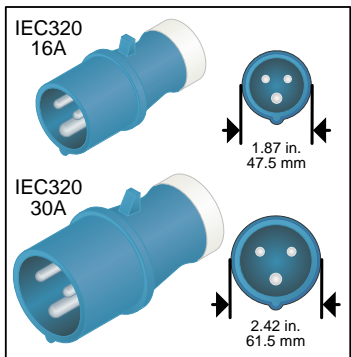
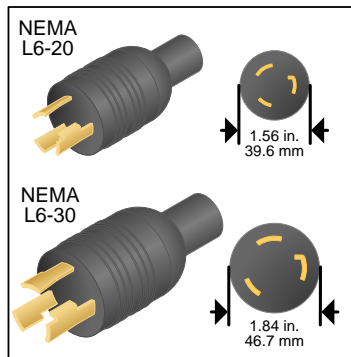
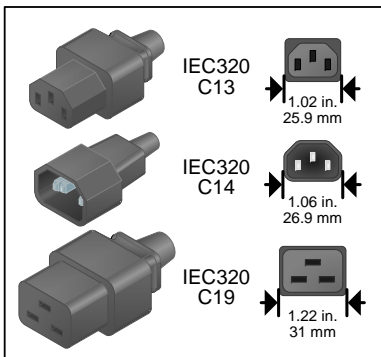
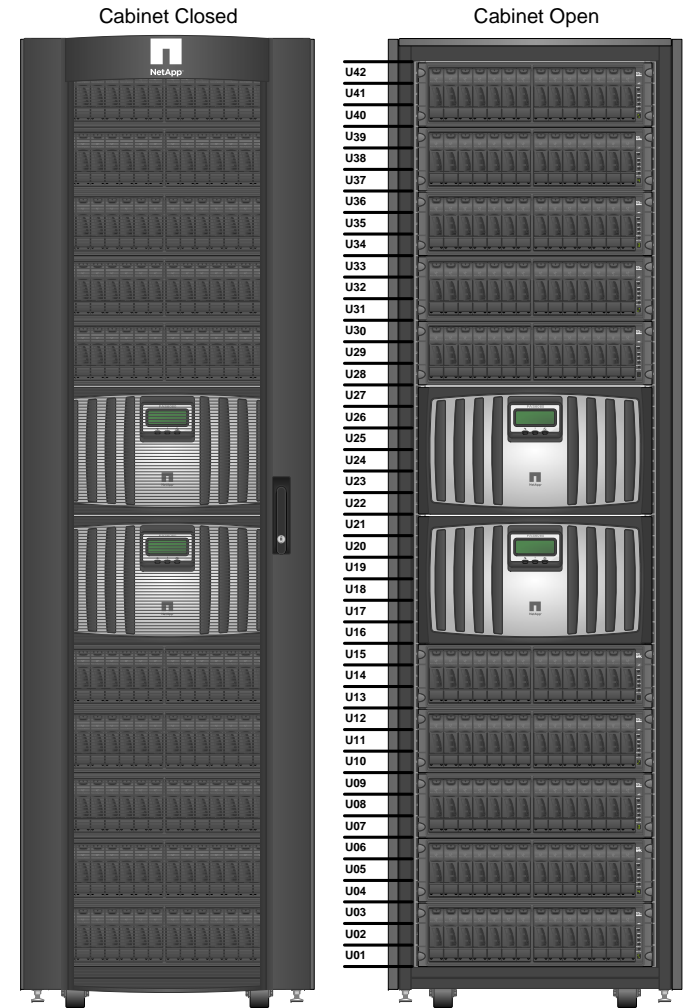




# NetApp Hardware Universe – RC-0036-0708 – Side A – 07-22-2008 System Cabinet

42U System Cabinet					
Dimensions		Weight		Clearance	
Height	78.7 in. (200 cm)	Rail Load Capacity	125 lb. (56.7 kg)	Front/Rear	30 in. (76.3 cm)
Depth	37.4 in. (95 cm)	Empty Weight	275 lb. (124.7 kg)	Side (Optional)	24 in. (61 cm)
Width	23.6 in. (60 cm)	Loaded Weight	1500 lb. (680 kg)	Top	12 in. (30 cm)
Rack Space	73.5 in. (186.7 cm)				

System Cabinet Configurations				
Configuration	20-Amp Single-Phase PDU	30-Amp Single-Phase 2x PDU	30-Amp Single-Phase 4x PDU	
Power Requirement	20A (derated to 16A in U.S.) 200-240V AC, 50/60Hz x 4	30A (derated to 24A in U.S.) 200-240V AC, 50/60Hz x 2	30A (derated to 24A in U.S.) 200-240V AC, 50/60Hz x 4	
Power Distribution Units (PDU)	4x (mounted two per side)	2x (mounted one unit per side)	4x (mounted two per side)	
Power Inlet (U.S.)	IEC320-C20 x 4	(Power cords hard-wired to PDU)	(Power cords hard-wired to PDU)	
Power Inlet (Intl)	IEC320-C20 x 4	(Power cords hard-wired to PDU)	(Power cords hard-wired to PDU)	
Power Outlets (per PDU)	IEC320-C13 x 8	IEC320-C13 x 16	IEC320-C13 x 8	
Part Numbers	Base Cabinet (U.S.)	X871A-R6 (20A PDU x 4)	X8730A-R6 (30A PDU x 2)	X8730B-R6 (30A PDU x 4)
	Base Cabinet (Intl)	(same as U.S.)	X8731A (30A PDU x 2)	X8731B (30A PDU x 4)
	PDU Only (U.S.)	X8711-R6 (20A PDU x 1)	X8712A-R6 (30A PDU x 1)	X8712B-R6 (30A PDU x 1)
	PDU Only (Intl)	(same as U.S.)	X8713A-R6 (30A PDU x 1)	X8713B-R6 (30A PDU x 1)
	Power Cord (U.S.)	X875A-R6 (NEMA L6-20 x 4)	(NEMA L6-30 hard-wired to PDU)	(NEMA L6-30 hard-wired to PDU)
	Power Cord (Intl)	X875B-R6 (IEC309-16A x 4)	(IEC309-30A hard-wired to PDU)	(IEC309-30A hard-wired to PDU)
	Power Cord (Aus/NZ)	X875C-R6 (AS/NZS3123-20 x 4)	-	-
Input Current Actual (Amps)	17.1 per PDU	25.5 per PDU	17.2 per PDU	
Input Power Actual (Watts)	3,373 total per PDU	5,460 total per PDU	3,373 total per PDU	
Thermal Dissipation (BTU/hr)	11,510 per PDU	18,629 per PDU	11,510 per PDU	
Notes	Because there are two PDUs per side, instead of one, the capacity is double the amount, although the PDUs must be connected to separate 20A branch circuits.	30A PDU uses two 8-outlet strips daisy-chained with hard-wired input cables.	Because there are two PDUs per side, instead of one, the capacity is double the amount, although the PDUs must be connected to separate 30A branch circuits.	



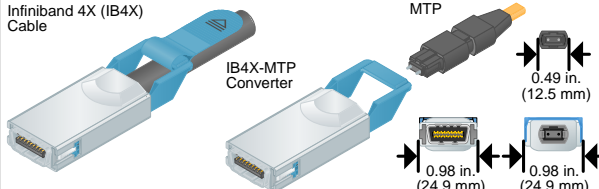
Power Distribution			
IEC320-C13 (female) to IEC320-C14 (male)			
27 in. Power Cable	X800-42U-R6	1U Blank Panel	X8776-R6
48 in. Power Cable	X1558A-R6	3U Blank Panel	X8777-R6
System Cabinet Kits and Parts			
Rail Kit	X877-R6	Interconnect Kit	X879-R6
Bolt-Down Kit	X878-R6		
Universal 4-Post Rack Mount Kit		X5515A-R6	



# NetApp Hardware Universe – RC-0036-0708 – Side B – 07-22-2008

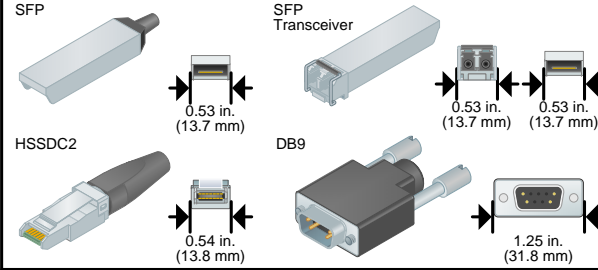
## Common Cables

### HA Pair Interconnect Cables and Connectors



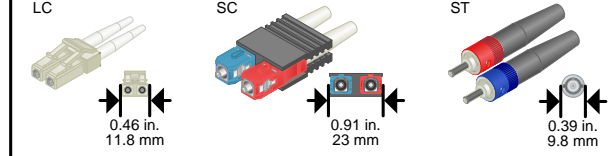
Part No.	Begin	End	Length	Quantity
X1943A-R6	InfiniBand 4X	InfiniBand 4X	.5m	2
X1940A-R6	InfiniBand 4X	InfiniBand 4X	2m	2
X1941A-R6	InfiniBand 4X	InfiniBand 4X	5m	2
X1942A-R6	InfiniBand 4X	InfiniBand 4X	10m	2
X1949A-R5	InfiniBand 4X	MTP	Cu-Op converter	1
X1945A-R6	MTP	MTP	5m	1
X1946A-R6	MTP	MTP	30m	1
X1951A-R6	MTP	SC (Op)	30m	1
X1952A-R6	MTP	ST (Op)	30m	1
X1953A-R6	MTP	LC (Op)	30m	1
X1954A-R6	MTP	FC (Op)	30m	1
X1955A-R6	MTP	MT-RJ (Op)	30m	1

### Fibre Channel Cables and Connectors



Part No.	Begin	End	Length	Quantity
X6529-R6	SFP	LC (Op)	Transceiver (2Gb)	1
X6539-R6	SFP	LC (Op)	Transceiver (4Gb)	1
X6530-R6	SFP	SFP	.5m (4/2/1Gb)	1
X6532-R6	SFP	SFP	3m (2/1Gb only)	1
X6556-R6	SFP	SFP	5m (4/2/1Gb Op)	1
X6538-R6	SFP	DB9	3m	1
X6531-R6	SFP	HSSDC2	.5m	1
X6533-R6	SFP	HSSDC2	3m	1

### Optical Cables and Connectors



Part No.	Begin	End	Length	Quantity
X6510A-R6	SC	SC	5m	1
X6511A-R6	SC	SC	30m	1
X6524-R6	2 x LC	2 x LC	2m	1
X6553-R6	LC	LC	2m	1
X6536-R6	LC	LC	5m	1
X6554-R6	LC	LC	15m	1
X6537-R6	LC	LC	30m	1
X6523-R6	2 x LC	2 x SC	2m	1
X6547-R6	LC	SC	5m	1
X6546-R6	LC	SC	30m	1

### HA Pair Notes

HA pair configuration means two controllers - both actively serving data - are connected for automatic failover protection. The following interconnect options are applicable to HA pair configurations using NVRAM5 and NVRAM6 adapters:

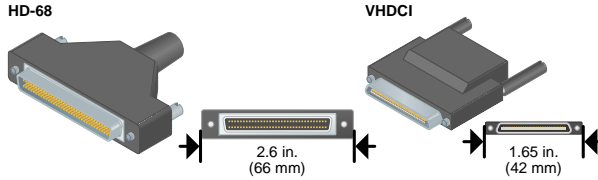
- .5m to 10m** – Copper InfiniBand interconnect cables (standard)  
NetApp part: X1943A-R6 (.5m), X1940A-R6 (2m), X1941A-R6 (5m), or X1942A-R6 (10m)
- 5m to 30m** – Optical interconnect using MTP ribbon cables (supplier NetApp)  
NetApp part: X1949A-R6 (Cu-to-Op converter)  
NetApp part: X1945A-R6 (5m) or X1946-R6 (30m)
- 30m to 300m** – Optical interconnect using MTP ribbon cables (suppliers NetApp and Fujikura)  
NetApp part: X1949A-R6 (Cu-to-Op converter)  
Fujikura part: CBPE4-497-XXX, where XXX designates length in meters  
Example: 300 meter MTP 50/125 Plenum Cable 500Mhz/KM is CBPE4-497-300
- 300m to 500m** – Optical interconnect using MTP ribbon cables (suppliers NetApp and Fujikura)  
NetApp part: X1949A-R6 (Cu-to-Op converter)  
Fujikura part: CBPE4-507-XXX, where XXX designates length in meters  
Example: 500 meter MTP 50/125 Plenum Cable 2000Mhz/KM is CBPE4-507-500

NOTE: In order to achieve the maximum 500 meter distance between controllers in a HA pair, the interconnect cable must be a direct point-to-point connection with no intermediate device between them (such as patch panel).

HA configurations that must go through a patch panel can use the following part numbers in conjunction with the X1949A-R6 Cu-to-Op converters:

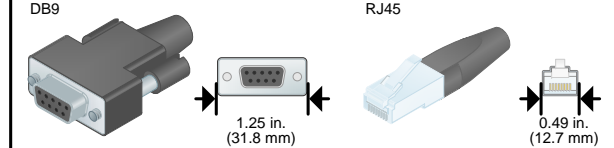
- X1951A-R6 - SC termination
- X1952A-R6 - ST termination
- X1953A-R6 - LC termination
- X1954A-R6 - FC (Op) termination
- X1955A-R6 - MT-RJ termination

### SCSI Cables and Connectors



Part No.	Begin	End	Length	Quantity
X6513-R6	HD-68	VHDCI	2m	1

### Console Cables and Connectors



Part No.	Begin	End	Length	Quantity
X881-R6	DB9	RJ45	M Dongle	1

### Terms and Abbreviations

<b>BTU</b> – British Thermal Unit	<b>MTP</b> – Mechanical Transfer Pull-Off
<b>Cu</b> – Copper Connector	<b>MT-RJ</b> – Mechanical Transfer Registered Jack
<b>FC</b> – Fibre Channel	<b>Op</b> – Optical Connector
<b>FC (Op)</b> – Ferrule Connector	<b>PDU</b> – Power Distribution Unit
<b>HSSDC</b> – High-Speed Serial Data Connector	<b>SC</b> – Subscriber Connector
<b>IB</b> – InfiniBand	<b>SFP</b> – Small Form-Factor Pluggable
<b>IB4X</b> – InfiniBand 4X	<b>ST</b> – Straight Tip Connector
<b>LC</b> – Lucent Connector	<b>VHDCI</b> – Very High Density Cable Interconnect

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## Fabric-Attached Storage (FAS)

Model	FAS6080	FAS6040	FAS3170	FAS3140	FAS3070	FAS3040	FAS3020	FAS2050	FAS2020	FAS270	FAS250	
Front View												
System Capacity Raw Maximum <sup>1</sup>	1,176TB	840TB	840TB	420TB	504TB	336TB	84TB	104TB	68TB	16TB	4TB	
Aggregate/Vol Maximum Size <sup>2</sup>	16TB	16TB	16TB	16TB	16TB	16TB	16TB	16TB	8TB	8TB	2TB	
Max Back-End FC Loops	14	10	10	6	8	6	4	2	2	1	-	
Max Expansion Disk Shelves	84	60	60	30	36	24	12	6	4	3	-	
Max Drive Quantity	FC	1,176	840	840	420	504	336	168	84 (external)	56 (external)	56 (14 int + 42 ext)	14 (internal)
	SAS	-	-	-	-	-	-	-	20 (internal)	12 (internal)	-	-
	SATA	1,176	840	840	420	504	336	168 <sup>4</sup>	104 (20 int + 84 ext)	68 (12 int + 56 ext)	28 (external)	-
Environmental HA Pair/Single Controller	Height (HA/Single)	12U / 6U	12U / 6U	6U / 6U	6U / 6U	6U / 3U	6U / 3U	6U / 3U	4U / 4U	2U / 2U	3U / 3U	- / 3U
	Weight (HA/Single)	242 lb. (109.6 kg) 121 lb. (54.8 kg)	242 lb. (109.6 kg) 121 lb. (54.8 kg)	122 lb. (55.3 kg) 95 lb. (43.1 kg)	122 lb. (55.3 kg) 95 lb. (43.1 kg)	150 lb. (68 kg) 75 lb. (34 kg)	150 lb. (68 kg) 75 lb. (34 kg)	150 lb. (68 kg) 75 lb. (34 kg)	110 lb. (50 kg) with drives	60 lb. (27.2 kg) with drives	77 lb. (35 kg) with drives	77 lb. (35 kg) with drives
	AC Power (HA only)	100-120V 11.2A 200-240V 5.8A	100-120V 10.8A 200-240V 5.6A	100-120V 8.1A 200-240V 4A	100-120V 5.9A 200-240V 2.9A	100-120V 7.4A 200-240V 4.2A	100-120V 6.8A 200-240V 3.8A	100-120V 4.8A 200-240V 2.8A	100-120V 5.7A 200-240V 2.9A	100-120V 4.1A 200-240V 2.2A	100-120V 4A 200-240V 2A	100-120V 4A 200-240V 2A
	Thermal <sup>3</sup> (HA/Single)	3,740 BTU/hr 1,870 BTU/hr	3,624 BTU/hr 1,812 BTU/hr	2,761 BTU/hr 1,602 BTU/hr	2,026 BTU/hr 1,272 BTU/hr	2,466 BTU/hr 1,233 BTU/hr	2,304 BTU/hr 1,152 BTU/hr	1,610 BTU/hr 805 BTU/hr	2,247 BTU/hr 1,988 BTU/hr	1,587 BTU/hr 1,298 BTU/hr	1,279 BTU/hr	1,178 BTU/hr
Platform Specifications HA Pair/Single Controller	Processor (HA/Single)	8 / 4 64-bit dual-core	4 / 2 64-bit	4 / 2 64-bit dual-core	2 / 1 64-bit dual-core	4 / 2 64-bit dual-core	4 / 2 64-bit	2 / 1 32-bit	2 / 1 32-bit	2 / 1 32-bit	2 / 1 64-bit	1 64-bit
	RAM (HA/Single)	64GB / 32GB	32GB / 16GB	32GB / 16GB	8GB / 4GB	16GB / 8GB	8GB / 4GB	4GB / 2GB	4GB / 2GB	2GB / 1GB	2GB / 1GB	512MB
	NVRAM (HA/Single)	4GB / 2GB	1GB / 512MB	4GB / 2GB onboard	1GB / 512MB onboard	1GB / 512MB	1GB / 512MB	1GB / 512MB	512MB / 256MB NVMEM	256MB / 128MB NVMEM	256MB / 128MB NVMEM	64MB NVMEM
	PCI Slots (HA/Single)	10 / 5 (PCIe) 6 / 3 (PCI-X)	10 / 5 (PCIe) 6 / 3 (PCI-X)	8 / 4 (PCIe)	8 / 4 (PCIe)	6 / 3 (PCIe)	6 / 3 (PCIe)	6 / 3 (PCI-X)	2 / 1 (PCIe)	-	-	-
	Ethernet (HA/Single)	12 / 6 GbE RJ45	12 / 6 GbE RJ45	4 / 2 GbE RJ45	4 / 2 GbE RJ45	8 / 4 GbE RJ45	8 / 4 GbE RJ45	8 / 4 GbE RJ45	4 / 2 GbE RJ45	4 / 2 GbE RJ45	4 / 2 GbE RJ45	2 GbE RJ45
	FC Ports (HA/Single)	16 / 8 4Gb SFP <sup>6</sup>	16 / 8 4Gb SFP <sup>6</sup>	8 / 4 4Gb SFP <sup>6</sup>	8 / 4 4Gb SFP <sup>6</sup>	8 / 4 4Gb SFP <sup>6</sup>	8 / 4 4Gb SFP <sup>6</sup>	8 / 4 2Gb SFP <sup>7</sup>	4 / 2 4Gb SFP <sup>6</sup>	4 / 2 4Gb SFP <sup>6</sup>	4 / 2 2Gb SFP <sup>7</sup>	1 2Gb SFP <sup>7</sup>
Data ONTAP <sup>®</sup> (Min Release)	7.2.4	7.2.4	7.2.5	7.2.5	7.2.1 10.0.2	7.2.1 10.0.2	7.0.1	7.2.2L1	7.2.2L1	6.5	6.4.3	



# NetApp Hardware Universe – RC-0032-0708 – Side B – 07-22-2008

	NetApp S Family		NetApp SA Systems			
Model	S550	S300	SA600	SA300	SA200	
Front View						
System Capacity Raw Maximum <sup>1</sup>	12TB	6TB	1,176TB	504TB	104TB	
Aggregate/Vol Maximum Size <sup>2</sup>	12TB	6TB	16TB	16TB	16TB	
Max Back-End FC Loops	-	-	14	8	2	
Max Expansion Disk Shelves	-	-	84	36	6	
Max Drive Quantity	FC	-	1,176	504	84 (external)	
	SAS	-	-	-	20 (internal)	
	SATA	12 (internal)	8 (internal)	1,176	504	104 (20 int + 84 ext)
Environmental HA Pair/Single Controller	Height (HA/Single)	- / 2U	- / 4U <sup>5</sup>	12U / 6U	6U / 3U	4U / 4U
	Weight (HA/Single)	52 lb. (35.8 kg) with drives	41.88 lb. (19 kg) with drives	242 lb. (109.6 kg) / 121 lb. (54.8 kg)	150 lb. (68 kg) / 75 lb. (34 kg)	110 lb. (50 kg) with drives
	AC Power (HA only)	100-120V 9A 200-240V 4.5A	100-120V 6A 200-240V 3A	100-120V 11.2A 200-240V 5.8A	100-120V 7.4A 200-240V 4.2A	100-120V 5.7A 200-240V 2.9A
	Thermal <sup>3</sup> (HA/Single)	1,706 BTU/hr	1,706 BTU/hr	3,740 BTU/hr / 1,870 BTU/hr	2,466 BTU/hr / 1,233 BTU/hr	2,247 BTU/hr / 1,988 BTU/hr
Platform Specifications HA Pair/Single Controller	Processor (HA/Single)	1 32-bit	1	8 / 4 64-bit dual-core	4 / 2 64-bit dual-core	2 / 1 32-bit
	RAM (HA/Single)	2GB	1GB	64GB / 32GB	16GB / 8GB	4GB / 2GB
	NVRAM (HA/Single)	256MB	128MB NVMEM	4GB / 2GB	1GB / 512MB	512MB / 256MB NVMEM
	PCI Slots (HA/Single)	2 (PCI-X)	-	10 / 5 (PCIe) 6 / 3 (PCI-X)	6 / 3 (PCIe)	2 / 1 (PCIe)
	Ethernet (HA/Single)	2 GbE RJ45	4 GbE RJ45	12 / 6 GbE RJ45	8 / 4 GbE RJ45	4 / 2 GbE RJ45
	FC Ports (HA/Single)	-	-	16 / 8 4Gb SFP <sup>6</sup>	8 / 4 4Gb SFP <sup>6</sup>	4 / 2 4Gb SFP <sup>6</sup>
Data ONTAP <sup>®</sup> (Min Release)	7.2.1 SFE	7.2.1 SFE	7.2.5	7.2.5	7.2.5	

## Terms and Abbreviations

**BTU** – British Thermal Unit  
**Cu** – Copper Connector  
**FAS** – Fabric-Attached Storage  
**FC** – Fibre Channel  
**GbE** – Gigabit Ethernet  
**HA** – High Availability  
**NVRAM** – Non-Volatile RAM  
**Op** – Optical Connector  
**PSU** – Power Supply Unit

**SAS** – Serial-attached SCSI  
**SATA** – Serial ATA  
**SFE** – S Family Edition  
**SFP** – Small Form-Factor Pluggable  
**VAC** – Volts Alternating Current

## Notes

- System capacity is calculated using base 10 arithmetic (i.e. 1TB=1,000,000,000,000 bytes) and is derived based on the type, size, and number of drives.
- Maximum volume/aggregate size is calculated using base 2 arithmetic (1TB = 2<sup>40</sup> bytes).
- The thermal dissipation values shown are based on typical system values at 100-120V input voltage. Please refer to the Site Requirements Guide on the NOW site for worst-case thermal dissipation values.
- Available with all drive types = 500GB. The maximum number of 750GB disk drives is 112. The maximum number of 1TB disk drives is 84.
- A single NetApp S300 system is roughly 8.8" (22mm) wide and only occupies half of a standard 19" rack horizontally. It is possible to rack two S300 systems side by side in a standard 19" rack.
- Autosensing ports: 1, 2, 4Gb.
- Autosensing ports: 1, 2Gb.

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# V-Series Storage Virtualization

Model	V6080	V6070	V6040	V6030	V3170	V3140	V3070	V3040	V3020
Front View									
System Capacity Raw Maximum <sup>1</sup>	1,176TB	1,008TB	840TB	840TB	840TB	420TB	504TB	336TB	168TB
Max Number of LUNs	1,176	1,008	840	840	840	420	504	336	168

V-Series Supported Arrays	<p>EMC CLARiiON            EMC Symmetrix            Fujitsu ETERNUS            Hitachi TagmaStore USP            Hitachi Lightning            Hitachi Thunder            HP StorageWorks            IBM TotalStorage            3Par InServ</p>
	<p><b>Note:</b> Please check the NOW™ site for the latest V-Series support matrix.</p>

Environmental	HA Pair/Single Controller	Height (HA/Single)	12U / 6U	12U / 6U	12U / 6U	12U / 6U	6U / 6U	6U / 6U	6U / 3U	6U / 3U	6U / 3U
		Weight (HA/Single)	242 lb. (109.6 kg) 121 lb. (54.8 kg)	242 lb. (109.6 kg) 121 lb. (54.8 kg)	242 lb. (109.6 kg) 121 lb. (54.8 kg)	242 lb. (109.6 kg) 121 lb. (54.8 kg)	122 lb. (55.3 kg) 95 lb. (43.1 kg)	122 lb. (55.3 kg) 95 lb. (43.1 kg)	150 lb. (68 kg) 75 lb. (34 kg)	150 lb. (68 kg) 75 lb. (34 kg)	150 lb. (68 kg) 75 lb. (34 kg)
AC Power (HA Pair)	100-120V 11.1A 200-240V 5.8A	100-120V 22A 200-240V 10A	100-120V 22A 200-240V 10A	100-120V 22A 200-240V 10A	100-120V 8.1A 200-240V 4A	100-120V 5.9A 200-240V 2.9A	100-120V 7.4A 200-240V 4.2A	100-120V 6.8A 200-240V 3.8A	100-120V 4.8A 200-240V 2.8A	100-120V 4.8A 200-240V 2.8A	
Thermal <sup>2</sup> (HA/Single)	3,740 BTU/hr 1,870 BTU/hr	3,740 BTU/hr 1,870 BTU/hr	3,624 BTU/hr 1,812 BTU/hr	3,624 BTU/hr 1,812 BTU/hr	2,761 BTU/hr 1,602 BTU/hr	2,026 BTU/hr 1,272 BTU/hr	2,466 BTU/hr 1,233 BTU/hr	2,304 BTU/hr 1,152 BTU/hr	1,610 BTU/hr 805 BTU/hr	1,610 BTU/hr 805 BTU/hr	
Platform Specifications	HA Pair/Single Controller	Processor (HA/Single)	8 / 4 64-bit dual-core	8 / 4 64-bit	4 / 2 64-bit	4 / 2 64-bit	4 / 2 64-bit dual-core	2 / 1 64-bit dual-core	4 / 2 64-bit dual-core	4 / 2 64-bit	2 / 1 32-bit
		RAM (HA/Single)	64GB / 32GB	64GB / 32GB	32GB / 16GB	32GB / 16GB	32GB / 16GB	8GB / 4GB	16GB / 8GB	8GB / 4GB	4GB / 2GB
		NVRAM (HA/Single)	4GB / 2GB	4GB / 2GB	1GB / 512MB	1GB / 512MB	4GB / 2GB Onboard	1GB / 512MB Onboard	1GB / 512MB	1GB / 512MB	1GB / 512MB
		PCI Slots (HA/Single)	10 / 5 (PCIe) 6 / 3 (PCI-X)	10 / 5 (PCIe) 6 / 3 (PCI-X)	10 / 5 (PCIe) 6 / 3 (PCI-X)	10 / 5 (PCIe) 6 / 3 (PCI-X)	8 / 4 (PCIe)	8 / 4 (PCIe)	6 / 3 (PCIe)	6 / 3 (PCIe)	6 / 3 (PCI-X)
		Ethernet (HA/Single)	12 / 6 GbE RJ45	12 / 6 GbE RJ45	12 / 6 GbE RJ45	12 / 6 GbE RJ45	4 / 2 GbE RJ45	4 / 2 GbE RJ45	8 / 4 GbE RJ45	8 / 4 GbE RJ45	8 / 4 GbE RJ45
		FC Ports (HA/Single)	16 / 8 4Gb SFP <sup>3</sup>	16 / 8 2Gb SFP <sup>4</sup>	16 / 8 4Gb SFP <sup>3</sup>	16 / 8 2Gb SFP <sup>4</sup>	8 / 4 4Gb SFP <sup>3</sup>	8 / 4 4Gb SFP <sup>3</sup>	8 / 4 4Gb SFP <sup>3</sup>	8 / 4 4Gb SFP <sup>3</sup>	8 / 4 2Gb SFP <sup>4</sup>
		Data ONTAP <sup>®</sup> (Min Release)	7.2.4	7.2	7.2.4	7.2	7.2.5	7.2.5	7.2.2	7.2.2	7.0.2



NearStore VTL

Model	VTL1400	VTL700	VTL300	
Front View				
System Capacity Raw Maximum <sup>1</sup>	672TB	336TB	70TB	
Max Usable Capacity 2:1 Compression	550TB 1,100TB	275TB 550TB	55TB 110TB	
Max Sustained Write 2:1 Compression	2,500MB/sec 2,300MB/sec	1,250MB/sec 1,150MB/sec	800MB/sec 650MB/sec	
Max Sustained Read 2:1 Compression	1,600MB/sec 1,400MB/sec	800MB/sec 700MB/sec	500MB/sec 475MB/sec	
Max Number of Virtual Tapes	20,000	10,000	10,000	
Max Number of Virtual Drives	3,000	1,500	1,500	
Max Number of Virtual Libraries	512	256	256	
Max SATA Drives	672	336	70	
Environmental	Height	6U	3U	3U
	Weight	150 lb. (68 kg)	75 lb. (34 kg)	75 lb. (34 kg)
	AC Power	100-120V 3.7A 200-240V 2.1A	100-120V 3.7A 200-240V 2.1A	100-120V 3.7A 200-240V 2.1A
	Thermal <sup>3</sup>	2,466 BTU/hr	1,233 BTU/hr	1,233 BTU/hr
Platform Specifications	Processor	4 64-bit dual-core	2 64-bit dual-core	2 64-bit dual-core
	RAM	16GB	8GB	8GB
	PCI Slots	4 (PCIe)	2 (PCIe)	3 (PCIe)
	Ethernet	8 GbE RJ45	4 GbE RJ45	4 GbE RJ45
	FC Ports	8 4Gb SFP <sup>3</sup>	4 4Gb SFP <sup>3</sup>	4 4Gb SFP <sup>3</sup>
	VTL O/S (Min Release)	5.0	5.0	5.0

Backend Tape Drive Support

Supported Vendors: HP, IBM, Quantum, Sony, STK

Please check the NOW™ site for a complete list of supported vendors and models.

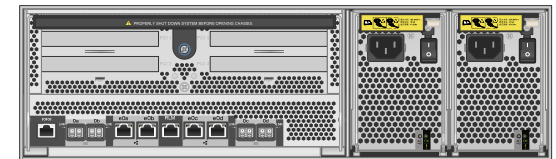
Backend Tape Library Support

Supported Vendors: ADIC, IBM, Quantum, STK, Overland, SpectraLogic, HP

Please check the NOW™ site for a complete list of supported vendors and models.



VTL700 Front



VTL700 Rear

Notes

- <sup>1</sup> System capacity is calculated using base 10 arithmetic (i.e. 1TB=1,000,000,000,000 bytes) and is derived based on the type, size, and number of drives.
- <sup>2</sup> The thermal dissipation values shown are based on typical system values at 100-120V input voltage. Please refer to the Site Requirements Guide on the NOW site for worst-case thermal dissipation values.
- <sup>3</sup> Autosensing ports: 1, 2, 4Gb.
- <sup>4</sup> Autosensing ports: 1, 2Gb.
- <sup>5</sup> Max performance and capacity are calculated using base 10 arithmetic (i.e. 1TB=1,000,000,000,000 bytes).

Terms and Abbreviations

- BTU** – British Thermal Unit  
**Cu** – Copper Connector  
**FC** – Fibre Channel  
**GbE** – Gigabit Ethernet  
**HA** – High Availability  
**NVRAM** – Non-Volatile RAM  
**LUN** – Logical Unit Number  
**Op** – Optical Connector  
**SFP** – Small Form-Factor Pluggable  
**VAC** – Volts Alternating Current  
**VTL** – Virtual Tape Library

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### Adapter Cards

	Part Number	Media	Data ONTAP (min release)	VTL O/S (min release)	NearStore® VTL			Fabric-Attached Storage										
					300	700	1400	2050	3020	3040	3070	3140	3170	6040	6080			
FIBRE CHANNEL	PCI-e	X1128A-R6 FCP TARGET Dual Port 4Gb	Op - LC	7.2	-													
		X1130A-R6 FCP TARGET Quad Port 4Gb	Op - LC	7.3	-													
		X2053A-R6 DISK/TAPE Dual Port 4Gb	Op - LC	7.2 10.1	5.0													
		X2054A-R6 DISK/TAPE Quad Port 4Gb	Op - LC	7.2.2	-													
		X2054B-R6 DISK/TAPE Quad Port 4Gb	Op - LC	7.2.3	5.2													
	X2055A-R6 DISK Dual Port 4Gb	Op - LC	7.2 10.0.1	5.0														
	PCI-X	X1028B-R6 FCP TARGET Dual Port 4Gb	Op - LC	7.1.0.1	-													
		X2050A-R5 DISK Dual Port 2Gb	Op - LC	6.3	4.0													
		X2050B-R5 DISK Dual Port 2Gb	Op - LC	6.5.1	-													
		X2051A-R5 TAPE Dual Port 2Gb	Op - LC	6.3 10.0	4.1													
X2052A-R5 DISK/TAPE Quad Port 4Gb		Op - LC	7.2.1 10.0.3	-														

Please refer to the NOW™ [System Configuration Guide](#) for proper platform and expansion slot assignment information.

	Part Number	Media	Data ONTAP (min release)	VTL O/S (min release)	NearStore® VTL			Fabric-Attached Storage											
					300	700	1400	2050	3020	3040	3070	3140	3170	6040	6080				
ETHERNET	PCI-e	X1006A-R5 TOE Quad Port GbE	Cu – RJ45	7.2.1	-														
		X1008A-R6 TOE Dual Port 10GbE	Op - LC	7.2.3 10.3	-														
		X1010A-R6 TOE Dual Port 10GbE	Cu – CX4	10.0.3	-														
		X1038A-R6 NIC Dual Port GbE	Op - LC	7.2	-														
		X1039A-R6 NIC Dual Port GbE	Cu – RJ45	7.2 10.0.1	-														
		X1049A-R6 NIC Quad Port GbE	Cu – RJ45	7.2.1 10.0.1	-														
		X1129A-R5 iSCSI Dual Port GbE	Cu – RJ45	7.2.1	-														
		X1136A-R5 iSCSI Dual Port GbE	Op - LC	7.2.1	-														
	PCI-X	X1005A-R5 TOE Single Port 10GbE	Op - LC	7.2 10.0.1	-														
		X1007A-R5 TOE Quad Port GbE	Cu – RJ45	7.2	-														
		X1029B-R5 iSCSI Dual Port	Cu – RJ45	7.2	-														
		X1035B-R5 NIC Dual Port GbE	Op - LC	6.4.4	-														
		X1036B-R5 iSCSI Dual Port	Op - LC	7.1.1	-														
		X1037C-R6 NIC Dual Port GbE	Cu – RJ45	6.3.1 10.0	-														
		X1047B-R6 NIC Quad Port GbE	Cu – RJ45	7.2.1 10.0.1	-														

Please refer to the NOW™ [System Configuration Guide](#) for proper platform and expansion slot assignment information.



## Adapter Cards

	Part Number	Media	Data ONTAP (min release)	VTL O/S (min release)	NearStore® VTL			Fabric-Attached Storage									
					300	700	1400	2050	3020	3040	3070	3140	3170	6040	6080		
SCSI	PCIe	X2028A-R6 TAPE Dual SCSI-LVD/SE	Cu - 68p VHDCI	7.2	-												
		X2027B-R5 TAPE Dual SCSI-LVD/SE	Cu - 68p VHDCI	7.0.5	4.1												

Please refer to the NOW™ [System Configuration Guide](#) for proper platform and expansion slot assignment information.

	Part Number	Media	Data ONTAP (min release)	VTL O/S (min release)	NearStore® VTL			Fabric-Attached Storage										
					300	700	1400	2050	3020	3040	3070	3140	3170	6040	6080			
OTHER	PCIe	X1124A-R6 SnapMirror®/Fibre Channel 4Gb	Op - LC	7.2.2	-													
		X1300A-R5 Hardware Compression NIC	-	-	5.0													
		X1926A-R6 MetroCluster FC-VI 4Gb	Op - LC	7.2.3	-													
		X1936A-R5 Performance Acceleration Module	-	7.3	-													
		X3147-R5 NVRAM6 512MB	Cu - IB4X	7.2 10.0.2	-													
		X3148-R5 NVRAM6 2GB	Cu - IB4X	7.2 10.0.1	-													
	PCI-X	X1024-R5 SnapMirror®/Fibre Channel 2Gb	Op - LC	6.5	-													
		X1922A-R5 MetroCluster FC-VI 2Gb	Op - LC	6.4.1	-													
		X3145A-R5 NVRAM5 512MB	Cu - IB4X	6.5.3 10.0	4.0													

Please refer to the NOW™ [System Configuration Guide](#) for proper platform and expansion slot assignment information.

### Terms and Abbreviations

- Cu – Copper Connector
- FC – Fibre Channel
- FCP – Fibre Channel Protocol
- GbE – Gigabit Ethernet
- IB4X – InfiniBand 4X
- LC – Lucent Connector
- NIC – Network Interface Card
- NVRAM – Non-Volatile RAM
- Op – Optical (connector)
- TOE – TCP Offload Engine
- VTL – Virtual Tape Library

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### Disk Drives

	Capacity	Part No.	RPM	EOA/EOS	Data ONTAP (min release)	VTL O/S (min release)	Interface (Gb/Sec)			DS14 Model		
							1	2	4	mk1	mk2	mk4
FIBRE CHANNEL	72GB	X272A	10K	12.2006 12.2011	6.2	-	■	■		■	■	■
	72GB	X272B-R5	10K	12.2006 12.2011	6.3.3 10.0.1	-	■	■		■	■	■
	72GB	X273A	15K	12.2006 12.2011	6.3.3	-	■	■		■	■	■
	72GB	X273B-R5	15K	12.2006 12.2011	6.4.5 10.0.1	-	■	■		■	■	■
	144GB	X236A	10K	-	6.2	-	■			■		
	144GB	X274A	10K	05.2008 06.2013	6.2	-	■			■	■	■
	144GB	X274B-R5	10K	05.2008 06.2013	6.3.3 10.0	-	■	■		■	■	■
	144GB	X275A-R5	15K	06.2007 N/A	6.4.5 10.0.1	-	■	■		■	■	■
	144GB	X278A-R5	15K	-	7.2.1 10.0.2	-	■	■	■	■	■	■
	300GB	X276A-R5	10K	05.2008 06.2013	6.4.5 10.0	-	■	■		■	■	■
	300GB	X279A-R5	15K	-	7.2.1 10.0.2	-	■	■	■	■	■	■
	450GB	X291A-R5	15K	-	7.0.7 10.0.4	-	■	■	■		■	■



	Capacity	Part No.	RPM	EOA/EOS	Data ONTAP (min release)	VTL O/S (min release)	Interface (Gb/Sec)			Storage System		
							1.5	3	6	FAS	20x0	VTL
SAS	144GB	X286A-R5	15K	-	7.2.2	-		■			■	
	300GB	X287A-R5	15K	-	7.2.2	-		■			■	
SATA	250GB	X262A	7.2K	08.2005 08.2010	7.0.1	-	■			■		
	250GB	X262B-R5	7.2K	05.2008 06.2013	7.0.6 10.0	-	■	■		■		
	250GB	X280B-R5	7.2K	05.2008 06.2013	7.2.4	-	■	■			■	
	320GB	X266A	5.4K	08.2005 08.2010	6.5	-	■			■		
	320GB	X266B-R5	7.2K	11.2006 12.2011	6.5.1	4.0	■			■		■
	500GB	X267A-R5	7.2K	-	7.0.1 10.0	4.1	■	■		■		■
	500GB	X282B-R5	7.2K	-	7.2.1	-	■	■			■	
	750GB	X268A-R5	7.2K	-	7.0.7 10.0.2	5.6	■	■		■		■
	750GB	X283B-R5	7.2K	-	7.2.4	-	■	■			■	
	1000GB	X269A-R5	7.2K	-	7.2.3 10.0.3	5.6	■	■		■		■
	1000GB	X298A-R5	7.2K	-	7.2.4	-	■	■			■	





# NetApp Hardware Universe – RC-0035-0808 – Side B – 08-22-2008

## Shelf Enclosures

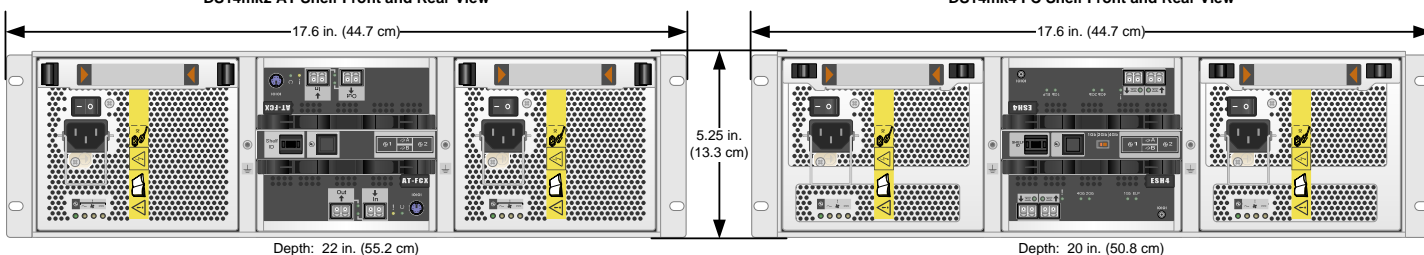
Model	Part Number	Weight	Disk	Rack	Power (Amps @100-120V)	Thermal (BTU/hr)	EOA/EOS	Data ONTAP (min release)	VTL O/S (min release)
DS14mk1	X500 (shelf with AC PSU) X501 (shelf without PSUs) X511 (110/220VAC PSU only)	Empty 50.06 lb. (23 kg) With Drives 77 lb. (35 kg)	14	3U	N/A	N/A	02.2005 02.2010	6.0.2	-
DS14mk2	X550-R5 (shelf with AC PSUs) X551-R5 (shelf without PSUs) X511A-R5 (110/220VAC PSU only)	Empty 50.06 lb. (23 kg) With Drives 77 lb. (35 kg)	14	3U	10K RPM 72GB: 3.43A 144GB: 3.43A 300GB: 3.89A 15K RPM 72GB: 3.63A 144GB: 3.75A 300GB: 4.32A	10K RPM 72GB: 1,167 144GB: 1,167 300GB: 1,320 15K RPM 72GB: 1,234 144GB: 1,272 300GB: 1,470	05.2008 06.2013	6.4.1 10.0	-
DS14mk4	X553A-R5 (shelf w/AC PSUs) X553A-DC-R5 (shelf w/DC PSUs) X511A-R5 (110/220VAC PSU only)	Empty 50.06 lb. (23 kg) With Drives 77 lb. (35 kg)	14	3U	10K RPM 72GB: 3.01A 144GB: 3.36A 300GB: 3.78A 15K RPM 72GB: 3.65A 144GB: 3.45A 300GB: 4.27A	10K RPM 72GB: 1,020 144GB: 1,140 300GB: 1,287 15K RPM 72GB: 1,238 144GB: 1,174 300GB: 1,452	-	7.2.1 10.0.1	-
DS14mk2 AT	X562-R5 (shelf without PSUs) X511A-R5 (110/220VAC PSU only) DSX-7.0TB-QS-R5 (500GB drives) DSX-10.5TB-QS-R5 (750GB drives) DSX-14.0TB-QS-R5 (1TB drives)	Empty 50.06 lb. (23 kg) With Drives 77 lb. (35 kg)	14	3U	250GB: 2.72A 320GB: 3.12A 500GB: 2.90A 750GB: 3.22A 1000GB: 3.10A	250GB: 923 320GB: 1,058 500GB: 1,095 750GB: 1,050 1000GB: 1,050	-	6.5 10.0	4.0



DS14mk2 AT Shelf Front and Rear View



DS14mk4 FC Shelf Front and Rear View

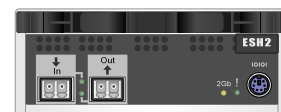


## Shelf Interface Modules

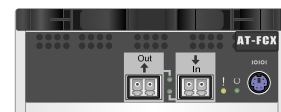
Module	Platforms	Part Number	Interface	EOA/EOS	Data ONTAP (min release)	VTL O/S (min release)	DS14 Shelf Model				Interface (Gb/Sec)			
							mk1	mk2	mk4	mk2AT	1	2	4	
LRC	FAS	X5501A Cu: DB9 X5502A Op: SC	IN: DB9 / SC OUT: DB9	03.2006 04.2011	-	-	■	■	■	■	■	■	■	■
ESH	FAS	X5505A Cu: HSSDC2 X5506A Op: LC	IN: HSSDC2 / LC OUT: HSSDC2	05.2005 06.2010	6.2	-	■	■	■	■	■	■	■	■
ESH2	FAS	X511A-R5	IN: SFP OUT: SFP	05.2008 06.2013	6.5.1 10.0	-	■	■	■	■	■	■	■	■
ESH4	FAS	X512A-R5	IN: SFP OUT: SFP	-	7.2.1 10.0.1	-	■	■	■	■	■	■	■	■
AT-FC	NearStore R150/200	X5610A Cu: HSSDC2 X5611A Op: LC	IN: HSSDC2 / LC OUT: HSSDC2	06.2006 06.2011	6.5	-	■	■	■	■	■	■	■	■
AT-FC2	NearStore R150/200	X5613A	IN: SFP OUT: SFP	06.2006 06.2011	6.5.1	-	■	■	■	■	■	■	■	■
AT-FCX	FAS, VTL	X5612A-R5	IN: SFP OUT: SFP	-	7.0.1 10.0	4.0	■	■	■	■	■	■	■	■



ESH4 Module



ESH2 Module



AT-FCX Module

### Terms and Abbreviations

- BTU – British Thermal Unit
- Cu – Copper Connector
- EOA – End of Availability
- EOS – End of Support
- ESH – Electronically Switched Hub
- FAS – Fabric-Attached Storage
- HSSDC – High-Speed Serial Data Connector
- LC – Lucent Connector
- LRC – Loop Resiliency Circuit
- Op – Optical (connector)
- SAS – Serial-attached SCSI
- SATA – Serial ATA
- RPM – Revolutions Per Minute
- VTL – Virtual Tape Library

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# NetApp Hardware Universe – RC-0037-0708 – Side A – 07-22-2008




## NetApp DataFort

### NetApp DataFort Storage Security Systems

Model	E510	E515	FC520	FC525	FC1020 Tape Only	S110	KM500
Front View							
Solution	E Series NAS (CIFS/NFS) & IP SAN (iSCSI)		FC Series SAN & Tape (FCP)			S Series SCSI Tape	Lifetime Key Management™

Certifications	FIPS 140-2 Level 3 Common Criteria EAL-4+ (underway) US NIST AES-256 US NIST SHA-1 US NIST SHA-256 US DoD 5015.2 DCSSI (France)							
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Environmental	<b>Height</b>	2U	1U	2U	1U	2U	2U	2U
	<b>Weight</b>	31.3 lb. (14.2 kg)	22.9 lb. (10.4 kg)	31.3 lb. (14.2 kg)	22.9 lb. (10.4 kg)	35.3 lb. (16 kg)	30.2 lb. (13.7 kg)	48 lb. (21.8 kg)
	<b>AC Power Thermal<sup>3</sup></b>	100-240V 3A 819 BTU/hr	100-240V 5A 556 BTU/hr	100-240V 5A 751 BTU/hr	100-240V 3A 502 BTU/hr	100-240V 3A 959 BTU/hr	100-240V 3A 703 BTU/hr	100-240V 5A 822 BTU/hr
Platform Specifications	<b>Processor</b>	SEP	SEP	SEP	SEP	SEP	SEP	SEP
	<b>Power Supply</b>	Redundant Hot Swap	Single No Hot Swap	Redundant Hot Swap	Single No Hot Swap	Redundant Hot Swap	Redundant Hot Swap	Redundant Hot Swap
	<b>Storage Interfaces</b>	2 GbE RJ45 (1 client, 1 storage)	2 GbE RJ45 (1 client, 1 storage)	2 FC Ports LC (1 host, 1 storage)	2 FC Ports LC (1 host, 1 storage)	10 FC Ports LC (5 host, 5 storage)	2 SCSI LVD (1 host, 1 storage)	N/A
	<b>Mgmt Interfaces</b>	1 GbE RJ45	1 GbE RJ45	1 GbE RJ45	1 GbE RJ45	1 GbE RJ45	1 GbE RJ45	1 GbE RJ45

Security Smart Cards	<p><b>System Card</b></p> <p>Cryptographic "ignition key" to boot NetApp DataFort and access encryption keys.</p> <p>Once initialized, each is unique to a particular NetApp DataFort appliance.</p> 	<p><b>Admin Card</b></p> <p>Provides 2 factor authentication for administrators.</p> <p>Role-Based Access Control allows multiple administrators &amp; roles.</p> <p>Can be shared among NetApp DataFort appliances.</p> 	<p><b>Recovery Card</b></p> <p>Recovery cards are initialized during install and can be shared among multiple appliances.</p> <p>Quorum of recovery cards (2/5, 3/5, 2/3) is required for sensitive key management and recovery operations, providing role separation.</p> 
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FC1020 Front View



FC1020 Rear View



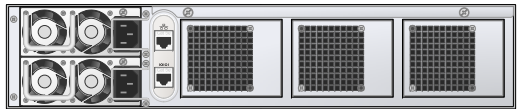
E515 Front View



E515 Rear View



KM500 Front View



KM500 Rear View



## Information Classification

Model		IS1200-FRM	IS1200-SA	IS1200-ECS
Solution		File Reporting & Migration	Search & Restore from Backup	Enterprise Content Services
Platform Specifications	Height	1U	1U	1U
	Processor	2 dual-core	2 dual-core	2 dual-core
	RAM	4GB	4GB	4GB
	Ports	2 GbE RJ45	2 GbE RJ45	2 GbE RJ45
	Power Supplies	Redundant Hot Swap	Redundant Hot Swap	Redundant Hot Swap
Model-Dependent Base Services	Clustering of Nodes			
	Actionable Services			
	Deep Index (content)	-		
	Search	-		
	Reporting		-	
Optional Services	SnapSearch	-	Optional	Optional
	Retention Manager	-	-	Optional
	Microsoft® Exchange Connector	-	-	Optional
	PST Indexing	-	-	Optional
	Symantec® Enterprise Vault™ Connector	-	-	Optional
	Information Center	-	-	Optional

## Terms and Abbreviations

**BTU** – British Thermal Unit  
**CIFS** – Common Internet File System  
**Cu** – Copper Connector  
**FC** – Fibre Channel  
**FCP** – Fibre Channel Protocol  
**iSCSI** – Internet SCSI  
**LC** – Lucent Connector  
**LVD** – Low-voltage Differential  
**NFS** – Network File System  
**Op** – Optical Connector  
**SEP** – Storage Encryption Processor  
**SFP** – Small Form-Factor Pluggable  
**VHDCI** – Very High Density Cable Interconnect

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