



Cabling storage arrays to FC switches in a MetroCluster configuration

ONTAP MetroCluster

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Cabling storage arrays to FC switches in a MetroCluster configuration

You must connect storage arrays to FC switches so that the ONTAP systems in the MetroCluster configuration can access a specific array LUN through at least two paths.

- The storage arrays must be set up to present array LUNs to ONTAP.
- The ONTAP controllers must be connected to the FC switches.
- The ISLs must be cabled between the FC switches across the MetroCluster sites.
- You must repeat this task for each storage array at both of the MetroCluster sites.
- You must connect the controllers in a MetroCluster configuration to the storage arrays through FC switches.

Steps

1. Connect the storage array ports to FC switch ports.

At each site, connect the redundant port pairs in the storage array to FC switches on alternate fabrics. This provides redundancy in the paths for accessing the array LUNs.

Related information

[Switch zoning in a MetroCluster configuration with array LUNs](#)

[Example of cabling storage array ports to FC switches in a two-node MetroCluster configuration](#)

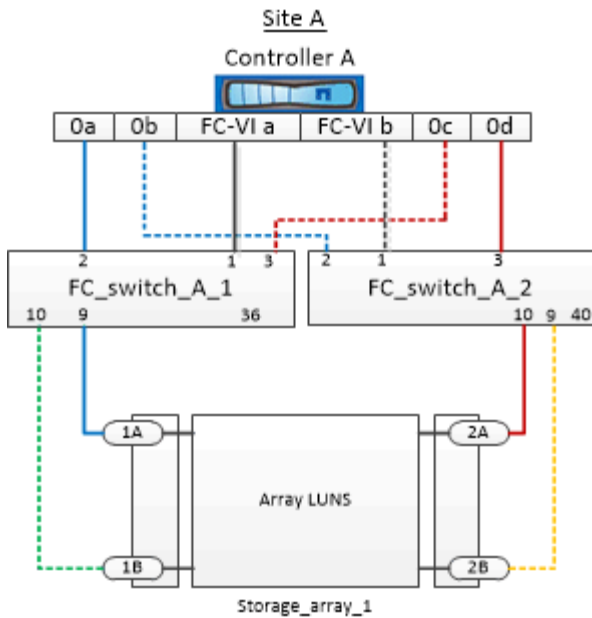
[Example of cabling storage array ports to FC switches in a four-node MetroCluster configuration](#)

[Example of cabling storage array ports to FC switches in an eight-node MetroCluster configuration](#)

Example of cabling storage array ports to FC switches in a two-node MetroCluster configuration

In a MetroCluster configuration with array LUNs, you must connect the storage array ports that form a redundant port pair to alternate FC switches.

The following illustration shows the connections between storage arrays and FC switches in a two-node fabric-attached MetroCluster configuration with array LUNs:



The connections between storage array ports and FC switch ports are similar for both stretch and fabric-attached variants of two-node MetroCluster configurations with array LUNs.



If you plan to use disks in addition to array LUNs in your MetroCluster configuration, you must use the switch ports specified for the configuration with disks.

Port assignments for FC switches when using ONTAP 9.1 and later

In the illustration, the redundant array port pairs for both the sites are as follows:

- Storage array at Site A:
 - Ports 1A and 2A
 - Ports 1B and 2B
- Storage array at Site B:
 - Ports 1A' and 2A'
 - Ports 1B' and 2B'

FC_switch_A_1 at Site A and FC_switch_B_1 at Site B are connected to form fabric_1. Similarly, FC_switch_A_2 at Site A and FC_switch_B_2 are connected to form fabric_2.

The following table lists the connections between the storage array ports and the FC switches for the example MetroCluster illustration:

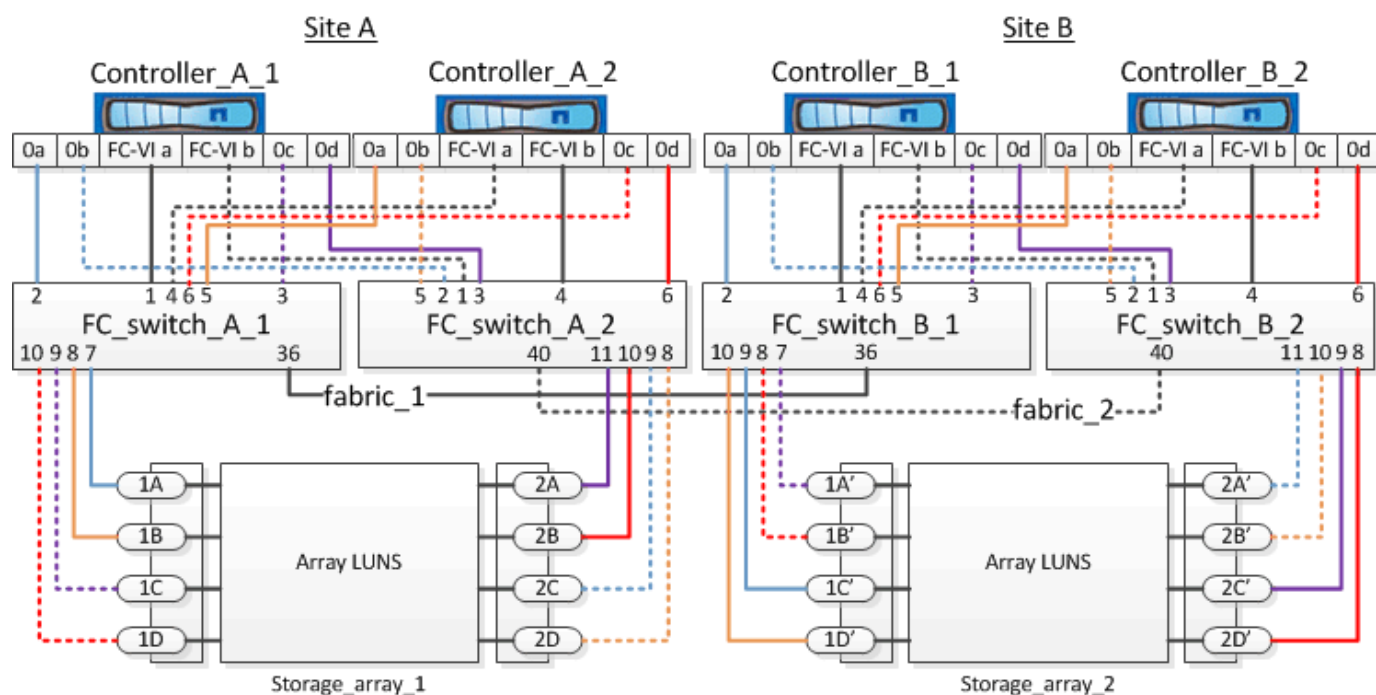
| Array LUN ports | FC switch ports | Switch fabrics |
|-----------------|------------------------|----------------|
| Site A | | |
| 1A | FC_switch_A_1, Port 9 | fabric_1 |
| 2A | FC_switch_A_2, Port 10 | fabric_2 |

| Array LUN ports | FC switch ports | Switch fabrics |
|-----------------|------------------------|----------------|
| 1B | FC_switch_A_1, Port 10 | fabric_1 |
| 2B | FC_switch_A_2, Port 9 | fabric_2 |
| Site B | | |
| 1A' | FC_switch_B_1, Port 9 | fabric_1 |
| 2A' | FC_switch_B_2, Port 10 | fabric_2 |
| 1B' | FC_switch_B_1, Port 10 | fabric_1 |
| 2B' | FC_switch_B_2, Port 9 | fabric_2 |

Example of cabling storage array ports to FC switches in a four-node MetroCluster configuration

In a MetroCluster configuration with array LUNs, you must connect the storage array ports that form a redundant port pair to alternate FC switches.

The following reference illustration shows the connections between storage arrays and FC switches in a four-node MetroCluster configuration with array LUNs:



If you plan to use disks in addition to array LUNs in your MetroCluster configuration, you must use the switch ports specified for the configuration with disks.

Port assignments for FC switches when using ONTAP 9.1 and later

In the illustration, the redundant array port pairs for both the sites are as follows:

- Storage array at Site A:
 - Ports 1A and 2A
 - Ports 1B and 2B
 - Ports 1C and 2C
 - Ports 1D and 2D
- Storage array at Site B:
 - Ports 1A' and 2A'
 - Ports 1B' and 2B'
 - Ports 1C' and 2C'
 - Ports 1D' and 2D'

FC_switch_A_1 at Site A and FC_switch_B_1 at Site B are connected to form fabric_1. Similarly, FC_switch_A_2 at Site A and FC_switch_B_2 are connected to form fabric_2.

The following table lists the connections between the storage array ports and the FC switches for the MetroCluster illustration:

| Array LUN ports | FC switch ports | Switch fabrics |
|-----------------|------------------------|----------------|
| Site A | | |
| 1A | FC_switch_A_1, Port 7 | fabric_1 |
| 2A | FC_switch_A_2, Port 11 | fabric_2 |
| 1B | FC_switch_A_1, Port 8 | fabric_1 |
| 2B | FC_switch_A_2, Port 10 | fabric_2 |
| 1C | FC_switch_A_1, Port 9 | fabric_1 |
| 2C | FC_switch_A_2, Port 9 | fabric_2 |
| 1D | FC_switch_A_1, Port 10 | fabric_1 |
| 2D | FC_switch_A_2, Port 8 | fabric_2 |
| Site B | | |
| 1A' | FC_switch_B_1, Port 7 | fabric_1 |

| Array LUN ports | FC switch ports | Switch fabrics |
|-----------------|------------------------|----------------|
| 2A' | FC_switch_B_2, Port 11 | fabric_2 |
| 1B' | FC_switch_B_1, Port 8 | fabric_1 |
| 2B' | FC_switch_B_2, Port 10 | fabric_2 |
| 1C' | FC_switch_B_1, Port 9 | fabric_1 |
| 2C' | FC_switch_B_2, Port 9 | fabric_2 |
| 1D' | FC_switch_B_1, Port 10 | fabric_1 |
| 2D' | FC_switch_B_2, Port 8 | fabric_2 |

Example of cabling storage array ports to FC switches in an eight-node MetroCluster configuration

In a MetroCluster configuration with array LUNs, you must connect the storage array ports that form a redundant port pair to alternate FC switches.

An eight-node MetroCluster configuration consists of two four-node DR groups. The first DR group consists of the following nodes:

- controller_A_1
- controller_A_2
- controller_B_1
- controller_B_2

The second DR group consists of the following nodes:

- controller_A_3
- controller_A_4
- controller_B_3
- controller_B_4

To cable the array ports for the first DR group, you can use the cabling examples for a four-node MetroCluster configuration for the first DR group.

[Example of cabling storage array ports to FC switches in a four-node MetroCluster configuration](#)

To cable the array ports for the second DR group, follow the same examples and extrapolate for the FC-VI ports and FC initiator ports belonging to the controllers in the second DR group.

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