

NetApp F200, F300, F500 and F600 Series Configuration Information for DataONTAP Release 4.3

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NetApp F200, F300, F500, and F600 Series Configuration Information for Data ONTAP Release 4.3

This document provides configuration information for the NetApp F200, F300, F500, and F600 series filers running Data ONTAP™ Release 4.3. The information in this document is organized as follows:

- File system size limits—this section identifies the maximum size of the file system for each filer.
- Disk shelf support—this section identifies the types of disk shelves you can connect to the filer.
- SCSI connector assignment information—this section lists the numbers of the SCSI connectors for filer disk and tape drives.
- Expansion slot assignment information—this section lists the type of cards installed in each expansion slot, and provides a list of the types and number of network cards you can install in the filer.
- System memory requirements—this section describes the memory configuration required to support the size of your file system.

For the FAServer filers, SCSI connector assignments, expansion slot assignments, and system memory requirements for Release 4.3 are the same as those for Release 3.0. See the *Hardware Guide for the FAServers* for configuration information about the FAServers.

File system size limits

The maximum size of your file system varies with the filer model, and it determines the number of data disks the filer supports. If adding a disk would cause the file system to exceed the limit by more than 0.5 GB, the system rejects the request and the disk you are trying to add becomes a spare disk.

Use the information in the following table to determine how many disks will be used with your filer.

Maximum size of the file system, by filer model

Filer model	Maximum size in GB
NetApp F210, F220, and F230	54 GB
NetApp F330	117 GB
NetApp F520 and F540	243 GB
NetApp F630	450 GB

Disk shelf support

NetApp provides two types of disk shelves:

- StorageShelf 1, which supports 4-GB disks¹
- StorageShelf 2, which supports 9-GB disks

The NetApp F200 series, F330, F500 series, and F600 series filers support mixed disk shelf configurations (that is, combinations of StorageShelf 1 and StorageShelf 2 disk shelves).

¹ StorageShelf 1 disk shelves are referred to as "Digital Disk Shelves" in other documentation.

SCSI connector assignments for Release 4.3

This section provides the number of the SCSI connectors for the disk and tape drives you can connect to your filer.

The following table provides the SCSI connector assignments for the F210, F220, and F230 filers.

SCSI connector assignments for the NetApp F210, F220, and F230

Device	NetApp F210 SCSI connector*	NetApp F220 SCSI connector	NetApp F230 SCSI connector
Disk shelf 1	9a	0	9a
Disk shelf 2	9b	9a	9b
Disk shelf 3	N/A	N/A	8a
Disk shelf 4	N/A	N/A	8b
Tape drive	0	9b	0

* The NetApp F210 SCSI connector assignments listed in this table apply only to those NetApp F210s that contain a wide SCSI card in slot 9a. You can identify the wide SCSI card by locating the 68-pin SCSI connector on the faceplate. If your NetApp F210 includes a narrow SCSI card (with a 50-pin SCSI connector), use SCSI connector 9a for disk shelf 1, SCSI connector 9a for disk shelf 2, and SCSI connector 9b for the tape drive.

The following table provides the SCSI connector assignments for the NetApp F330 and F520 filers.

SCSI connector assignments for the NetApp F330 and F520

Device	NetApp F330 SCSI connector	NetApp F520 SCSI connector
Disk shelf 1	0	8a
Disk shelf 2	9a	8b
Disk shelf 3	4a	7a
Disk shelf 4	4b	7b
Tape drive	9b	2

The following table provides the SCSI connector assignments for the NetApp F540 and F630 filers.

SCSI connector assignments for the NetApp F540 and F630

Device	NetApp F540 SCSI connector*	NetApp F630 SCSI connector*
Disk shelves 1 and 2	8a	8a
Disk shelves 3 and 4	8b	8b
Disk shelves 5 and 6	7a	7a
Disk shelves 7 and 8	7b	7b
Tape drive	2	6

* Each SCSI connector on the NetApp F540 and F630 filers supports two disk shelves that are connected to each other in a daisy chain. The first disk shelf in the chain is attached to the filer SCSI connector.

Expansion slot assignments for Release 4.3

This section provides expansion slot assignments for the NetApp F200, F300, F500, and F600 series filers. This section also provides information about the types and number of network cards you can install in each filer.

NetApp F210 expansion slot assignments

The following table lists the slot assignments for the NetApp F210.

Expansion slot assignments for the NetApp F210

Expansion card	Expansion slot					
	1 – 4	5	6	7	8	9
Network card 1	Not available for use	X				
Network card 2					X	
Network card 3				X		
NVRAM card			X			
SCSI card						X

The NetApp F210 supports up to three Ethernet network cards. The following table lists the types of network cards and the maximum number of each type of network card you can install in the filer. The table also identifies the slots in which you can install the cards.

Network cards for the NetApp F210

Network card	Max. # of cards	Expansion slot		
		5	7	8
Single-port 10/100Base-T	3	X	X	X
Quad-port 10/100Base-T	1	X*		
Quad-port 10Base-T	3	X	X	X

* Install the quad-port 10/100Base-T card in slot 5 only.

NetApp F220 expansion slot assignments

The following table lists the slot assignments for the NetApp F220.

Expansion slot assignments for the NetApp F220

Expansion card	Expansion slot					
	1 – 4	5	6	7	8	9
Network card 1	Not available for use			X		
Network card 2					X	
Network card 3		X				
NVRAM card			X			
SCSI card						X

The NetApp F220 supports up to three network cards. The following table lists the types of network cards and the maximum number of each type of network card you can install in the filer. The table also identifies the slots in which you can install the cards.

Network cards for the NetApp F220

Network card	Max. # of cards	Expansion slot		
		5	7	8
Single-port 10/100Base-T	2		X	X
Quad-port 10Base-T	2		X	X
FDDI-fiber, single-attachment	2		X	X
FDDI-fiber, dual-attachment	2		X	X
FDDI-TP, single-attachment	2		X	X
ATM, OC-3	1	X		

NetApp F230 expansion slot assignments

The following table lists the slot assignments for the NetApp F230.

Expansion slot assignments for the NetApp F230

Expansion card	Expansion slot					
	1 – 4	5*	6	7	8	9
Network card 1	Not available for use	X				
Network card 2				X	X	
Network card 3				X		
NVRAM card			X			
SCSI card 1						X
SCSI card 2**					X	

* For optimum system performance, NetApp recommends that you install the highest-performance network card in slot 5. High-performance network cards are rated according to their data rate. The cards are rated from highest to lowest performance as follows: (1) ATM, (2) FDDI, (3) single-port 10/100Base-T, (4) quad-port 10/100Base-T, and (5) 10Base-T.

** If slot 8 is already occupied by a narrow SCSI card for tape drives, remove it and install it in the SCSI 0 connector.

The NetApp F230 supports up to three network cards. The following table lists the types of network cards and the maximum number of each type of network card you can install in the filer. The table also identifies the slots in which you can install the cards.

Network cards for the NetApp F230

Network card	Max. # of cards	Expansion slot		
		5	7	8
ATM, OC-3	1	X*		
FDDI-fiber, single-attachment	3	X	X	X
FDDI-fiber, dual-attachment	3	X	X	X
FDDI-TP, single-attachment	3	X	X	X
Single-port 10/100Base-T	3	X	X	X

Network cards for the NetApp F230 (continued)

Network card	Max. # of cards	Expansion slot		
		5	7	8
Quad-port 10/100Base-T	1	X*		
Quad-port 10Base-T	3	X	X	X

* Install the Quad-port 10/100Base-T or ATM card in slot 5 only. Note that one or the other may be installed, but not both.

NetApp F330 expansion slot assignments

The following table lists the slot assignments for the NetApp F330.

Expansion slot assignments for the NetApp F330

Expansion card	Expansion slot								
	1	2	3	4	5	6	7	8	9
FDDI card 1							X		
FDDI card 2								X	
FDDI card 3	X								
FDDI card 4		X							
Single-port Ethernet card 1			X						
Single-port Ethernet card 2	X								
Quad-port Ethernet card 1		X							
Quad-port Ethernet card 2			X					X	
ATM card 1					X				
NVRAM card						X			
SCSI card 1									X
SCSI card 2				X					

The NetApp F330 supports up to four network cards. The following table lists the types of network cards and the maximum number of each type of network card you can install in the filer. The table also identifies the slots in which you can install the cards.

Network cards for the NetApp F330

Network card	Max. # of cards	Expansion slot					
		1	2	3	5	7	8
Single-port 10/100Base-T	2	X		X			
Quad-port 10Base-T	2		X	X			X
FDDI-fiber, single-attachment	4	X	X			X	X
FDDI-fiber, dual-attachment	4	X	X			X	X
FDDI-TP, single-attachment	4	X	X			X	X
ATM, OC-3	1				X*		

* Install the ATM card in slot 5 only.

NetApp F520 expansion slot assignments

The following table lists the slots assignments for the NetApp F520.

Expansion slot assignments for the NetApp F520

Expansion card	Expansion slot								
	1	2*	3*	4	5	6	7	8	9
Network card 1	Not available for use		X						
Network card 2					X				
Network card 3**			X						
Network card 4 or SCSI card for tape***		X							
NVRAM card				X					
SCSI card 1 for disks								X	
SCSI card 2 for disks							X		
Environmental card									X

* For optimum system performance, NetApp recommends that you install the highest-performance cards in slots 2 and 3. High-performance network cards are rated according to their data rate. The cards are rated from the highest to lowest performance as follows: (1) ATM, (2) FDDI, (3) single-port 10/100Base-T, (4) quad-port 10/100Base-T, and (5) quad-port 10Base-T.

** If no tape drive is installed, you may install card 3 in slot 5 or 6.

***If no tape drive is installed, you may install card 4 in slot 5 or 6.

The NetApp F520 supports up to four network cards if the tape SCSI card is not installed in slot 2. The following table lists the types of network cards and the maximum number of each type of network card you can install in the filer. The table also identifies the slots in which you can install the cards.

Network cards for the NetApp F520

Network card	Max. # of cards	Expansion slot			
		2	3	5	6
Single-port 10/100Base-T	4	X	X	X	X
Quad-port 10/100Base-T	3		X	X	X
Quad-port 10Base-T	3		X	X	X
Gigabit Ethernet	1		X		
FDDI-fiber, single-attachment	4	X	X	X	X
FDDI-fiber, dual-attachment	4	X	X	X	X
FDDI-TP, single-attachment	4	X	X	X	X
ATM, OC-3	2	X*	X*	X	X

* For optimum system performance, NetApp recommends that you install the ATM cards in slots 2 and 3.

NetApp F540 expansion slot assignments

The following table lists the slot assignments for the NetApp F540.

Expansion slot assignments for the NetApp F540

Expansion card	Expansion slot								
	1	2	3*	4	5	6	7	8	9
Network card 1	Not available for use		X						
Network card 2					X				
Network card 3						X			
NVRAM card				X					
SCSI card 1 for disks								X	
SCSI card 2 for disks							X		
SCSI card for tape		X							
Environmental card									X

* For optimum system performance, NetApp recommends that you install the highest-performance card in slot 3. High-performance network cards are rated according to their data rate. The cards are rated from highest to lowest performance as follows: (1) ATM, (2) FDDI, (3) single-port 10/100Base-T, (4) quad-port 10/100Base-T, and (5) quad-port 10Base-T.

The NetApp F540 supports up to three network cards. The following table lists the types of network cards and the maximum number of each type of network card you can install in the filer. The table also identifies the slots in which you can install the cards.

Network cards for the NetApp F540

Network card	Max. # of cards	Expansion slot		
		3	5	6
Single-port 10/100Base-T	3	X	X	X
Quad-port 10Base-T	3	X	X	X
Gigabit Ethernet	1	X		
FDDI-fiber, single-attachment	3	X	X	X

Network cards for the NetApp F540 (continued)

Network card	Max. # of cards	Expansion slot		
		3	5	6
FDDI-fiber, dual-attachment	3	X	X	X
FDDI-TP, single-attachment	3	X	X	X
ATM, OC-3	1	X*	X	X

* For optimum system performance, NetApp recommends that you install the ATM card in slot 3.

NetApp F630 expansion slot assignments

The following table lists the slot assignments for the NetApp F630.

Expansion slot assignments for the NetApp F630

Expansion card	Expansion slot									
	1	2	3	4	5*	6	7	8	9	10
Network card 2	Install any combination of network cards 2 through 5 in slots 1 through 4**									
Network card 3										
Network card 4										
Network card 5										
Network card 1										X
SCSI card 1 for disks								X		
SCSI card 2 for disks							X			
SCSI card for tape						X				
NVRAM card									X	

* Slot 5 is reserved for future use.

** For optimum system performance, NetApp recommends that you install the highest-performance card in slot 10. High-performance network cards are rated according to their data rate. The cards are rated from the highest to lowest performance as follows: (1) GB Ethernet, (2) ATM, (3) FDDI, (4) single-port 10/100Base-T, (5) quad-port 10/100Base-T, and (6) quad-port 10Base-T. Note: Quad-port Ethernet cards cannot be installed in slot 10.

The NetApp F630 supports up to five network cards. The following table lists the types of network cards and the maximum number of each type of network card you can install in the filer. The table also identifies the slots in which you can install the cards.

Network cards for the NetApp F630

Network card	Max. # of cards	Expansion slot				
		1	2	3	4	10
Single-port 10/100Base-T	5	X	X	X	X	X
Quad-port 10/100Base-T	4	X	X	X	X	

Network cards for the NetApp F630 (continued)

Network card	Max. # of cards	Expansion slot				
		1	2	3	4	10
Quad-port 10Base-T	4	X	X	X	X	
Gigabit Ethernet	1					X
FDDI-fiber, single-attachment	5	X	X	X	X	X
FDDI-fiber, dual-attachment	5	X	X	X	X	X
FDDI-TP, single-attachment	5	X	X	X	X	X
ATM, OC-3	4	X	X	X	X	X*

* For optimum system performance, NetApp recommends that you install the ATM card in slot 10, unless you have a Gigabit Ethernet card in that slot.

System memory requirements

This section describes the recommended memory configuration required to support the size of your file system.

The amount of memory required by your system depends on the following factors:

- Maximum number of files the file system can hold, as set by the `maxfiles` command.
- Total disk space. To determine the total disk space on your filer, use the `sysconfig -r` command and add up the first numbers in the “Used (mb/blks)” column for all disks.
- Number of network interfaces on the filer.

To find out how much memory the system has, use the `sysconfig` command.

You can install up to 256 MB of memory in an F200, F300, and F500 series filer. The following table lists the memory requirements for the NetApp F200, F300, and F500 series filers.

System memory requirements for the NetApp F200, F300, and F500 series filers

maxfiles (in millions)	Disk capacity (in GB)			
	Up to 28	29 – 52	53 – 104	105 – 208
Up to 1.7	64 MB	64 MB	N/A	N/A
1.8 – 12.6	64 MB	64 MB	64 MB	64 MB*
12.7 – 20.9	N/A	N/A	64 MB**	128 MB
21.0 or more	N/A	N/A	128 MB	128 MB

* If your filer contains five or more network interfaces, increase the memory from 64 MB to 128 MB.

** If your filer is a NetApp F540 or F520 with two or more network interfaces, increase the memory from 64 MB to 128 MB.

You can install up to 512 MB of memory in a NetApp F600 series filer. The following tables describe the memory requirements for the NetApp F600 series when used with 4-GB disks and when used with 9-GB disks.

System memory requirements for the NetApp F600 series filers with 4-GB disks

maxfiles (in millions)	Disk capacity (in GB)			
	Up to 28	29 – 52	53 – 104	105 – 208
Up to 1.7	128 MB	128 MB	N/A	N/A
More than 1.7	128 MB	128 MB	128 MB	128 MB

System memory requirements for the NetApp F600 series filers with 9-GB disks

maxfiles (in millions)	Disk capacity (in GB)			
	Up to 113	113 - 226	227 - 339	340 - 452
Up to 7	128 MB	128 MB	N/A	N/A
7 to 69.7	128 MB	128 MB	128 MB	128 MB
More than 69.7	N/A	N/A	256 MB	256 MB