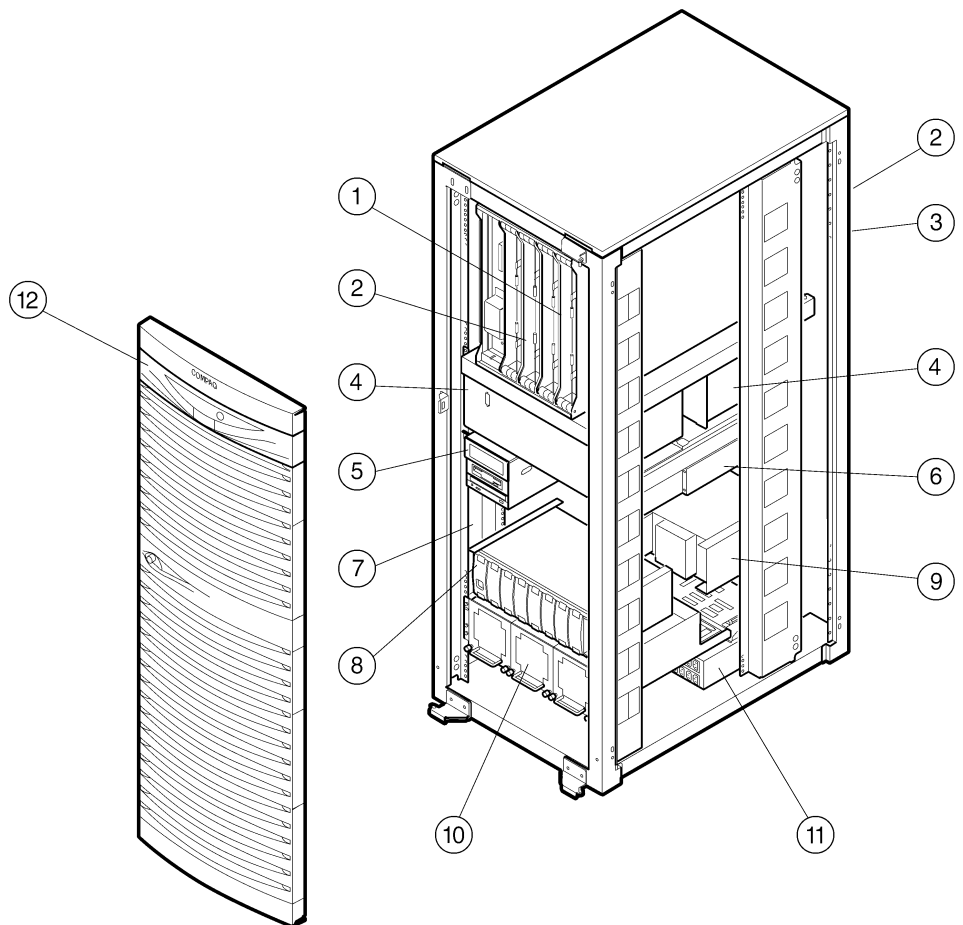


Overview

AT A GLANCE

- GS60E systems offer superior business and technical application performance with large I/O capacity to tackle the most demanding enterprise applications
- Processor module with two Alpha 21264 6/525-MHz CPUs; each with 4-MB L2 cache
- System I/O module with four I/O channels
- 1-GB or 4-GB memory
- PCI Shelf Mount Box
- 10/100 Mb Fast Ethernet network interface card
- UltraSCSI 1-port Single-ended adapter
- UltraSCSI 16-bit StorageWorks shelf with power supply and 1-m SCSI cable
- 9.1-GB UltraSCSI disk drive
- 600-MB CD-ROM drive
- PCI SCSI controller and 2-m SCSI cable for connection to CD-ROM
- 3-phase power system with power cord
- Redundant 48 VDC hot swappable power supplies to power CPU, memory, I/O, and PCI shelves
- 120 VAC power for StorageWorks shelves
- Shielded console cable for connection to console terminal
- Tru64™ UNIX or OpenVMS Factory Installed Software
- 90-day software product warranty
- Protected by Compaq Services, including one-year, on-site, four-hour response warranty; system installation must be ordered separately



- | | |
|---------------------------------------|---|
| 1. CPU module (front) | 7. Space for second PCI box |
| 2. Memory module (front/rear) | 8. StorageWorks shelf |
| 3. I/O module (rear) | 9. Space for second StorageWorks shelf |
| 4. Blowers | 10. 48 VDC power regulator (3) |
| 5. CD-ROM and optional diskette drive | 11. AC distribution panel |
| 6. PCI box (rear mount) | 12. Door and operator control panel (OCP) |

Standard Features

EXPANDED BASE SERVERS

Processor

Two Alpha 21264 6/525 MHz processors (2 CPUs per module)

Cache Memory

4-MB ECC L2 onboard cache per CPU

Architecture

64-bit bus-based system architecture with seven system bus slots for CPU, memory, and I/O modules (1.87-GB/sec sustained system bandwidth; 2.1-GB/sec peak bandwidth)

Upgradability

Supports additional processors, additional memory, additional I/O port modules, as well as storage and PCI I/O module options; in-cabinet upgrade available to next generation Alpha 21264 microprocessors

Standard 2 CPUs on one CPU module

Maximum 6 CPUs on three CPU modules

System I/O Module and System I/O Expansion

System I/O module with four I/O channels (KFTHA-AA)

Standard 1

Maximum 3

RETMA PCI shelf mount box (DWLPB-DA)

Standard 1

Maximum 11 (with I/O Expansion Cabinets)

Memory

Standard 1 GB or 4 GB on one memory module

Maximum 12 GB

Network Controller

PCI 10/100 Mb Fast Ethernet adapter UTP

Expansion

Internal Drive Bays Seven to 28 available internal to system cabinet; up to 84 drive bays with I/O expansion cabinet

Total PCI I/O Slots Up to 132 PCI I/O slots total with System and I/O Expansion Cabinets available and no internal storage (120 PCI I/O slots with internal storage and 10 DWLPB-DA PCI I/O buses)

PCI 12-24 internal to System Cabinet

Storage

CD-ROM 5.25" half height CD-ROM drive

Hard Drives 9.1-GB UltraSCSI disk drive (included)

18.2-GB, 36.4 GB UltraSCSI disk drives available

Diskette Drive Optional with Graphics Console Subsystem (3X-KFE72-LA)

Maximum Internal Storage 1019.2 GB (36.4-GB disk drives)

Storage Controller/Shelf

UltraSCSI 1-port Single-ended adapter (KZPBA-CA)

UltraSCSI 16-bit StorageWorks shelf (BA36R-RC) and 1-m SCSI cable, VHDCI male-to-68 HD male (BN38C-01)

Power Supplies

Redundant 48 VDC hot-swappable power supplies

MODELS

GS60E Tru64 UNIX Expanded Base Servers

Two 6/525-MHz CPUs

9.1-GB UltraSCSI Hard Drive

DA-483GG-AA/AB

(4-GB memory)

DA-483GE-AA/AB

(1-GB memory)

GS60E OpenVMS Expanded Base Servers

Two 6/525 MHz CPUs

9.1-GB UltraSCSI Hard Drive

DY-483GG-AA/AB

(4-GB memory)

DY-483GE-AA/AB

(1-GB memory)

-AA=120/208V US/Canada; 202V

Japan

-AB=380-415V Europe, 50/60 Hz

Standard Features

EXPANDED BASE SERVERS *(continued)*

Intelligent Manageability

Software features for advanced server and network management, including
ServerWORKS™ Manager
ServerWORKS workgroup administrator
ServerWORKS Manager application
SNMP agents to manage Microsoft Windows NT, SCO UNIX, Novell NetWare, and IBM OS/2
Intelligent Server Management

Security

Chassis on/off key lock
Multi-boot for choice of boot device

OS Support

Tru64 UNIX systems include pre-installed software, base license, unlimited user license, server extension license, Open Source Internet Solutions Software license, and Netscape Enterprise Server 3.0.
OpenVMS systems include pre-installed software, base license, and Enterprise Integration Server License Package V3.0A.
Support for up to two instances of either Tru64 UNIX or OpenVMS on a single hardware platform

Service and Support

Protected by Compaq Services, including a one-year, on-site hardware warranty with four-hour 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.

Options

System requirements:

- GS60E requires Tru64 UNIX V4.0E or V4.0F or OpenVMS V7.1-2 or V7.2-1.
- Software media and documentation for first system on-site
- Serial console terminal
- Installation and/or startup services

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

Processors (SMP Expansion)

Maximum two additional CPU modules per system for a system total of three

All CPU modules must be at same speed on same bus.

For systems with more than two processor modules, a minimum of two memory modules is recommended

Upgrades include processor module with Alpha microprocessors, SMP extension license, and end-user product warranty.

Dual-CPU module (Tru64 UNIX)	762P2-AX
Dual-CPU module (OpenVMS)	762P1-AX

Memory

Maximum 12-GB memory

1-GB and 2-GB memory modules have built in 2-way interleaving; additional interleaving is accomplished with the addition of more memory modules.

4-GB memory modules have built in 4-way interleaving; optimal performance is achieved when two 2-GB modules are paired with one 4-GB module or one 4-GB module is paired with another 4-GB module.

4-GB memory module	MS7CC-GA
2-GB memory module	MS7CC-FA
1-GB memory module	MS7CC-EA

I/O Expansion Buses

RETMA PCI shelf mount box for system and I/O expansion cabinets (included) with 12 PCI slots and required cable for connection to KFTHA-AA I/O channel; maximum of two per System Cabinet with one StorageWorks shelf standard; see "Expansion—System Cabinet and I/O Expansion Cabinet" for more details	DWLPB-DA
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Graphics console subsystem and diskette, includes two asynchronous serial ports, parallel port, keyboard and mouse ports, diskette drive, extension cables for video, keyboard, and mouse.	3X-KFE72-LA
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Note: Option required to support KZPAC-AA/CA RAID controllers—diskette drive is required to run the RAID Configuration Utility and to support hardware partitioning.

System I/O Modules

Systems support a maximum of 11 I/O channels with three KFTHA-AA modules installed and no internal storage, and 10 I/O channels with internal storage.

System I/O module (included) with four KFTHA-AA I/O channels for DWLPB-DA shelf mount boxes, maximum three per system

Storage Controllers

PCI UltraSCSI Controllers

Tru64 UNIX V4.0E or later supports eight KZPBA-Cx SCSI controllers per PCI, maximum of 64 per system.

OpenVMS V7.1.2 or later supports eight KZPBA-Cx SCSI controllers per PCI, maximum of 26 per system.

Tape and optical devices are not supported with KZPAC SCSI RAID controllers.

For cluster configurations, use Y cable (BN39A-0G) or SCSI Hub (BA35X-03/05).

Manufacturing may substitute correct cable lengths depending on configuration.

PCI Fibre Channel adapter (KGPSA-BC) (uses one PCI slot); Tru64 V4.0F supports eight per PCI, maximum eight per system, OpenVMS V7.2-1 supports four per PCI, maximum four per system; requires Fibre Channel cable	380574-001
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Fibre Channel cable (BNGBX-xx) xx=02, 05, 15, 30, 50 meters x=1, 2, 3, 4, 5	234457-B2x
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PCI 1-port UltraSCSI Single-ended host adapter (uses one PCI slot)—included	KZPBA-CA
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PCI 1-port UltraSCSI Differential host adapter (uses one PCI slot); OpenVMS V7.1-1H1 or later supports multi-host SCSI clusters, requires BN38C-xx cable	KZPBA-CB
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1-m VHDCI male-to-68-pin HD male UltraSCSI cable x=01, 02, 03, 05 meters	BN38C-xx
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PCI 1-port RAID (FWSE) controller (UltraSCSI ready) with 4-MB cache memory (uses one PCI slot) allows RAID levels 0, 0+1, 1, and 5; includes RAID Array 230/plus subsystem software and documentation kit; 3X-KFE72-LA option required to run RCU; tape and optical drives not supported; four per PCI, maximum of four per system	KZPAC-AA
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Options

Storage Controllers (continued)

PCI UltraSCSI Controllers (continued)

PCI 3-port RAID (FWSE) controller (UltraSCSI-ready) with 4-MB cache memory (uses 2 PCI slots) allows RAID levels 0, 0+1, 1, and 5; includes RAID Array 230/plus subsystem software and documentation kit; 3X-KFE72-LA option required to run RCU; tape and optical drives not supported; four per PCI, maximum of four per system; requires BN31K-0E or KZPAC-SB for third port connection	KZPAC-CA
PCI 3-port RAID (FWSE) controller (UltraSCSI-ready) with 8-MB cache memory (uses two slots) allows RAID levels 0, 0+1, 1, and 5; includes RAID Array 230/plus subsystem software and documentation kit; 3X-KFE72-LA option required to run RCU; tape and optical drives not supported; four per PCI, maximum four per system; requires BN31K-0E or KZPAC-SB for third port connection	KZPAC-CB
SCSI cable/bulkhead assembly kit with two ports for KZPAC-CA/CB; allows connection of one third port outputs using one PCI bulkhead slot	KZPAC-SB
SCSI cable/bulkhead assembly kit with one port for KZPAC-CA/CB, allows connection of one third port output using one PCI bulkhead slot	BN31K-0E
1-m VHDCI male-to-VHDCI male UltraSCSI cable, connects KZPAC to front-mounted StorageWorks shelf.	BN37A-01
2-m VHDCI male-to-VHDCI male UltraSCSI cable, connects KZPAC to rear-mounted StorageWorks shelf.	BN37A-02
Battery backup for cache memory option for KZPAC controller, recommended for all KZPAC controllers	KZPSC-UB
8-MB cache memory option	MS100-BB
DSSI and CI Adapters (OpenVMS only)	
PCI DSSI adapter, 12 per PCI, maximum of 24 per system (KFPSA, KFMSB not supported on same DSSI bus)	KFPSA-AA
External shielded cable (MR/MR connectors); select length—09, 16, 25 feet	BC29S-xx
External shielded cable (MR/PS connectors); select length—06, 09, 16, 30 feet	BC29R-xx
PCI CI adapter, four per PCI, maximum of 26 per system; requires two PCI slots for adapter and power	CIPCA-AA

Storage Controllers (continued)

DSSI and CI Adapters (OpenVMS only) (continued)

Same as CIPCA-AA except uses two PCI slots for adapter	CIPCA-BA
Computer interconnect cable sets; connects CIPCA to Star Coupler; select length—10, 20, 45 m	BNCIA-xx

External Storage Controllers

HSZ70 UltraSCSI RAID Array controllers are supported under Tru64 UNIX V3.2G, V4.0B or later and OpenVMS V6.2-1H3 for direct attachments or OpenVMS V7.1-1H1 or later for cluster support.	
HSJ50 CI Storage Array Controllers are supported under OpenVMS V6.2-1H3 or later with CIPCA-AA/BA or CIXCD-AC CI controllers; QB-5C4AA-SA software kits are required for each external cache (one for HSJ50, two for HSJ52, four for HSJ54).	
Controllers require KZPSA, KZPBA, KFPSA, or CIPCA SCSI adapters or controllers, as appropriate.	
HSZ70 requires QB-5SBAB-SA/SB for Tru64 UNIX, or QB-5SBAC-SA/SB for OpenVMS.	
Fibre Channel controller (HSG80), 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
UltraSCSI controller (HSZ80), includes 2-MB cache expandable to 32 MB; requires 400569-001 for Tru64 UNIX or 400571-001 for OpenVMS	400564-B21
UltraSCSI controller (HSZ80), includes 2-MB cache expandable to 128 MB; requires 400569-001 for Tru64 UNIX or 400571-001 for OpenVMS.	400565-B21
StorageWorks UltraSCSI RAID Array DS-HSZ70-AH controller, includes 64-MB cache expandable to 128 MB; requires DS-HS35X-BC external cache battery and HSZ70 kit .	
32-MB cache 6-channel CI array controller with cache battery	HSJ50-AF
128-MB cache 6-channel CI array controller with cache battery	HSJ50-AJ
Dual 64-MB cache CI array controller with cache batteries	HSJ52-AF
Dual 128-MB cache CI array controller with cache batteries	HSJ52-AH
Dual 256-MB cache CI array controller with cache batteries	HSJ52-AJ
Quad 512-MB cache CI array controller with cache batteries	HSJ54-AJ

Options

Storage Devices

When multiple storage devices are configured with the system, specify which devices should be installed inside the system cabinet, inside the system expansion cabinet, or installed in the external StorageWorks cabinet. Line item sequencing allows Manufacturing to configure storage options in the appropriate cabinet.

List storage options to be integrated in system cabinet immediately following system part number.

List storage options to be integrated in StorageWorks cabinet immediately following StorageWorks cabinet part number.

Internal Storage

System cabinet provides space for up to four BA36R-RC/RD StorageWorks shelves; each shelf holds a maximum of two 5.25" devices and one 3.5" device or seven 3.5" devices.

System cabinet includes one UltraSCSI StorageWorks shelf (BA36R-RC) and one PCI shelf (DWLPB-DA).

UltraSCSI Options

Each UltraSCSI StorageWorks shelf requires SCSI controller and SCSI cable to connect controller to shelf; refer to UltraSCSI Configuration Guidelines (EK-ULTRA-CG.C01).

UltraSCSI single-channel StorageWorks shelf (included) with 16-bit I/O personality module (DS-BA35X-FA), 180W AC power supply, DC fans, RETMA rackmounting hardware; supports 16-bit UltraSCSI devices and some 8-bit narrow SCSI devices depending on compliance with minimum revision levels

BA36R-RC

UltraSCSI dual-channel StorageWorks shelf, includes 16-bit I/O personality module (DS-BA35X-FB), 180 W AC power supply, DC fans, RETMA rack-mounting hardware; supports 16-bit UltraSCSI devices and some 8-bit narrow SCSI devices, depending on compliance with minimum revision levels.

BA36R-RD

Power Option for BA36R Shelves

An additional power supply provides N+1 power for StorageWorks shelves; power supply uses 3.5" slot in StorageWorks shelf, reducing total number of devices supported by one.

180W 120 VAC Redundant Power Supply for StorageWorks shelf

CK-BA35X-HH

SCSI Signal Converter

UltraSCSI StorageWorks DOC Signal Converter, required to convert FWD signals from KZPBA-CB to single-ended for connection to DS-BA35X-FA personality module in StorageWorks shelf, field installed only

DS-BA35X-DA

Internal Storage (continued)

SCSI Signal Converter (continued)

Fast20 Personality Module for BA356 single-ended-to-single-ended 1-channel, field installed only

DS-BA35X-FA

Fast20 Personality Module for BA356 single-ended-to-single-ended 2-channel, field installed only

DS-BA35X-FB

Cable for above

BN38C-02

UltraSCSI Hubs

UltraSCSI hubs are supported with KZPBA-CB PCI differential SCSI adapters.

UltraSCSI Hub with three differential ports (two host ports and one storage port), no single-ended ports, in 3.5" SBB, UltraSCSI cables not included

DS-DWZZH-03

UltraSCSI Hub with five differential ports, no single ended ports, consists of four host ports and one storage port in 5.25" SBB, UltraSCSI cables not included

DS-DWZZH-05

UltraSCSI Hub with one differential port and two single-ended ports in 3.5" SBB, UltraSCSI cables not included

DS-DWZZH-21

16-bit Wide Drives

36.4-GB 10,000 rpm 16-bit UltraSCSI disk drive SBB (not supported on KZPAC controllers)

DS-RZ1FB-VW

18.2-GB 10,000 rpm 16-bit UltraSCSI disk drive SBB (not supported on KZPAC controllers)

DS-RZ1ED-VW

18.2-GB 7200 rpm 16-bit UltraSCSI disk drive SBB (not supported on KZPAC controllers)

DS-RZ1EA-VW

9.1-GB 10,000 rpm 16-bit UltraSCSI disk drive SBB

DS-RZ1DD-VW

9.1-GB 7200 rpm 16-bit UltraSCSI disk drive SBB

DS-RZ1DA-VW

Tape Devices

Tape drives not supported with KZPAC RAID controller

8-GB DAT 3.5" SCSI tape drive in StorageWorks carrier; requires OpenVMS V6.2-1H3 or later or Tru64 UNIX V3.2C or later and System Console Firmware Revision 3.0-9

TLZ09-VA

32/64-GB DAT tape loader in StorageWorks carrier

TLZ9L-VA

12/24-GB 4mm DAT SCSI tape drive in StorageWorks carrier

DS-TLZ10-VA

20/40-GB DLT SCSI tape drive in 5.25" StorageWorks carrier

TZ88N-VA

35/70-GB DLT SCSI tape drive in 5.25" StorageWorks carrier

DS-TZ89N-VW

Solid State Disks

Supported with KZPBA controller

Options

Internal Storage (continued)

Solid State Disks (continued)

Solid state disks cannot be combined with RZxx disks/tapes on same SCSI bus.

3.5" and 5.25" solid state disks not supported on same SCSI bus

1.6-GB Fast20 5.25" Ultra solid state disk DS-EZ716-VW

1.1-GB Fast20 5.25" Ultra solid state disk DS-EZ711-VW

536-MB Fast20 5.25" Ultra solid state disk DS-EZ705-VW

268-MB Fast20 3.5" Ultra solid state disk DS-EZ42-VW

134-MB Fast20 3.5" Ultra solid state disk DS-EZ41-VW

RAID Storage Systems

ESA 12000 Storage Arrays and RAID Array 8000 (HSG80/HSZ80) product sets are supported on Tru64 UNIX and OpenVMS systems.

ESA 10000 Storage Arrays and RAID Array 7000 (HSZ70 Product Set) are supported on Tru64 UNIX and OpenVMS systems.

Ordering and configuring information is available at www.compaq.com/products/storageworks/.

External Storage Devices

The following devices can be added as required:

SW5XX, SW6XX, SW8XX Storage Cabinets

SCSI Disk Drives

Tape Drives

TZ87, TZ857 (loader support for Tru64 UNIX available via DECnsr), TZ877, TZ88, TZ885, TZ887, TSZ07, TLZ09, TKZ9E, TKZ9F, TLZ9L, TKZ6x, TL810, TL812, TL820, TL822, TL826, DS-TL893-BA, DS-TL894-BA, DS-TL896-BA, DS-TLZ10-VA, DS-TL895-xx

Networks and Communications

Connection of system to Ethernet requires twisted-pair cable, except when using DE500-FA.

PCI LAN Communications Controllers

Requires DWLPB-DA PCI shelf mount box (one included)

Maximum of six DEFPA-AB/DB/UB/MB FDDI controllers (100 Mb/sec) per system

Each adapter/controller uses one PCI slot

PCI Ethernet 1-port adapter with three connector types, OpenVMS and Tru64 UNIX support eight per PCI, maximum of eight per system DE450-CA

PCI Fast Ethernet (10/100 32 bit) fibre adapter, OpenVMS and Tru64 UNIX support eight per PCI, maximum of eight per system DE500-FA

Networks and Communications (continued)

PCI LAN Communications Controllers (continued)

PCI Fast Ethernet (10/100 Mb) Adapter, OpenVMS and Tru64 UNIX support eight per PCI, maximum eight per system—included DE500-BA

Category 5 cross-over cable for point-to-point, unshielded BN24Q-xx

Category 5 cross-over cable for point-to-point, shielded BN28Q-03

Category 5 straight through for system to repeater or hub, unshielded BN25G-xx

Twisted pair, shielded (-03, -04, -07 available lengths) BN26M-xx

PCI FDDI controller Fibre—Single attachment station MultiMode Fibre, OpenVMS and Tru64 UNIX support six per DWLPB, maximum of six per system; requires BN34x SC type connecting cable. DEFPA-AB

PCI FDDI controller Fibre—Dual attachment station MultiMode Fibre, OpenVMS and Tru64 UNIX support six per DWLPB, maximum of six per system. Requires BN34x SC type connecting cable. DEFPA-DB

MultiMode Fibre Optic Duplex cable, SC connector-to-ST connector BN34A-xx

MultiMode Fibre Optic Duplex cable, SC connector-to-SC connector BN34B-xx

MultiMode Fibre Optic Duplex cable, SC connector-to-MIC connector BN34D-xx

PCI FDDI controller Copper, Dual attachment station UTP, OpenVMS and Tru64 UNIX support six per DWLPB, maximum six per system; requires BN26x or BN25H connecting cables. DEFPA-MB

PCI FDDI controller Copper, Single attachment station UTP, OpenVMS and Tru64 UNIX support six per DWLPB, maximum six per system; requires BN26x or BN25H connecting cables. DEFPA-UB

8-pin MP-to-8-pin MP, screened, EIA/TIA category 5 cable BN26M-xx

8-pin MP-to-8-pin MP, screened, crossover, EIA/TIA category 5 cable BN26S-xx

3-m unshielded twisted pair RJ-45 connectors BN25H-03

PCI Gigabit Ethernet adapter, one per DWLPB, maximum of four per system; does not support network boot DEGPA-SA

Options

Networks and Communications (continued)

PCI LAN Communications Controllers (continued)

- PCI ATMworks 351 bus adapter DGLPA-FA/UA
(uses one PCI slot); Tru64 UNIX supports two per PCI, maximum of two per system; DGLPA-FA/UA are not supported on the same system as DGLPB-AB.
- PCI-to-ATMworks 155 Mb Adapter – 3X-DAPBA-FA
Fibre; Tru64 UNIX and appropriate patch kits (patch kit 1 for V4.0F; patch kit 2 for V4.0E) support a maximum of six per system; refer to <http://www.service.digital.com> for patch kit availability—SN-PBXNP-AC PCI Token Ring Adapter is not supported in same system with ATM 155 (DAPBA) adapter; if ATMworks 351 (DGLPA) NIC card is installed, follow that adapter's configuration rules; only one ATM adapter can be installed on same bus as ATMworks 351 network interface card
- PCI-to-ATMworks 622 Mb Adapter – 3X-DAPCA-FA
Fibre; Tru64 UNIX and appropriate patch kits (patch kit 1 for V4.0F; patch kit 2 for V4.0E) support a maximum of two per system. Refer to <http://www.service.digital.com> for patch kit availability—SN-PBXNP-AC PCI Token Ring Adapter is not supported in the same system with the ATM 622 (DAPCA) adapter; if ATMworks 351 (DGLPA) NIC card is installed, follow that adapter's configuration rules; only one ATM adapter can be installed on same bus as ATMworks 351 network interface card
- Same as above except UTP 3X-DAPBA-UA
- PCI Token Ring Adapter, Tru64 UNIX and OpenVMS support four per PCI, maximum of four per system; minimum system console support required V4.0 AXP CD release; requires BC26M cable SN-PBXNP-AC
- PCI Asynchronous 4-port adapter, Tru64 UNIX and OpenVMS support two per PCI, maximum of two PBXDA-xx per system PBXDA-AA
- PCI Asynchronous 8-port adapter, Tru64 UNIX and OpenVMS support two per PCI, maximum of two PBXDA-xx per system. PBXDA-AB
- PCI Asynchronous 16-port adapter, Tru64 UNIX and OpenVMS support 2 per PCI, maximum 2 PBXDA-xx per system PBXDA-AC

Networks and Communications (continued)

PCI LAN Communications Controllers (continued)

- PCI Synchronous 2-port controller, PBXDP-AA
Tru64 UNIX and OpenVMS support two PBXDP-xx per system.
- PCI Synchronous 4-port controller, PBXDP-AB
Tru64 UNIX and OpenVMS support two PBXDP-xx per system.
- PCI Synchronous 8-port controller, PBXDP-AC
Tru64 UNIX and OpenVMS support two PBXDP-xx per system.

Local and Wide Area Communications Servers/Network Connectivity Products

Each communications server requires 802.3/Ethernet connection. Depending on server selected, either ThinWire BNC type connection (e.g., BC16M cable) or thick wire 15-pin AUI transceiver cable (e.g., BNE3x) is required. Additional items also required—see the *Network Products Guide*.

MEMORY CHANNEL

Up to two PCI System Area Network controllers are supported on GS60E with Console Firmware V5.5-x or later.

Tru64 UNIX Systems

Requires Tru64 UNIX V4.0F with TruCluster V1.6 or later

Each system node in a MEMORY CHANNEL cluster requires a TruCluster Production Server (QB-3RLAG-KA) or TruCluster MEMORY CHANNEL (QB-4ZCAG-AA) software license.

TruCluster MEMORY CHANNEL license (QB-4ZCAG-AA), normally used for high-performance technical computing applications, is not required if systems include a TruCluster Production Server license (QB-3RLAG-KA).

The following options are currently not supported with MEMORY CHANNEL: DJ-ML200, CIPCA.

OpenVMS Systems

Requires OpenVMS V7.1-2 or later and OpenVMS Cluster license (QL-MUZAG-AA)

2-node clusters can be configured by ordering a CCMAB-AA for each system and one BN29B-04 or BN29B-10 cable; cable connects directly to CCMAB-AA in each system.

For three or four system clusters, order one CCMAB-AA adapter and one BN29B-04 or BN29B-10 cable for each system and one CCMHB-AA hub for the cluster.

CCMHB-AA includes four CCMLB-AA line cards and supports up to four nodes; expansion up to eight system nodes can be achieved by adding up to four additional CCMLB-AA line cards

If two or more CCMAB-AA controllers are configured in each system, a second CCMHB-AA hub is required for clusters with more than two nodes; in 2-node clusters the CCMAB-AA may be directly connected.

Options

MEMORY CHANNEL (continued)

OpenVMS Systems (continued)

In cases where nodes must be separated by a longer distance than standard copper cables allow, the CCMFB option converts the output of the standard CCMAB controller or CCMLB line card to single-mode fiber optic cable. The fiber optic connection may be up to 2,000 meters long between two CCMAB controllers connected in virtual hub mode, or 3,000 meters between a CCMAB controller and a CCMHB hub. (The connection from the CCMHB hub to a second system may also be 3,000 meters). The CCMFB option requires a second PCI slot in the system from which it draws power only. It is normally connected to the corresponding CCMAB controller with the short BN39B-01 cable. The CCMFB is also used in the CCMHB hub where it occupies a slot normally used by the CCMLB line card, limiting expansion to four radial fiber optic connections.

The CCMHB-BA hub expansion box provides additional slots for up to eight fiber optic connections. Two standard length, single-mode fiber optic cables are available (BN34R-10 and BN34R-31); however, users normally provide this connection. Customers should reference the TIA/EIA 568-A Commercial Building Telecommunications Cabling Standard, Section 12.3.4. Fiber optic connectivity is completely transparent to the systems using it and has no performance impact.

MEMORY CHANNEL Controller

PCI System Area Network controller, maximum of two	CCMAB-AA
System Area Network hub with four line cards; includes BN19P-2E power cord for Canada, Japan, and U.S. operations; country-specific power cord for other regions is required.	CCMHB-AA
MEMORY CHANNEL hub expansion box with no line cards	CCMHB-BA
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
Copper-to-single mode fiber optic converter	CCMFB-AA
TruCluster Production Server Software for Tru64 UNIX	QB-3RLAG-AA
Tru64 UNIX Driver for MEMORY CHANNEL license	QB-4ZCAG-AA
OpenVMS Cluster license for Alpha systems	QL-MUZAG-AA

MEMORY CHANNEL (continued)

MEMORY CHANNEL Power Cords

Ireland, United Kingdom	BN19A-2E
Egypt, India	BN19S-2E
Central Europe	BN19C-2E
Israel	BN18L-2E
Switzerland	BN19E-2E
Italy	BN19M-2E
Denmark	BN19K-2E
Australia, New Zealand	BN19H-2E

Console Terminal

VT console terminal with EIA-232 25-pin DSUB connector is required, (even with KFE72 installed) for system power-up, diagnostics and console display, order unless otherwise available.

Shielded console cable included for connection to console terminal.

VT510 terminal VT510-xx

Graphics Support for Tru64 UNIX

Graphics support for GS60E running Tru64 UNIX V4.0E or later can be provided through combined use of 3X-KFE72-LA port option and SN-PBXGB-AA graphics adapter.

SN-PBXGB-AA requires 17" or 21" Professional Series monitor and keyboard for graphics support, unless available on-site

Selection of video extension cable and country-specific power cord is required for all monitor variants.

Graphics console subsystem for Tru64 UNIX systems, includes 3X-KFE72-LA
diskette drive and mouse.

PowerStorm 3D30 2D/3D graphics adapter SN-PBXGB-AA

Monitors

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; requires video extension cable and country-specific power cord; Northern Hemisphere without power cord	SN-VRQP7-24
Same as above except Southern Hemisphere without power cord	SN-VRQP7-23

Options

Monitors (continued)

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; requires video extension cable and country-specific power cord; Northern Hemisphere without power cord	SN-VRQP1-24
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Same as above except Southern Hemisphere without power cord	SN-VRQP1-23
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Video Extension Cable

1.8-m video extension cable	BN39C-02
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Monitor Power Cords

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

Keyboards

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

Tru64 UNIX U.S./English keyboard	SN-LKQ47-AA
Tru64 UNIX Belgian keyboard	SN-LKQ47-AB
Tru64 UNIX Canadian/French keyboard	SN-LKQ47-AC
Tru64 UNIX Danish keyboard	SN-LKQ47-AD
Tru64 UNIX UK keyboard	SN-LKQ47-AE
Tru64 UNIX Finnish keyboard	SN-LKQ47-AF
Tru64 UNIX German keyboard	SN-LKQ47-AG
Tru64 UNIX Dutch keyboard	SN-LKQ47-AH
Tru64 UNIX Italian keyboard	SN-LKQ47-AI
Tru64 UNIX Swiss/French keyboard	SN-LKQ47-AK
Tru64 UNIX Swedish keyboard	SN-LKQ47-AM
Tru64 UNIX Norwegian keyboard	SN-LKQ47-AN
Tru64 UNIX French keyboard	SN-LKQ47-AP
Tru64 UNIX Latin-American keyboard	SN-LKQ47-AR
Tru64 UNIX Spanish keyboard	SN-LKQ47-AS
Tru64 UNIX Hebrew keyboard	SN-LKQ47-AT
Tru64 UNIX Portuguese keyboard	SN-LKQ47-AV
Tru64 UNIX BHCSY keyboard	SN-LKQ47-AX

Keyboards (continued)

Tru64 UNIX International keyboard	SN-LKQ47-BA
Tru64 UNIX Greek keyboard	SN-LKQ47-BH
Tru64 UNIX Taiwanese keyboard	SN-LKQ47-BI
Tru64 UNIX Korean keyboard	SN-LKQ47-BK
Tru64 UNIX Polish keyboard	SN-LKQ47-BP
Tru64 UNIX Hungarian keyboard	SN-LKQ47-BQ
Tru64 UNIX Arabic keyboard	SN-LKQ47-BR
Tru64 UNIX Cyrillic keyboard	SN-LKQ47-BT
Tru64 UNIX Turkish keyboard	SN-LKQ47-BU
Tru64 UNIX Czech keyboard	SN-LKQ47-BV
Tru64 UNIX Thai keyboard	SN-LKQ47-CB
Tru64 UNIX S. Chinese keyboard	SN-LKQ47-CV
Tru64 UNIX Slovak keyboard	SN-LKQ47-CZ
OpenVMS U.S./English keyboard	LK461-A2
OpenVMS Belgian keyboard	LK461-AB
OpenVMS Canadian/French keyboard	LK461-AC
OpenVMS Danish keyboard	LK461-AD
OpenVMS Finnish keyboard	LK461-AF
OpenVMS German keyboard	LK461-AG
OpenVMS Dutch keyboard	LK461-AH
OpenVMS Italian keyboard	LK461-AI
OpenVMS Swiss/French keyboard	LK461-AK
OpenVMS Swiss/German keyboard	LK461-AL
OpenVMS Swedish keyboard	LK461-AM
OpenVMS Norwegian keyboard	LK461-AN
OpenVMS French keyboard	LK461-AP
OpenVMS Canadian/English keyboard	LK461-AQ
OpenVMS Spanish keyboard	LK461-AS
OpenVMS Hebrew keyboard	LK461-AT
OpenVMS Portuguese keyboard	LK461-AV
OpenVMS Greek keyboard	LK461-BH
OpenVMS Romanian keyboard	LK461-BL
OpenVMS Polish keyboard	LK461-BP
OpenVMS Hungarian keyboard	LK461-BQ
OpenVMS Cyrillic keyboard	LK461-BT
OpenVMS Turkish keyboard	LK461-BU
OpenVMS Czech keyboard	LK461-BV
OpenVMS Turkish-French keyboard	LK461-BW
OpenVMS Yugoslavian keyboard	LK461-BY
OpenVMS Slovak keyboard	LK461-CZ

Options

Tru64 UNIX and OpenVMS Partitions

A single GS60E can be divided into a maximum of two partitions. Each partition is allocated its own set of hardware resources— CPU, memory, and I/O module. Partitioning support requires Tru64 UNIX V4.0F or later, or OpenVMS V7.2 or later operating system and partitioning licenses.

System Console Firmware Revision 5.5x is required.

Each partition requires a minimum of one CPU module, one memory module, one I/O module, and one DWLPB (PCI and PIU shelf) per partition.

Each partition has its own instance of the operating system, independent system console, and error log.

Each partition must have a dedicated console terminal. The first partition will obtain this support in a standard manner via the server console panel. The second partition requires a 3X-KFE72-LA to obtain this console support. H8571-J adapter is required to connect 3X-KFE72-LA to the console terminal; 3X-KFE72-LA includes a diskette drive, which is required to support RAID Configuration Utility (RCU).

For more information regarding Tru64 UNIX V4.0F partitioning configuration hardware guidelines and console partition commands, see Tru64 UNIX V4.0F SPD 41.61.22 and Tru64 UNIX V4.0F System Administration Guide, Appendix E.4.

For more information regarding OpenVMS Galaxy partitioning guidelines and support, see <http://www.openvms.digital.com/availability/GALAXY.HTML>.

Minimum Hardware Required per GS60E Partition

Dual Alpha 21264 6/525-MHz CPU module (at least one Rev. D01 CPU Alpha 21264 module per system).

MS7CC-EA/FA/GA memory module (1 GB, 2 GB, 4 GB)

KFTHA-AA I/O module

DWLPB-DA shelf mount box

3X-KFE72-LA graphics console subsystem

3X-RRDRX-AA CD-ROM drive or network adapter; additional SCSI CD-ROM's can be configured in StorageWorks shelf using supported I/O adapters

Console terminal with shielded console cable

Tru64 UNIX Hardware Partition license per partition for second partition support (QM-MT4AA-AA)

OpenVMS software partition license is required for each CPU in a partition (QL-66XAA-3B/3C/3D/3F)

Unsupported Options for GS60E Partitions

MEMORY CHANNEL; clustering of a partitioned GS60E is not supported

NVRAM (Prestoserve Non-Volatile Random Access Memory)

EISA devices

Supported Options List (SOL) restriction rules still apply for maximum configurations of GS60E systems.

Expansion—System Cabinet and I/O Expansion Cabinet

System Cabinet

System Cabinet includes PCI I/O shelf and StorageWorks shelf, and three 1600W 48 VDC power regulators for redundant hot-swappable power support

Provides space for four BA36R-RC/RD UltraSCSI StorageWorks Shelves, one DWLPB-DA (PCI shelf mount boxes), or two BA36R-RC/RD StorageWorks shelves and two PCI shelves

I/O Expansion Cabinet

Includes two 1600W 48 VDC power regulators providing N+1 hot swappable power redundancy; third space available for additional power supply for added power protection

Maximum of two I/O Expansion Cabinets per system

PCI I/O shelf included in I/O Expansion Cabinet

Maximum of four PCI I/O shelves and three StorageWorks shelves or four StorageWorks shelves and three PCI I/O shelves supported in each I/O Expansion Cabinet

StorageWorks shelves mount from top of cabinet downward, front mount only.

PCI I/O shelves mount from bottom of cabinet upward, rear mount only.

I/O Expansion Cabinet (top gun blue) 3X-H9A22-BA
3-phase power RETMA mounting,
maximum of two per system;
120/208V US/Canada, 202V
Japan 50-60 Hz

Same as above except 380-415V 3X-H9A22-BB
Europe 50-60 Hz

Cabinet Power Options

System Cabinet with three power supplies and I/O Expansion Cabinet with two power supplies include necessary power and power redundancy required for all internal system components.

1600W power converter, 48V output, H7506-AA
maximum of three per cabinet;
option can be used to replace an
existing power regulator in the
System Cabinet and I/O Expansion
Cabinet or provide additional power
redundancy in the I/O Expansion
Cabinet

Software

Tru64 UNIX

Tru64 UNIX systems include Traditional Unlimited User License, Server Extension, and Open Source Internet Solutions Software Kit.

Media and documentation are required for first system on-site.

Software Processor Code = G

Tru64 UNIX media and online documentation on CD-ROM QM-MT4AA-H8

Options

Software (continued)

Tru64 UNIX (continued)

Tru64 UNIX full hard copy documentation	QA-MT4AA-GZ
StorageWorks Software Package with licenses for Logical Storage Manager and AdvFS Utilities	QB-5RXAG-AA
TruCluster Available Server license and documentation	QB-05SAG-AA
TruCluster Available Server license	QL-05SAG-AA
Advanced Server for Tru64 UNIX, 25 Client Concurrent License	QL-5U29M-3D
Advanced Server for Tru64 UNIX, 50 Client Concurrent License	QL-5U29M-3E
Advanced Server for Tru64 UNIX, 100 Client Concurrent License	QL-5U29M-3F
Advanced Server for Tru64 UNIX, 250 Client Concurrent License	QL-5U29M-3G
Advanced Server for Tru64 UNIX, 500 Client Concurrent License	QL-5U29M-3H
Layered products media and documentation for Tru64 UNIX on CD-ROM	QA-054AA-H8
DECnet/OSI end-system license	QL-MTJAG-AA
DECnet/OSI extended function license	QL-MTKAG-AA

OpenVMS

OpenVMS systems include OpenVMS base license with system manager license and Compaq Enterprise Integration Server License Package for OpenVMS Revision V3.0A.

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 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.

Software (continued)

OpenVMS (continued)

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-MT2AG-AA
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 documentation on CD-ROM	QA-MT1AA-H8
OpenVMS base hard copy documentation	QA-09SAA-GZ
Layered products media and documentation for OpenVMS on CD-ROM; includes Compaq Enterprise Integration Server for OpenVMS media and documentation	QA-03XAA-H8
DECnet/OSI end-system license	QL-MTFAG-AA
DECnet/OSI extended function license	QL-MTHAG-AA
Cluster License for OpenVMS Alpha	QL-MUZAG-AA

Hardware and Software Supplemental Support Services

Installation or Installation and Startup is required for all AlphaServer GS60E systems. Consult a Compaq Customer Service Account Representative for assistance in selecting the support plan that is most appropriate. For more information on Compaq Services, see <http://www.compaq.com/services>.

Installation Services

Installation Service Package FM-ALP82-IN

Hardware Supplemental Support— 4-GB memory Americas and Asia Pacific only

Systems include one-year hardware warranty, on-site, same day, 4-hour response time; select optional Hardware Supplemental Support Services, if required.

Years 1-3, 5 x 9, 4-hour response time	FM-8V4HR-36
Years 1-3, 5 x 12, 4-hour response time	FM-8V512-36
Years 1-3, 6 x 16, 4-hour response time	FM-8V616-36
Years 1-3, 7 x 24, 4-hour response time	FM-8V724-36
Years 1-5, 5 x 9, 4-hour response time	FM-8V4HR-60
Years 1-5, 5 x 12, 4-hour response time	FM-8V512-60

Options

Hardware and Software Supplemental Support Services (continued)

Hardware Supplemental Support— 1-GB memory Americas and Asia Pacific only (continued)

Years 1-5, 6 x 16, 4-hour response time	FM-8V616-60
Years 1-5, 7 x 24, 4-hour response time	FM-8V724-60
Years 1-3, 5 x 9, 4-hour response time	FM-8D4HR-36
Years 1-3, 5 x 12, 4-hour response time	FM-8D512-36
Years 1-3, 6 x 16, 4-hour response time	FM-8D616-36
Years 1-3, 7 x 24, 4-hour response time	FM-8D724-36
Years 1-5, 5 x 9, 4-hour response time	FM-8D4HR-60
Years 1-5, 5 x 12, 4-hour response time	FM-8D512-60
Years 1-5, 6 x 16, 4-hour response time	FM-8D616-60
Years 1-5, 7 x 24, 4-hour response time	FM-8D724-60

Software— Americas and Asia Pacific only

Systems include 90-day Conformance to SPD and Telephone Advisory Support. Select optional Software Supplemental Support Services, if required.

Software service upgrades for Tru64 UNIX include advisory and remedial software support with new version license rights for Tru64 UNIX Base, unlimited users, and Server Extensions.

Software service upgrades for OpenVMS include advisory and remedial software support with new version license rights for OpenVMS Base and Enterprise Integration Package.

Software Supplemental Support— 2 CPU Systems (Tru64 UNIX)

12-month 5 x 9 Bronze Software Supplemental Support	FM-60EU9-12
36-month 5 x 9 Bronze Software Supplemental Support	FM-60EU9-36
60-month 5 x 9 Bronze Software Supplemental Support	FM-60EU9-60
12-month 7 x 24 Bronze Software Supplemental Support	FM-60EUS-12
36-month 7 x 24 Bronze Software Supplemental Support	FM-60EUS-36
60-month 7 x 24 Bronze Software Supplemental Support	FM-60EUS-60
12-month Bronze Node Software Supplemental Support	FM-60EUN-12
36-month Bronze Node Software Supplemental Support	FM-60EUN-36
60-month Bronze Node Software Supplemental Support	FM-60EUN-60

Software Supplemental Support— 2 CPU Systems (OpenVMS)

12-month 5 x 9 Bronze Software Supplemental Support	FM-60EV9-12
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Hardware and Software Supplemental Support Services (continued)

Software Supplemental Support— 2 CPU Systems (OpenVMS) (continued)

36-month 5 x 9 Bronze Software Supplemental Support	FM-60EV9-36
60-month 5 x 9 Bronze Software Supplemental Support	FM-60EV9-60
12-month 7 x 24 Bronze Software Supplemental Support	FM-60EVS-12
36-month 7 x 24 Bronze Software Supplemental Support	FM-60EVS-36
60-month 7 x 24 Bronze Software Supplemental Support	FM-60EVS-60
12-month Bronze Node Software Supplemental Support	FM-60EVN-12
36-month Bronze Node Software Supplemental Support	FM-60EVN-36
60-month Bronze Node Software Supplemental Support	FM-60EVN-60

Software Supplemental Support— SMPs for Tru64 UNIX and OpenVMS

1-year, 82/GS60-84/GS140-GS60E Dual-CPU SMP	FM-824DP-12
3-year, 82/GS60-84/GS140-GS60E Dual-CPU SMP	FM-824DP-36
5-year, 82/GS60-84/GS140-GS60E Dual-CPU SMP	FM-824DP-60

Hardware and Software Supplemental Support Services— Europe only

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

Recommended Online Power Protection/UPS Solutions for GS60E

For complete protection, UPS products should be used with data line surge protectors.

2-wire modem, wall plug-in	4N-GA249-AB
10BaseT, wall plug-in	4N-GA249-CA
Din rail and modules, up to 32 ports per rack or wall mount	4N-GA245-xx

Powerware Plus UPS Models

Models are hardwired on input and rated 50/60 Hz; North American models are rated 176V-256V in, 100/200V, 120/208V, 127/220V out; International models are rated 380/415V in, 380/415/220V out.

15kVA/10kW, 10 minutes battery time at full load, two batteries, North America or other 60-Hz applications	4N-AEAAN-BA
18kVA/12kW, seven minutes battery time at full load, two batteries, North America or other 60-Hz applications	4N-AEAAP-BA
15kVA/10kW, 16 minutes battery time at full load, two batteries, North America or other 60-Hz applications	4N-AEAAN-BC

Options

Recommended Online Power Protection/UPS Solutions for GS60E (continued)

Powerware Plus UPS Models (continued)

18kVA/12kW, 10 minutes battery time at full load, two batteries, North America or other 60-Hz applications	4N-AEAAP-BC
15 kVA/10kW, 16 minutes of battery time at full load, three batteries, North America or other 60-Hz applications	4N-AEAAN-BD
18kVA/12kW, 10 minutes of battery time at full load, three batteries, North America or other 60-Hz applications	4N-AEAAP-BD
15 kVA/10kW, 10 minutes of battery time at full load, two batteries, International or other 50-Hz applications, hardwired only	4N-AEAAN-BE
18kVA/12kW, seven minutes of battery time at full load, two batteries, International or other 50-Hz applications, hardwired only	4N-AEAAP-BE
24kVA/16kW, 12 minutes of battery time at full load, one battery, North America or other 60-Hz applications, Distribution cab option	4N-AEAAR-AA
36kVA/24kW, five minutes of battery time at full load, one battery, North America or other 60-Hz applications, Distribution cab option	4N-AEAAS-AA
24kVA/16kW, 30 minutes of battery time at full load, two batteries, North America or other 60-Hz applications, Distribution cab option	4N-AEAAR-AB
36kVA/24kW, 15 minutes of battery time at full load, two batteries, North America or other 60-Hz applications, Distribution cab option	4N-AEAAS-AB
24kVA/16kW, 50 minutes of battery time at full load, three batteries, North America or other 60-Hz applications, Distribution cab option	4N-AEAAR-AC
36kVA/24kW, 30 minutes of battery time at full load, three batteries, North America or other 60-Hz applications, Distribution cab option	4N-AEAAS-AC

UPS Receptacle Options/ Extended Battery Options

Choose UPS receptacle option, depending on input plug configuration of external storage cabinet used—ESA 10000 requires two L6-30R, SW800 requires two L21-30R, and GS60E Expansion Cabinet requires one L21-30R.

Recommended Online Power Protection/UPS Solutions for GS60E (continued)

UPS Receptacle Options/ Extended Battery Options (continued)

15/18kVA model output receptacle module—two L21-30R, three 5-20R2	4N-AEACM-BK
15/18kVA model output receptacle module—two L6-30R, two L21-30R, one 5-20R2	4N-AEACM-BN
15/18kVA model output receptacle module, Module 1—two L21-30R and conduit kit for connecting Module 1 to Module 2; Module 2— two L21-30R, three 5-20R2	4N-AEACM-PA
Add-on battery cabinet for 15 and 18kVA models; can be added to Model 4N-AEAAN/P-BD – approximately 12 minutes per cabinet	4N-AEACH-BB
Add-on battery pack for 24 and 36kVA models; can be added to Model 4N-AEAAR/S-AC – approximately 15-20 minutes per cabinet	4N-AEACN-AA

UPS Monitoring and Unattended Shutdown Software (for previous UPS systems only)

Power Management software is included with all Alpha Servers in ServerWORKS manager kit. Software communicates with recommended UPS. Network adapter is required for Tru64 UNIX; multi-interface module (connects via terminal server) is required for OpenVMS. Software includes toolbar plug-in for ServerWORKS Manager on Tru64 UNIX only.

Connect-UPS network adapter, Twisted Pair, 60 Hz 120V NEMA – Tru64 UNIX only	4N-AEAEO-DA
Connect-UPS network adapter ThinWire, 60 Hz 120V NEMA – Tru64 UNIX only	4N-AEAEO-DC
Connect-UPS network adapter, Twisted Pair, 50 Hz 240V IEC – Tru64 UNIX only	4N-AEAEO-DB
Connect-UPS network adapter, ThinWire, 50 Hz 240V IEC – Tru64 UNIX only	4N-AEAEO-DD
Multi-interface module, one to four systems on one UPS, includes splitter cable to interface with network adapter (Tru64 UNIX) and terminal server output (OpenVMS) for mixed operating platforms on one UPS; kits can be daisy-chained	4N-JMIU4-AB
Tru64 software kit for existing installation; same communications interface hardware as above required	4N-AEAES-GA
OpenVMS software kit for existing installation; same communications interface hardware as above required	4N-ONVMS-PL

Options

AlphaServer GS60E System Upgrades

The following AlphaServer 8200 or GS60 upgrades are complete box-swap system upgrades to the AlphaServer GS60E. As a result of this upgrade, the system cabinet is replaced, however, the existing AlphaServer GS60 CPU and CPU clock module, AlphaServer 8200/GS60 memory, and PCI I/O modules remain usable and are transferable.

The AlphaServer 8200 to AlphaServer GS60E upgrade includes one dual Alpha 21264 CPU module, which is the minimum generation CPU technology supported with this system. For additional AlphaServer GS60E system expansion options, see the "Options" section in this QuickSpec.

Upgrades include the AlphaServer GS60E system cabinet with the following:

- 7-slot system bus
- Three 1600W 48V DC power regulators for redundant hot-swappable power support; 3-phase power subsystem
- One 12-slot PCI shelf
- One UltraSCSI 16-bit StorageWorks shelf with power supply and 1-m SCSI cable
- Upgrade documentation
- Base operating system license

Note: AlphaServer 8200 to GS60E system upgrades also include one dual Alpha 21264 CPU module.

Dual AlphaServer GS60 to AlphaServer GS60E System Upgrade, Tru64 UNIX DA-76U8A-AA/AB

Dual AlphaServer GS60 to AlphaServer GS60E System Upgrade, OpenVMS DY-76U8A-AA/AB

Dual AlphaServer 8200 to AlphaServer GS60E System Upgrade, Tru64 UNIX DA-76U8B-AA/AB

Dual AlphaServer 8200 to AlphaServer GS60E System Upgrade, OpenVMS DY-76U8B-AA/AB

Technical Specifications

System Unit

Physical Characteristics

Dimensions (HxWxD)	67 x 23.6 x 39.4 in/170 x 60 x 100 cm
Shipping Dimensions	76.25 x 36 x 47.9 in/194 x 91.5 x 121.5 cm
Weight	
Minimum configuration	650 lbs
Maximum configuration	775 lbs
Shipping Weight	
Minimum configuration	750 lbs
Maximum configuration	875 lbs

Clearances

	Operating	Service
Front	40 in/1 m	59 in/1.5 m
Rear	40 in/1 m	40 in/1 m
Sides	0	0

Environmental

	Operating	Non-Operating
Temperature	41°F to 95°F/5°C to 35°C	-40°F to 151°F/-40°C to 66°C
Humidity	10% to 90%	10% to 95%
Altitude	0 to 10,000 ft/0 to 3 km	40,000 ft/12,192 m
Vibration	5 to 500 Hz @ 0.1G maximum	
Heat dissipation	Minimally configured system ¹ (system cabinet) 1200W/4100 Btu/hr Fully configured system ² (system cabinet) 2450W / 8300 Btu/hr Fully configured system ³ (system cabinet with two I/O expansion cabinets) 5,150W/17,550 Btu/hr	

Regulatory

Agency approvals	UL Listed to UL1950 cUL Listed to CAN/C22.2 No. 950-M89 FCC Part 15 (Class A) CE Declaration 4206
Reviewed to	EN 60950 1922/A4:1997, European Norm AS/NZS 3260:1993, Australian/New Zealand Standard 73/23/EEC, Low Voltage Directive IEC950, second edition, fourth Amendment

Power Requirements ⁴	US/Canada	Japan	Europe
Nominal voltage	120/208V	202V	380-415V
Frequency range	50 Hz to 60 Hz	50 Hz to 60 Hz	50 Hz to 60 Hz
Phases	3-phase star 3-wire+N+GND	3-phase delta 4-wire mid-GND or 3-wire junction GND	3-phase star 3-wire+N+GND
Maximum input	17A rms	17A rms	9A rms
Surge current	210A peak	210A peak	215A peak
Rating	30A	30A	32A
Power cord length	15 ft/4.5 m	15 ft/4.5 m	15 ft/4.5 m
Power cap (system)	DEC 12-12314-00	DEC 12-12314-01	DEC 12-14379-06
Receptacle (site)	DEC 12-12315-00	DEC 12-12315-01	Hubbell 532R6W
(industry equivalent)	NEMA L21-30R	NEMA L21-30R	IEC 309 (32A)
PCS/PDS/PDU/UPS cable	BC24W	BC24W	BN29X

¹ Minimally configured system contains three power supplies, dual-CPU module, memory module, system I/O module, CD-ROM, minimally configured PCI shelf, and one disk drive.

² Fully configured system contains three power supplies, three dual-CPU modules (six CPUs), two memory modules, two system I/O modules, two PCI shelves, CD-ROM, and two StorageWorks shelves with 12 disk drives.

³ Fully configured system and two expansion cabinets consist of the above "fully configured system" and two expansion cabinets, each include three PCI shelves, four StorageWorks shelves, and 24 disk drives.

⁴ Power system provides near unity power factor which allows full utilization of the input line current (Watts = VA).

Free Manuals Download Website

<http://myh66.com>

<http://usermanuals.us>

<http://www.somanuals.com>

<http://www.4manuals.cc>

<http://www.manual-lib.com>

<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

Golf course search by state

<http://golfingnear.com>

Email search by domain

<http://emailbydomain.com>

Auto manuals search

<http://auto.somanuals.com>

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