Compaq AlphaServers

AlphaServer ES40 and AlphaStation ES40

AlphaServer ES40

Powerhouse systems delivering mainframe-size enterprise performance

The new-generation *Compaq AlphaServer™* ES40 server meets the growing enterprise's need for mainframe-size speed, power and performance—at a midrange server price. Loaded with as many as four blazing-fast 667 MHz *Alpha™* 21264A processors and featuring up to 32 GB of memory, large dedicated 8 MB L2 caches and advanced crossbar switching technology, this server can handle the toughest jobs at stunning speeds.

With state-of-the-art reliability features like ECC memory, hot-swap RAID storage, advanced clustering support and redundant hot-swap power and cooling systems, the modular *AlphaServer* ES40 delivers dependable support for crucial resource-intensive Internet, business and database applications.

The *AlphaServer* ES40 provides the high performance and dependability required for the most demanding enterprise environments. This solution is the right choice for business intelligence, ISP Internet/telecom and database-related applications as well as specialized industry-specific uses such as airline reservations. The *Compaq AlphaStation™* ES40 makes an ideal personal super computer or high-end visualization client. Client side opportunities include CAD/CAM, GIS, high-performance technical visualization, defense applications and opportunities in the fast growing Linux-based computing market. These systems enable companies to leverage their equipment investments with a seamless path to memory, storage and performance upgrades.

→ Key Features

- → 1 to 4 x 667 MHz *Alpha* 21264A processors deliver mainframe-quality performance
- → Up to 32 GB ECC memory and crossbar switch architecture provides 2 to 3 times faster database and application performance
- → New, very large 8 MB Dual Data Rate cache doubles cache size and bandwidth
- → Flexibility and scalability in a compact form factor with a choice of 2 models, 3 enclosures and supporting up to 134 hot-swap drive bays
- → Up to 2.5 TB of in-cabinet storage maximizes capacity
- → High-reliability features including hot-swap drives, RAID, redundant hot-swap power and cooling subsystems, and heat, fan failure and power supply sensors

→ The Compaq Advantage

- → Fully certified for *Compaq Tru64™* UNIX®, Linux and *Compaq OpenVMS™*
- → High-availability support with *Tru64* UNIX and *OpenVMS* cluster solutions guarantee maximum uptime and high data integrity
- → Pre-packaged Internet-energized operating system and application software makes *Tru64* UNIX and *OpenVMS* servers Internet-ready
- → Compaq AllConnect for UNIX or Affinity for *OpenVMS* provide smooth interoperability with Microsoft® Windows NT® environments
- → Compaq server management software included with all *AlphaServers* provides exceptional systems management
- → Compaq Warranty includes 3-year on-site, 5-day x 9-hour coverage with 24-hour response and optional service upgrades to maximize your critical systems worldwide[1]

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Features	**AlphaServer ES40**
Form Factor	→ Tower, pedestal or rack-mountable enclosures
Processor/Cache	→ 1 to 4 x 667 MHz *Alpha* 21264A processors → Each processor with 64 KB I-cache, 64 KB D-cache on chip and 8 MB per processor L2 cache
Memory	→ Min. 512 MB, ECC, 5-way interleaved industry-standard DIMM memory, expandable to 16 GB in Model 1 which includes 16 DIMM sockets and 32 GB in Model 2 which includes 32 DIMM sockets
System Architecture	→ Advanced dual 256-bit wide memory datapaths and crossbar switch technology providing 5.2 GBps (peak) memory bandwidth → Dual 64-bit PCI buses providing 532 MBps I/O throughput
Internal Expansion	→ Model 1: 6 x 64-bit PCI slots → Model 2: 10 x 64-bit PCI slots
Storage Controllers	→ Optional: FWD SCSI-2, Ultra SCSI RAID, CI, DSSI
Network Controllers	→ 10/100 Fast Ethernet, Gigabit Ethernet, FDDI, asynchronous communication
Drive Bays	→ Up to 8 internal hot-swap *Compaq StorageWorks*™ Ultra2 SCSI drive bays in the system chassis and tower models. Implemented using 2 internal disk drive cages, each supporting 4 x 1.6-inch drives. 4 removable media bays: 1 x 3.5-inch bay for diskette drive, 1 x 5.25-inch bay for CD-ROM and 2 open HH 5.25-inch bays for tape or hard drives. In pedestal models, an optional 28 additional internal hot-swap *StorageWorks* drives can be installed; up to 134 drive bays can be installed in the rack models by including 1 system drawer with 2 drive cages and 9 storage shelves
Power Supply	→ Up to 3 hot-swap 750 watt N+1 power supplies: 1 standard, 2 optional
Cooling	→ Hot-swap, redundant, variable-speed fans
Interfaces	→ 2 serial, 1 parallel, keyboard, mouse, 2 USB ports and Remote Server Management port
High Availability	→ Hot-swap redundant power and cooling, auto reboot, thermal management software, remote system management, RAID, hot-swap drives, memory failover, ECC memory, ECC cache, SMP CPU failover, error logging, optional uninterruptible power supply (UPS) and UPS Power Management Software
Optional Clustering	→ *Tru64* UNIX TruCluster Available Server, TruCluster Production Server and *OpenVMS* Clusters
Operating Systems	→ *Tru64* UNIX 4.0F, *OpenVMS* 7.2-1 and Linux
Software	→ Server management software standard with all *AlphaServer* ES40 models → Internet-energized software packaged with *Tru64* UNIX and *OpenVMS* systems
Service and Support	→ 3-year on-site Hardware Warranty[1] with 24-hour response → Service options for up to 24x7 coverage with 4-hour response time are available, along with a complete portfolio of worldwide service offerings

AlphaServer ES40 Model 1

6 PCI slots, 16 DIMM slots supporting up to 16 GB of memory

→ *Tru64* UNIX–67/667 MHz
8 MB cache 512 MB
DA-62BAA-CA

→ *Tru64* UNIX–67/667 MHz
8 MB cache 1 GB
DA-62BAA-DA

→ *OpenVMS*–67/667 MHz
8 MB cache 512 MB
DY-62BAA-CA

→ *OpenVMS*–67/667 MHz
8 MB cache 1 GB
DY-62BAA-DA

→ Linux Ready–67/667 MHz
8 MB cache 512 MB
DJ-62BAA-CA

→ *Tru64* UNIX–6/500 MHz
4 MB cache 512 MB
DA-62AAA-CA

→ *Tru64* UNIX–6/500 MHz
4 MB cache 1 GB
DA-62AAA-DA

→ *OpenVMS*–6/500 MHz
4 MB cache 512 MB
DY-62AAA-CA

→ *OpenVMS*–6/500 MHz
4 MB cache 1 GB
DY-62AAA-DA

→ Linux Ready–6/500 MHz
4 MB cache 512 MB
DJ-62AAA-EA

AlphaServer ES40 Model 2

10 PCI slots, 32 DIMM slots supporting up to 32 GB of memory

→ *Tru64* UNIX–67/667 MHz
8 MB cache 1 GB
DA-64BAA-DA

→ *Tru64* UNIX–67/667 MHz
8 MB cache 2 GB
DA-64BAA-EA

→ *OpenVMS*–67/667 MHz
8 MB cache 1 GB
DY-64BAA-DA

→ *OpenVMS*–67/667 MHz
8 MB cache 2 GB
DY-64BAA-EA

→ *Tru64* UNIX–6/500 MHz
4 MB cache 1 GB
DA-64AAA-DA

→ *Tru64* UNIX–6/500 MHz
4 MB cache 2 GB
DA-64AAA-EA

→ *OpenVMS*–6/500 MHz
4 MB cache 1 GB
DY-64AAA-DA

→ *OpenVMS*–6/500 MHz
4 MB cache 2 GB
DY-64AAA-EA

AlphaStation ES40 Model 1

→ *Tru64* UNIX–67/667 MHz
8 MB cache 256 MB
DA-62BAA-BW

→ *OpenVMS*–67/667 MHz
8 MB cache 256 MB
DY-62BAA-BW

→ Linux Ready–67/667 MHz
8 MB cache 256 MB
DJ-62BAA-BW

AlphaStation ES40 Model 2

→ *Tru64* UNIX–667 MHz
8 MB cache 512 MB
DA-64BAA-CW

→ *OpenVMS*–667 MHz
8 MB cache 512 MB
DY-64BAA-CW

→ Linux Ready–667 MHz
8 MB cache 512 MB
DJ-64BAA-CW

External *StorageWorks* Expansion

Ultra SCSI SE pedestal,
single-bus,
180 W P/S DS-BA356-KF

Ultra SCSI SE pedestal,
split-bus,
180 W P/S DS-BA356-KG

Ultra SCSI FWD pedestal,
180 W P/S DS-BA356-KH

Ultra SCSI RAID
controller, 64 MB
cache DS-HSZ70-AH

Devices for *StorageWorks* Shelves

9.1 GB 7,200 rpm
UltraSCSI drive DS-RZ1DA-VW

18.2 GB 7,200 rpm
UltraSCSI drive DS-RZ1EA-VW

36.4 GB 7,200 rpm
UltraSCSI drive DS-RZ1FB-VW

9.1 GB 10K rpm
UltraSCSI drive DS-RZ1DD-VW

18.2 GB 10K rpm
UltraSCSI drive DS-RZ1ED-VW

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

25/50 GB 8mm AIT
SCSI 3.5" tape drive . . . DS-TZS20-VW

35/70 GB DLT SE SCSI
tape drive DS-TZ89N-VW

2 GB QIC narrow SCSI
tape drive TZK11-VA

Communications Options

PCI 1-port 10/100 Mb
single-channel Ethernet
adapter
(twisted pair) 3X-DE600-AA

PCI 2-port 10/100 Mb
multi-channel Ethernet
adapter
(twisted pair) 3X-DE602-AA

Multi-mode fiber (MMF)
add-on daughter card for
3X-DE602-AA
(NHD2) 3X-DE602-FA

PCI 10/100 Mb 4-port
Ethernet adapter DE504-BA

Cable for 10Base-T
twisted pair
connection BN25G-xx

PCI Gigabit Ethernet adapter,
SC connectors, MMF-no
boot support . . . . DEGPA-SA

SC-SC dual fibre optic cable, mm,
pp xx = length
in meters BN34B-xx

PCI FDDI adapter, SAS,
MMF, SC connector . . . 3X-DEFPA-AC

PCI FDDI adapter, DAS,
MMF, SC connector . . . 3X-DEFPA-DC

MIC-SC dual fiber
optic cable BN34D-xx

SC-to-SC dual fiber
optic cable BN34B-xx

PCI FDDI adapter, DAS,
TP-PMD 3X-DEFPA-MC

PCI FDDI adapter, SAS,
TP-PMD, requires
BN25H-03 . . . . 3X-DEFPA-UC

Monitors

15" Corporate Series auto-scanning
color monitor, VGA to
1024 x 768 at 85 Hz . . . 3R-VRQV5-24

17" professional series auto-
scanning color monitor Flat
Definition CRT, 0.25mm aperture
grill pitch, VGA to 1280 x 1024
at 75 Hz 3R-VRQP7-24

19" professional series auto-
scanning color monitor, Flat
Definition Trinitron® CRT,
0.25mm aperture grill pitch,
VGA to 1280 x 1024 at
75 Hz 3R-VRQP9-24

21" auto-scanning color monitor,
Trinitron CRT, 0.28mm aperture
grill pitch, VGA to 1600 x 1200
at 85 Hz 3R-VRQP1-24

18" flat-panel TFT 8000 monitor, TFT
active matrix, in-plane switching
technology 160 degrees viewing
angles, 1280 x 1024 resolution,
brightness 165 nits, detachable
base SN-VRQF8-24

15" (15" viewable image size)
flat-panel TFT 5000 monitor, TFT
active matrix, in-plane switching
technology 160 degrees viewing
angles, 1280 x 1024 resolution,
brightness 165 nits, detachable
base SN-VRQF5-24

Graphics Adapters

ELSA GLoria Synergy™ graphics
with 8 MB SGRAM 1600 x 1200,
2D/3D graphics
accelerator . . . . SN-PBXGK-BB

Compaq PowerStorm™ 4D51T
advanced 3D graphics
accelerator . . . . SN-PBXGI-AD

PowerStorm 300 3D multi-head
graphics accelerator with 15 MB
frame buffer memory and 16 MB
texture memory . . . . SN-PBXGD-AD

PowerStorm 350 3D multi-head
graphics accelerator with 30 MB
frame buffer memory and 32 MB
texture memory . . . . . SN-PBXGD-AE

Compaq AlphaServer ES40 Options

SMP Upgrades

Tru64 UNIX—67/667 MHz
8 MB cache KN610-BB

OpenVMS—67/667 MHz
8 MB cache KN610-BC

Linux-ready—67/667 MHz
8 MB cache KN610-BA

Tru64 UNIX—6/500 MHz
4 MB cache
(for server only) KN610-AB

Digital™ *OpenVMS*—6/500 MHz
4 MB cache
(for server only) KN610-AB

Linux-ready—6/500 MHz
(for server only) KN610-AA

Key Options
Memory

512 MB (4 x 128) MB
DIMM kit MS610-CA

1 GB (4 x 256) MB
DIMM kit MS610-DA

2 GB (4 x 512) MB
DIMM kit MS610-EA

4 GB (4 x 1 GB) MB
DIMM kit MS610-FA

System Enclosures
(one required)

Tower
(floor standing)
20"-high tower
enclosure BA61M-MT

Pedestal
(floor standing with storage
expansion space)

31"-high pedestal enclosure,
120 V BA61P-PA
240 V BA61P-PB

Rack
(M-Series cabinet)

Rack-mount kit BA61R-RM

Cabinet 67"-high,
120 V dual 24 A
controller H9A10-MC

Cabinet 67"-high,
240 V dual 16 A
controller H9A10-MD

Cabinet 79"-high,
120 V dual 24 A
controller H9A15-MC

Cabinet 79"-high,
240 V dual 16 A
controller H9A15-MD

Rear cabinet
extender for
H9A10-MC/MD H9C10-TE

Rear cabinet
extender for
H9A15-MC/MD H9C15-TE

Cabinet front door
for H9A10-MC/MD H9C10-TF

Cabinet front door
for H9A15-MC/MD H9C15-TF

StorageWorks Ultra SCSI,
single-bus shelf kit BA36R-RC
split-bus shelf kit BA36R-RD

StorageWorks 4254
Ultra2 SCSI split-bus
14-slot shelf kit . . . . DS-SSL-RS

StorageWorks
RA 8000 HSZ80 single
controller TGB 400553-B21

StorageWorks
RA 8000 HSZ80 dual
controller TGB 400552-B21

StorageWorks
ESA 12000 HSZ80
256 MB cache/controller,
24-slot 400555-001

StorageWorks
RA 8000 FC HSG80
single controller 380550-B21

StorageWorks
RA 8000 FC HSG80
dual controllers 380560-B21

StorageWorks
ESA 12000 FC HSG80
256 MB cache/controller,
24-slot 380620-001

Power Supplies

Redundant power supply,
N+1 optional H7906-A9

System Chassis Internal Storage
(one cage and one drive required)

Four-bay disk
drive cage BA610-4D

18.2 GB 10K rpm
1.0" Universal
drive 3R-A0561-AA

9.1 GB 10K rpm
1.0" Universal
drive 3R-A0526-AA

System Chassis Internal Removable Drives

12/24 GB 5.25"
4mm DAT SCSI
tape drive TLZ10-LB

600 MB 32X
5.25" CD-ROM drive RRD47-VD

Storage Controllers

Combo card, PCI,
2-port SE, Ultra SCSI,
10/100 Mb Ethernet . . . . . KZPCM-DA

Ultra SCSI SE, PCI,
1-port adapter . . . . KZPBA-CA

Ultra SCSI FWD, PCI,
1-port adapter . . . . KZPBA-CB

Ultra SCSI RAID, PCI,
4 MB cache, 1 port . . . . KZPAC-AA

Ultra SCSI RAID, PCI,
4 MB cache, 3 ports . . . . . . KZPAC-CA

Ultra SCSI RAID, PCI,
8 MB cache, 3 ports . . . . . . KZPAC-CB

CI controller, PCI,
OpenVMS only . . . . CIPCA-BA

Ultra 2 (LVD) PCI,
1-port adapter 3X-KZPCA-AA

Ultra2 64-bit 3-channel
PCI to SCSI backplane
RAID controller 3X-KZPCC-CE

Ultra2 64-bit PCI to
FC host bus adapter,
single channel 3X-KGPSA-CA

Compaq AlphaServers

Compaq AlphaServer **ES40**

Mainframe-size performance and dependability—at a midrange server-size price—with the speed and power to handle crucial resource-intensive Internet, business and database applications.

Compaq Delivers Solutions for Business

Compaq Financial Services	**Customized leasing and financial asset management services:** ➜ *TradeIn 2000* is designed to make the trade-up process to new Compaq systems quick, easy and economical. For more information, visit our website at www.compaq.com/solutions/tradein ➜ Competitive rates, simple processing and 100 percent solution financing ➜ The ability to bundle payments for hardware, software and services into one fixed monthly payment ➜ Flexible invoicing options ➜ Online leased-asset tracking services to help manage your technology investment and reduce your total cost of ownership ➜ Customized "tech refresh" solutions for upgrading or expanding your technology over time ➜ A variety of lease structures and terms ➜ For more information, call 1-888-277-5942 or visit us at www.compaq.com/financialservices
Service and Support	**The industry's most comprehensive service and support program:** ➜ A global network of 27,000 IT experts in more than 100 countries ➜ 24-hours-a-day, 7-days-a-week technical support ➜ Testing to guarantee seamless operation with Compaq systems ➜ To learn more about Compaq customer services, contact your local Compaq representative or business partner at 1-800-289-9052 or visit us at www.compaq.com/services

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