Compaq AlphaServer GS140 and AlphaServer 8400 Rackmount
V2.5—10 February 1999
Systems and Options Catalog

Product Description

Compaq AlphaServer GS140 rackmount systems offer 6/525 MHz 64-bit Alpha 21264 microprocessors packaged in top gun blue system cabinets. AlphaServer 8400 Rackmount systems offer 5/625 MHz 64-bit Alpha 21164 microprocessors packaged in gray system cabinets.

Compaq AlphaServer Global Solutions (GS140) and AlphaServer 8400 rackmount systems includes a nine-slot backplane and support up to fourteen independently powerful CPUs with their own data and address paths, 28 GB of error correctable memory, 144 individual PCI slots to configure up to 85 TB of UltraSCSI storage. The system I/O bandwidth normally associated with mainframe systems provides the capacity to tackle the most demanding business applications. These servers offer room for growth for the largest and most complex applications. Large databases, complex simulations, data warehousing, and decision support are examples of the kinds of applications the AlphaServer GS140 and AlphaServer 8400 support with ease.

ServerWORKS Manager provides advanced server and network management capabilities and is supplied with all AlphaServer systems. Simple Network Management Protocol (SNMP) enables information to pass from the managed system to the console for Tru64 UNIX and OpenVMS for AlphaServers. Detailed server information is viewable, including system, network, storage, and environmental information. All AlphaServer systems are also supplied with management tools to complement ServerWORKS Manager. For more information, see the StorageWorks Software section of this catalog.

AlphaServer GS140 and 8400 run OpenVMS or Tru64 UNIX operating systems. Clusters, hot swap disks, RAID, ECC memory and data paths, and fault management are available.

All System Building Blocks and options stand alone as 19-inch rackmount assemblies and plug directly into 240V ac. Cable egress is from the rear to manage high interface cable situations.

Note: Only the unique rackmount features and options for Compaq AlphaServer GS140 and AlphaServer 8400 Rackmount systems are listed here. Refer to the Compaq AlphaServer GS140 and AlphaServer 8400 configuration menu for SMP expansion, memory, supported options, storage devices, and software. AlphaServer 8200 Windows NT Rackmount systems are only available as custom quotes from Compaq CustomSystems.

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Step 1—Compaq AlphaServer GS140 and AlphaServer 8400 Systems

- Compaq AlphaServer GS140 6/525 systems require minimum operating system support of:
  - Tru64 UNIX V4.0E
  - OpenVMS V7.1-2
- AlphaServer 8400 5/625 Systems require minimum operating system support of:
  - Tru64 UNIX V3.2G, V4.0B, V4.0D or later
  - OpenVMS V6.2-1H3, V7.1-1H1 or later
- Software media and documentation required for first system on site.
- Console terminal required to install system, unless terminal is available on site.
- System includes nine slot centerplane—three slots are used by CPU module, memory module, and system I/O module (KFTHA-AA).
  - Six slots are available for additional CPU, memory, or system I/O module(s).
- Power Management software is included with all servers. Software communicates with recommended UPS.

Compaq AlphaServer GS140 and AlphaServer 8400 Rackmount Expanded Base Servers include

- AlphaServer GS140 includes: Processor module with two Alpha microprocessor 21264 6/525 MHz CPUs; each CPU includes 4 MB Backup cache.
- AlphaServer 8400 includes: Processor module with two Alpha microprocessor 21164 5/625 MHz[1] CPUs, each CPU includes 4 MB Backup cache.
- System I/O module with four I/O channels (KFTHA-AA)
- AlphaServer GS140 includes 4 GB of memory.
- AlphaServer 8400 includes 2 GB or 4 GB of memory.
- PCI 12-slot Plug-in Unit (DWLPR-A9).
- UltraSCSI one port Single-ended adapter (KZPBA-CA).
- StorageWorks Shelf
- 4.3 GB 3.5-inch SCSI system disk drive.
- 600 MB CD-ROM drive.
- High Speed Network Interface Card.
- Universal single phase power.
- N+1 ac to dc converter (CPU SBB only)
- Shielded console cable is included for connection to the console terminal
- Factory Installed Software
  - Tru64 UNIX base license, Unlimited User license, Server Extension license, Internet Access Software license, or
  - OpenVMS base license, Enterprise Integration Package V2.0.
- One year hardware product warranty
- 90 day software product warranty
- System installation must be ordered separately with Compaq AlphaServer GS140 and AlphaServer 8400 systems.

1. 5/625 CPUs clocked at 612.8 MHz for AlphaServer 8400 applications.

Compaq AlphaServer GS140 6/525 Dual CPU Expanded Base Servers—Top Gun Blue Enclosure

Order Number	Operating System	CPU	Memory	Power
DA-AN3GG-A9	Tru64 UNIX	Two 6/525 MHz	4 GB	Single Phase
DY-AN3GG-A9	OpenVMS	Two 6/525 MHz	4 GB	Single Phase

AlphaServer 8400 5/625 Dual CPU Expanded Base Servers—Gray Enclosures

Order Number	Operating System	CPU	Memory	Power
DA-AN2GF-B9	Tru64 UNIX	Two 5/625 MHz	2 GB	Single Phase
DA-AN2GG-B9	Tru64 UNIX	Two 5/625 MHz	4 GB	Single Phase
DY-AN2GF-B9	OpenVMS	Two 5/625 MHz	2 GB	Single Phase
DY-AN2GG-B9	OpenVMS	Two 5/625 MHz	4 GB	Single Phase

Step 1a—Compaq AlphaServer GS140 and AlphaServer 8400 Rackmount System Building Blocks

System Building Blocks are an alternative to Servers listed in Step 1. They provide flexibility in configuring the Compaq AlphaServer GS140 and AlphaServer 8400 with a choice of memory and I/O options.

System Building Block Requirements

- Compaq AlphaServer GS140 6/525 systems require minimum operating system support of:
  - Tru64 UNIX V4.0E
  - OpenVMS V7.1-2
- AlphaServer 8400 5/625 Systems require minimum operating system support of:
  - Tru64 UNIX V3.2G, V4.0B, V4.0D or later
  - OpenVMS V6.2-1H3, V7.1-1H1 or later
- Minimum of one memory module
- Minimum of one system I/O module
- CD-ROM drive
- Console terminal required unless available on site.
- System includes a nine-slot backplane—three slots are used by CPU, memory, and system I/O modules.
  - Six slots available for additional CPU, memory, or system I/O module(s).
- SBB is a nine-slot Rackmount chassis with dual CPU.
- If Factory Installed Software is required, a BA36R-AF StorageWorks Shelf, CD-ROM and system disk are required.

Compaq AlphaServer GS140 6/525 MHz and AlphaServer 8400 5/625 MHz Dual CPU Rackmount SBB

3X-762XS-B9	Compaq AlphaServer GS140 rackmount chassis with dual 6/525 CPU, 240 V. No memory, no I/O, no operating system. Mounted in H9A15 cabinet—Blue.
758XR-A9	AlphaServer 8400 rackmount chassis with dual 5/625 CPU, 240 V. No memory, no I/O, no operating system. Mounted in H9A15 cabinet—Gray.

Required (See Step 6)

DWLPR-x9 Gray **3X-DWLPR-x9 Blue**	Rackmount PCI unit.
KZPBA-CA	PCI-based one port UltraSCSI Single-ended host adapter—Uses one PCI slot
BN38C-02	2 m VHDCI male to 68-pin HD male UltraSCSI cable, connects KZPBA to rear mounted storage shelf
DE500-AA	High Speed Network Interface Card

Step 2—Power Controllers

Compaq AlphaServer GS140 and AlphaServer 8400 Rackmount systems include two power cords, one from the system box and one from the H7600-AA power controller. Both power cords are 20 Amp Twist-Lock for use in the Americas. Order H7600-BN power strip for other geographies (ships with international pin-and-sleeve and the appropriate power cord for system).

H7600-AB	North America 220/240 V 24 Amp twist-lock
H7600-BN	Universal 220/240 16 V Amp pin-and-sleeve

Step 3—CPU Symmetric MultiProcessing (SMP) Expansion

See Step 2 of the Compaq AlphaServer GS140 and AlphaServer 8400 configuration menu.

Step 4—AlphaServer Expansion Packages

Consult CSS.

Step 5—Memory

See Step 3 of the Compaq AlphaServer GS140 and AlphaServer 8400 configuration menu.

Step 6—I/O Expansion Buses

PCI I/O buses are available on Compaq AlphaServer GS140 and AlphaServer 8400 Rackmount systems. Application and system configuration constraints will determine maximum configuration. Configuration limits exist at the I/O bus level and controller level. Verify the maximum number of allowed controllers as listed in the Controller Configuration Table.

- Each DWLPR-A9/B9 (Gray) or 3X-DWLPR-C9/D9 (Blue) PCI or PCI with EISA chassis contains 12 I/O slots.
- PCI shelves connect directly to system via a hose cable to the KFTHA-AA. Maximum of twelve hose connections supported per system.

DWLPR-A9 (Gray) **3X-DWLPR-C9 (Blue)**	12 slot PCI Rackmount chassis, requires 7 inches of vertical rackmounting space.
KFE70-CA[1]	PCI to EISA Bridge; converts 12-slot PCI bus to 2 EISA, 6 PCI/EISA, and 2 PCI slots. Includes RX26 diskette drive, mounting hardware, and cables to mount RX26. Maximum one EISA Bridge option supported per system). Each KFE70-CA/DWLPR-A9 requires 8.75 inches of vertical rackmounting space.
DWLPR-B9 (Gray) **3X-DWLPR-D9 (Blue)**	12 slot PCI Rackmount chassis with KFE70-CA embedded. Contains 2 EISA, 6 PCI/EISA, and 2 PCI slots. Maximum one DWLPR-B9 or 3X-DWLPR-D9 unit is supported per system, requires 8.75 inches of vertical rackmounting space.

1. Maximum of one EISA bus per system.

Step 7—System I/O Modules

See Step 5 of the Compaq AlphaServer GS140 and AlphaServer 8400 configuration menu.

Step 8—Storage Controllers

- See Step 6 of the Compaq AlphaServer GS140 and AlphaServer 8400 configuration menu.
- BA36R-AF/AR (Wide) StorageWorks shelves and BA35R-AF/AR (Narrow) StorageWorks selves are recommended for use with Rackmount systems. Select appropriate SCSI cables to connect from controller to these shelves.

Step 9—Storage

- See Step 7 of the Compaq AlphaServer GS140 and AlphaServer 8400 configuration menu.
- BA36R-AF and BA36R-AR wide StorageWorks shelves, and BA35R-AF and BA35R-AR narrow StorageWorks shelves are supported on Rackmount systems.
- 8-bit narrow and 16-bit wide devices are supported on Rackmount systems.
- Base system includes one StorageWorks shelf, a CD-ROM drive and one hard disk drive leaving 4 slots for 3.5-inch devices.

Step 10—Networks and Communications

- See Step 8 of the Compaq AlphaServer GS140 and AlphaServer 8400 configuration menu.
  - DWLPR-A9 (gray) or 3x-DWLPR-C9 (blue) required for PCI based options
  - DWLPR-B9 (gray) or 3x-DWLPR-D9 (blue) required for EISA based options
  - KFE70-CA (EISA/PCI bridge)

Step 11—Console Terminal

- Console terminal with EIA-232 25-pin DSUB connector and printer required unless otherwise available.
- Shielded console cable is included for connection to console terminal.

VT510-xx	VT510 terminal.

Step 12—Expansion (Storage Expansion Cabinet and I/O Expansion Cabinet)

If expansion is required, disks, tapes, I/O chassis or additional options, select same cabinet and power controllers as used in system cabinet and stack. 71.75 inches of rack space available. Use only devices with 240 V ac or 120V/240 V ac front ends.

Step 13—Power Expansion Components

- Base system cabinet includes one H7600-AA power controller and one power supply.
- Redundant (N+1) power supply option is provided on Compaq AlphaServer GS140 and AlphaServer 8400 Rackmount systems.
- Battery backup capability is not supported on Compaq AlphaServer GS140 and AlphaServer 8400 Rackmount systems. The use of an UPS system is recommended.

Step 14—Software

See Step 12 of the Compaq AlphaServer GS140 and AlphaServer 8400 configuration menu.

Step 15—Environmental Power Products

For UPS Solutions see section following Specifications in Compaq AlphaServer GS140 and AlphaServer 8400 configuration menu.

Configuring system in H9A15 Cabinet

The H9A15 cabinet is 80 inches tall and has 71.75 inches of standard 19-inch vertical rack space.

- Compaq AlphaServer GS140 and AlphaServer 8400 Rackmount SBB is 36.75 inches and is mounted 14 inches from top of cabinet.
- BA36R-AF is mounted directly above the SBB with system disk and CD-ROM.
- To preserve air flow, the only options supported above SBB are: front and rear mounted BA36R-xx shelves and PCI drawer.
- PCI drawer with EISA is recommended for bottom of cabinet, below SBB.
- One H7600 power strips can be mounted in bottom of cabinet.
- Remaining 21 inches of available space in bottom of cabinet can be filled with options as required.
- The items configured in cabinet with SBB are standard 19 inches, RETMA compatible, and occupy different heights and depths. See chart below.

Cabinet Configuration Table	Rack Height	Depth[1]
System Building Block	36.75 in	23.5 in
PCI drawer (no EISA)	7.00 in	25.00 in
PCI drawer with EISA	8.75 in	25.00 in
BA36R-AF/AR shelves	7.00 in	10.00 in

1. Does not include cable egress.

Installation Services—Compaq AlphaServer GS140 and AlphaServer 8400 Systems

- Installation Service Package or Installation and Startup Package is mandatory for all Compaq AlphaServer GS140 and AlphaServer 8400 systems.
- Consult your Compaq Customer Service Account Representative for assistance in choosing the support plan that is most appropriate.
- For more information on Compaq Services see: http://www.digital.com/services

FP-8INST-xx Installation Service Package

FP-8STAR-xx Installation Service and Startup Package

Specifications

Physical Characteristics	Operating	Shipping
Height	202.0 cm (79.5 in)	225.4 cm (88.8 in)
Width	60.0 cm (23.6 in	91.5 cm (36.0 in)
Depth	103.6 cm (40.8 in)	121.5 cm (47.9 in)
Weight	363 kg (800 lb)	397 kg (875 lb)
Clearance	**Operating**	**Service**
Front	1.0 m (40 in)	1.5 m (59 in)
Rear	.75 m (29.5 in)	1.0 m (40 in)
Side	0	0
Environmental	**Operating**	**Non-operating**
Temperature	10°C to 35°C (50°F to 90°F)	-40° to 66°C (-40°F to 151°F)
Humidity	10% to 90%	10% - 95%
Altitude	0 to 2.4m (0 to 8200 ft)	9,100m (30,000 ft)
Vibration	2-22 Hz @ 0.01 in da min.	22-500 Hz @ 0.25 g max.
Heat Dissipation		
Minimum Configuration	3200 Btu/hr, 930 W	
Maximum Configuration	14400 Btu/hr, 4200 W	
Power Requirements		
Nominal AC input voltage	200-240 V ac	
Frequency range	47-63 Hz	
Phases	Single-Phase	
Max input current (Max Config)	20.3 A rms	
Plugs from Cabinet	NEMA L6-20P (QTY=2)	
Receptacle	NEMA L6-20R (QTY=2)	
Regulatory Approvals	UL, CSA, IEC, FCC, CE	