controllers require a minimum Operating System Revision of Tru64 UNIX V4.0F or OpenVMS V7.1-2 unless noted otherwise.
- Each storage controller/adaptor uses one PCI slot

	Maximum # Supported			
	Tru64 UNIX	OpenVMS	Linux	
PCI-to-Fibre Channel host bus adapter	2	2	-	DS-KGPSA-CA
Fibre Channel cable xx=02, 05, 15, 30, 50 meters				BNGBX-xx
PCI 2-port UltraSCSI single-ended adapter and 10/100 Mb Ethernet combo adapter	2	2	-	KZPCM-DA
VHDCI male-to-VHDCI male UltraSCSI cable, Xx=02, 2E(2.5), 03, 05, 10, 20 m)				BN37A-XX
PCI 1-port Ultra2 SCSI (LVD) single-ended adapter, 68-pin HD connector, requires BN38C cable (2 to 20m) to connect to single-ended UltraSCSI shelf	2	2	-	3X-KZPCA-AA
68-pin HD male-to-VHDCI male UltraSCSI cable; required for each external UltraSCSI shelf attached to KZPCA-AA adapter				BN38C-xx
PCI 1-port UltraSCSI single-ended adapter; includes internal 68-pin and 50-pin HD connectors and external 68-pin HD connector; requires BN38C-xx cable (2-20m) to connect to single ended UltraSCSI shelf	2	2	2	KZPBA-CA
PCI 1-port UltraSCSI differential adapter; includes external 68-pin HD connector; requires BN38C-xx cable (2-25m) to connect adapter to Differential UltraSCSI shelf or RAID controller	2	2	2	KZPBA-CB
68-pin HD male-to-VHDCI male UltraSCSI cable; required for each external UltraSCSI shelf attached to KZPBA-CA/CB adapter				BN38C-xx
PCI 1-port UltraSCSI RAID controller with 4-MB cache memory, includes RAID Array 230/Plus Subsystem software and documentation kit and VHDCI female connector; tape drives not supported – 18.2-GB or higher disk drives not supported on KZPAC-xx RAID controllers	2 V4.0F	2	-	KZPAC-AA
PCI 3-port UltraSCSI RAID controller with 4-MB cache memory, includes RAID Array 230/Plus Subsystem Software and documentation kit; tape drives not supported; SCSI cable required for each active port; requires BN31K-0E for external third-port connection –18.2-GB or higher disk drives not supported on KZPAC-xx RAID controllers	2 V4.0F	2	-	KZPAC-CA

Options

Step 6 – External Storage –Optional (continued)

	Maximum # Supported			
	Tru64 UNIX	OpenVMS	Linux	
PCI 3-port UltraSCSI RAID controller with 8-MB cache memory, includes RAID Array 230/Plus Subsystem Software and documentation kit; tape drives not supported; SCSI cable required for each active port; requires BN31K-0E for external third-port connection –18.2-GB or higher disk drives not supported on KZPAC-xx RAID controllers	2 V4.0F	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 m) Note: Manufacturing may substitute BN37A-02 cable for specific cabinet configurations				BN37A-xx
SCSI cable/bulkhead assembly kit with KZPAC-CA/CB, allows external connection of one third port				BN31K-0E
SCSI cable/bulkhead assembly kit with two ports for KZPAC-CA/CB, allows external connection of two third ports				KZPAC-SB
PCI 1-channel Ultra2 SCSI RAID controller, 4-MB cache (Linux-Ready systems only)	-	-	1	SN-KZPBC-AA
PCI 3-channel Ultra2 SCSI RAID controller, 32-MB cache (Linux-Ready systems only)	-	-	1	FR-PCTAR-IB
PCI 3-channel Ultra2 SCSI RAID controller, 64-MB cache (Linux-Ready systems only)	-	-	1	FR-PCTAR-IC

StorageWorks BA370 Rackmount Enclosure

- M-series cabinets (H9A10 and H9A15) allow one BA370 enclosure to be installed in front 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

Factory configured RAID of rackmounted BA370/HSZ80 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>

Removable Media Devices for External StorageWorks Shelves

12/24-GB 4 mm DAT narrow SCSI tape drive in StorageWorks carrier DS-TLZ10-VA

35/70-GB AIT tape drive in StorageWorks carrier (Tru64 UNIX and OpenVMS only) DS-AIT35-VW

600-MB 32X CD-ROM drive in StorageWorks carrier DS-RRD47-VA

StorageWorks UltraSCSI Shelves – Requires selection of UltraSCSI adapter and SCSI cable

- StorageWorks Shelf supports seven 3.5" x 1.6" hard disk drives; with the addition of redundant power supply, six drives are supported
- StorageWorks shelf kits are mounted back-to-back in pedestals and cabinets

StorageWorks UltraSCSI single-bus shelf kit BA36R-RC

StorageWorks UltraSCSI split-bus shelf kit BA36R-RD

3-m SCSI cable BN37A-03

Options

Step 6 – External Storage – Optional (continued)

Disk Drives (Supported in StorageWorks UltraSCSI Shelves)

- Maximum six (10,000 rpm) or seven (7,200 rpm) drives supported in StorageWorks shelf
- One power supply supports a maximum of six 10,000 rpm disks

9.1-GB UltraSCSI drive 7,200 rpm	DS-RZ1DA-VW
18.2-GB UltraSCSI drive 7,200 rpm	DS-RZ1EA-VW
9.1-GB UltraSCSI drive 10,000 rpm	DS-RZ1DD-VW
18.2-GB UltraSCSI drive 10,000 rpm	DS-RZ1ED-VW
36.4-GB UltraSCSI drive 10,000 rpm	DS-RZ1FC-VW
36.4-GB UltraSCSI drive 10,000 rpm	DS-RZ1FD-VW

StorageWorks Universal Drive Shelves – Model 4254 (Ultra2 SCSI (LVD))

StorageWorks Model 4254 enclosure; Ultra2 SCSI (LVD) split-bus universal drive shelf (Refer to Compaq StorageWorks Enclosure 4200 QuickSpec when configuring shelf) DS-SSL14-R

When selecting a DS-SSL14-Rx split-bus shelf, order two 3X-KZPCA-AA adapters;

Model 4254 enclosures are compatible with Wide Ultra2 (LVD) adapters only

Note: The depth of a DS-SSL14-Rx shelf does not allow front and rear mounting, US.

Same as above, International	DS-SSL14-R3
Same as above, Japan	DS-SSL14-R4

System Disk Drives (Supported in Model 4254 Universal Drive Shelf)

9.1-GB Ultra2 (LVD) 7,200 rpm 1.0" Universal drive	3R-A0525-AA
9.1-GB Ultra3 (LVD) 10,000 rpm 1.0" Universal drive	3R-A0584-AA
9.1-GB Ultra3 (LVD) 15,000 rpm 1.0" Universal drive	3R-A1542-AA
18.2-GB Ultra2 (LVD) 7,200 rpm 1.0" Universal drive	3R-A0527-AA
18.2-GB Ultra3 (LVD) 10,000 rpm 1.0" Universal drive	3R-A1543-AA
18.2-GB Ultra3 (LVD) 15,000 rpm 1.0" Universal drive	3R-A0919-AA
36.4-GB Ultra3 (LVD) 10,000 rpm 1.0" Universal drive	3R-A0528-AA

Step 7 – UltraSCSI RAID Array Controllers & 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 rackmount controller shelf, blue, with one controller, 110V DS-SWXRA-GH

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

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

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

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

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

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

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

Options

Step 7 – UltraSCSI RAID Array Controllers & UltraSCSI RAID Packaged Solutions – Optional (continued)

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 180W 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
- Platform specific software
- 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 set are supported on AlphaServer DS10 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 8 – 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	Linux	
ELSA Gloria synergy graphics with 8-MB SGRAM 1600 x 1200, 2D/3D graphics accelerator	3	3	-	SN-PBXGK-BB
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
PCI combo adapter, Permedia P2 graphics, 10/100 Mbit NIC	1	1	1	3X-DEPVD-AA
PCI combo adapter, Permedia P2 graphics, 10/100 NIC, 1-port SCSI	1	1	1	3X-DEPVZ-AA

Step 9 – Monitors –Optional

- Graphics monitors other than those listed below can be used if compatible with SVGA graphics ordered with system
- Selection of 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" viewable image size) professional series auto-scanning color monitor, Trinitron CRT, 0.25 mm aperture grill pitch, VGA to 1280 x 1024 at 75 Hz, TCO 95, 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
19" (18" viewable image size) professional series auto-scanning color monitor, Flat Definition Trinitron CRT, 0.25 mm aperture grill pitch, VGA to 1280 x 1024 at 75 Hz, TCO 99, MPR-II, Energy Star, attached 1.8-m video cable; without power cord, Northern hemisphere	3R-VRQP9-24
Same as above, Southern hemisphere	3R-VRQP9-23
21" (19.6" viewable image size) auto-scanning color monitor, Trinitron CRT, 0.25 mm aperture grill pitch, VGA to 1600 x 1200 at 75 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; order one for each monitor	BN39C-02
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Monitor Power Cords

Australia, New Zealand, 2.5 m	BN19H-2E
Central Europe, 2.5 m	BN19C-2E
Denmark, 2.5 m	BN19K-2E
Egypt, India, South Africa, 2.5 m	BN19S-2E
Israel, 2.5 m	BN18L-2E
Italy, 2.5 m	BN19M-2E
Japan, 2.5 m, Dentori approved	3X-BN46F-02
North America	BN26J-1K
Switzerland, 2.5 m	BN19E-2E
UK, Ireland, 2.5 m	BN19A-2E

Options

Step 10 – Networks and Communications – Optional

- Controllers/adapters require a minimum of Tru64 UNIX V4.0F or OpenVMS V7.1-2.
- Systems include dual embedded 10/100 BaseT Ethernet ports (BN25G-xx cable must be ordered separately)
- Additional Ethernet ports can be added using available PCI slots

	Maximum # Supported			
	Tru64 UNIX	OpenVMS	Linux	
PCI 1-port 10/100-Mb Ethernet adapter (Twisted Pair)	1	-	1	3X-DE600-AA
PCI to dual-port 10/100 UTP Fast Ethernet adapter	1 V4.0F	1	1	3X-DE602-AA
PCI single-port MMF add-on daughter card for 3X-DE602-AA	1	1		3X-DE602-FA
PCI 10/100 Mbit 4-port Ethernet adapter, UTP	1	1	1	DE504-BA
Cable for 10BaseT twisted pair connection				BN25G-xx
PCI Gigabit Ethernet adapter, SC connectors, MMF, no boot support	1	1	1	DEGPA-SA
SC-to-SC dual fiber optic cable				BN34B-xx
PCI combo adapter, Permedia P2 graphics, 10/100 Mbit NIC	1	1	1	3X-DEPVD-AA
PCI combo adapter, Permedia P2 graphics, 10/100 NIC, 1-port SCSI	1	1	-	3X-DEPVZ-AA
PCI FDDI adapter, single attachment station (SAS), multi-mode fiber (MMF), SC connector	1	1	-	3X-DEFPA-AC
PCI FDDI adapter, DAS, MMF, SC connector	1	1	-	3X-DEFPA-DC
MIC-SC dual fiber optic cable mm, pp xx = length in meters				BN34D-xx
SC-to-SC dual fiber optic cable mm, pp xx = length in meters				BN34B-xx
PCI FDDI adapter, SAS, TP-PMD, requires BN25H-03 cable	1	1	-	3X-DEFPA-UC
PCI FDDI dual adapter, DAS, TP-PMD, requires BN25H-03 cable	1	1	-	3X-DEFPA-MC
3m (9.8") FDDI cross-over cable mm, pp xx = length in meters				BN25H-03
PCI 2-port synchronous communications adapter, maximum two PBXDP-Ax per system	2 V4.0F	2	-	PBXDP-AA
PCI 4-port synchronous communications adapter, maximum two PBXDP-Ax per system	2 V4.0F	2	-	PBXDP-AB
PCI 4-port asynchronous controller, cable included; maximum three PBXDA-Ax per system	3 V4.0F	3	-	PBXDA-AA
PCI 8-port asynchronous controller, cable included; maximum three PBXDA-Ax per system	3 V4.0F	3	-	PBXDA-AB
PCI 16-port asynchronous controller, cable included; maximum three PBXDA-Ax per system	3 V4.0F	3	-	PBXDA-AC

Options

Step 11 – Keyboards, Mouse

Step 11a – Keyboards

- Keyboards are not included with the system and must be ordered separately
- Selection of country-specific keyboard is recommended.

	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

Step 11b – Mouse – Recommended

3-button mouse

SN-PBQWS-WA

Options

Step 12 – MEMORY CHANNEL – Optional

Tru64 UNIX Systems (V5.0A and later)

- Each system node in the cluster requires a TruCluster Server software 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-MUZAE-AA)

Configuring Information

- Up to one 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
- For integration of MEMORY CHANNEL hubs into cabinet configurations, a rackmount kit (2T-MAVRK-AA) and power cord (BN35S-02) are required

MEMORY CHANNEL Controller

PCI System Area Network Controller, maximum two	CCMAB-AA
System Area Network Hub with four line cards; includes BN19P-2E power cord for Canada, Japan, and US operations—for other regions, order appropriate power cord from list below	CCMHB-AA
Expansion line card for CCMHB hub	CCMLB-AA
1-m cable for CCMAB and CCMHB	BN39B-01
4-m cable for CCMAB and CCMHB	BN39B-04
10-m cable for CCMAB and CCMHB	BN39B-10
Rackmount kit for CCMHB hub	2T-MAVRK-AA
Power cord for rackmount CCMHB hub	BN35S-02

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

Options

Step 13 – Software – Required selection of media and documentation for first system on site.

- Software processor code = E

Tru64 UNIX

- AlphaServer DS10 Tru64 UNIX systems include Base license, Unlimited User license, Server Extension license, Open Source Internet Solutions
- AlphaStation DS10 Tru64 UNIX systems include 2-user Base license and Compaq Open3D traditional 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
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
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

OpenVMS

- AlphaServer DS10 OpenVMS systems include Base license with System Manager license and Compaq Enterprise Integration Server License Package for OpenVMS Revision V3.0A.
- AlphaStation DS10 OpenVMS systems include Base license, Concurrent Use 1-user license, NAS 150 Client license, and Compaq Open3D traditional 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

Options

Step 13 – Software – Required selection of media and documentation for first system on site. (continued)

OpenVMS (continued)

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. 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
Traditional Unlimited User license	QL-MT2AE-AA
OpenVMS Cluster license for Alpha systems	QL-MUZAC-AA
OpenVMS Cluster Client license for Alpha systems	QL-3MRAC-AA
OpenVMS Cluster Client to Full OpenVMS Cluster Migration license	QL-6J7AC-AA

Step 14 – Hardware and Software Supplemental Services –Optional

Hardware Supplemental Services

- Systems include three-year, onsite hardware warranty with next business day response
- Select optional Hardware Supplemental Services if required

3-year, 5 x 9, 4-hour response time	FM-MK4HR-36
5-year, 5 x 9, 4-hour response time	FM-MK4HR-60
3-year, 5 x 12, 4-hour response time	FM-MK512-36
5-year, 5 x 12, 4-hour response time	FM-MK512-60
3-year, 6 x 16, 4-hour response time	FM-MK616-36
5-year, 6 x 16, 4-hour response time	FM-MK616-60
3-year, 7 x 24, 4-hour response time	FM-MK724-36
5-year, 7 x 24, 4-hour response time	FM-MK724-60
Years 4-5, 5 x 9, next day response time	FM-MKXHW-60

Software Supplemental Services

	Tru64 UNIX	OpenVMS
1-year, 5 x 9 Bronze Software Supplemental Support	FM-D10U9-12	FM-D10V9-12
3-year, 5 x 9 Bronze Software Supplemental Support	FM-D10U9-36	FM-D10V9-36
5-year, 5 x 9 Bronze Software Supplemental Support	FM-D10U9-60	FM-D10V9-60
1-year, 7 x 24 Bronze Software Supplemental Support	FM-D10US-12	FM-D10VS-12
3-year, 7 x 24 Bronze Software Supplemental Support	FM-D10US-36	FM-D10VS-36
5-year, 7 x 24 Bronze Software Supplemental Support	FM-D10US-60	FM-D10VS-60
1-year, Bronze Node Software Supplemental Support	FM-D10UN-12	FM-D10VN-12
3-year, Bronze Node Software Supplemental Support	FM-D10UN-36	FM-D10VN-36
5-year, Bronze Node Software Supplemental Support	FM-D10UN-60	FM-D10VN-60

Technical Specifications

Physical Characteristics

Dimensions (HxWxD)	5.1 x 17.6 x 19 in/13 x 45 x 48 cm
Weight (maximum)	36 lbs/16.3 kg

System Unit

Environmental

Temperature¹

Operating (Tower, Rackmount)	50° to 104°F/10° to 40°C
Non-Operating	-40° to 151°F/-40° to 66°C

Humidity

Operating	10% to 95%
Non-Operating	20% to 80%

Heat Dissipation

Single unit = 176 Watts = 601 BTU/Hr
Rack of 12 systems = 2112 Watts = ~7,212 BTU/Hr

Typical System

AlphaServer DS10 466MHz
Power Supply, 300W
Main logic board containing Alpha CPU, EV6, 466 MHz
Main memory = 1 GB
(3) Hard disk drive
(1) Floppy disk drive
(1) CD-ROM disk drive
(1) PCI Graphics Card
(1) PCI Graphics Card
Running system exerciser during the power measurement.
Measured Input Voltage = 116 VAC RMS @ 60Hz
Measured Input Current = 2.27 Amps RMS
Measured Input Power = 176 Watts

Altitude (unpressurized)

Operating	40,000 ft/12,192 m
Non-Operating	10,000 ft / 3,048 m ²

Electrical

Nominal voltage range (Vac)	100 to 120Vac / 220 Vac
Operating voltage range (Vac) (temporary condition)	90 to 128 Vac /180 to 265 Vac
Power source phase	Single/Single/Single
Nominal frequency (Hz)	60 Hz /50 Hz
Frequency range (Hz)	59 to 61 Hz /49-51 Hz
Maximum inrush current	11 amps/22 amps
Power supply (single cordset)	12 amps/5 amps

Regulatory

Agency Approvals	UL: Listed to UL1950 (3rd edition) CUL Listed: CAN/CSA-C22.2 No. 950-M95 TUV: EN 60950/A11: 1997 GS marked FCC: Part 15 Class B CE: EN55022, EN50082 VCCI Class II ITE BMSI: CISPR22, CNS13438 C-Tick: CISPR22, AS/NZS 3548
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Reviewed to

AS/NZ 3260:1993 Australian/New Zealand Standard
EN 60950/A11: 1997 European Norm
IEC950 (2nd edition, 4th amend)

¹ Maximum operating temperature at sea level. Reduce by 1.8°F (1°C) for each 2,000 ft (660 m) above sea level.

² Higher altitudes are possible if maximum operating temperature is reduced.