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AlphaServer 2100A 4/275, 5/250 and 5/300 Systems V2.3

Digital Systems and Options Catalog

AlphaServer 2100A 4/275, 5/250 and 5/300 Systems

Product Description

AlphaServer 2100A systems are low-cost Alpha symmetric multiprocessing (SMP) PCI/EISA-based servers. They offer support for OpenVMS, Digital UNIX and Windows NT, and are suitable for general-purpose commercial, high-performance application and database, and PC LAN Superserver computing environments.

AlphaServer 2100A 4/275 (Alpha 21064A microprocessor) features a 275-MHz CPU with 4 Mbyte cache; AlphaServer 2100A 5/250 (Alpha 21164 microprocessor) features a 250-MHz CPU with 4 Mbyte cache; AlphaServer 2100A 5/300 (Alpha 21164 microprocessor) features a 291-MHz CPU with 4 Mbyte cache. Each can be configured with up to four processors of the same speed for symmetric multiprocessing. The systems support up to 2 Gbytes of memory and 64 Gbytes of internal disk storage.

The system bus bandwidth is 667 Mbytes/second and the high-performance PCI I/O subsystem has a peak bandwidth of 132 Mbytes/second. The 33 Mbyte/ second EISA I/O bus supports a variety of industry-standard EISA options. The AlphaServer 2100A is configured with 8 PCI slots and 3 EISA slots.

AlphaServer 2100A systems supports StorageWorks storage devices. High-availability features, including optional internal RAID and hot swap of disks, offer data security in mission-critical environments. RAID levels supported are 0 (striping), 1 (shadowing), 0+1 (striped shadowing), and 5 (striping with parity).

AlphaServer 2100A systems are also offered in a rackmountable enclosure.

Step 1—Systems

- See System Bus Slot Table and PCI Option Slot Chart for slot configuration rules.
- Digital UNIX and OpenVMS systems require operating system media and documentation kit for first system on site; see Step 9.
- Windows NT systems include Windows NT Server plus 5-client access V3.51 media (CD-ROM) and license in shrink-wrapped package.

- Systems ordered in the Americas and Asia Pacific Area (APA) include 120 V U.S. power cord and keyboard unless alternate is specified. Select country specific power cord and keyboard for **all** systems ordered in Europe.
- Uninterruptable Power Supplies are available; see UPS Information following System Specifications.
- Options ordered will be factory installed unless specified as **spares**.

AlphaServer 2100A 4/275, 5/250, and 5/300 Systems include

- Alpha microprocessor 21064
  - 275-MHz CPU with 4 Mbyte onboard cache or
- Alpha microprocessor 21164
  - 250 MHz CPU with 4 Mbyte onboard cache or
  - 291 MHz CPU with 4 Mbyte onboard cache
- BA740 large pedestal enclosure which includes
  - Integral 10 Mbyte/s Fast SCSI-2 controller, 8-bit (narrow)
  - Ethernet Card (uses 1 PCI slot)
  - Two EIA-232 asynchronous serial ports, 9-pin D-subminiature connectors
  - One parallel port, 25-pin D-subminiature connectors
  - Keyboard port and mouse port
  - 8-slot RZxx storage assembly, 8-bit (narrow) or 16-bit (wide)
  - Three 5.25-inch, half-height removable media slots
  - Eight PCI slots
  - Three EISA slots

- 602-Watt power supply
- 1.44 Mbyte diskette drive in dedicated slot
- 600 Mbyte Quad-Speed CD-ROM (uses one removable media slot)
- 2.1 Gbyte 7200 RPM disk drive (uses one storage assembly slot)
- Video Graphics Adapter (uses 1 PCI slot)
- Memory (indicated below)
- 3-button mouse
- Keyboard (Americas and AP only)
- Power cord (Americas and AP only)
- Customer documentation
- EISA Configuration Utility
- Hardware Warranty: Three-year, on-site, with 5 x 9, 24-hour response time*
- Software Warranty: 90-day SPD conformance with advisory telephone support*

* Service upgrades are available; see Step 11, Hardware and Software Supplemental Services.

Windows NT Systems include

- Windows NT Server plus 5-client access V3.51 media (CD-ROM) and license in shrink-wrapped package.

Order Number	Memory	Hard Drive	PCI /EISA slots available for additional options
AlphaServer 2100A 4/275—275 MHz Windows NT Systems			
DN-252S1-J9	128 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
DN-252S1-K9	512 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
AlphaServer 2100A 5/250—250 MHz Windows NT Systems			
DN-253S1-J9	128 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
DN-253S1-K9	512 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
AlphaServer 2100A 5/300—291 MHz Windows NT Systems			
DN-254S1-J9	128 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
DN-254S1-K9	512 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA

Step 1—Systems *(continued)*

Digital UNIX Systems include

- Digital UNIX operating system base license (V3.2D-2)
- Digital NAS Base Server 200 for Digital UNIX license (QL-306AG-AA) includes the following layered products (order media and documentation separately).
  - PrintServer Software (Licensed with appropriate Digital Printer)
  - DECmessageQ for Digital UNIX Run-Time only
  - Digital DCE Run-Time Services for Digital UNIX
  - Objectbroker for Digital UNIX Run-Time only

- POLYCENTER Advanced File System utilities
- POLYCENTER NetWorker Save and Restore for Digital UNIX (Server)
- PATHWORKS for Digital UNIX LAN Manager
- PATHWORKS for Digital UNIX Netware
- Digital UNIXServer Extensions
- Logical Storage Manager
- Digital UNIX operating system is factory installed.

Order Number	Memory	Hard Drive	PCI/EISA slots available for additional options
AlphaServer 2100A 4/275—275 MHz Digital UNIX systems			
DA-252S1-J9	128 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
DA-252S1-K9	512 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
AlphaServer 2100A 5/250—250 MHz Digital UNIX systems			
DA-253S1-J9	128 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
DA-253S1-K9	512 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
AlphaServer 2100A 5/300—291 MHz Digital UNIX systems			
DA-254S1-J9	128 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
DA-254S1-K9	512 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA

OpenVMS Systems include

- OpenVMS operating system base license. (V6.2-1H1)
- NAS 200 for OpenVMS license (QL-23EAG-AA), includes the following layered products (order media and documentation separately).
  - DECwindows Motif for OpenVMS Alpha
  - DECwindows Motif Worldwide support for OpenVMS Alpha
  - DECprint Supervisor for OpenVMS Alpha, (Base, Plus, Open)
  - PrintServer [TM[Software (Licensed with appropriate Digital printer)
  - DECmessageQ for OpenVMS Alpha Run-time option only

- Objectbroker for OpenVMS Alpha Run-time option only
- Polycenter Software Distribution for OpenVMS Alpha (Client)
- DECnet for OpenVMS Alpha End System
- DECnet/OSI for OpenVMS Alpha End System
- DEC TCP/IP services for OpenVMS Alpha
- PATHWORKS for OpenVMS (LAN Manager)
- PATHWORKS for OpenVMS (Macintosh [R])
- PATHWORKS for OpenVMS (Netware)
- OpenVMS operating system is factory installed.
- OpenVMS V6.2 1-1H1 media on CD (QA-MT1AG-H8) included.

Order Number	Memory	Hard Drive	PCI/EISA slots available for additional options
AlphaServer 2100A 4/275—275 MHz OpenVMS systems			
DY-252S1-J9	128 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
DY-252S1-K9	512 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
AlphaServer 2100A 5/250—250 MHz OpenVMS systems			
DY-253S1J9	128 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
DY-253S1-K9	512 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
AlphaServer 2100A 5/300—291 MHz OpenVMS systems			
DY-254S1-J9	128 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA
DY-254S1-K9	512 Mbytes	1 x 2.1 Gbytes	6 PCI / 3 EISA

Step 1—Systems *(continued)*

- Use System Bus Slot Table for slot configuration rules when adding additional CPUs and memory.
- See PCI Option Slot Table for options supported in specific PCI slots.

System Bus Slot Table

Recommended Slots	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7
1 CPU system	—	CPU 0	—	Memory 0	Memory 1	Memory 2	Memory 3
2 CPUs system	—	CPU 0	CPU 1	Memory 0	Memory 1	Memory 2	Memory 3
3 CPUs system	CPU 2	CPU 0	CPU 1	Memory 0	Memory 1	Memory 2	Memory 4
4 CPUs system	CPU 3	CPU 0	CPU 1	Not available	CPU 2	Memory 0	Memory 1

PCI Option Slot Table

- Some PCI options are **not** supported behind a PCI-PCI bridge on specific operating systems. Use the following table for options restricted to slots **4, 5, 6 and 7 only**. All other options supported on the AlphaServer 2100A not listed here are supported in any PCI slot (0, 1, 2, 3, 4, 5, 6, 7).

Order Number	Description	Max #	Supported in PCI slots only	Operating System
KZPSA-BB	One-port Fast Wide Differential SCSI controller	3	**4, 5, 6, 7**	Windows NT
KZPSA-BB[1]	One-port Fast Wide Differential SCSI controller	4	**4, 5, 6, 7**	OpenVMS/Digital UNIX
PB2GA-JB[2]	S3-Trio64 Graphics option 1MB	1	**4, 5, 6, 7**	Windows NT
CCMAA-AA	PCI to Memory Channel adapter	2	**4, 5, 6, 7**	Digital UNIX

(1) KZPSA-BB, when running Digital UNIX or OpenVMS, is supported in all PCI slots (0-7). However, KZPSA utilities, FWupdate and CnfgDiag do not function when the KZPSA is installed in slots 0, 1, 2, 3. Any Firmware updates or changes to the default parameter settings can only be accomplished in slots 4, 5, 6, 7.

(2) Graphics option standard in all systems.

Step 2—Additional CPUs (Symmetrical Multiprocessing (SMP) Upgrades)

Order up to three additional CPUs, for a maximum of four—See System Bus Slot Table for configuration rules.

- Additional CPUs **must** match the speed of CPU in system.
- Four-CPU systems are restricted to two memory slots.

Note: Adding CPUs may require an additional power supply (see Step 7).

Additional CPUs

460NR-AA	Windows NT SMP upgrade, includes one 4/275 MHz CPU processor; SMP license is not required.
470NR-AA	Windows NT SMP upgrade, includes one 5/250 MHz CPU processor; SMP license is not required.
480NR-AA	Windows NT SMP upgrade, includes one 5/300 MHz CPU processor; SMP license is not required.
460AR-AA	Digital UNIX SMP upgrade includes one 4/275 MHz CPU processor and Digital UNIX SMP license.
470AR-AA	Digital UNIX SMP upgrade includes one 5/250 MHz CPU processor and Digital UNIX SMP license.
480AR-AA	Digital UNIX SMP upgrade includes one 5/300 MHx CPU processor and Digital UNIX SMP license.
460YR-AA	OpenVMS SMP upgrade includes one 4/275 MHz CPU processor and OpenVMS SMP license.
470YR-AA	OpenVMS SMP upgrade includes one 5/250 MHz CPU processor and OpenVMS SMP license.
480YR-AA	OpenVMS SMP upgrade includes one 5/300 MHz CPU processor and OpenVMS SMP license.

Step 3—Memory

See System Bus Slot Table for slot configuration rules.

- One, two, and three CPU systems support a total of four memory boards in any combination.
- Four CPU systems support total of two memory boards in any combination.
- Windows NT V3.51 supports up to 1 Gbyte of memory.
- Digital UNIX V3.2D-2 supports up to 2 Gbyte of memory.
- OpenVMS V6.2 1-1H1 supports up to 2 Gbyte of memory.

MS450-BA	64 Mbyte memory module (AlphaServer 2100A 4/275 systems only)
MS451-DA	128 Mbyte memory module
MS451-FA	512 Mbyte memory module

Step 4—Monitors and Graphics

Graphics monitors other than those listed below can be used if compatible with graphics adapter included with system.

Windows NT systems

- Windows NT systems **require** a graphics monitor to run **all** system functions.
- Video adapter included in system supports 1024 x 768 resolution, 72-Hz monitors.

Digital UNIX and OpenVMS systems

- All console functions, including the EISA Configuration Utility (ECU) and the Standalone Configuration Utility can be performed using a standard video terminal (VT2xx, VT3xx, VT4xx, VT5xx) connected to one of the system's serial ports (See Step 8).
- For graphics console functionality, order a graphics monitor.
- Video adapter included in system supports 1024 x 768 resolution, 72-Hz monitors.

VRC15-KA/K4	15" (13.9" viewable image size) high-resolution color monitor with Light Gray enclosure. Flat-square CRT with 0.28 mm dot pitch and anti-reflection, anti-glare, anti static coating. Auto-scanning from VGA to 1024 x 768 at 75Hz NI refresh rates. MPR-II, Energy Star, DPMS and NUTEK compliant. 120/240V universal power supply. Includes 1.4 meter HD15 male to male video cable. Select -KA for Northern Hemisphere or -K4 for Southern Hemisphere operation. If purchased in North America, -KA includes 120V power cord, otherwise power cords for -KA and -K4 not included, order separately.
VRT17-PA/P4	17" (16.0" viewable image size) high-resolution color monitor with Light Gray enclosure. Trinitron aperture grille CRT with 0.26mm stripe pitch and anti-reflection, anti-glare, anti static coating. Auto-scanning from VGA to 1280 x 1024 at 75Hz NI refresh rates. MPR-II, Energy Star, DPMS and NUTEK compliant. 120/240V universal power supply. Includes 3.0 meter HD15 male to BNC video cable. Select -PA for Northern Hemisphere or -P4 for Southern Hemisphere operation. If purchased in North American, -PA includes 120V power cord, otherwise power cords for -PA and -P4 not included, order separately.
VRC21-LA/L4	21" (19.6" viewable image size) ultra high-resolution color monitor with Ligh Gray enclosure. Diamondtron aperture grille CRT with 0.30 mm stripe pitch and anti-reflection, anti-glare, anti static coating. Auto-scanning from VGA to 1600 x 1200 at 75Hz NI refresh rates. On Screen display (OSD). Stereo viewing compatible. MPR-II, Energy Star, DPMS and NUTEK compliant. 120/240V universal power supply. Includes 3.0 meter HD15 male to BNC video cable. Select -LA for Northern Hemisphere, or -L4 for Southern Hemisphere operation. If purchased in North America, -LA includes 120V power cord, otherwise power cords for -LA and -L4 not included, order separately.

Step 5—Storage

Internal Disk Storage Assembly

- Included storage assembly supports eight 3.5-inch disk drives.

- Integral 8-bit Fast SCSI-2 controller supports maximum of seven devices in system enclosure (three 5.25-inch removable media devices and four 3.5-inch disk drives). All disk drives connected to this controller operate in **narrow** mode.

- One additional storage assembly in system enclosure supports eight additional 3.5-inch disk drives. Additional storage assembly requires an additional power supply (see Step 7).

- Internal storage assemblies are normally configured for split-bus (two buses), four drives per bus. By reversing the positions of the terminator and jumper plugs, internal storage assemblies can be reconfigured for single-bus operation with a maximum of seven disk drives per storage assembly.

- Manufacturing normally configures internal storage assemblies in split-bus mode. If there are not enough storage controllers to support the number of internal disk drives ordered, Manufacturing will configure the internal storage assemblies for single-bus mode.

- Internal storage assembly drive slots are physically interleaved with electrically contiguous drives in every other slot.

- **Note: Wide** disk drives configured on a **narrow** bus will operate in **narrow** mode. **Narrow** disk drives configured on a **wide** bus will operate in **narrow** mode. **Wide** and **narrow** devices can be mixed on a single bus.

Additional Storage Assembly for Internal Disk Storage

- Storage assembly supports 16-bit (wide) and/or 8-bit (narrow) modes.
- Requires an additional power supply (see Step 7).
- Includes SCSI cables for factory integration and for field installation if ordered as spare.

BA35E-SA   Storage assembly supports eight 3.5-inch, half-height hard disk drives

Step 5a—Controllers and Storage Devices for 16-bit (Wide) Mode

- Internal StorageWorks 16-bit Wide Shelves:
  - 16-bit devices require 16-bit (wide) shelves.
  - Internal StorageWorks shelf is electrically compatible with 16-bit (wide) drives.
- Wide Storage Controllers allow wide devices to operate in 16-bit mode.
  - KZPSC-xx PCI-based one- and three-port Storage-Works RAID 230 controllers support hard disk drives only; tapes are not supported.
  - Three-port StorageWorks RAID 230 controller KZPSC-BA supports up to 21 disk drives in up to eight logical groups. RAID sets must be created to support more than eight physical disk drives.
  - Maximum of four KZPSC-xx controllers supported per system.
  - KZPSA-BB PCI-based one-port Fast Wide Differential SCSI controller supports externally connected wide disks in BA356 using DWZZB fast wide differential to wide single-ended converter, or narrow disks using DWZZA fast wide differential to narrow single-ended converter in BA356.
  - KZPSA-BB controller on Windows NT systems support supports up to 15 disks. Digital UNIX and OpenVMS systems support 7 disks.

- Maximum of four PCI- or EISA-based RAID controllers supported per system.
- **Note:** Wide drives operate in narrow (8-bit) mode when connected to narrow SCSI controllers, such as Integral Fast SCSI-2 controller.
- Cabling information for Fast SCSI-2/3 controllers
  - Internal cables are supplied as needed for factory installed configurations. BC25T-3L cable is used from KZPSC-xx or KZPSM-AA controllers to internal shelf.
  - External cables are **not** included and must be ordered separately.
  - KZPSA-BB External cables: BN21K-xx from KZPSA to DWZZA, DWZZB and HSZ40 (straight to right angle) BN21W-0B Y SCSI-3 cable 68-pin for KZPSA in mid-bus configurations
  - KZPSC-xx External cables: BN31L-1E from KZPSC-xx to BA350 BN31S-1E from KZPSC-xx to BA356
  - If all three ports on KZPSC-BA controller are used, use SCSI cable BN31K-0E for third port external connection. **Note:** Third external port blocks one PCI or EISA bulkhead.

Storage Controllers for Wide Mode

KZPSC-AA   One-port PCI backplane RAID controller; includes StorageWorks RAID Array 230 Subsystem family software and documentation kit for OpenVMS, Digital UNIX and Windows NT

KZPSC-BA   Three-port PCI backplane RAID controller; includes StorageWorks RAID Array 230 Subsystem family software and documentation kit for OpenVMS, Digital UNIX and Windows NT

Step 5a—Controllers and Storage Devices for 16-bit (Wide) Mode *(continued)*

Storage Controllers for Wide Mode

KZPSA-BB	One-port PCI-based Fast Wide Differential (FWD) SCSI controller
KZPSM-AA	PCI-based Combination Ethernet and Fast Wide SCSI controller

Hard Disk Drives for Wide Mode

RZ26L-VW	1.05 Gbyte, 3.5-inch half-height disk drive
RZ28D-VW	2.1 Gbyte, 3.5-inch 7200 RPM half-height disk drive
RZ29B-VW	4.3 Gbyte, 3.5-inch 7200 RPM half-height disk drive

Storage Option Packs for Wide Mode

- Storage option packs are factory installed **only**.
- Additional RZxx disk drives may be added.

SD001-CA	One-Port RAID Storage Option Pack includes: One KZPSC-AA and Three RZ28 disk drives
SD001-DA	Three-Port RAID Storage Option Pack includes: One KZPSC-BA and Five RZ28 disk drives

External Disk Expansion for Wide Mode

- External BA356 StorageWorks modular storage pedestals are supported on all Fast Wide SCSI-2/3 controllers listed in Step 5a.
- External BA356 is not supported on integral Fast SCSI-2.
- SCSI cable BN21K-xx for KZPSA, and BN31S-1E for KZPSC, is required to connect an external BA356 modular storage pedestal to controller.

BA356-KC	Modular storage pedestal includes BA356-xx basic shelf, BA35X-HF universal ac power supply, pedestal mounting kit, and 120 V power cord; requires SCSI cable (BN31S-1E) for KZPSC-xx controllers. Order country specific power cord for 240 V use from Step 10.

Step 5b—Internal Removable Media Devices

Systems include 600 Mbyte CD-ROM; system supports two additional 5.25-inch half-height removable media devices, or one 5.25-inch, full-height removable media device.

Removable Media Devices

RRD45-AC	600 Mbyte 5.25-inch half-height quad-speed CD-ROM
TLZ07-LG	8.0 Gbyte 5.25-inch half-height SCSI 4-mm DAT
TZK11-LG	2.0 Gbyte 5.25-inch half-height SCSI QIC tape

Step 5c—External Storage

Tabletop Tape Expansion

- The integral Fast SCSI-2 controller **cannot** be extended outside the system enclosure to support external SCSI devices.
- External tape drives are supported on optional Fast SCSI-2 8-bit narrow controller (KZPAA-AA) only.
- Each tabletop tape device **requires** three-foot SCSI cable (BC09D-03)

Storage Controller for Narrow Mode (required for external tape expansion)

KZPAA-AA	PCI-based one-port high performance Fast SCSI-2 controller

Step 5c—External Storage *(continued)*

Tape Drives for Narrow Mode

TLZ07-DA	8.0 Gbyte, 4mm DAT tabletop tape drive
TLZ7L-DA[1, 2]	32.0-96.0 Gbyte 4-mm DAT autoloader
TZ87-TA	20.0 Gbyte DLT 5.25-inch tabletop tape drive
SZ107-AA	140.0 Gbyte DLT loader (Digital UNIX and OpenVMS only)
TSZ07-BA/CA	1600/6250-bit/inch 9-track tabletop magtape drive (Digital UNIX and OpenVMS only)
TKZ15-TA	5.0 Gbyte 8mm tabletop tape drive (Digital UNIX and OpenVMS only)

(1)   Includes four cartridge loader. Twelve cartridge magazine supported (TLZ7L-12).

(2)   Windows NT operating system does not support unattended back-up mode without third-party Arcada software.

Step 5d—DSSI Storage (OpenVMS systems only)

- System supports up to two KFESA or KFESB EISA/DSSI adapters; KFESA and KFESB adapters can be mixed on the same system.
- System supports four KFPSA PCI DSSI adapters.
- Each internal storage assembly in system in single/split-bus mode supports one/two HSD10 DSSI/SCSI converters.
- Disk drives installed "behind" HSD10 must be 8-bit (narrow).
- Cabling information for DSSI controllers:
- DSSI cables must be ordered separately.
  - KFESB/KFPSA uses "Micro-Ribbon" connection.
  - KFESB/KFPSA to any external "Pin-Socket" DSSI. connection requires BC22Q-xx.
  - KFESB/KFPSA to any external "Micro-Ribbon" DSSI straight connection requires BC21Q-xx.
  - KFESB/KFPSA to any external "Micro-Ribbon" DSSI right-angle connection requires BC29S-xx DSSI cable.
  - KFESB/KFPSA to HSD10 requires BC29S-xx. If HSD10 is factory installed, BC29S-06 cable is included.
  - HSD10 to HSD10 (inside system) requires BC29U-02.
  - BC29U-06 (KFESB to HSD10) is provided if factory installed.
  - HSD10 to HSD10 (between systems) requires BC29T-09.
  - HSD10 to any external "Micro-Ribbon" DSSI connection (all other DSSI systems and storage devices) requires BC29S-xx for straight connection to external device; or BC29T-09 for right-angle connection to external device.

DSSI Adapters

KFPSA-AA	PCI-to-DSSI controller (OpenVMS systems **only**); maximum four per system.
KFESB-AA	EISA-based single-DSSI controller (OpenVMS systems **only**); maximum two per system
HSD10-AA	StorageWorks Array controller; supports seven SCSI-2 disks, tape, and optical devices. (See Storage section for supported devices.)

DSSI Option Pack

- OpenVMS DSSI starter option pack includes:
  - Two KFESB-AA EISA-based DSSI adapters
  - Two HSD10-AA DSSI/SCSI converter
  - Three RZ28 2-Gbyte disk drives
  - Two BC29L-06 DSSI cables*
  - VMScluster license (QL-MUZAG-AA)

SD002-AA	OpenVMS DSSI Starter Option Pack

* Additional cables are required to connect to external DSSI storage devices or systems.

Step 5e—PCI to CI Storage Host Adapter (OpenVMS Systems only)

CIPCA-AA	PCI-to-CI adapter, Maximum two per system; requires one PCI slot and one EISA slot. Minimum Operating System Version: OpenVMS 6.2-1H2 Minimum Console Revision: V4.4 Requires one of the following CI cables per adapter:
BNCIA-10	10-meter CI cable
BNCIA-20	20-meter CI cable
BNCIA-45	45-meter CI cable

Step 6—Networks and Communications

- See PCI Option Slot Chart for slot configuration rules.
- Systems include Ethernet controller (AUI, 10BaseT, or ThinWire selectable)
- Select networking cable
  - BNE4C-xx for AUI
  - BN25G-xx for 10BaseT
  - BC16M-xx for ThinWire, and H8225-00 Terminator
- Maximum of 4 PCI-based network controllers supported.

Order Number	Description	Maximum # supported		
		Digital UNIX	OpenVMS	Windows NT
DEFEA-AA	EISA-based DEC FDDIcontroller Single Attachment	2	2	2
DEFEA-DA	EISA-based DEC FDDIcontroller Dual Attachment (requires 2 EISA slots)	1	1	1
DEFEA-UA	EISA-based DEC FDDIcontroller UTP Attachment	2	2	2
DNSES-AA	EISA-based synchronous communications controller	3	3	0
CXI01-AA/AD	ISA-based asynchronous multiplexer	2	0	2
DIIAA-AA	Digiboard ISA datafire-U ISDN Controller (Available as a SPARE Only)	0	0	1
DIIAA-AB	Digiboard ISA datafire-ST ISDN Controller (Available as a SPARE Only)	0	0	1
DEFPA-AA*	PCI to FDDI Adapter, SAS, MMF, SC	4	4	4
DEFPA-DA*	PCI to FDDI Adapter, DAS, MMF, SC	4	4	4
DEFPA-UA*	PCI to FDDI Adapter, SAS, TP-PMD	4	4	4
DE435-AA	PCI-based Digital Etherworks 32-bit High Performance Network Interface Card	4	4	4
DE500-XA	PCI-based Fast Ethernet controller	2	2	2

* Cables: Fiber, Duplex, "SC" to "MIC" (concentrator): BN34D-xx; Fiber, Duplex, "SC" to "SC": BN34B-xx; Fiber, Duplex, "SC" to "ST": BN34A-xx; Copper STP, 8 cond, wired pin-pin: BN26M-xx; Copper STP, 8 cond, wired cross-over: BN26S-03.

Step 6a—PCI to Memory Channel Interconnect (Digital UNIX systems only)

Supported on Digital UNIX systems only; requires Digital UNIX V3.2D or above. Each system node in a Memory Channel cluster requires a software license.

- Servers in a compute-server array require a Digital UNIX Driver for Memory Channel License.
- Servers in a TruCluster high-availability environment require a license for TruCluster for Digital UNIX.

Configuring information:

- For two-system nodes, order one CCMAA-AA per system and one BC12N-10 cable to connect them.
- For three or more system nodes, order CCMHA-AA (Memory Channel Hub) one CCMAA-AA and one BC12N-10 cable per system node.
- CCMHA-AA (Memory Channel Hub) is configured with four CCMLA-AA Line Cards and supports up to four nodes. Expansion up to eight system nodes can be achieved by adding up to four additional CCMLA-AA Line Cards.

Note: CCMAA-AA (PCI to Memory Channel Adapter) must be installed in PCI slots 4-7.

CCMAA-AA	PCI to Memory Channel Adapter —Maximum two supported on AlphaServer 2100A
CCMHA-AA	Memory Channel Hub with 4 Line Cards
CCMLA-AA	Memory Channel Line Card for use with Memory Channel Hub (CCMHA-AA)
BC12N-10	Memory Channel Cable
QB-3RLAQ-AA	TruCluster Software for Digital UNIX
QB-4ZCAQ-AA	Digital UNIX Driver for Memory Channel license

Step 6a—PCI to Memory Channel Interconnect *(continued)*

CCMHA-AA, Memory Channel Hub, includes BN19P-2E line cord for Canada, Japan, US operation. For other regions, order one of the following:

BN19A-2E	Ireland, United Kingdom
BN19S-2E	Egypt, India
BN19C-2E	Central Europe
BN18L-2E	Israel
BN19E-2E	Switzerland
BN24X-2E	Italy
BN19K-2E	Denmark
BN19H-2E	Australia, New Zealand

Step 7—Additional Power Supply

- Additional power supply is **required** if configured system includes second storage assembly, **or**
  - More than two CPUs are installed, or
  - Two CPUs and more than one memory board is installed
- In lesser configurations, the additional power supply may be ordered for n+1 redundancy.
- Americas and Asia Pacific Area orders:
  - If additional power supply is factory installed, 120 V U.S. power cord is included when alternate is not selected.
  - If additional power supply is ordered as **spare,** power cord **must** be ordered separately, see Step 10.
- European orders:
  - If additional power supply is factory installed **or** ordered as **spare,** country specific power cord **must** be ordered separately, see Step 10.

H7893-AA	602-watt power supply

Step 8—Terminals and Printers

Systems include two EIA-232 asynchronous serial ports with 9-pin D-subminiature connectors.

Digital UNIX and OpenVMS systems

Console terminals can either be graphics monitor connected to the included video graphics adapter (See Step 4), or a serial video terminal. If a serial video terminal is used as the console terminal, it must be VT320, VT420, or VT520 compatible. These terminals have the graphics capability required for the EISA Configuration Utility.

Select terminals and serial printers as required. A 9-pin to MMJ adapter (H8571-J) is required for each connection. A cable must be ordered unless otherwise provided.

Step 9—Software

Windows NT systems

Systems include Windows NT Server plus 5-client access V3.51 media (CD-ROM) and license in shrink-wrapped package. Order documentation kit if required.

QA-23CAA-GZ	Windows NT Server documentation kit

Step 9—Software *(continued)*

Digital UNIX systems

Select user licenses and additional software as required. Media and documentation is **required** for first system on site.

Software Processor Code = G for all software, 1-4 processors

Digital UNIX Concurrent Use Licenses

Digital UNIX Concurrent Use license provide the right to interactively use the operating system by the specified number of concurrent users on a designated Digital UNIX system. Digital UNIX Concurrent Use licenses are not specific to a single system and can be moved from one system to another at user discretion.

QL-MT7AM-3B	Digital UNIX Concurrent Use 1-user license
QL-MT7AM-3C	Digital UNIX Concurrent Use 2-user license
QL-MT7AM-3D	Digital UNIX Concurrent Use 4-user license
QL-MT7AM-3E	Digital UNIX Concurrent Use 8-user license
QL-MT7AM-3F	Digital UNIX Concurrent Use 16-user license
QL-MT7AM-3G	Digital UNIX Concurrent Use 32-user license
QL-MT7AM-3H	Digital UNIX Concurrent Use 64-user license
QL-MT7AG-AA	Digital UNIX Traditional unlimited user license
QL-MT5AG-AA	Digital UNIX developer's extension license

Digital UNIX Media and Documentation—required for first system on site

QA-MT4AA-H8	Digital UNIX media and on-line documentation on CD-ROM
QA-MT4AA-GZ	Digital UNIX full hardcopy documentation

Digital UNIX Layered Products CD-ROM

QA-054AA-H8	Layered products media and documentation for Digital UNIX on CD-ROM

DECnet Licenses

QL-MTJAG-AA	DECnet/OSI end-system license for Digital UNIX
QL-MTKAG-AA	DECnet/OSI extended function license for Digital UNIX

OpenVMS systems

Select user licenses and additional software as required. Media and documentation is **required** for first system on site.

Software Processor Code = G for all software, 1-4 processors
OpenVMS Concurrent Use User Licenses

OpenVMS Concurrent Use license 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.

QL-MT3AA-3B	OpenVMS Concurrent Use 1-user license
QL-MT3AA-3C	OpenVMS Concurrent Use 2-user license
QL-MT3AA-3D	OpenVMS Concurrent Use 4-user license
QL-MT3AA-3E	OpenVMS Concurrent Use 8-user license
QL-MT3AA-3F	OpenVMS Concurrent Use 16-user license
QL-MT3AA-3G	OpenVMS Concurrent Use 32-user license
QL-MT3AA-3H	OpenVMS Concurrent Use 64-user license
QL-MT3AA-3J	OpenVMS Concurrent Use 128-user license
QL-MT3AA-3K	OpenVMS Concurrent Use 256-user license
QL-MT2AG-AA	OpenVMS Traditional unlimited user license

Step 9—Software *(continued)*

OpenVMS Media and Documentation—required for first system on site

QA-MT1AA-H8	OpenVMS media and documentation on CD-ROM
QA-MT1AG-H8	OpenVMS V6.2-1H1 media and documentation on CD-ROM, included with system
QA-001AA-GZ	OpenVMS hardcopy documentation

OpenVMS Layered Products CD-ROM

QA-03XAA-H8	Layered products media and documentation for OpenVMS on CD-ROM

DECnet Licenses

QL-MTGAG-AA	DECnet extended function license for OpenVMS
QL-MTHAG-AA	DECnet end-system to extended function upgrade license for OpenVMS

DSSI Information

EK-410AB-MG	DSSI VMScluster Installation Guide
EK-D4AXP-TS	DSSI VMScluster Troubleshooting Guide

Step 10—Keyboards and Power Cords

Systems ordered in the Americas and Asia Pacific Area include 120 V U.S. power cord and keyboard unless alternate is specified. Select country specific power cord and keyboard for **all** systems ordered in Europe.

Keyboards

Windows NT and Digital UNIX	OpenVMS	
LK471-A2	**LK461-A2**	U.S./English
LK471-AB	**LK461-AB**	Belgian
	LK461-AC	Canadian/French
LK471-AD	**LK461-AD**	Danish
LK471-AE	**LK461-AE**	United Kingdom
	LK461-AF	Finnish
LK471-AG	**LK461-AG**	German
	LK461-AH	Dutch
LK471-AI	**LK461-AI**	Italian
LK471-AK	**LK461-AK**	Swiss/Generic
	LK461-AL	Swiss/German
	LK461-AM	Swedish
LK471-AN	**LK461-AN**	Norwegian
LK471-AP	**LK461-AP**	French
	LK461-AQ	Canadian/English
LK471-AS	**LK461-AS**	Spanish
LK471-AV	**LK461-AV**	Portuguese

Step 10—Keyboards and Power Cords *(continued)*

Power Cords

BN27Y-1J*	U.S., Canada, Japan, 120 V
BN19H-2E	Australia/New Zealand
BN19C-2E	Central Europe
BN19A-2E	UK/Ireland
BN19E-2E	Switzerland
BN19K-2E	Denmark
BN19M-2E	Italy
BN19S-2E	India/South Africa
BN18L-2E	Israel

* Orderable as 17-00083-15

Step 11—Hardware and Software Supplemental Support Services

Step 11a—Hardware and Software Supplemental Support Services—Americas and Asia Pacific Area only

- Systems include three-year warranty, on-site with 5x9, 24-hour response time.

AlphaServer 2100 4/275 Systems

FM-454HR-36	Years 1-3, 5 x 9, 4-hour response time
FM-454HR-60	Years 1-5, 5 x 9, 4-hour response time
FM-45512-36	Years 1-3, 5 x 12, 4-hour response time
FM-45512-60	Years 1-5, 5 x 12, 4-hour response time
FM-45616-36	Years 1-3, 6 x 16, 4-hour response time
FM-45616-60	Years 1-5, 6 x 16, 4-hour response time
FM-45724-36	Years 1-3, 7 x 24, 4-hour response time
FM-45724-60	Years 1-5, 7 x 24, 4-hour response time

AlphaServer 2100 5/250 and 5/300 Systems

FM-S54HR-36	Years 1 - 3, 5 x 9, 4-hour response time
FM-S54HR-60	Years 1 - 5, 5 x 9, 4-hour response time
FM-S5512-36	Years 1 - 3, 5 x 12, 4-hour response time
FM-S5512-60	Years 1 - 5, 5 x 12, 4-hour response time
FM-S5616-36	Years 1 - 3, 6 x 16, 4-hour response time
FM-S5616-60	Years 1 - 5, 6 x 16, 4-hour response time
FM-S5724-36	Years 1 - 3, 7 x 24, 4-hour response time
FM-S5724-60	Years 1 - 5, 7 x 24, 4-hour response time

Step 11a—Hardware and Software Supplemental Support Services *(continued)*

Software

- Systems include 90-day Conformance to SPD and Telephone Advisory Support. Select optional Software Supplemental Support Services, if required.
- Software service upgrades for **Windows NT** include advisory and remedial software support for the time period indicated.
- Software service upgrades for **Digital UNIX** include advisory and remedial software support with new version license rights for operating system and Digital NAS Base Server 200 for the time period indicated.
- Software service upgrades for **OpenVMS** include advisory and remedial software support with new version license rights for operating system and Digital NAS Base Server 200 for the time period indicated.

AlphaServer 2100A 4/275, 5/250, and 5/300 Systems

FM-45NTS-12	12-month Software Supplemental Support for **Windows NT** AlphaServer 2100A systems
FM-45NTS-36	36-month Software Supplemental Support for **Windows NT** AlphaServer 2100A systems
FM-45NTS-60	60-month Software Supplemental Support for **Windows NT** AlphaServer 2100A systems
FM-SEOSF-12	12-month Software Supplemental Support for **Digital UNIX** AlphaServer 2100A systems
FM-SEOSF-36	36-month Software Supplemental Support for **Digital UNIX** AlphaServer 2100A systems
FM-SEOSF-60	60-month Software Supplemental Support for **Digital UNIX** AlphaServer 2100A systems
FM-SEVMS-12	12-month Software Supplemental Support for **OpenVMS** AlphaServer 2100A systems
FM-SEVMS-36	36-month Software Supplemental Support for **OpenVMS** AlphaServer 2100A systems
FM-SEVMS-60	60-month Software Supplemental Support for **OpenVMS** AlphaServer 2100A systems

Step 11b—Hardware and Software Supplemental Support Services—Europe only

Europe does **not** have specific part numbers for Hardware and Software Supplemental Support Services. Prices can be quoted using the Excelerator tool; contact MCS Sales in your country for information on Hardware and Software Supplemental Support Services.

AlphaServer 2100A System Specifications

Specifications

Shipping Dimension	
Height	119 cm (46.9 in.)
Width*	102 cm (40.0 in.)
Depth*	61 cm (24.0 in.)
Weight	85 kg (187 lb) typical
	114 kg (250 lb) maximum

Installed Dimensions	
Height	70 cm (27.6 in.)
Width	43 cm (16.9 in.)
Depth	81 cm (31.9 in.)
Weight	75 kg (165 lb) typical
	100 kg (220 lb) maximum

Clearances	Operating	Service
Front	75 cm (29.5 in.)	75 cm (29.5 in.)
Rear	15.2 cm (6 in.)	76.2 cm (30 in.)
Sides	None	76.2 cm (30 in.)

Environmental		
Temperature	Operating**	10°-35° C (50°-95° F)
	Nonoperating	
	Storage (60 days)	-40°-66° C (-40°-151° F)
	Rate of change	11° C/hr (20° F/hr)
Relative humidity	Operating	20–80%
	Nonoperating	20–80%
	Storage (60 days)	10–95%
	Rate of change	20%/hr
Maximum wet bulb temperature	Operating Storage (60 days)	28° C (82° F)
		46° C (115°F)
Minimum dew point temperature	Operating	2° C (36° F)
	Storage (60 days)	Not tested
Maximum heat dissipation	Current	Theoretical
Single supply	800 Watt, 3005 Btu/hr	920 Watt, 3142 Btu/hr
Dual supply	1280 Watt, 4371 Btu/hr	1675 Watt, 5720 Btu/hr
Air flow and quality	Intake location	Front
	Exhaust location	Rear
Altitude	Operating†	2000 m (6562 ft)
	Nonoperating	3600 m (12,000 ft)
Mechanical shock	Operating	7.5 G 10 ms
	Nonoperating	20 G peak 30 ms
Vibration	Operating	10-500 Hz .1 G peak
Acoustics	Operating	LNPEc (Bels)
		6.6 maximum per ISO 7779

Electrical		
Nominal ac voltage	100-120 Vac	220-240 Vac
Voltage range (Vac)	88-132 Vac	180-264 Vac
Power source phase	Single	Single
Nominal frequency (Hz)	60 Hz	50 Hz
Frequency range (Hz)	47-63 Hz	47-63 Hz
Maximum inrush current	50 Amps	50 Amps
RMS current at nominal voltage (steady state)	8.5 Amps	4.0 Amps
Power cord	Type	IEC 320 C16
	Length	240 cm (113 in.)
	U.S. plug	NEMA 5-15, Socket EIC 320 Sheet, C-15

* Dmensions of shipping pallet; fork-lift access is on the width dimension.

** Maximum operating temperature at Sea Level. Reduce by 1° C (1.8° F) for each 600 m (2000 ft) above Sea Level.

† Higher altitudes are possible if maximum operating temperature is reduced (see Temperature, above); other restrictions may apply, such as maximum permissible altitude for hard disk drives.

Specifications *(continued)*

Regulatory	
Agency approvals	UL Listed to UL1950 CSA Certified to CAN/ C22.2 No. 950-M89 TUV EN 60950 GS VDE 0805 Gsmarke ZH1/61 IEC 950 FCC 15J Part 15 (Class A) CE
Reviewed to	AS 3260 Australian Standard SS 436 14 50 Swedish Standard NZS 6661:1989 New Zealand Standard EN 60 950: 1992 European Norm

Recommended Power Protection/UPS Solutions for AlphaServer 2100A Systems

UPS offerings feature on-line design and include EIA232 port for local or network monitoring. Prestige units feature a three piece modular design that allows users to safely swap out components without disconnecting the critical load and "plug and play" battery and receptacle extensions. Units include 7 minute battery at full UPS rated output (14 minutes for fully configured system). U.S. models include a three-year, 24-hour hot swap warranty.

Prestige UPS - North American Model

4N-AEAAH-AM	UPS, 3.0kVA/2.0KW Rating, 208V in, 120/208V out, L6-30P Input Plug, (1) L5-30R, (4) 5-15R Output Receptacles—call for information on 120V input models
4N-AEACH-xx	Optional Receptacle Extension, -AA - AE available
4N-AEAAH-AB	Add-on Battery

Prestige UPS - International Model

4N-AEAAH-AS	UPS, 3.0kVA/2.1KW Rating, 200-240V selectable in/out, IEC 309 Input Plug, (3) IEC 320 10A, (1) IEC 320 20A
4N-AEACH-xx	Optional Receptacle Extension, -DA - DD available (Shuko, French, British, Australian)
4N-AEAAH-AB	Add-on Battery
4N-AEWAR-G2	Prestige 5-year on-site exchange warranty upgrade for models sold and serviced in the U.S.
4N-AEACH-HA	Optional mobile module stacker standard unit for above UPS HB/HC/HD=1/2/3 added battery modules

Companion Data Surge Protection

4N-GA249-AB	Modem connection (wall plug-in unit)
4N-GA249-CA	10BaseT connection (wall plug-in unit)
4N-GA510-BF	ThinWire connection (device port)
4N-GA245-xx	Multi-port connection (din rail/rackmount)
4N-GA240-xx	Additional plug-in data modules for 4N-GA249 series devices. AC panel protection also available. All devices include 5 year hot-swap warranty.

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

Includes cable, media and documentation.

Monitoring Software	Windows NT	Digital UNIX	OpenVMS
Single system shutdown	**4N-AEAES-AA**	**4N-AEAES-AK**	**4N-AEAES-EM**
Network Management and multiple system shutdown*	**4N-AEAES-BA**	**4N-AEAES-BK**	**Call for information**

* Connect-UPS Adapter required
   DA/DB=twisted pair, DC/DD=ThinWire

4N-AEAEO-DA/DC	Connect UPS Adapter 120V (North American)
4N-AEAEO-DB/DD	Connect UPS Adapter 220V (International)