

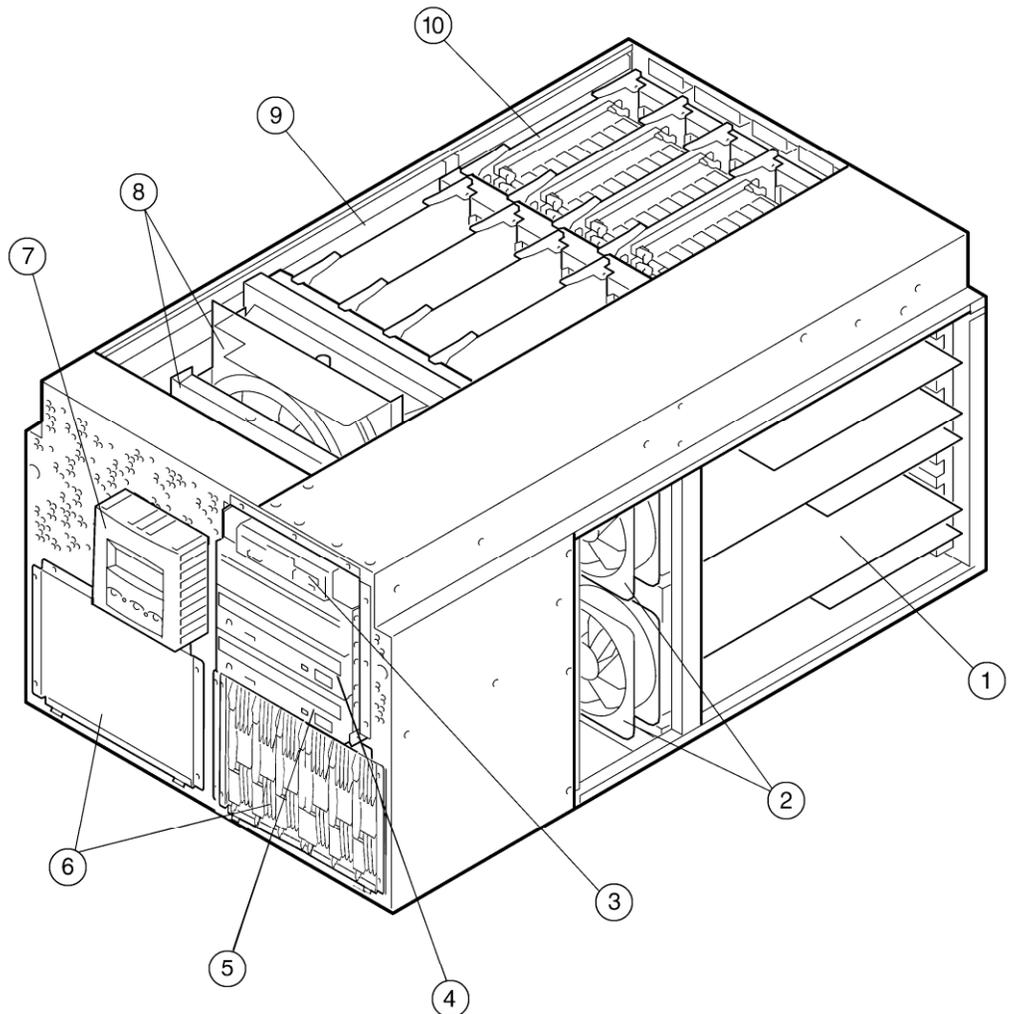
QUICKSPECS

Overview

AT A GLANCE

AlphaServer/AlphaStation ES40
Linux-Ready Systems include:

- Alpha 21264 6/500-MHz CPU with 4-MB L2 Late Write Cache, 67/667-MHz CPU with 8-MB L2 Dual Data Rate Cache, or 68/833-MHz CPU with 8-MB L2 Dual Data Rate Cache
- Six 64-bit PCI I/O expansion slots
- 512-MB memory option
- 1.44-MB diskette drive
- 600-MB 40X IDE CD-ROM drive
- Two 9-pin serial ports
- One 25-pin parallel port
- RMC dedicated serial port, 6-pin MMJ connector
- Dual USB ports
- Keyboard and mouse port
- Knockouts for two 68-pin SCSI connections
- Auto-sensing power supply
- U.S. English keyboard with North America orders
- 3-button mouse
- Integral remote system management console
- Customer documentation
- Protected by Compaq Services, including three-year hardware warranty, on-site with 5 x 9 next business day response - Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center for details. In Canada, consult the Product Information Centre at 1-888-88-COMPAQ.



- | | |
|-------------------------|-----------------------------------|
| 1. PCI cards | 6. 6-bay disk drive storage cages |
| 2. Fans | 7. Control panel |
| 3. Diskette drive | 8. Fans |
| 4. Removable media bays | 9. CPUs |
| 5. CD-ROM drive | 10. Memory |

QUICKSPECS

Standard Features

Processor

Alpha 21264 6/500-MHz CPU, 67/667-MHz CPU, or 68/833-MHz CPU

Cache Memory

4-MB L2 Late Write Backup Cache
8-MB MB L2 Dual Data Rate Backup Cache (67/667-MHz CPU, 68/833-MHz CPU)

Upgradability

Supports additional processors and upgrades of memory and hard drives

Memory

| | |
|---------|--------------------|
| Minimum | 512 MB |
| Maximum | 16 GB (see Step 3) |

Network Controller

Choice of Ethernet controllers

Expansion

| | |
|---------------|---|
| PCI I/O slots | 6 |
|---------------|---|

Storage

| | |
|----------------|--|
| Diskette Drive | 1.44-MB diskette drive in dedicated slot |
| CD-ROM | 600-MB 40X IDE CD-ROM |
| Hard Drives | Choice of 9.1-GB, 18.2-GB, or 36.4-GB drives |

Interfaces

| | |
|---------------------------|--|
| Parallel | 1 25-pin parallel port |
| Serial | 2 9-pin serial ports |
| USB | Dual USB ports |
| Keyboard | 1 |
| Mouse | 1 |
| Remote systems management | 1 dedicated remote systems management port |
| SCSI connections | Two 68-pin SCSI connections knockouts |

Graphics

Optional

Form Factor

Tower, Pedestal, Rackmount (M-Series Cabinet)

Power Supply

Auto sensing power supply, hot swappable, N+1

Service and Support

Protected by Compaq Services including a 3-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. Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center for details. In Canada, consult the Product Information Centre at 1-888-88-COMPAQ.

QUICKSPECS

Systems/Options

Step 1 – Select system

ES40 systems require the **mandatory** selection of the following items:

- Disk drive cage or StorageWorks shelf (Step 5)
 - Disk drive cage requires mandatory selection of Ultra2 SCSI LVD storage adapter (3X-KZPCA-AA)
 - StorageWorks shelf requires UltraSCSI adapter and SCSI cable (Step 10)
- System disk drive (Step 5)
- Ethernet adapter (Step 7)
- Tower, Pedestal, or Rack Kit (Step 8)
- Non-North American systems require country-specific keyboard (Step 16); North American systems include U.S. English keyboard

Note: For system integration of options with 6-3 part numbers, contact [CustomSystems](#).

AlphaServer ES40 Systems

| ES40 | CPU | PCI I/O Slots | Memory / Cache | Order No. |
|---------|---------|---------------|----------------|-------------|
| Model 1 | 500 MHz | 6 | 512 MB / 4 MB | DJ-62AAA-CA |
| Model 1 | 667 MHz | 6 | 512 MB / 8 MB | DJ-62BAA-CA |
| Model 1 | 833 MHz | 6 | 512 MB / 8 MB | DJ-62CAA-CA |

AlphaStation ES40 Systems

| | | | | |
|---------|---------|----|---------------|-------------|
| Model 1 | 667 MHz | 6 | 512 MB / 8 MB | DJ-62BAA-BW |
| Model 2 | 667 MHz | 10 | 512 MB / 8 MB | DJ-64BAA-CW |

Step 2 –Additional CPU Modules –Optional

- One CPU included, three additional CPUs are supported
 - SMP upgrade includes one 6/500-MHz CPU with 4-MB cache KN610-AA
 - SMP upgrade includes one 67/667-MHz CPU with 8-MB cache KN610-BA
 - SMP upgrade includes one 68/833-MHz CPU with 8-MB cache KN610-CA

Note: When upgrading to 68/833-MHz CPUs, all 67/667-MHz CPUs or all 6/500-MHz CPUs must be replaced; all CPU modules must be at the same speed. Additionally, when upgrading to 67/667MHz CPUs, the EV6 system (54-25385-01) must be at Rev E05 or higher. For Revisions lower than E05, contact Customer Services or 1-800-OK-COMPAQ (1-800-652-6672) and reference FCO #00-ES40 F002.

Step 3 –Memory –Optional

- Systems include one memory option; maximum 16 GB Model 1 and Model 2 (see Note below)
- Memory performance considerations: Interleaved operations reduce the average latency and increase the memory throughput over non-interleaved operations. With one memory option (4 DIMMs) installed, memory interleaving will not occur. With two identical memory options (8 DIMMs) installed, memory read-write operations are two-way interleaved. With four identical memory options (16 DIMMs) installed, memory read-write operations are four-way interleaved, maximizing memory throughput.
 - 256-MB memory option (4x64-MB DIMMs) AlphaStations only MS610-BA
 - 512-MB memory option (4x128-MB DIMMs) MS610-CA
 - 1-GB memory option (4x256-MB DIMMs) MS610-DA
 - 2-GB memory option (4x512-MB DIMMs) MS610-EA
 - 4-GB memory option (4x1024-MB DIMMs) MS610-FA

Note: The patch to support greater than 2-GB of memory per system is located at:

<http://www.kernel.org/pub/linux/kernel/people/andrea/patches/v2.2/2.2.17> (patch name: bigmem-2.2.18pre2-18.bz2)

The following minimum operating system versions are required:

- Linux RedHat V6.2
- Linux SuSE V6.3
- Linux Kernel V2.2.17

QUICKSPECS

Options

Step 4 – Additional Power Supplies –Required for third and fourth CPUs and/or second Disk Drive Cage

- Power supply included with system provides support for two CPUs and one disk drive cage
- Third and fourth CPUs and/or second disk drive cage require additional power supply
- Second power supply supports third and fourth CPU and second disk drive cage, or provides N+1 for up to two CPUs and one disk drive cage
- Third power supply provides full N+1 redundancy
- Each additional power supply ordered with a tower system requires an additional country-specific power cord
- Pedestal systems and Rack kit include three internal power cords regardless of the number of power supplies ordered

ES40 720W power supply

H7906-A9

Step 5 – Disk Drive Cage or StorageWorks Shelf – Mandatory

- Tower enclosure supports one system and two disk drive cages
- Pedestal enclosure supports one system and two disk drive cages, two Universal 42xx/43xx StorageWorks shelves or three BA36R StorageWorks shelves
- M-Series cabinets support four systems each with two disk drive cages and up to six StorageWorks shelves

Step 5a – Disk Drive Cage – Requires selection of system disk drive

- Disk drive cage supports six 1.0 in (25.4 mm) Universal disk drives per cage

6-bay disk drive cage with cable for use with 1.0 in (25.4 mm) Universal drives – requires mandatory selection of LVD Ultra2 adapter (3X-KZPCA-AA) per disk drive cage

BA610-6D

System Disk Drives (Supported in Disk Drive Cage)

| | |
|--|-------------|
| 9.1-GB Ultra2 SCSI 7,200 rpm 1.0 in (25.4 mm) Universal disk drive | 3R-A0525-AA |
| 9.1-GB Ultra3 SCSI 10,000 rpm 1.0 in (25.4 mm) Universal disk drive | 3R-A0584-AA |
| 9.1-GB Ultra3 SCSI 15,000 rpm 1.0 in (25.4 mm) Universal disk drive | 3R-A1542-AA |
| 18.2-GB Ultra2 SCSI 7,200 rpm 1.0 in (25.4 mm) Universal disk drive | 3R-A0527-AA |
| 18.2-GB Ultra3 SCSI 15,000 rpm 1.0 in (25.4 mm) Universal disk drive | 3R-A1543-AA |
| 18.2-GB Ultra3 SCSI 10,000 rpm 1.0 in (25.4 mm) Universal disk drive | 3R-A0585-AA |
| 36.4-GB Ultra3 SCSI 10,000 rpm 1.0 in (25.4 mm) Universal disk drive | 3R-A0919-AA |

Step 5b – StorageWorks BA36R Shelf –Requires selection of UltraSCSI adapter and SCSI cable (Step 10) and system disk drive

- StorageWorks Shelf supports seven 3.5 in x 1.6 in (88.9 mm x 40.64 mm) hard disk drives; with addition of redundant power supply, only 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; **Note:** When ordering a split-bus shelf to be mounted in a Pedestal Enclosure, order one BN37A-03 cable per shelf

BA36R-RD

3-m SCSI cable

BN37A-03

System Disk Drives (Supported in StorageWorks BA36R Shelf)

| | |
|---|-------------|
| 9.1-GB Ultra2 SCSI 7,200 rpm disk drive | DS-RZ1DA-VW |
| 9.1-GB Ultra3 SCSI 10,000 rpm disk drive | DS-RZ1DD-VW |
| 18.2-GB Ultra2 SCSI 7,200 rpm disk drive | DS-RZ1EA-VW |
| 18.2-GB Ultra3 SCSI 10,000 rpm disk drive | DS-RZ1ED-VW |
| 36.4-GB Ultra2 SCSI 7,200 rpm disk drive | DS-RZ1FB-VW |
| 36.4-GB Ultra3 SCSI 10,000 rpm disk drive | DS-RZ1FC-VW |

QUICKSPECS

Options

Step 5 – Disk Drive Cage or StorageWorks Shelf – Mandatory *(continued)*

Step 5c – StorageWorks Model 4254 and Models 4314R, 4354R Universal Drive Shelves

StorageWorks Model 4254 Ultra2 SCSI (LVD) split-bus Universal drive shelf; refer to Compaq StorageWorks Enclosure 4200 QuickSpecs when configuring shelf. Model 4254 enclosures are compatible with Wide Ultra2 (LVD) adapters only. Note that the depth of a DS-SSL14-Rx shelf does not allow front and rear mounting, US

DS-SSL14-RS (138151-001)

Same as above, International DS-SSL14-R3 (138151-B31)

Same as above, Japan DS-SSL14-R4 (138151-291)

StorageWorks Model 4314R, 4354R Ultra2 SCSI (LVD) single-bus and split-bus Universal drive shelves; refer to Compaq StorageWorks Enclosure 4300 Family QuickSpecs when configuring shelves. When selecting a DS-SSL13-Rx split-bus shelf, order two 3X-KZPCA-AA adapters with BN38C-05 cables. Model 43xx enclosures are compatible with Wide Ultra2 (LVD) adapters only. Note that the depth of a DS-SL13R-xx shelf does not allow front and rear mounting.

Model 4314R single-bus, rackmount, US DS-SL13R-AA (190209-001)

Model 4314R single-bus, rackmount, International DS-SL13R-AB (190209-B31)

Model 4314R single-bus, rackmount, Japan DS-SL13R-AJ (190209-291)

Model 4354R single-bus, rackmount, US DS-SL13R-BA (190211-001)

Model 4354R split-bus, rackmount, International DS-SL13R-BB (190211-B31)

Model 4354R split-bus, rackmount, Japan DS-SL13R-BJ (190211-291)

System Disk Drives *(Supported in Model 4254, 4314R, 4354R Universal Drive Shelves)*

9.1-GB Ultra2 SCSI 7,200 rpm 1.0 in (25.4 mm) Universal disk drive 3R-A0525-AA

9.1-GB Ultra3 SCSI 10,000 rpm 1.0 in (25.4 mm) Universal disk drive 3R-A0584-AA

9.1-GB Ultra3 SCSI 15,000 rpm 1.0 in (25.4 mm) Universal disk drive 3R-A1542-AA

18.2-GB Ultra2 SCSI 7,200 rpm 1.0 in (25.4 mm) Universal disk drive 3R-A0527-AA

18.2-GB Ultra3 SCSI 10,000 rpm 1.0 in (25.4 mm) Universal disk drive 3R-A0585-AA

18.2-GB Ultra3 SCSI 15,000 rpm 1.0 in (25.4 mm) Universal disk drive 3R-A1543-AA

36.4-GB Ultra3 SCSI 10,000 rpm 1.0 in (25.4 mm) Universal disk drive 3R-A0919-AA

Step 6 – Internal Removable Media –Optional

- System supports four internal removable devices
 - System includes 1.44-MB diskette drive
 - System includes 5.25 in (133.35 mm) half-height 600-MB 40X IDE CD-ROM
 - Removable media slots provide support for two 5.25 in (133.35 mm) half-height devices, or one 5.25 in (133.35 mm) full-height removable media device
- 5.25 in (133.35 mm) half-height 12/24-GB 4mm DAT SCSI tape drive, top gun blue; requires single-ended UltraSCSI adapter (KZPBA-CA or KZPCM-DA) and SCSI cable (BN46L-01) TLZ10-LB
- 5.25 in (133.35 mm) half-height 2-GB QIC tape drive, top gun blue; requires single-ended UltraSCSI adapter (KZPBA-CA or KZPCM-DA) and SCSI cable (BN46L-01) PBXTZ-AA
- 3.28-ft (1-m) Ultra2 68-pin LVD cable with two connectors, multimode terminator and two wide-to-narrow adapters (for connection of 50-pin narrow devices) 3X-BN46M-01

QUICKSPECS

Options

Step 7 – Ethernet Adapters – Mandatory

- Each adapter uses one PCI slot
- PCI 1-port 32-bit 10/100-Mb single-channel UTP FE Ethernet adapter (Twisted Pair) maximum four per system 3X-DE600-AA
- PCI 4-port 10/100 Mb Ethernet adapter, maximum one per system DE504-BA
- Cable for 10BaseT twisted pair connection BN25G-xx

Step 8 – System Enclosures – Mandatory selection of Tower, Pedestal, or Rack Kit

Step 8a – Tower Enclosure

- Tower enclosure supports one system
- Tower enclosure ordered in North America includes 120V power cord; country-specific power cord mandatory for all non-North American systems; additional power cord mandatory for each power supply ordered with a system installed in a tower enclosure

Tower enclosure BA61M-MT

Step 8b – Pedestal Enclosure

- Pedestal enclosure supports one system, two Universal 42xx/43xx StorageWorks shelves or three UltraSCSI BA36R StorageWorks shelves
- Pedestal enclosure (BA61P-PB, 240V only) supports Universal shelves
- 120V pedestal enclosure includes two external 120V power cords; 240V pedestal enclosure requires two country-specific power cords

Pedestal enclosure, 120V BA61P-PA

Pedestal enclosure, 240V BA61P-PB

Step 8c – Rack Kit for M-Series Cabinet

- Rack kit requires for each ES40 system installed in a new or existing M-Series Cabinet
- Rack kit supports one system

Rack kit for ES40, includes dress bezel, slides, three internal power cords, all bracketry and hardware for mounting in M-Series Cabinets BA61R-RM

QUICK SPECS

Options

Step 9 – M-Series Cabinets

M-Series cabinet enclosures support up to four systems, up to six StorageWorks shelves, and/or two BA370 enclosures; 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 only one system is ordered for the H9A15 cabinet

Note: For configurations beyond those listed in the following charts, contact *CustomSystems*.

Cabinet Configuration Chart for AlphaServer ES40 (8U) with StorageWorks Shelves (4U)

| Cabinet | Rack Kit | Cabinet Extender | Cabinet Height/Space | Systems | BA356 Shelves | DS-SSL14 120V Shelves ² | BA356/ DS-SSL14 ³ | |
|--------------------------|----------|------------------|--------------------------|----------------|---------------|------------------------------------|------------------------------|----------|
| | | | | | | | BA356 | DS-SSL14 |
| H9A10-MC/MD ¹ | BA61R-RM | H9C10-TE | 56 in (142.24 cm)/32U | 1 | 6 | 8 | 6 | 4 |
| | | | | 2 | 6 | 5 | 6 | 1 |
| | | | | 3 | 2 | 2 | 4 | 0 |
| | | | | 4 ¹ | 0 | 0 | 0 | 0 |
| H9A15-MC/MD ⁴ | BA61R-RM | H9C15-TE | 68.25 in (173.36 cm)/39U | 1 | 6 | 8 | 6 | 5 |
| | | | | 2 | 6 | 5 | 6 | 2 |
| | | | | 3 | 6 | 2 | 6 | 0 |
| | | | | 4 | 2 | 0 | 2 | 0 |

(1) Contact Compaq *CustomSystems* for cabinet configurations with four ES40 systems installed in an H9C10-MC/MD cabinet.

(2) Japan only – 240V cabinet required when using universal shelves

(3) When using a combination of BA356 and DS-SSL14 shelves in cabinet, do not remove top fan

(4) Installation of one ES40 system in an H9A15 cabinet requires the mandatory selection of a ballast kit.

M-Series Cabinets – Required selection of one cabinet

- Two H7600-xx power distribution units are standard in the M-series cabinet
- For cabinet configurations that require a third power distribution unit (H7600-xx), contact Compaq *CustomSystems* at 1-800-AT-COMPAQ

67 in (170.18 cm) cabinet with 56 in (142.24 cm) 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 in (170.18 cm) cabinet with 56 in (142.24 cm) 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 in (200.66 cm) cabinet with 68.25 in (173.36 cm) 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 in (200.66 cm) cabinet with 68.25 in (173.36 cm) 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

QUICKSPECS

Options

Step 9 – M-Series Cabinets *(continued)*

Factory Integration – Required

Factory Integration of systems and storage devices assembled and configured in cabinet enclosure in predefined locations YS-ASCAA-AA

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

Ballast is added to a cabinet at particular locations for specific configurations to meet safety regulations for installation, operation, and service; see Cabinet Configuration Charts.

Two 35-40 lb (15.88-18.14 kg) steel plates H9C10-MC

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

Rackmount StorageWorks controller shelf with RETMA mounting kit, and NEMA power for BA35R-MR

H9A10-MC/H9A15-MC cabinets, North America, Asia Pacific; order BN30B-02 for mounting in H9A10-MD/H9A15-MD cabinet (Europe)

180W power supply, includes 120V North American and 240V IEC power cord DS-BA35X-HH

Step 10 – Storage Adapters – Required if StorageWorks shelf is selected in Step 5

Note: The following adapter is mandatory for use with the BA610-6D 6-bay disk drive cage.

PCI 1-port Ultra2 (LVD) SCSI adapter, 32-bit, single-channel (uses one PCI slot); includes internal 68-pin and external 68-pin HD connectors; requires BN38C-xx cable to connect adapter to Ultra2 shelf; HSZxx RAID controllers not supported. OpenVMS V7.1-2 requires Tima Kit: DEC-AXPVMS-VMS712_UPDATE-V0300—4.PCSI; Tru64 UNIX V4.0F requires Patch Kit2 BL13: DUV40FAS0002-19991116.tar 3X-KZPCA-AA

68-pin HD male-to-VHDCI male UltraSCSI cable; xx = 02, 03, 05, 10, 20, 25 m BN38C-xx

Note: The following adapters are only supported with StorageWorks shelves; not supported with the BA610-6D disk drive cage.

PCI 1-port UltraSCSI differential adapter (uses one PCI slot); includes external 68-pin HD connector, requires BN38C-xx cable to connect adapter to shelf or RAID controller, maximum five per system KZPBA-CB

68-pin HD male-to-VHDCI male UltraSCSI cable; xx = 02, 03, 05, 10, 20 m BN38C-xx

PCI 1-port Ultra SCSI RAID controller with 4-MB cache; maximum four per system; supports disk drives only and external support only in BA356 StorageWorks shelves SN-KZPBC-AA

PCI 3-port Ultra SCSI RAID controller with 32-MB cache; maximum four per system; supports disk drives only and external support only in BA356 StorageWorks shelves FR-PCTAR-IB

PCI 3-port Ultra SCSI RAID controller with 64-MB cache; maximum four per system; supports disk drives only and external support only in BA356 StorageWorks shelves FR-PCTAR-IC

Step 11 – Storage Devices – Optional

DLT Tape Drives

DLT8000 40/80-GB DLT external tabletop tape drive (supports Linux RedHat V6.2, EV6 only) 146197-B21

DLT8000 40/80-GB DLT external tabletop tape drive (supports Linux RedHat V6.2, EV6 only) – Japan only 146197-291

DLT8000 40/80-GB DLT tape drive, SBB DS-TZ90N-VW

Step 12 – Graphics Adapters – Optional

- Select graphics adapter, monitor, and country-specific keyboard if required

ELSA Gloria synergy graphics with 8-MB SGRAM 1600 x 1200, 2D/3D graphic accelerator, maximum one per system SN-PBXGK-BB

QUICKSPECS

Options

Step 13 –Monitors –Optional

- 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 colour 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 colour monitor Flat Definition CRT, 0.25mm aperture grill pitch, VGA to 1280 x 1024 at 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 |
| 19" (18" viewable image size) professional series auto-scanning colour monitor, Flat Definition Trinitron CRT, 0.25mm aperture grill pitch, VGA to 1280 x 1024 at 75 Hz, TCO 99, MPR-II, Energy Star, attached 1.8-m video cable; Northern Hemisphere without power cord | 3R-VRQP9-24 |
| Same as above except Southern Hemisphere without power cord | 3R-VRQP9-23 |
| 21" (19.6" viewable image size) auto-scanning colour monitor, Trinitron CRT, 0.28mm aperture grill pitch, VGA to 1600 x 1200 @85 Hz NI, TCO 99, 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 |
| TFT 8020 flat panel 18" monitor, U.S. (requires SN-PBXGK-BB ELSA Gloria graphics adapter) | 3R-A0852-AA |

Video Extension Cable

- | | |
|--|----------|
| 5.91-ft (1.8-m) video extension cable – mandatory for each monitor ordered | BN39C-02 |
|--|----------|

Monitor Power Cords

- | | |
|---|-------------|
| North American, 120V, 75 in (190.5 cm) | BN26J-1K |
| Australia, New Zealand, 8.2 ft (2.5m) | BN19H-2E |
| Central Europe, 8.2 ft (2.5m) | BN19C-2E |
| Denmark, 8.2 ft (2.5m) | BN19K-2E |
| Egypt, India, South Africa, 8.2 ft (2.5m) | BN19S-2E |
| Israel, 8.2 ft (2.5m) | BN18L-2E |
| Italy, 8.2 ft (2.5m) | BN19M-2E |
| Japan, 8.2 ft (2.5m), Dentori approved | 3X-BN46F-02 |
| Switzerland, 8.2 ft (2.5m) | BN19E-2E |
| UK, Ireland, 8.2 ft (2.5m) | BN19A-2E |

QUICKSPECS

Options

Step 14 – Keyboards, Power Cords, Documentation

Step 14a – Keyboards – Required for all non-North American systems

- Systems ordered in North America include U.S. English keyboard; selection of country-specific keyboard is mandatory for all non-North American systems

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

QUICKSPECS

Options

Step 14 – Keyboards, Power Cords, Documentation *(continued)*

Keyboard or Mouse Extension Cable

6 ft (1.83 m) keyboard or mouse extension cable; to extend both keyboard and mouse order two cables 3X-BC34A-06

Step 14b – Power Cords

Tower Power Cords

- Tower enclosure ordered in North America includes 120V power cord; selection of country-specific power cord is mandatory for all non-North American orders.
- Each additional power supply ordered with a system installed in tower enclosure requires an additional power cord

Pedestal Power Cords

- Pedestal systems ordered in North America include two 120V power cords; selection of two country-specific power cords is mandatory for all non-North American orders.

| | |
|---|-------------|
| North American 120V, 75 in (190.5 cm) | BN26J-1K |
| Australia, New Zealand, 8.2 ft (2.5m) | BN19H-2E |
| Central Europe, 8.2 ft (2.5m) | BN19C-2E |
| Denmark, 8.2 ft (2.5m) | BN19K-2E |
| Egypt, India, South Africa, 8.2 ft (2.5m) | BN19S-2E |
| Germany, 8.2 ft (2.5m) | BN35S-02 |
| Israel, 8.2 ft (2.5m) | BN18L-2E |
| Italy, 8.2 ft (2.5m) | BN19M-2E |
| Japan, 8.2 ft (2.5m) | 3X-BN46F-02 |
| Switzerland, 8.2 ft (2.5m) | BN19E-2E |
| UK, Ireland, 8.2 ft (2.5m) | BN19A-2E |

Step 14c – Documentation

Additional ES40 System Information Kit (print and CD), Owners Guide, User Interface Guide, and Release Notes QA-6E88A-G8

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 |

Step 16 – Software

- Operating system software not included with these systems.

QUICKSPECS

Options

Step 17 – Hardware Supplemental Support Services – Optional

Hardware—Americas and Asia Pacific Only

- Systems include three-year hardware warranty, onsite with 5 x 9, 24-hour response time
- Options ordered as part of initial system sale take on warranty of the enclosure
- Options added after initial system sale take on warranty of the enclosure until enclosure warranty ends
- All unique ES40 options have a minimum of one-year Return to Compaq Warranty
- Select optional Hardware Supplemental Support Services if required

| Supplemental Service for ES40 Tower System | Model 1 | Model 2 |
|--|-------------|-------------|
| 3-year, 5 x 9, 4-hour response time | FM-4T4HR-36 | FM-4Q4HR-36 |
| 5-year, 5 x 9, 4-hour response time | FM-4T4HR-60 | FM-4Q4HR-60 |
| 3-year, 7 x 24, 4-hour response time | FM-4T724-36 | FM-4Q724-36 |
| 5-year, 7 x 24, 4-hour response time | FM-4T724-60 | FM-4Q724-60 |
| 5-year, 5 x 9, next day, on-site | FM-4TXHW-60 | FM-4QXHW-60 |

| Supplemental Service for ES40 Pedestal System | Model 1 | Model 2 |
|---|-------------|-------------|
| 3-year, 5 x 9, 4-hour response time | FM-4F4HR-36 | FM-4G4HR-36 |
| 5-year, 5 x 9, 4-hour response time | FM-4F4HR-60 | FM-4G4HR-60 |
| 3-year, 7 x 24, 4-hour response time | FM-4F724-36 | FM-4G724-36 |
| 5-year, 7 x 24, 4-hour response time | FM-4F724-60 | FM-4G724-60 |
| 5-year, 5 X 9, next day, on-site | FM-4FXHW-60 | FM-4GXHW-60 |

| Installation Services | Model 1 | Model 2 |
|--|-------------|-------------|
| Hardware product installation for ES40 Tower System | FM-4TINS-IN | FM-4QINS-IN |
| Hardware product installation for ES40 Pedestal System | FM-4FINS-IN | FM-4GINS-IN |

Add-on memory installation for ES40

FM-64MEM-IN

Add-on SMP CPU installation for ES40

FM-64CPU-IN

Note: Add-on installation part numbers should be used when options are added to existing systems.

Hardware Supplemental Support Services — Europe Only

- Europe does not offer specific part numbers for Hardware Supplemental Support Services. Prices are quoted based on worldwide service reference pricing. Contact MCS Sales in your country for information on Hardware Supplemental Support Services.

QUICKSPECS

Technical Specifications

Tower Configuration

| | | |
|----------------------------|---|----------------|
| Dimensions (HxWxD) | 20 x 15.25 x 31 in / 50.8 x 38.7 x 78.7 cm | |
| Shipping Dimensions | 32.2 x 24 x 40 in / 82.48 x 60.2 x 101.6 cm | |
| Weight | | |
| Typical Configuration | 144.3 lbs/65.6 kg | |
| Maximum Configuration | 212.8 lbs/96.7 kg | |
| Shipping Weight | | |
| Typical Configuration | 172 lbs/78 kg | |
| Maximum Configuration | 242 lbs/110 kg | |
| Clearances | Operating | Service |
| Front | 29.5 in/75 cm | 29.5 in/75 cm |
| Rear | 6 in/15 cm | 29.5 in/75 cm |
| Left Side | None | 29.5 in/75 cm |
| Right Side | None | None |

Pedestal Configuration

| | | |
|----------------------------|---|----------------|
| Dimensions (HxWxD) | 30.8 x 20 x 31.75 in/78.2 x 50.8 x 80.6 cm | |
| Shipping Dimensions | 42.4 x 39.5 x 23.9 in/107.7 x 100.3 x 60.7 cm | |
| Weight | | |
| Typical Configuration | 280 lbs/127 kg | |
| Maximum Configuration | 350 lbs/159 kg | |
| Shipping Weight | | |
| Nominal | 328 lbs/149 kg | |
| Maximum | 407 lbs/185 kg | |
| Clearances | Operating | Service |
| Front | 29.5 in/75 cm | 29.5 in/75 cm |
| Rear | 6 in/15 cm | 29.5 in/75 cm |
| Left Side | None | None |
| Right Side | None | 29.5 in/75 cm |

Rackmount System

| | | |
|--|--|---|
| Dimensions (HxWxD) | 13.87 x 17.6 x 30.1 in/35.2 x 44.7 x 76.5 cm (fits 14 in [8U] standard RETMA cabinet) | |
| Shipping Dimensions | 28.8 x 24 x 40 in/73.2 x 60.7 x 101.6 cm | |
| Weight | | |
| When lifting: | | |
| Nominal | 110 lbs/50 kg | |
| Maximum | 167.2 lbs/76 kg | |
| Total added to cabinet (brackets, slides, cables): | | |
| Nominal | 130 lbs/59 kg | |
| Maximum | 202.4 lbs/92 kg | |
| Shipping Weight | | |
| Nominal | 158 lbs/72 kg | |
| Maximum | 233 lbs/106 kg | |
| Clearances | Operating | Service |
| | See specific cabinet requirements | Minimum 4 ft/121.9 cm, 30 in/76.3 cm withdrawal on rails |

QUICKSPECS

Technical Specifications

Cabinet Configuration

| | 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 | Configuration dependent |
| Shipping Weight | Nominal: 946 lbs/430 kg Maximum: 1,375 lbs/625 kg | Nominal: 1,056 lbs/550 kg Maximum: 1,408 lbs/640 kg |

System Unit

Environmental

Temperature

| | |
|---|----------------------------|
| Operating (Tower, Pedestal, Rackmount) ¹ | 50° to 95°F/10° to 35°C |
| Non-operating | -40° to 151°F/-40° to 66°C |
| 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 |
|-----------|----------|

Heat Dissipation

| | Nominal | Maximum |
|----------------------|-------------------------|----------------------|
| Tower and Rack | 900W, 3,074 BTU/hr | 1300W, 4,440 BTU/hr |
| Pedestal | 1480W, 5,054 BTU/hr | 2400W, 8,196 BTU/hr |
| H9A10/H9A15 Cabinets | Configuration dependent | 4800W, 16,392 BTU/hr |

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 ft/3,048 m |
| Non-operating | 40,000 ft/12,192 m |

Acoustics (Declared values per ISO 9296 and ISO 7779)

Acoustics³

| | L _{WAd3B} | L _{nAm5dBA} (bystander position) |
|-----------|--------------------|---|
| Idle | 6.6 | 48 |
| Operating | 6.6 | 48 |

Vibration

| | |
|---------------|-------------------------|
| Operating | 10 to 500 Hz 0.1 G peak |
| Non-operating | 1.03 Grms 5-300 Hz |

QUICKSPECS

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 to 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)

Tower and Rackmount

| | | | |
|----------------------|-------|-------|-------|
| Single power cord | 11.0A | 8.5A | 5.0A |
| Multiple power cords | 6.5A | 5.3A | 3.0A |
| Maximum VA | 1,300 | 1,270 | 1,250 |

Pedestal

| | | | |
|-----------------|-------|-------|-------|
| Each power cord | 12.0A | 10.5A | 6.0A |
| Maximum VA | 1,960 | 1,900 | 1,880 |

M-series Cabinet (configuration dependent)

| | | | |
|-----------------------|-----|-----|------------|
| Nominal voltage (VAC) | 100 | 120 | 220 to 240 |
| Each power cord | 24A | 24A | 16A |

Power Cords

| | | |
|-----------|------------------------|---|
| Tower | Up to 3 (75 in/190 cm) | IEC 320 C13 to NEMA 5-15 (N. America) or IEC 320 C13 to country-specific |
| Pedestal | 2 (75 in/190 cm) | 120V non-removable NEMA 5-15 (N. America) or 200-240V IEC 320 C13 to country-specific |
| Rackmount | 3 (14 ft 10 in/52 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/30 cm) | 120V non-removable NEMA L5-30P or 200-240V non-removable IEC 309 |

Regulatory

Agency Approvals

UL: Listed to UL1950 (third 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
 CE: EN55022, EN50082
 VCCI Class II ITE

Reviewed to

BCIO: CISPR22, CNS13438
 C-Tick: CISPR22, AS/NZS 3548
 AS/NZ 3260:1993 Australian/New Zealand Standard
 EN 60950/A4: 1997 European Norm
 IEC 950 (second edition, third amend)

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

(C)2001 Compaq Computer Corporation. All rights reserved. Compaq is a trademark of Compaq Computer Corporation. The information in this publication is subject to change without notice. Printed in Canada.