Start here - Choose your procedure

ONTAP MetroCluster

NetApp
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Start here: Choose between controller upgrade, system refresh, or expansion

Depending on the scope of the equipment upgrade, you choose a controller upgrade procedure, a system refresh procedure, or an expansion procedure.

- Controller upgrade procedures apply only to the controller modules. The controllers are replaced with a new controller model.

  The storage shelf models are not upgraded.

  - In switchover and switchback procedures, the MetroCluster switchover operation is used to provide nondisruptive service to clients while the controller modules on the partner cluster are upgraded.
  - In an ARL-based controller upgrade procedure, the aggregate relocation operations are used to nondisruptively move data from the old configuration to the new, upgraded configuration.
- Refresh procedures apply to the controllers and the storage shelves.

  In the refresh procedures, new controllers and shelves are added to the MetroCluster configuration, creating a second DR group, and then data is nondisruptively migrated to the new nodes.

  The original controllers are then retired.
- Expansion procedures add additional controllers and shelves to the MetroCluster configuration without removing any.

  The procedure you use depends on the type of MetroCluster and number of existing controllers.

Upgrade type	Go to…
Controller upgrade	Choose a controller upgrade procedure
System refresh	Choose a system refresh procedure
Expansion	• Two-node MetroCluster to four • Four-node MetroCluster FC to eight • Four-node MetroCluster IP to eight

Choose a controller upgrade procedure

The controller upgrade procedure you use depends on the platform model and type of MetroCluster configuration.

In an upgrade procedure, the controllers are replaced with a new controller model. The storage shelf models are not upgraded.

- In switchover and switchback procedures, the MetroCluster switchover operation is used to provide nondisruptive service to clients while the controller modules on the partner cluster are upgraded.
- In an ARL-based controller upgrade procedure, the aggregate relocation operations are used to nondisruptively move data from the old configuration to the new, upgraded configuration.

Choosing a procedure that uses the switchover and switchback process

Select your Current platform from the FC or IP table below. If the intersection of the Current platform row and Target platform column is blank, the upgrade is not supported.

Supported MetroCluster IP controller upgrades

If your platform is not listed, there is no supported controller upgrade combination.

When you perform a controller upgrade, the old and the new platform type **must** match.

- You can upgrade a FAS system to a FAS system, or an AFF A-Series to an AFF A-Series.
- You cannot upgrade a FAS system to an AFF A-Series, or an AFF A-Series to an AFF C-Series.

For example, if the platform you want to upgrade is a FAS8200, you can upgrade to a FAS9000. You cannot upgrade a FAS8200 system to an AFF A700 system.

		Target MetroCluster IP platform									
		AFF A150	FAS2750 AFF A220	FAS500f AFF C250 ASA C250 AFF A250 ASA A250	FAS8200 AFF A300	AFF A320	FAS8300 AFF C400 ASA C400 AFF A400 ASA A400	FAS8700	FAS9000 AFF A700	AFF C800 ASA C800 AFF A800 ASA A800	FAS9500 AFF A900 ASA A900
Source MetroCluster IP platform	AFF A150										
	FAS2750 AFF A220										
	FAS500f AFF C250 ASA C250 AFF A250 ASA A250										
	FAS8200 AFF A300										Note 2
	AFF A320										
	FAS8300 AFF C400 ASA C400 AFF A400 ASA A400										Note 2
	FAS8700										Note 2
	FAS9000 AFF A700										Note 1
	AFF C800 ASA C800 AFF A800 ASA A800										
	FAS9500 AFF A900 ASA A900										

- Note 1: For this upgrade use the procedure Upgrade controllers from AFF A700/FAS9000 to AFF A900/FAS9500 in a MetroCluster IP configuration using switchover and switchback (ONTAP 9.10.1 or later)
- Note 2: Controller upgrades are supported on systems running ONTAP 9.13.1 or later.
- All nodes in the MetroCluster configuration must be running the same ONTAP version. For example, the new controllers must be running the same ONTAP version as the old controllers.

Supported MetroCluster FC controller upgrades

If your platform is not listed, there is no supported controller upgrade combination.

When you perform a controller upgrade, the old and the new platform type **must** match.

- You can upgrade a FAS system to a FAS system, or an AFF A-Series to an AFF A-Series.
- You cannot upgrade a FAS system to an AFF A-Series, or an AFF A-Series to an AFF C-Series.

For example, if the platform you want to upgrade is a FAS8200, you can upgrade to a FAS9000. You cannot upgrade a FAS8200 system to an AFF A700 system.

		Target MetroCluster FC platform											
		FAS80x0	AFF80x0	FAS8200	AFF A300	FAS8300	AFF A400	ASA A400	FAS9000	AFF A700	FAS9500	AFF A900	ASA A900
Source MetroCluster FC platform	FAS8020	Note 1		Note 1		Note 1			Note 1				
	AFF8020		Note 1		Note 1		Note 1			Note 1			
	FAS8040 FAS8060 FAS8080												
	AFF8040 AFF8060 AFF8080												
	FAS8200					Note 2			Note 2		Note 4		
	AFF A300						Note 2			Note 2		Note 4	
	FAS8300										Note 4		
	AFF A400											Note 4	
	ASA A400												Note 5
	FAS9000										Note 3		
	AFF A700											Note 3	
	FAS9500												
	AFF A900												
	ASA A900												

- Note 1: For upgrading controllers when FCVI connections on existing FAS8020 or AFF8020 nodes use ports 1c and 1d, see the following Knowledge base article.
- Note 2: Controller upgrades from AFF A300 or FAS8200 platforms using onboard ports 0e and 0f as FC-VI connections are only supported on the following systems:
  - ONTAP 9.9.1 and earlier
  - ONTAP 9.10.1P9
  - ONTAP 9.11.1P5
  - ONTAP 9.12.1GA
  - ONTAP 9.13.1 and later

  For more information, review the Public Report.
- Note 3: For this upgrade refer to Upgrade controllers from AFF A700/FAS9000 to AFF A900/FAS9500 in a MetroCluster FC configuration using switchover and switchback (ONTAP 9.10.1 or later)
- Note 4: Controller upgrades are supported on systems running ONTAP 9.13.1 or later.
- Note 5: Controller upgrades are supported on systems running ONTAP 9.14.1 or later.
- All nodes in the MetroCluster configuration must be running the same ONTAP version. For example, the new controllers must be running the same ONTAP version as the old controllers.

MetroCluster type	Upgrade method	ONTAP version	Procedure

IP	Upgrade with 'system controller replace' commands	9.13.1 and later	Link to procedure
FC	Upgrade with 'system controller replace' commands	9.10.1 and later	Link to procedure
FC	Manual upgrade with CLI commands (AFF A700/FAS9000 to AFF A900/FAS9500 only)	9.10.1 and later	Link to procedure
IP	Manual upgrade with CLI commands (AFF A700/FAS9000 to AFF A900/FAS9500 only)	9.10.1 and later	Link to procedure
FC	Manual upgrade with CLI commands	9.8 and later	Link to procedure
IP	Manual upgrade with CLI commands	9.8 and later	Link to procedure

Choosing a procedure using aggregate relocation

In an ARL-based controller upgrade procedure, the aggregate relocation operations are used to nondisruptively move data from the old configuration to the new, upgraded configuration.

MetroCluster type	Aggregate relocation	ONTAP version	Procedure
FC	Using "system controller replace" commands to upgrade controller models in the same chassis	9.10.1 and later	Link to procedure

MetroCluster type	Aggregate relocation	ONTAP version	Procedure
FC	Using `system controller replace` commands	9.8 and later	Link to procedure
FC	Using `system controller replace` commands	9.5 through 9.7	Link to procedure
FC	Using manual ARL commands	9.8	Link to procedure
FC	Using manual ARL commands	9.7 and earlier	Link to procedure

Choosing a system refresh method

The system refresh procedure you use depends on the platform model, and type of MetroCluster configuration. Refresh procedures apply to the controllers and the storage shelves. In the refresh procedures, new controllers and shelves are added to the MetroCluster configuration, creating a second DR group, and then data is nondisruptively migrated to the new nodes. The original controllers are then retired.

Supported MetroCluster FC tech refresh combinations

		Target MetroCluster FC platform									
		FAS8200	AFF A300	FAS8300	AFF A400	ASA A400	FAS9000	AFF A700	FAS9500	AFF A900	ASA A900
Source MetroCluster FC platform	FAS8200	■	■	■	■	■	■	■	■	■	■
	AFF A300	■	■	■	■	■	■	■	■	■	■
	FAS8300			■	■	■	■	■	■	■	■
	AFF A400			■	■	■	■	■	■	■	■
	ASA A400			■	■	■	■	■	■	■	■
	FAS9000						■	■	■	■	■
	AFF A700						■	■	■	■	■
	FAS9500								■	■	■
	AFF A900								■	■	■
	ASA A900								■	■	■

- You must complete the tech refresh procedure before adding a new load.
- All nodes in the MetroCluster configuration must be running the same ONTAP version. For example, if you have an eight-node configuration, all eight nodes must be running the same ONTAP version.
- Do not exceed any object limits of the 'lower' of the platforms in the combination. Apply the lower object limit of the two platforms.
- If the target platform limits are lower then the MetroCluster limits, you must reconfigure the MetroCluster to be at, or below, the target platform limits before you add the new nodes.
- Refer to the Hardware universe for platform limits.

Supported MetroCluster IP tech refresh combinations

		Target MetroCluster IP platform									
		AFF A150 ASA A150	FAS2750 AFF A220	FAS500f AFF C250 ASA C250 AFF A250 ASA A250	FAS8200 AFF A300	AFF A320	FAS8300 AFF C400 ASA C400 AFF A400 ASA A400	FAS8700	FAS9000 AFF A700	AFF C800 ASA C800 AFF A800 ASA A800	FAS9500 AFF A900 ASA A900
Source MetroCluster IP platform	AFF A150 ASA A150	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
	FAS2750 AFF A220	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
	FAS500f AFF C250 ASA C250 AFF A250 ASA A250	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
	FAS8200 AFF A300										
	AFF A320										
	FAS8300 AFF C400 ASA C400 AFF A400 ASA A400										
	FAS8700										
	FAS9000 AFF A700										
	AFF C800 ASA C800 AFF A800 ASA A800										
	FAS9500 AFF A900 ASA A900										

Note 1: This combination requires ONTAP 9.13.1 or later.

- You must complete the tech refresh procedure before adding a new load.
- All nodes in the MetroCluster configuration must be running the same ONTAP version. For example, if you have an eight-node configuration, all eight nodes must be running the same ONTAP version.
- Do not exceed any object limits of the 'lower' of the platforms in the combination. Apply the lower object limit of the two platforms.
- If the target platform limits are lower than the MetroCluster limits, you must reconfigure the MetroCluster to be at, or below, the target platform limits before you add the new nodes.
- Refer to the Hardware universe for platform limits.

Refresh method	Configuration type	ONTAP version	Procedure
• Method: Expand the MetroCluster configuration and then remove the old nodes	Four-node FC	9.6 and later	Link to procedure
• Method: Expand the MetroCluster configuration and then remove the old nodes	Four-node IP	9.8 and later	Link to procedure

Choose an expansion procedure

The expansion procedure you use depends on the type of MetroCluster configuration and the ONTAP version.

An expansion procedure involves adding new controllers and storage to the MetroCluster configuration. The

expansion must maintain an even number of controllers on each site and the procedure you use depends on the number of nodes in the original MetroCluster configuration.

Expansion method	Configuration type	ONTAP version	Procedure
Method: Expand a two-node MetroCluster FC to four	Two-node FC	ONTAP 9 and later (platforms must be supported in ONTAP 9.2 and later)	Link to procedure
Method: Expand a four-node MetroCluster FC to eight	Four-node FC	ONTAP 9 or later	Link to procedure
Method: Expand a four-node MetroCluster IP to eight	Four-node IP	ONTAP 9.9.1 and later	Link to procedure

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