Overview

At A Glance

AlphaServer™/*AlphaStation*™ DS20E Linux-Ready Systems include:

- Alpha 21264 667-MHz or 833-MHz processor (dual processor capability)
- 8-MB level DDR cache per processor
- ECC-protected memory bus and cache
- 512-MB or 1-GB SDRAM memory expandable to 4 GB
- Five PCI and one shared PCI/ISA slot (six total slots)
- Six hot swap hard disk drive bays
- Internal mass storage capacity up to 436 GB
- Integrated environmental server management module
- Two 375-Watt hot pluggable power supplies with optional third for N+1 redundancy
- Combo 24X CD-ROM drive and 1.44-MB floppy disk drive
- Protected by HP Services, including a three-year on-site limited warranty

NOTE: Certain restrictions and exclusions may apply. For details, consult the Product Information Centre at 1-888-882-6672.

1. Operator Control Panel
2. Removable media bay
3. Combination CD-ROM/floppy drive
4. Hard disk drive cage
5. Power supplies
6. Ultra2/Ultra3 SCSI adapter
7. System motherboard
8. CPU modules
9. Server Management Module

Standard Features

Processor	Alpha 21264 667-MHz or 833-MHz processor	
Cache Memory	8-MB level 2 dual data rate cache per processor	
Upgradability	System upgradable to dual processing	
Memory	Standard	512-MB or 1-GB ECC 83-MHz SDRAM memory
	Maximum	4 GB
Network Controller	Choice of Ethernet controllers	
Expansion Slots	I/O (Total)	6
	PCI	5
	Shared PCI/ISA	1
Storage Controller	Choice of storage controllers	
Storage	Diskette Drive	1.44 MB
	CD-ROM Drive	24X Max IDE CD-ROM Drive
	Internal Hard Drives	Choice of 18.2-GB, 36.4-GB, or 72.8-GB drives
	Maximum Internal Storage	436 GB
Expansion Ports	Parallel	1
	Serial	2
	Pointing Device (Mouse)	1
	Keyboard	1
	SCSI knockouts on rear of chassis	6
Form Factor	Rackmount or Pedestal	
Power Supply	Two 375-Watt hot plug power supplies, standard; optional third N+1 for redundancy Hot plug redundant power supply support; hot plug fan support	
Service and Support	HP Services provides a wide range of service offerings including a three-year limited warranty fully supported by a worldwide network of resellers and service providers; lifetime toll-free 7 x 24 hardware technical phone support. **NOTE**: Certain restrictions and exclusions may apply. For details, consult the Product Information Centre at 1-888-882-6672.	

Systems/Options

Step 1 – Select system

AlphaServer DS20E systems require the **mandatory** selection of the following items:

- Pedestal/tower or rackmount bezel kit
- Disk drive cage
- LVD SCSI adapter
- System disk drive
- Ethernet adapter
- Power cord

NOTE: Graphics adapter, keyboard, mouse, and monitor are recommended.

AlphaServer DS20E Linux-Ready Systems		
CPU	**Memory/Cache**	**Order Number**
667 MHz	512 MB/8 MB	DJ-56PAB-EA
667 MHz	1 GB/8 MB	DJ-56PAB-FA
833 MHz	512 MB/8 MB	DJ-56RAA-EA
833 MHz	1 GB/8 MB	DJ-56RAA-FA
AlphaStation DS20E Linux-Ready Systems		
CPU	**Memory/Cache**	**Order Number**
667 MHz	512 MB/8 MB	DJ-56PAB-EW
667 MHz	1 GB/8 MB	DJ-56PAB-FW
833 MHz	512 MB/8 MB	DJ-56RAA-EW
833 MHz	1 GB/8 MB	DJ-56RAA-FW

Step 2 – Select mandatory options

Step 2a – Bezel Kits – Mandatory

- Pedestal/Tower kit or Rackmount kit is mandatory for each system

Pedestal/Tower bezel kit	3X-BA56P-PB
Rackmount bezel kit (M-Series Cabinets)	3X-BA56R-RC
Rackmount bezel kit for Compaq Series 9000 cabinets (Onsite integration only – contact CustomSystems if factory integration is required)	3X-BA56R-RE

Step 2b – Bezel Kits – Mandatory

- Systems support one disk drive cage; disk drive cage supports six 3.5-inch hard disk drives

6-bay disk drive cage	BA610-6D

Step 2c – SCSI Adapter – Mandatory

- Selection of LVD SCSI adapter to connect to internal disk drive cage is mandatory; SCSI cable included with system

Single-channel LVD adapter, maximum two per system	3X-KZPCA-AA

Options

Step 2 – Select mandatory options *(continued)*

Step 2d – System Disk Drive (Supported in Disk Drive Cage) **–** Mandatory

- Selection of one disk drive is mandatory

18.2-GB Ultra3 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A0585-AA
18.2-GB Ultra3 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A1543-AA
36.4-GB Ultra3 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A0919-AA
36.4-GB Ultra3 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3079-AA
72.8-GB Ultra3 (LVD) 10,000 rpm 1-inch Universal disk drive	3R-A3050-AA
Ultra Universal drive height converter (4-pack); required for installed base customers with 4-slot drive cage when ordering 1.0-inch universal drives	3R-A0528-AA

Step 2e – Ethernet Adapters – Mandatory

- Selection of one Ethernet adapter is mandatory (Ethernet adapter is not required if KZPCM is selected)

PCI 10/100 Mbit Fast Ethernet adapter, UTP (up to four per system)	3X-DE600-AA
PCI 10/100 Mbit 4-port Ethernet adapter, UTP, maximum one per system	DE504-BA
PCI Video/NIC Combo adapter, 3Dlabs Permedia P2 graphics with 4-MB VRAM, single-port 10/100 Mbit Fast Ethernet, maximum one per system	3X-DEPVD-AA
Cable for 10BaseT twisted pair connection	BN25G-xx

Step 2f – **Power Cords** – Mandatory

- Selection of one power cord is mandatory for all systems.

Pedestal Power Cords	North American 120V, 75-inch	BN26J-1K
	Australia, New Zealand, 2.5-meter (103541-511)	BN19H-2E
	Central Europe, 2.5-meter	BN19C-2E
	Denmark, 2.5-meter (103541-481)	BN19K-2E
	Egypt, India, South Africa, 2.5-meter (103541-AR1)	BN19S-2E
	Israel, 2.5-meter	BN18L-2E
	Italy, 2.5-meter (103541-461)	BN35M-02
	Japan, 2.5-meter	3X-BN46F-02
	Switzerland, 2.5-meter (103541-511)	BN19E-2E
	UK, Ireland, 2.5-meter	BN19A-2E
Rackmount Power Cords	U.S./Canada	BN20Z-4E
	Non-U.S.	BN35S-4E
	Japan, 2.5-metre	3X-BN46D-4E

Options

Step 3 – Additional CPU Modules – Optional

- One 6/667-MHz or 833-MHz CPU included, one additional CPU is supported; second CPU must be same speed.

SMP upgrade includes one 6/667-CPU with 8-MB cache, Linux	KN311-CD
SMP upgrade includes one 6/833-CPU with 8-MB cache, Linux	KN312-BD

Step 4 – Memory – Optional

- System includes one memory option; up to three additional memory options can be added; maximum memory supported is 4 GB

512-MB memory option (4 x 128-MB DIMMs)	MS340-DA
1-GB memory option (4 x 256-MB DIMMs)	MS340-EA

Step 5 – Additional Power Supplies – Optional

- Two 375 W power supplies included with system; optional third power supply provides N+1 redundancy

DS20E redundant power supply	FR-H7910-AA

Step 6 – External Storage – Optional

UltraSCSI Configuration Rules

- UltraSCSI configurations require UltraSCSI components (controllers, adapters, shelves, disks, and cables)

UltraSCSI *StorageWorks*™ Pedestals

- UltraSCSI top gun blue pedestals provide support for UltraSCSI disk drives; pedestal is available in single-bus or split-bus configurations and includes a personality module and 180W power supply
- UltraSCSI shelf supports: seven 3.5-inch hard disk drives, or one 5.25-inch device and four 3.5-inch hard disk drives, or two 5.25-inch devices and one 3.5-inch hard disk drive
- Installation of redundant power supply reduces number of 3.5-inch drive slots by one

UltraSCSI single-ended pedestal, single-bus personality module, 180 W power supply	DS-BA356-KF
UltraSCSI pedestal, single-channel differential personality module, 180 W power supply	DS-BA356-KH
180 W power supply, includes 120 V North American and 240 V IEC power cord	CK-BA35X-HH

Storage Controllers for External *StorageWorks* Shelves

NOTE: The following controllers are only supported with *StorageWorks* shelves (not supported with the 3X-BA611-4D or BA610-6D disk drive cages).

PCI 2-port UltraSCSI single-ended adapter and 10/100 Mbit Ethernet combo adapter (uses 1 PCI slot); includes internal 68-pin and 50-pin HD connectors and two external 68-pin VHDCI SCSI connectors, maximum one per system	KZPCM-DA
VHDCI male-to-VHDCI male UltraSCSI cable; required for each external UltraSCSI shelf attached to KZPCM, xx = 02, 2E [2.5], 02, 05, 10, 20 metres	BN37A-xx
PCI 1-port UltraSCSI single-ended adapter (uses one PCI slot); includes internal 68-pin and 50-pin HD connectors and external 68-pin HD connector, maximum one per system; requires BN38C cable (2 to 20 metres) to connect to single-ended UltraSCSI shelf	KZPBA-CA
PCI 1-port UltraSCSI differential adapter (uses one PCI slot); includes external 68-pin HD connector, maximum four per system; requires BN38C cable (2 to 25 metres) to connect to differential UltraSCSI shelf or external RAID array controller	3X-KZPBA-CC
68-pin HD male-to-VHDCI male UltraSCSI cable; required for each external UltraSCSI shelf attached to KZPBA-CA/CB adapter xx = 02, 03, 05, 10, 20, 25 metres	BN38C-xx

Options

Step 6 – External Storage – Optional *(continued)*

***StorageWorks* Shelf**	• Selection of *StorageWorks* shelf requires selection of UltraSCSI adapter and SCSI cable	
	StorageWorks UltraSCSI single-bus shelf kit	BA36R-RC
	StorageWorks UltraSCSI split-bus shelf kit	BA36R-RD

Step 7 – Storage Devices – Optional

System Disk Drive (Supported in *StorageWorks* Shelf)	9.1-GB 10,000 rpm UltraSCSI drive	DS-RZ1DD-VW
	18.2-GB 10,000 rpm UltraSCSI drive	DS-RZ1ED-VW
	36.4-GB 10,000 rpm UltraSCSI drive	DS-RZ1FC-VW
AIT Tape Drives	AIT 35/70-GB hot-plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves, requires 3X-KZPCA-AA adapter	3R-A2396-AA
	AIT 50/100-GB hot-plug LVD Universal tape drive, uses two slots in BA610-6D or 43xxx shelves, requires 3X-KZPCA-AA adapter	3R-A2779-AA
DLT/SDLT Tape Drives	SDLT tabletop 110/220-GB external tape drive, carbon black – requires 3X-KZPCA-AA LVD adapter – U.S.	192103-002
	Same as above – International	192103-B32
	Same as above – Japan	192103-292
	SDLT tabletop 160/320-GB external tape drive, carbon black – requires 3X-KZPCA-AA LVD adapter – U.S.	257319-001
	Same as above – International	257319-291
	Same as above –Japan	257319-B31
AIT Autoloaders	AIT 35-GB rackmount autoloader, 8 cartridge, U.S.	280349-001
	Same as above, International	280349-B31
	AIT 35-GB tabletop autoloader, 8 cartridge, U.S.	292355-001
	Same as above, International	292355-B31

Step 8 – Graphics Adapters – Recommended

	3Dlabs Oxygen VX1 32-MB PCI 2D graphics accelerator (one per system)	SN-PBXGF-AB

Step 9 – Monitors – Recommended

- Graphics monitors other than those listed can be used if compatible with SVGA graphics ordered with system
- Video extension cable required if monitor is located more than 1 metre from server
- Monitors will ship with, but not be integrated with systems
- A video cable, 6-foot/1.8-metre length, is included with all variants of monitors

Options

Step 9 – Monitors – Recommended *(continued)*

Carbon/Silver Monitors	V7550 17-inch (16-inch viewable image size) flat-faced shadow mask color monitor, two-tone (carbon/silver), 0.25mm dot pitch, VGA to 1024 x 768 @85 Hz, MPRII/TCO99/ Energy Star compliant, Northern Hemisphere with NA power cord, VGA cable	3R-A4002-AA
	P720 17-inch (16-inch viewable image size) auto-scanning color monitor, Diamondtron NF, 0.25-mm aperture grille pitch, VGA to 1280 x 1024 @85 Hz, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with Euro power cord, VGA cable – **NOTE**: This variant can also be used for North America and Asia Pacific	3R-A3389-AA
	Same as above, APD, no power cord (244373-B24)	3R-A3390-AA
	Same as above, , with PRC power cord, CCIB (244373-AA1)	3R-A3391-AA
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord (244373-011)	3R-A3392-AA
	P920 19-inch (18-inch viewable image size) auto-scanning color monitor, Diamondtron NF, 0.24 mm aperture grille pitch, VGA to 1600 x 1200 @85 Hz, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with NA power cord, VGA cable (244375-001)	3R-A3393-AA
	Same as above, with Euro power cord (244375-021)	3R-A3394-AA
	Same as above, with PRC power cord, CCIB (244375-AA1)	3R-A3396-AA
	Same as above, Southern Hemisphere, 0.25 to 0.27 mm aperture grille pitch, with Australia/New Zealand power cord (244375-011)	3R-A3397-AA
	P1220 22-inch (20-inch viewable image size) auto-scanning color monitor, Diamondtron NF, 0.24 mm aperture grille pitch, VGA to 1792 x 1344 @85Hz, dual video input, USB Hub, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with NA power cord, VGA cable (244374-001)	3R-A3398-AA
	Same as above, with Euro power cord (244374-021)	3R-A3399-AA
	Same as above, APD, no power cord (244374-B24)	3R-A3400-AA
	Same as above, with PRC power cord, CCIB (244374-AA1)	3R-A3401-AA
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord (244374-011)	3R-A3402-AA
Carbon/Silver Flat Panel Monitors	TFT1825, 18-inch (18-inch viewable image size) TFT flat panel monitor, 0.28mm pixel pitch, 1600 x 1200 @60Hz, multi-mode support, MPRII/TCO99/Energy Star compliant, one VGA, one DVI-I input connector. NA power cord, VGA and DVI-I cables	3R-A4292-AA
	TFT1520, 15.1-inch (15-inch viewable image size) TFT flat panel monitor, 0.297 mm pixel pitch, 1024 x 768 @75 Hz, multi-mode support, MPRII/TCO99/Energy Star compliant, two video input connectors (one VGA and one DVI-I), NA power cord, VGA and DVI-I cables	3R-A4249-AA

Options

Step 9 – Monitors – Recommended *(continued)*

Video Extension Cable	6 foot/1.8-metre video extension cable — mandatory for each monitor ordered	BN39C-02
Monitor Power Cords	North American, 120V, 75-inch	BN26J-1K
	Australia, New Zealand, 2.5-meter (103541-511)	BN19H-2E
	Central Europe, 2.5-meter	BN19C-2E
	Denmark, 2.5-meter (103541-48)	BN19K-2E
	Egypt, India, South Africa, 2.5-meter (103541-AR1)	BN19S-2E
	Israel, 2.5-meter	BN18L-2E
	Italy, 2.5-meter (103541-461)	BN35M-02
	Japan, 2.5-meter	3X-BN46F-02
	Switzerland, 2.5-meter (103541-511)	BN19E-2E
	UK, Ireland, 2.5-meter	BN19A-2E

Options

Step 10 – Networks and Communications – Optional

Ethernet	
PCI (32-bit, 33-MHz) single-port 10/100 Ethernet (UTP/RJ45) NIC, maximum four per system. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	3X-DE600-AA
PCI (32-/64-bit, 33-/66-MHz) single-port 10/100/1000 (UTP/RJ45) Gigabit NIC, copper; no on-board boot-ROM support, maximum two per system. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	DEGPA-TA

FDDI	
PCI (32-bit, 33-MHz) to FDDI SAS (MMF/duplex-SC) NIC, maximum two per system. Use BN34A, BN34B, or BN34D cables.	3X-DEFPA-AC
PCI (32-bit, 33-MHz) to FDDI DAS (MMF/duplex-SC) NIC, maximum two per system. Use BN34A, BN34B, or BN34D cables.	3X-DEFPA-DC
MIC-SC dual fiber optic cable	BN34D-xx
SC-to-SC dual fiber optic cable	BN34B-xx
PCI (32-bit, 33-MHz) to FDDI SAS (UTP/RJ45) NIC, maximum two per system. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	3X-DEFPA-UC
PCI (32-bit, 33-MHz) to FDDI DAS (UTP/RJ45s) NIC, maximum two per system. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	3X-DEFPA-MC

Ethernet, FDDI, Multi-use Cables	
Multimode fiber optic (MMF) 62.5/125um duplex cable, with SC-to-ST connectors. –xx = available lengths: (2E, 4E, 01, 03, 10, 20, 30) for 2.4, 4.5, 1, 3, 10, 20, 30 metres	BN34A-xx
Multimode fiber optic (MMF) 62.5/125um duplex cable, with SC-to-SC connectors. -xx = available lengths: (2E, 4E, 01, 03, 10, 20, 30) for 2.4, 4.5, 1, 3, 10, 20, 30 metres	BN34B-xx
Category 5e (4-Unshielded Twisted Pairs / UTP) straight-through cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0B, 0E, 01, 03, 04, 07) for 0.2, 0.5, 1, 3, 4, 7 metres	BN25G-xx
Category 5e (4-Twisted Pairs, Screened/ ScTP) straight-through cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 metres	BN26M-xx
Category 5e (4-Unshielded Twisted Pairs / UTP) Xover cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 metres	BN24Q-xx
Category 5e (4-Twisted Pairs, Screened / ScTP) Xover cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 metres	BN28Q-xx

Options

Step 11 – Keyboard and Mouse – Recommended

- Keyboard and mouse are not included with system and must be ordered separately
- All keyboards listed may not be available in all geographies

Keyboard/Language	Carbon
U.S./English keyboard	3R-LKQ48-AA
Arabic keyboard	3R-LKQ48-BR
Belgian keyboard	3R-LKQ48-AB
BHCSY keyboard	3R-LKQ48-AX
Canadian/French keyboard	3R-LKQ48-AC
Cyrillic keyboard (Russian)	3R-LKQ48-BT
Czech keyboard	3R-LKQ48-BV
Danish keyboard	3R-LKQ48-AD
Dutch keyboard	3R-LKQ48-AH
Finnish keyboard	3R-LKQ48-AF
French keyboard	3R-LKQ48-AP
German keyboard	3R-LKQ48-AG
Greek keyboard	3R-LKQ48-BH
Hebrew keyboard	3R-LKQ48-AT
Hungarian keyboard	3R-LKQ48-BQ
International keyboard	3R-LKQ48-BA
Italian keyboard	3R-LKQ48-AI
Japanese keyboard	3R-LKQ48-AJ
Korean keyboard	3R-LKQ48-BK
Latin-American keyboard	3R-LKQ48-AR
Norwegian keyboard	3R-LKQ48-AN
Polish keyboard	3R-LKQ48-BP
Portuguese keyboard	3R-LKQ48-AV
Simplified Chinese keyboard	3R-LKQ48-CV
Slovak keyboard	3R-LKQ48-CZ
Spanish keyboard	3R-LKQ48-AS
Swedish keyboard	3R-LKQ48-AM
Swiss/French keyboard	3R-LKQ48-AK
Traditional Chinese keyboard	3R-LKQ48-BI
Thai keyboard	3R-LKQ48-CB
Turkish Q keyboard	3R-LKQ48-BU
UK keyboard	3R-LKQ48-AE

Options

Step 11 – Keyboard and Mouse – Recommended *(continued)*

Mouse	3-button mouse – carbon	3R-A3480-AA
Keyboard or Mouse Extension Cable	6-foot/1.8-metre keyboard or mouse extension cable; to extend both keyboard and mouse order two cables	17-04016-01

Step 12 – Console Terminal – Optional

- Any terminal can be used as a console device
- Third-party console devices require an EIA-232 25-pin DSUB connector

VT510 video terminal; requires H8575-x cable	VT510-xx
Console cable, female connector	H8575-A
Console cable, male connector	H8575-D
Console cable, male connector (IBM compatible)	H8575-E

Step 13 – Linux Kit – Optional

Red Hat Linux CD-ROM Kit	QA-6M1AA-H8

Step 14 – Hardware Supplemental Support Services

- Systems include 3-year hardware warranty, on-site, with 5 x 9, 24-hour response time; select optional Hardware Supplemental Support Services if required
- Options ordered as part of "Initial System Sale" take on warranty of the enclosure; options added after "Initial System Sale" take on warranty of enclosure until enclosure warranty ends
- All unique AlphaServer DS20E options have a minimum of 1-year Return-to-Compaq warranty

Hardware Supplemental Support –Americas and Asia Pacific only	1-GB memory or less	More than 1-GB memory
5 x 9, 4-hour response time	FM-TC4HR-36	FM-TF4HR-36
5 x 12, 4-hour response time	FM-TC512-36	FM-TF512-36
6 x 16, 4-hour response time	FM-TC616-36	FM-TF616-36
7 x 24, 4-hour response time	FM-TC724-36	FM-TF724-36
Years 1-5, next day, onsite	FM-TCXHW-60	FM-TFXHW-60
Years 1-5, 5 x 9, 4-hour response time	FM-TC4HR-60	FM-TF4HR-60
Years 1-5, 5 x 12, 4-hour response time	FM-TC512-60	FM-TF512-60
Years 1-5, 6 x 16, 4-hour response time	FM-TC616-60	FM-TF616-60
Years 1-5, 7 x 24, 4-hour response time	FM-TC724-60	FM-TF724-60

Installation Services	Hardware product installation for DS20E	FM-TC12X-IN
	Add-on memory installation for DS20E	FM-TCMEM-IN
	Add-on CPU installation for DS20E	FM-TCSMP-IN

Technical Specifications

Pedestal	**Dimensions** (H x W x D)	18.5 x 8.85 x 27.5 in/47 x 22.5 x 69.9 cm	
	Shipping Dimensions	24 x 26.25 x 40 in/61 x 66 x 101.6 cm	
	Weight		
	Typical Configuration	80 lb/36 kg	
	Maximum Configuration	88 lb/40 kg	
	Shipping Weight		
	Nominal	100 lb/45 kg	
	Maximum	110 lb/50 kg	
	Clearances	**Operating**	**Service**
	Front	15 in/38.1 cm	15 in/38.1 cm
	Rear	6 in/15 cm	29.5 in/75 cm
	Left Side	None	None
	Right Side	None	None

Rackmount	**Dimensions** (H x W x D)	8.75 x 17.5 x 26 in/22.2 x 44.5 x 66 cm (5U)	
	Shipping Dimensions	24 x 26.25 x 40 in/61 x 66 x 101.6 cm	
	Weight		
	When lifting:		
	Nominal	80 lb/36 kg	
	Maximum	86 lb/39 kg	
	Total added to cabinet (brackets, slides, cables):		
	Nominal	84 lb/38 kg	
	Maximum	88 lb/40 kg	
	Shipping Weight		
	Nominal	100 lb/45 kg	
	Maximum	110 lb/50 kg	
	Clearances		
	Operating	See specific cabinet requirements	
	Service	Minimum 4 ft/121.9 cm, 28 in/71 cm withdrawal on rails	

Cabinet		**H9A10 M-Series**	**H9A15 M-Series**
	Dimensions (H x W x D) (Depth includes rear door extender)	67 x 23.6 x 41.5 in/ 170 x 60 x 105.4 cm	79 x 23.6 x 41.5 in/ 200 x 60 x 105.4 cm
	Shipping Dimensions	73 x 36 x 48 in/ 185.5 x 91.5 x 122 cm	85 x 36 x 48 in/ 216 x 91.5 x 122 cm
	Weight	Configuration dependent	1,000 lb/450 kg
	Shipping Weight	Configuration dependent, maximum payload 1,000 lb	1,056 lb/550 kg (normal) 1,408 lb/640 kg (maximum)

Technical Specifications

System Unit	**ENVIRONMENTAL**		
	Temperature	Operating (Tower, Rackmount)	50° to 95° F/10° to 35° C
		NOTE: Maximum operating temperature at sea level; reduce by 1.8°F (1°C) for each 600m (2,000 ft) above sea level.	
		Non-operating	Not tested
		Storage (60 days)	–40° to –151° F/–40 to –66° C
		Rate of change	20° F/hr/11° C/hr
	Relative Humidity	Operating	20% to 80%
		Non-operating	20% to 80%
		Storage (60 days)	10% to 95%
		Rate of change	20% hr
	Maximum Wet Bulb Temperature	Operating	82° F/28° C
		Storage (60 days)	115° F/46° C
	Maximum Dew Point Temperature	Operating	36° F/2° C
		Storage (60 days)	Not tested
	Heat Dissipation	**Nominal**	**Maximum**
	Pedestal	550W, 1,878 BTU/hr	780W, 2,664 BTU/hr
	H9A10/H9A15 Cabinets	Configuration dependent	Configuration dependent
	Air Flow and Quality		
	Intake location	Front	
	Exhaust location	Rear Tower, Pedestal, Rack; Rear/top H9A10/H9A15	
	Particle size	N/A	
	Concentration	N/A	
	Altitude		
	Operating	10,000 ft/3,037 m	
		NOTE: Higher altitudes are possible if maximum operating temperature is reduced (see Temperature); other restrictions may apply such as maximum permissible altitude for hard drives.	
	Non-operating	40,000 ft/12,192 m	
	ACOUSTICS (Declared values per ISO 9296 and ISO 7779)		
	Acoustics	**L_{WAd3}B**	**L_{nAm5}dBA** (bystander position)
	Idle	5.8	44
	Operating	6.3	49
		NOTE: Current values for specific configurations are available from Compaq, note that 1 B = 10 dBA.	
	Vibration		
	Operating	10 to 500 Hz .1 G peak	
	Non-operating	1.03 Grms 5 to 300 Hz	

Technical Specifications

System Unit *(continued)*

ELECTRICAL (Power supplies are universal, PFC, auto ranging, 100/240 VAC)			
Nominal Voltage (VAC)	100	120	200-240
Voltage Range (VAC) **temporary condition**	90-100	110-128	180-250
Power Source Phase	Single	Single	Single
Nominal Frequency (Hz)	50/60	50/60	50/60
Frequency Range (Hz)	49-51/59-61	49-51/59-61	49-51/59-61
RMS Current (maximum steady state)			
Pedestal and Rackmount			
Single power cord	7.5A	6.0A	3.8A
Maximum VA	780	765	730
M-Series Cabinet (configuration dependent)			
Nominal voltage (VAC)	100	120	220-240
Each power cord	24A	24A	16A
Power Cords			
Pedestal	1 (75 in/190 cm)	IEC 320 C13 to NEMA 5-15 (North America) or IEC 320 C13 to country-specific	
Rackmount	1 (14 ft 10 in/452 cm)	IEC 320 C13 to NEMA 5-15 (North America) or IEC 320 C13 to IEC 320 C14 (other countries)	
Cabinet	2 (10 ft 10 in/330 cm)	120V non-removable NEMA L5-30P or 200-240V non-removable IEC 309	
Regulatory			
Agency Approvals	UL: Listed to UL1950 (3rd edition)		
	CSA: Certified to CAN/CSA-C22.2 No. 950-M95		
	TUV: EN 60950/A4: 1997 VDE 0805 GS marked		
	FCC: Part 15.B Class A (EV6 500 MHz)		
	FCC: Part 15.B Class B (EV67 667 MHz)		
	CE: EN55022, EN50082		
	VCCI Class II ITE		
	BCIQ: CISPR22, CNS13438		
	C-Tick: CISPR22, AS/NZS 3548		
Reviewed to	AS/NZ 3260:1993 Australian/New Zealand Standard		
	EN 60950/A4: 1997 European Norm		
	IEC 950 (2nd edition, 4th amend)		

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