



## **Start here - Choose your procedure**

### **ONTAP MetroCluster**

NetApp  
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# Start here - Choose your procedure

## 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	<a href="#">Choose a controller upgrade procedure</a>
System refresh	<a href="#">Choose a system refresh procedure</a>
Expansion	<ul style="list-style-type: none"><li>• <a href="#">Two-node MetroCluster to four</a></li><li>• <a href="#">Four-node MetroCluster FC to eight</a></li><li>• <a href="#">Four-node MetroCluster IP to eight</a></li></ul>

## 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

		Target MetroCluster IP platform							
		FAS8300	AFF A400	FAS8700	FAS9000	AFF A700	AFF A800	FAS9500	AFF A900
Current MetroCluster IP platform	FAS8200								
	AFF A300								
	AFF A320								
	FAS8300								
	AFF A400								
	FAS8700								
	FAS9000							Note 1	
	AFF A700								Note 1

- 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 \(ONTAP 9.10.1 or later\)](#)

### Supported MetroCluster FC controller upgrades

		Target MetroCluster FC platform									
		FAS80x0	AFF80x0	FAS8200	AFF A300	FAS8300	AFF A400	FAS9000	AFF A700	FAS9500	AFF A900
Current 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			
	AFF A300						Note 2		Note 2		
	FAS8300										
	AFF A400										
	FAS9000									Note 3	
	AFF A700										Note 3
	FAS9500										
	AFF 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 supported only on systems running ONTAP 9.9.1. or earlier. 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 \(ONTAP 9.10.1 or later\)](#)

MetroCluster type	Upgrade method	ONTAP version	Procedure
FC	Upgrade with 'system controller replace' commands	9.10.1 and later	<a href="#">Link to procedure</a>
FC	Manual upgrade with CLI commands (AFF A700/FAS9000 to AFF A900/FAS9500 only)	9.10.1 and later	<a href="#">Link to procedure</a>
IP	Manual upgrade with CLI commands (AFF A700/FAS9000 to AFF A900/FAS9500 only)	9.10.1 and later	<a href="#">Link to procedure</a>
FC	Manual upgrade with CLI commands	9.8 and later	<a href="#">Link to procedure</a>
IP	Manual upgrade with CLI commands	9.8 and later	<a href="#">Link to procedure</a>

## 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 and swapping the controller module and NVM (upgrade from AFF A700 to AFF A900 only)	9.10.1 and later	<a href="#">Link to procedure</a>
FC	Using system controller replace commands	9.8 and later	<a href="#">Link to procedure</a>

MetroCluster type	Aggregate relocation	ONTAP version	Procedure
FC	Using <code>system controller replace</code> commands	9.5 through 9.7	<a href="#">Link to procedure</a>
FC	Using manual ARL commands	9.8	<a href="#">Link to procedure</a>
FC	Using manual ARL commands	9.7 and earlier	<a href="#">Link to procedure</a>

## 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	FAS9000	AFF A700	FAS9500	AFF A900
Current MetroCluster FC platform	FAS8200								
	AFF A300								
	FAS8300								
	AFF A400								
	FAS9000								
	AFF A700								
	FAS9500								
	AFF A900								

- Ensure that you complete the tech refresh procedure before adding a new load.



Do not exceed any object limits of the 'lower' of the platforms in the combination. Apply the lower object limit of the two platforms. Refer to the [Hardware universe](#) for platform limits.

### Supported MetroCluster IP tech refresh combinations

		Target MetroCluster IP platform														
		FAS2750	AFF A220	FAS500f	AFF A250	FAS8200	AFF A300	AFF A320	FAS8300	AFF A400	FAS8700	FAS9000	AFF A700	AFF A800	FAS9500	AFF A900
Current MetroCluster IP platform	FAS2750															
	AFF A220															
	FAS500f															
	AFF A250															
	FAS8200															
	AFF A300															
	AFF A320															
	FAS8300															
	AFF A400															
	FAS8700															
	FAS9000															
	AFF A700															
	AFF A800															
	FAS9500															
	AFF A900															

- Ensure that you complete the tech refresh procedure before adding a new load.



Do not exceed any object limits of the 'lower' of the platforms in the combination. Apply the lower object limit of the two platforms. Refer to the [Hardware universe](#) for platform limits.

Refresh method	Configuration type	ONTAP version	Procedure
<ul style="list-style-type: none"> <li>• Method: Expand the MetroCluster configuration and then remove the old nodes</li> </ul>	Four-node FC	9.6 and later	<a href="#">Link to procedure</a>
<ul style="list-style-type: none"> <li>• Method: Expand the MetroCluster configuration and then remove the old nodes</li> </ul>	Four-node IP	9.8 and later	<a href="#">Link to procedure</a>

## 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)	<a href="#">Link to procedure</a>
Method: Expand a four-node MetroCluster FC to eight	Four-node FC	ONTAP 9 or later	<a href="#">Link to procedure</a>

Expansion method	Configuration type	ONTAP version	Procedure
Method: Expand a four-node MetroCluster IP to eight	Four-node IP	ONTAP 9.9.1 and later	<a href="#">Link to procedure</a>



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