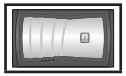
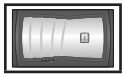
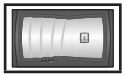
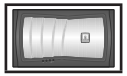
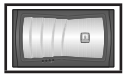
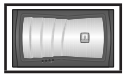
NetApp Hardware Universe – Storage Controllers – RC-0032-0111 – Side A – 01-14-2011

Fabric-Attached Storage (FAS), V-Series, and Storage Acceleration (SA) Controllers

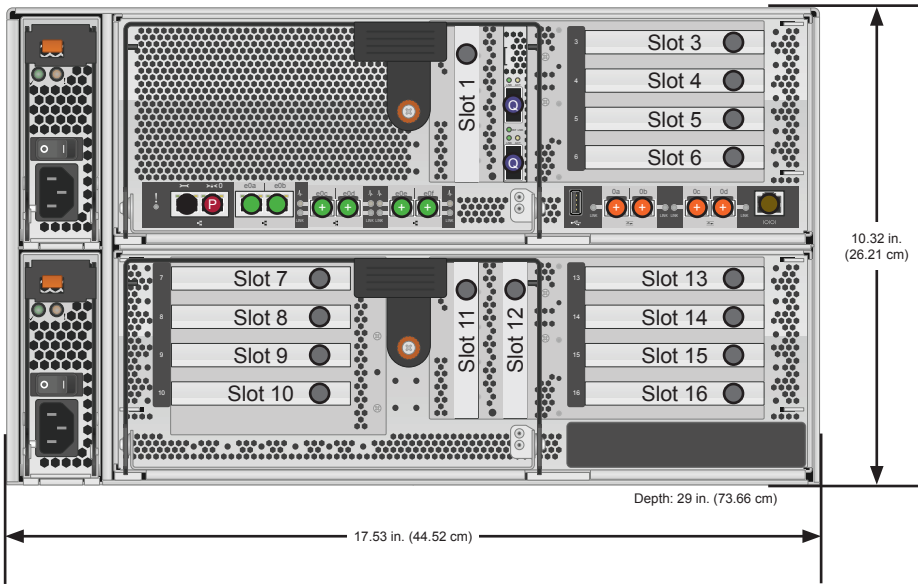
	Model	FAS/V6280 SA620	FAS/V6240	FAS/V6210	FAS/V6080 SA600	FAS/V6040	FAS/V3270 SA320[1]	FAS/V3240[1]	FAS/V3210	FAS/V3170	FAS/V3160	FAS/V3140	SA300	FAS2050 SA200	FAS2040	FAS2020
	Front View															
	Max Capacity[2] (7.3.x / 8.0.x)	- / 2880TB	- / 2880TB	- / 2400TB	1176TB / 2352TB	840TB / 1680TB	960TB / 1920TB	600TB / 1200TB	240TB / 480TB	840TB / 1680TB	672TB / 1344TB	420TB / 840TB	504TB / 1008TB	104TB / -	136TB / 272TB	68TB / -
	Max Aggregate[3] (32-bit / 64-bit)	- / 100TB	- / 100TB	- / 70TB	16TB / 100TB	16TB / 70TB	16TB / 70TB	16TB / 50TB	16TB / 50TB	16TB / 70TB	16TB / 50TB	16TB / 50TB	16TB / 50TB	16TB / -	16TB / 30TB	16TB / -
	Max DS4243 Shelves	60	60	50	49	35	40	25	10	35	28	17.5	21	3.5	4	-
	Max DS2246 Shelves	60	60	50	49	35	40	25	10	35	28	17.5	21	3.5	4	-
	Max DS14-Class Shelves	84	84	72	84	60	68	42	17	60	48	30	36	6	8	4
	Max Drive Quantity	1440	1440	1200	1176	840	960	600	240	840	672	420	504	104 (20 Int + 84 Ext)	136 (12 Int + 124 Ext)	68 (12 Int + 56 Ext)
V-Series Specifications	Max Backend LUNs	1440	1440	1200	1176	840	960	600	100[8]	840	672	420	No V-Series Models			
V-Series Specifications	V-Series Supprted Arrays	EMC CLARiiON EMC Symmetrix HDS USP/USPv HDS AMS HDS SANRISE (Japan Only)					IBM DS8x00 IBM DS5020/5x00 IBM XIV HP XP HP EVA				Fujitsu Eternus Sun STK 99xx 3PAR InServ		No V-Series Models			
Environmental HA Pair / Single Controller	Height (HA / Single)	12U / 6U	12U / 6U	6U / 6U	12U / 6U	12U / 6U	6U / 3U	6U / 3U	3U / 3U	6U / 6U	6U / 6U	6U / 6U	6U / 3U	4U / 4U	2U / 2U	2U / 2U
Environmental HA Pair / Single Controller	Weight (HA / Single)	251.4 (114 kg) 125.7 lbs (57 kg)	251.4 (114 kg) 125.7 lbs (57 kg)	130.1 lb. (59 kg) 99.2 lb. (45 kg)	244 lb. (110.6 kg) 122 lb (55.3 kg)	244 lb. (110.6 kg) 122 lb (55.3 kg)	149 lb. (67.6 kg) 74.5 lb. (33.8 kg)	149 lb. (67.6 kg) 74.5 lb. (33.8 kg)	79.5 lb. (36.1 kg) 67.3 lb. (30.5 kg)	121 lbs (54.9 kg) 102 lbs (46.3 kg)	121 lbs (54.9 kg) 102 lbs (46.3 kg)	121 lbs (54.9 kg) 102 lbs (46.3 kg)	150 lb. (68 kg) 75 lb. (34 kg)	110 lb. (49.9 kg) with drives	66 lb. (29.9 kg) with drives	66 lb. (29.9 kg) with drives
Environmental HA Pair / Single Controller	AC Power[4] (HA / Single)	13.8A / 6.9A @100V 7A / 3.5A @200V	13.2A / 6.6A @100V 6.6A / 3.3 @200V	- / 4.5A @100V 4.1A / 2.3 @200V	14.5A / 7.2A @100V 7.8A / 3.9A @200V	11.4A / 5.7A @100V 6.2A / 3.1A @200V	8.2A / 4.1A @100V 4.2A / 2.1A @200V	7.4A / 3.7A @100V 3.9A / 1.9 @200V	4.6A / 3A @100V 2.3A / 1.6A @200V	8.1A / 4.7A @100V 4A / 2.3A @200V	7.7A / 4.5A @100V 3.8A / 2.3A @200V	5.9A / 3.7A @100V 2.9A / 1.9A @200V	7.4A / 3.7A @100V 4.2A / 2.1A@200V	6.6A / 5.9A @100V 3.4A / 2.7A @200V	4.6A / 3.9A @100V 2.3A / 2A @200V	4.7A / 3.8A @100V 2.3A / 2.1A @200V
Environmental HA Pair / Single Controller	BTU/hr[5] (HA / Single)	4540 / 2270 @100V 4404 / 2202 @200V	4268 / 2314 @100V 4198 / 2099 @200V	- / 1468 @100V 2594 / 1417 @200V	4802 / 2401 @100V 4726 / 2363 @200V	3796 / 1898 @100V 3690 / 1845 @200V	2786 / 1393 @100V 2718 / 1359 @200V	2512 / 1256 @100V 2458 / 1229 @200V	1577 / 1021 @100V 1536 / 1000 @200V	2761 / 1602 @100V 2686 / 1564 @200V	2594 / 1502 @100V 2577 / 1535 @200V	2026 / 1272 @100V 1981 / 1249 @200V	2466 / 1233 @100V 2424 / 1212 @200V	2247 / 1988 @100V 2232 / 1782 @200V	1558 / 1319 @100V 1524 / 1288 @200V	1587 / 1298 @100V 1527 / 1388 @200V
Platform Specifications HA Pair / Single Controller	Processor (HA / Single)	4 / 2 64-bit six-core	4 / 2 64-bit quad-core	4 / 2 64-bit quad-core	8 / 4 64-bit dual-core	4 / 2 64-bit	4 / 2 64-bit dual-core	2 / 1 64-bit quad-core	2 / 1 64-bit dual-core	4 / 2 64-bit dual-core	4 / 2 64-bit dual-core	2 / 1 64-bit dual-core	4 / 2 64-bit dual-core	2 / 1 32-bit	2 / 1 32-bit dual-core	2 / 1 32-bit
Platform Specifications HA Pair / Single Controller	Memory (HA / Single)	192GB / 96GB	96GB / 48GB	48GB / 24GB	64GB / 32GB	32GB / 16GB	32GB / 16GB	16GB / 8GB	8GB / 4GB	32GB / 16GB	16GB / 8GB	8GB / 4GB	16GB / 8GB	4GB / 2GB	8GB / 4GB	2GB / 1GB
Platform Specifications HA Pair / Single Controller	NVRAM (HA / Single)	8GB / 4GB	8GB / 4GB	8GB / 4GB	4GB / 2GB	1GB / 512MB	4GB / 2GB NVMEM	2GB / 1GB NVMEM	1GB / 512MB NVMEM	4GB / 2GB onboard	4GB / 2GB onboard	1GB / 512MB onboard	1GB / 512MB	512MB / 256MB NVMEM	1GB / 512MB NVMEM	256MB / 128MB NVMEM
Platform Specifications HA Pair / Single Controller	Exp Slots (HA / Single)	24 / 12 PCIe	24 / 12 PCIe	8 / 4 PCIe	10 / 5 PCIe 6 / 3 PCI-X	10 / 5 PCIe 6 / 3 PCI-X	12 / 6 PCIe	12 / 6 PCIe	4 / 2 PCIe	8 / 4 PCIe	8 / 4 PCIe	8 / 4 PCIe	6 / 3 PCIe	2 / 1 PCIe	-	-
Platform Specifications HA Pair / Single Controller	Ethernet (HA / Single)	4 / 2 GbE RJ45 8 / 4 10GbE SFP+	4 / 2 GbE RJ45 8 / 4 10GbE SFP+	4 / 2 GbE RJ45 8 / 4 10GbE SFP+	12 / 6 GbE RJ45	12 / 6 GbE RJ45	4 / 2 GbE RJ45	4 / 2 GbE RJ45	4 / 2 GbE RJ45	4 / 2 GbE RJ45	4 / 2 GbE RJ45	4 / 2 GbE RJ45	8 / 4 GbE RJ45	4 / 2 GbE RJ45	8 / 4 GbE RJ45	4 / 2 GbE RJ45
Platform Specifications HA Pair / Single Controller	FC Ports (HA / Single)	8-32 / 4-16 8Gb SFP+[6]	8-32 / 4-16 8Gb SFP+[6]	8-16 / 4-8 8Gb SFP+[6]	16 / 8 4Gb SFP	16 / 8 4Gb SFP	4 / 2 4Gb SFP	4 / 2 4Gb SFP	4 / 2 4Gb SFP	8 / 4 4Gb SFP	8 / 4 4Gb SFP	8 / 4 4Gb SFP	8 / 4 4Gb SFP	4 / 2 4Gb SFP	4 / 2 4Gb SFP	4 / 2 4Gb SFP
Platform Specifications HA Pair / Single Controller	SAS Ports (HA / Single)	0-24 / 0-12 6Gb QSFP[7]	0-24 / 0-12 6Gb QSFP[7]	0-8 / 0-4 6Gb QSFP[7]	-	-	4 / 2 6Gb QSFP	4 / 2 6Gb QSFP	4 / 2 6Gb QSFP	-	-	-	-	-	2 / 1 3Gb QSFP	-
Platform Specifications HA Pair / Single Controller	Data ONTAP® (Min Release)	8.0.1	8.0.1	8.0.1	7.2.4 / 7.3 / 8.0	7.2.4 / 7.3 / 8.0	7.3.5 / 8.0.1	7.3.5 / 8.0.1	7.3.5 / 8.0.1	7.2.5 / 7.3 / 8.0	7.2.5 / 7.3.1 / 8.0	7.2.5 / 7.3 / 8.0	7.2.5 / 7.3 / 8.0	7.2.2L1 / 7.3	7.3.2 / 8.0	7.2.2L1 / 7.3

Please recycle after use. Feedback and questions can be sent to **xdl-hardwareuniverse@netapp.com**.

NetApp Hardware Universe – Storage Controllers – RC-0032-0111 – Side B – 01-14-2011

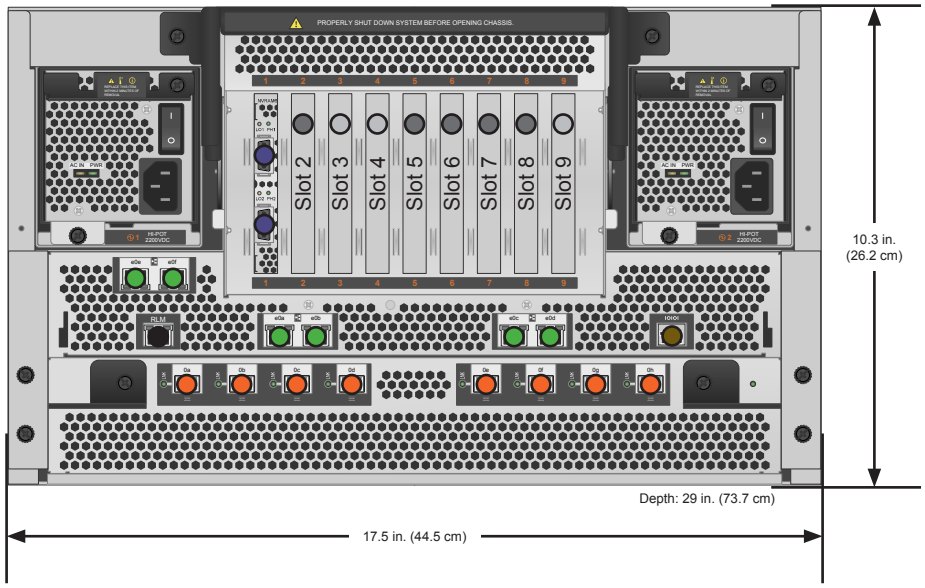
NVRAM8 adapter is placed in slot 2 in a FAS6200 series controller (as shown). FAS6210 model does not support IOXM.

FAS/V6200 and SA620
(Single controller show)

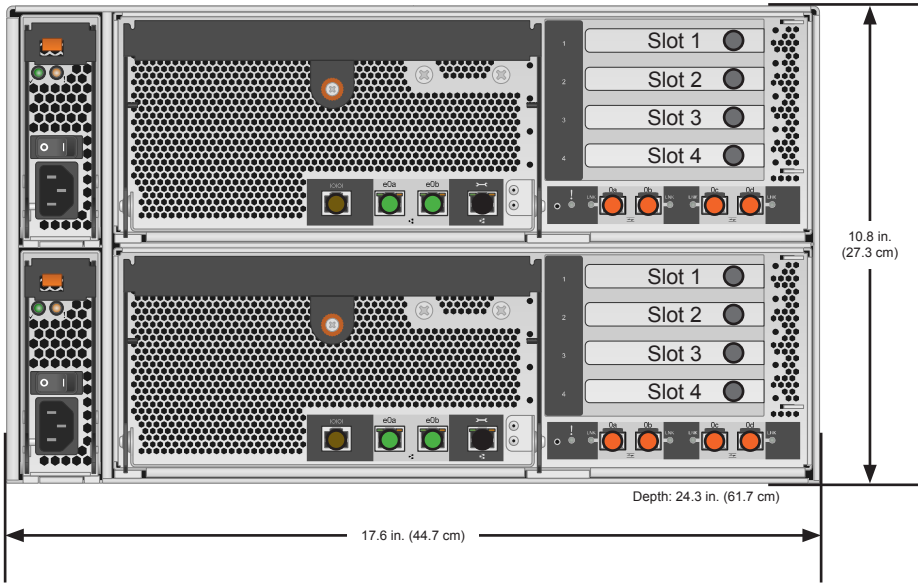


NVRAM6 adapter is placed in slot 1 in a FAS6000 and V6000 HA configuration (as shown).

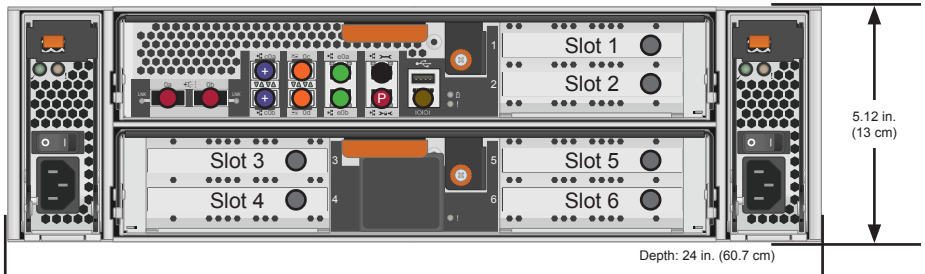
FAS/V6000 and SA600
(Single controller shown)



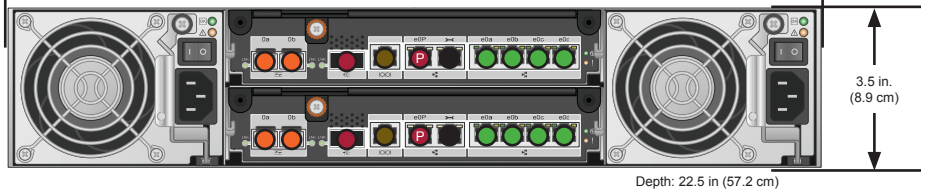
FAS/V3100
(HA configuration show)



FAS/V3200 & SA320
(Single contoller shown)



FAS2040
(HA configuration shown)



PCIe Expansion
PCI-X Expansion
Gigabit Ethernet RJ45
10 Gigabit Ethernet SFP+
4Gb Fibre Channel SFP
8Gb Fibre Channel SFP+
Serial-Attached SCSI QSFP
Alternate Control Path RJ45
Serial Console RJ45
Remote LAN Management RJ45
HA Interconnect IB4X
HA Interconnect QSFP
HA Interconnect SFP+

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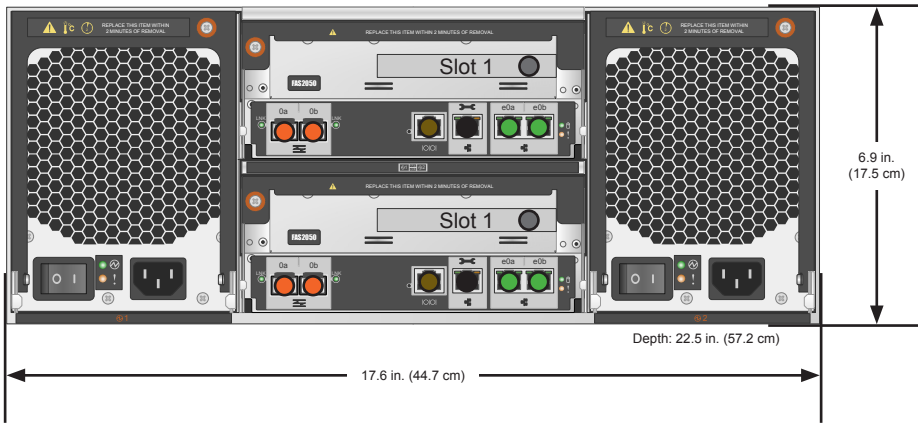
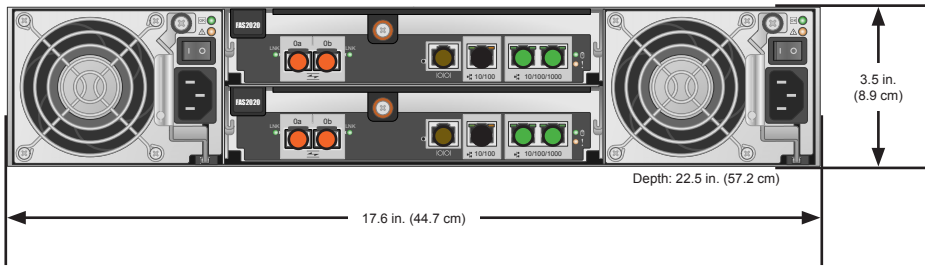
NetApp Hardware Universe – Storage Controllers – RC-0032-0111 – Side C – 01-14-2011

FAS2050 and SA200
(HA configuration show)



FAS2020
(HA configuration shown)



PCIe Expansion
PCI-X Expansion
Gigabit Ethernet RJ45
10 Gigabit Ethernet SFP+
4Gb Fibre Channel SFP
8Gb Fibre Channel SFP+
Serial-Attached SCSI QSFP
Alternate Control Path RJ45
Serial Console RJ45
Remote LAN Management RJ45
HA Interconnect IB4X
HA Interconnect QSFP
HA Interconnect SFP+

ACP – Alternate Control Path
BTU – British Thermal Unit
Cu – Copper Connector
FAS – Fabric-Attached Storage
FCP – Fibre Channel Protocol
FC – Fibre Channel
GbE – Gibabit Ethernet
HA – High Availability
IB4X – InfiniBand 4X
LUN – Logical Unit Number
NIC – Network Interface Card
NVRAM – Nonvolatile RAM
Op – Optical Connector
PSU – Power Supply Unit
QSFP – Quad Small Form-Factor Pluggable
RLM – Remote LAN Module
SAS – Serial-Attached SCSI
SATA – Serial ATA
SFP – Small Form-Factor Pluggable

[1] HA values shown reflect a Controller+IOXM (CI) configuration.
[2] System capacity is calculated using base 10 arithmetic (1TB=1,000,000,000,000 bytes) and is derived based on the type, size, and number of drives.
[3] Maximum aggregate size is calculated using base 2 arithmetic (1TB = 240 bytes).
[4] AC Power values shown are based on typical system values with 2 power supply units. Please refer to the Site Requirements Guide on the NOW site for worst-case values.
[5] Thermal disspation values shown are based on typcial system values. Please refere to the Site Requirements Guide on the NOW site for worst-case thermal dissapation values.
[6] FAS6200 embedded Fibre Channel ports and Fibre Channel ports on the vertical FC boards, all are considered as on-board ports, can be set as target or initiators and support operation at 2Gb, 4Gb or 8Gb speeds. Operation at 1Gb speeds is not supported.
[7] The number of onboard SAS ports differs based on the configuration.
[8] 100 LUNs from one array using one array LUN group. Combined LUN and NetApp disk can total 240 devices.

RC-0032-0111

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