



# Technical Specifications and References

## FlexPod

NetApp  
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# Technical Specifications and References

This section describes additional important technical specifications for each of the FlexPod Express components.

## Cisco UCS B-Series blade servers

The following table lists the Cisco UCS B-Series blade server options.

Component	Cisco UCS B200 M4	Cisco UCS B420 M4	Cisco UCS B200 M5
Processor support	Intel Xeon E5-2600	Intel Xeon E5-4600	Intel Xeon Scalable processors
Maximum memory capacity	24 DIMMs for a maximum of 768GB	48 DIMMs for a maximum of 3TB	24 DIMMs for a maximum of 3072GB
Memory size and speed	32GB DDR4; 2133MHz	64GB DDR4; 2400MHz	16GB, 32GB, 64GB, and 128GB DDR4; 2666MHz
SAN boot support	Yes	Yes	Yes
Mezzanine I/O adapter slots	2	3	2, front and rear, including GPU support
I/O maximum throughput	80Gbps	160Gbps	80Gbps

## Cisco UCS C-Series rack servers

The following table lists Cisco UCS C-Series rack server options.

Component	Cisco UCS C220 M4	Cisco UCS C240 M4	Cisco UCS C460 M4	Cisco UCS C220 M5
Processor support	1 or 2 Intel E5-2600 series	1 or 2 Intel Xeon E5-2600 series	2 or 4 Intel Xeon E7-4800/8800 series	Intel Xeon Scalable processors (1 or 2)
Maximum memory capacity	1.5GB	1.5TB	6TB	3072GB
PCIe slots	2	6	10	2
Form factor	1RU	2RU	4RU	1 RU

The following table lists the datasheets for the Cisco UCS C-Series rack server options.

Component	Cisco UCS datasheet
Cisco UCS C220 M4	<a href="http://www.cisco.com/c/dam/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/c220m4-sff-spec-sheet.pdf">http://www.cisco.com/c/dam/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/c220m4-sff-spec-sheet.pdf</a>
Cisco UCS C240 M4	<a href="http://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c240-m4-rack-server/datasheet-c78-732455.html">http://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c240-m4-rack-server/datasheet-c78-732455.html</a>

Component	Cisco UCS datasheet
Cisco UCS C460 M4	<a href="http://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c460-m4-rack-server/datasheet-c78-730907.html">http://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c460-m4-rack-server/datasheet-c78-730907.html</a>
Cisco UCS C220 M5	<a href="https://www.cisco.com/c/dam/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/c220m5-sff-specsheet.pdf">https://www.cisco.com/c/dam/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/c220m5-sff-specsheet.pdf</a>

## Cisco Nexus 3000 Series switches

The following table lists the Cisco Nexus 3000 series switch options.

Component	Cisco Nexus 3048	Cisco Nexus 3524	Cisco Nexus 31108	Cisco Nexus 3172PQ
Form factor	1RU	1RU	1RU	1 RU
Maximum 1Gbps ports	48	24	48 (10/40/100Gbps)	72 1/10GbE ports, or 48 1/10GbE plus six 40GbE ports
Forwarding rate	132Mbps	360Mbps	1.2Bpps	1Bpps
Jumbo frame support	Yes	Yes	Yes	Yes

The following table lists the datasheets for the Cisco Nexus 3000 series switch options.

Component	Cisco Nexus Datasheet
Cisco Nexus 31108	<a href="http://www.cisco.com/c/en/us/products/switches/nexus-31108pc-v-switch/index.html">http://www.cisco.com/c/en/us/products/switches/nexus-31108pc-v-switch/index.html</a>
Cisco Nexus 3172PQ	<a href="https://www.cisco.com/c/en/us/products/switches/nexus-3172pq-switch/index.html">https://www.cisco.com/c/en/us/products/switches/nexus-3172pq-switch/index.html</a>
Cisco Nexus 3048	<a href="https://www.cisco.com/c/en/us/products/switches/nexus-3048-switch/index.html">https://www.cisco.com/c/en/us/products/switches/nexus-3048-switch/index.html</a>
Cisco Nexus 3172PQ-XL	<a href="https://www.cisco.com/c/en/us/products/switches/nexus-3172pq-switch/index.html">https://www.cisco.com/c/en/us/products/switches/nexus-3172pq-switch/index.html</a>
Cisco Nexus 3548 XL	<a href="https://www.cisco.com/c/en/us/products/switches/nexus-3548-x-switch/index.html">https://www.cisco.com/c/en/us/products/switches/nexus-3548-x-switch/index.html</a>
Cisco Nexus 3524 XL	<a href="https://www.cisco.com/c/en/us/products/switches/nexus-3524-x-switch/index.html">https://www.cisco.com/c/en/us/products/switches/nexus-3524-x-switch/index.html</a>
Cisco Nexus 3548	<a href="https://www.cisco.com/c/en/us/products/switches/nexus-3548-x-switch/index.html">https://www.cisco.com/c/en/us/products/switches/nexus-3548-x-switch/index.html</a>
Cisco Nexus 3524	<a href="https://www.cisco.com/c/en/us/products/switches/nexus-3524-x-switch/index.html">https://www.cisco.com/c/en/us/products/switches/nexus-3524-x-switch/index.html</a>

The following table lists the Cisco Nexus 9000 series switch options.

Component	Cisco Nexus 9396	Cisco Nexus 9372
Form factor	2RU	1RU
Maximum ports	60	54
10Gbps SFP+ uplink ports	48	48

The following table lists the Cisco Nexus 9000 series switch options datasheets.

Component	Cisco Nexus datasheet
Cisco Nexus 9396	<a href="http://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-series-switches/datasheet-c78-736967.html">http://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-series-switches/datasheet-c78-736967.html</a>
Cisco Nexus 9372	<a href="http://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-series-switches/datasheet-c78-736967.html">http://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-series-switches/datasheet-c78-736967.html</a>
Nexus 9396X	<a href="https://www.cisco.com/c/en/us/products/switches/nexus-9396px-switch/index.html?dtdid=ossdc000283">https://www.cisco.com/c/en/us/products/switches/nexus-9396px-switch/index.html?dtdid=ossdc000283</a>

## NetApp FAS storage controllers

The following table lists the current NetApp FAS storage controller options.

Current component	FAS2620	FAS2650
Configuration	2 controllers in a 2U chassis	2 controllers in a 4U chassis
Maximum raw capacity	1440TB	1243TB
Internal drives	12	24
Maximum number of drives (internal plus external)	144	144
Maximum volume size	100TB	
Maximum aggregate size	4TB	
Maximum number of LUNs	2,048 per controller	
Storage networking supported	iSCSI, FC, FCoE, NFS, and CIFS	
Maximum number of NetApp FlexVol volumes	1,000 per controller.	
Maximum number of NetApp Snapshot copies	255,000 per controller	
Maximum NetApp Flash Pool intelligent data caching	24TB	



For details about the FAS storage controller option, see the [FAS models](#) section of the Hardware Universe. For AFF, see [AFF models](#) section.

The following table lists the characteristics of a FAS8020 controller system.

Component	FAS8020
Configuration	2 controllers in a 3U chassis
Maximum raw capacity	2880TB
Maximum number of drives	480
Maximum volume size	70TB
Maximum aggregate size	324TB
Maximum number of LUNs	8,192 per controller
Storage networking supported	iSCSI, FC, NFS, and CIFS
Maximum number of FlexVol volumes	1,000 per controller
Maximum number of Snapshot copies	255,000 per controller
Maximum NetApp Flash Cache intelligent data caching	3TB
Maximum Flash Pool data caching	24TB

The following table lists the datasheets for NetApp storage controllers.

Component	Storage controller datasheet
FAS2600 series	<a href="http://www.netapp.com/us/products/storage-systems/fas2600/fas2600-tech-specs.aspx">http://www.netapp.com/us/products/storage-systems/fas2600/fas2600-tech-specs.aspx</a>
FAS2500 series	<a href="http://www.netapp.com/us/products/storage-systems/fas2500/fas2500-tech-specs.aspx">http://www.netapp.com/us/products/storage-systems/fas2500/fas2500-tech-specs.aspx</a>
FAS8000 series	<a href="http://www.netapp.com/us/products/storage-systems/fas8000/fas8000-tech-specs.aspx">http://www.netapp.com/us/products/storage-systems/fas8000/fas8000-tech-specs.aspx</a>

## NetApp FAS Ethernet adapters

The following table lists NetApp FAS 10GbE adapters.

Component	X1117A-R6
Port count	2
Adapter type	SFP+ with fibre

The X1117A-R6 SFP+ adapter is supported on FAS8000 series controllers.

The FAS2600 and FAS2500 series storage systems have onboard 10GbE ports. For more information, see the [NetApp 10GbE adapter datasheet](#).



For more adapter details based on the AFF or FAS model, see the [Adapter section](#) in the Hardware Universe.

## NetApp FAS disk shelves

The following table lists the current NetApp FAS disk shelf options.

Component	DS460C	DS224C	DS212C	DS2246	DS4246
Form factor	4RU	2RU	2RU	2RU	4RU
Drives per enclosure	60	24	12	24	24
Drive form factor	3.5" large form factor	2.5" small form factor	3.5" large form factor	2.5" small form factor	3.5" large form factor
Shelf I/O modules	Dual IOM12 modules	Dual IOM12 modules	Dual IOM12 modules	Dual IOM6 modules	Dual IOM6 modules

For more information, see the NetApp disk shelves datasheet.



For more information about the disk shelves, see the NetApp Hardware Universe [Disk Shelves section](#).

## NetApp FAS disk drives

The technical specifications for the NetApp disks include form factor size, disk capacity, disk RPM, supporting controllers, and Data ONTAP version requirements and are located in the Drives section on [NetApp Hardware Universe](#).

## E-Series storage controllers

The following table lists the current E-Series storage controller options.

Current Component	E2812	E2824	E2860
Configuration	2 controllers in a 2U chassis	2 controllers in a 2U chassis	2 controllers in a 4U chassis
Maximum raw capacity	1800TB	1756.8TB	1800TB
Internal drives	12	24	60
Maximum number of drives (internal plus external)	180		
Maximum SSD	120		
Maximum volume size for disk pool volume	1024TB		
Maximum disk pools	20		
Storage networking supported	iSCSI and FC		
Maximum number of volumes	512		

The following table lists the datasheets for the current E-Series storage controller.

Component	Storage controller datasheet
E2800	<a href="http://www.netapp.com/us/media/ds-3805.pdf">http://www.netapp.com/us/media/ds-3805.pdf</a>

## E-Series adapters

The following table lists the E-Series adapters.

Component	X-56023-00-0E-C	X-56025-00-0E-C	X-56027-00-0E-C	X-56024-00-0E-C	X-56026-00-0E-C
Port count	2	4	4	2	2
Adapter type	10Gb Base-T	16G FC and 10GbE iSCSI	SAS	16G FC and 10GbE iSCSI	SAS

## E-Series disk shelves

The following table lists the E-Series disk shelf options.

Component	DE212C	DE224C	DE460C
Form factor	2RU	2RU	4RU
Drives per enclosure	12	24	60
Drive form factor	2.5" small form factor 3.5"	2.5"	2.5" small form factor 3.5"
Shelf I/O modules	IOM12	IOM12	IOM12

## E-Series disk drives

The technical specifications for the NetApp disk drives include form factor size, disk capacity, disk RPM, supporting controllers, and SANtricity version requirements and are located in the Drives section on [NetApp Hardware Universe](#).



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