Implementing a MetroCluster configuration with both disks and array LUNs

ONTAP MetroCluster

NetApp
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Implementing a MetroCluster configuration with both disks and array LUNs

To implement a MetroCluster configuration with native disks and array LUNs, you must ensure that the ONTAP systems used in the configuration can attach to storage arrays.

A MetroCluster configuration with disks and array LUNs can have either two or four nodes. Although the four-node MetroCluster configuration must be fabric-attached, the two-node configuration can either be stretch or fabric-attached.

NetApp Interoperability Matrix Tool

In the IMT, you can use the Storage Solution field to select your MetroCluster solution. You use the **Component Explorer** to select the components and ONTAP version to refine your search. You can click **Show Results** to display the list of supported configurations that match the criteria.

Related information

Example of a two-node fabric-attached MetroCluster configuration with disks and array LUNs

Example of a four-node MetroCluster configuration with disks and array LUNs

Considerations when implementing a MetroCluster configuration with disks and array LUNs

When planning your MetroCluster configuration for use with disks and array LUNs, you must consider various factors, such as the order of setting up access to storage, root aggregate location, and the usage of FC initiator ports, switches, and FC-to-SAS bridges.

Consider the information in the following table when planning your configuration:

Consideration	Guideline
Order of setting up access to the storage	You can set up access to either disks or array LUNs first. You must complete all setup for that type of storage and verify that it is set up correctly before setting up the other type of storage.
Location of the root aggregate	• If you are setting up a *new* MetroCluster deployment with both disks and array LUNs, you must create the root aggregate on native disks. When doing this, ensure that *at least one* disk shelf (with 24 disk drives) is set up at each of the sites. • If you are adding native disks to an *existing* MetroCluster configuration that uses array LUNs, the root aggregate can remain on an array LUN.

Consideration	Guideline
Using switches and FC-to-SAS bridges	FC-to-SAS bridges are required in four-node configurations and two-node fabric-attached configurations to connect the ONTAP systems to the disk shelves through the switches. You must use the same switches to connect to the storage arrays and the FC-to-SAS bridges.
Using FC initiator ports	The initiator ports used to connect to an FC-to-SAS bridge must be different from the ports used to connect to the switches, which connect to the storage arrays.A minimum of eight initiator ports is required to connect an ONTAP system to both disks and array LUNs.

Related information

Configuring the Cisco or Brocade FC switches manually

Example of switch zoning in a four-node MetroCluster configuration with array LUNs

Example of switch zoning in an eight-node MetroCluster configuration with array LUNs

Installing FC-to-SAS bridges and SAS disk shelves

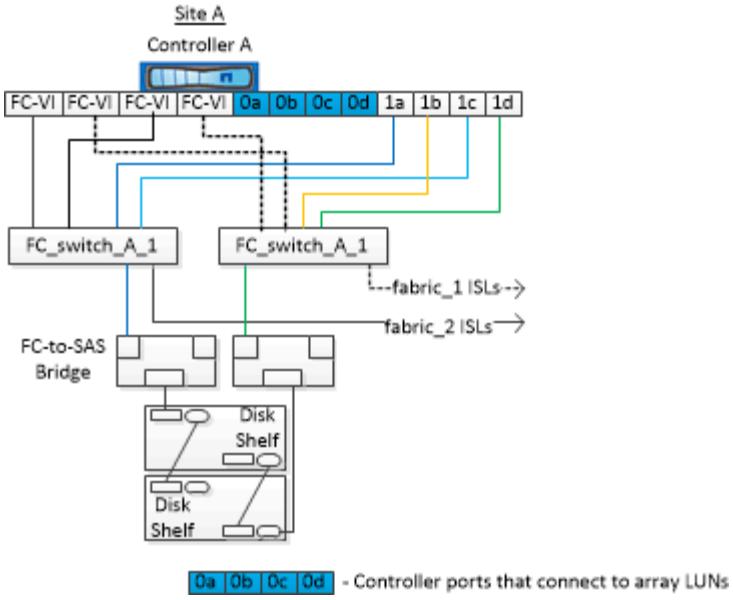
NetApp Hardware Universe

Example of a two-node fabric-attached MetroCluster configuration with disks and array LUNs

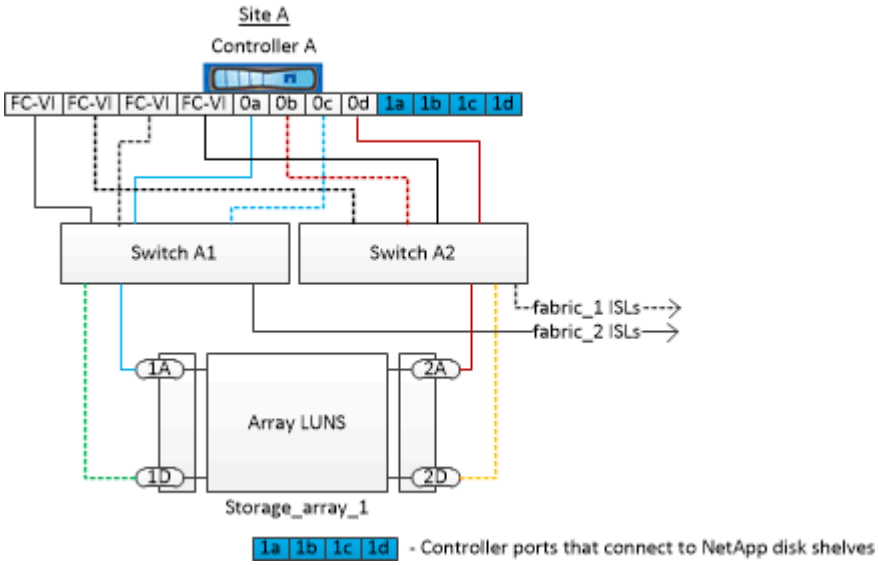
For setting up a two-node fabric-attached MetroCluster configuration with native disks and array LUNs, you must use FC-to-SAS bridges to connect the ONTAP systems with the disk shelves through the FC switches. You can connect array LUNs through the FC switches to the ONTAP systems.

The following illustrations represent examples of a two-node fabric-attached MetroCluster configuration with disks and array LUNs. They both represent the same MetroCluster configuration; the representations for disks and array LUNs are separated only for simplification.

In the following illustration showing the connectivity between ONTAP systems and disks, the HBA ports 1a through 1d are used for connectivity with disks through the FC-to-SAS bridges:



In the following illustration showing the connectivity between ONTAP systems and array LUNs, the HBA ports 0a through 0d are used for connectivity with array LUNs because ports 1a through 1d are used for connectivity with disks:



Example of a four-node MetroCluster configuration with disks and array LUNs

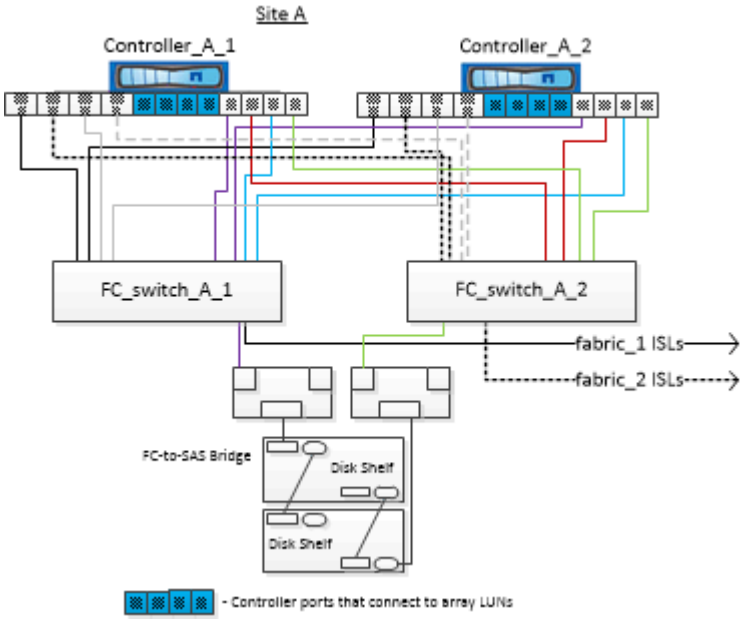
For setting up a four-node MetroCluster configuration with native disks and array LUNs, you must use FC-to-SAS bridges to connect the ONTAP systems with the disk shelves through the FC switches. You can connect array LUNs through the FC switches to the ONTAP systems.

A minimum of eight initiator ports is required for an ONTAP system to connect to both native disks and array LUNs.

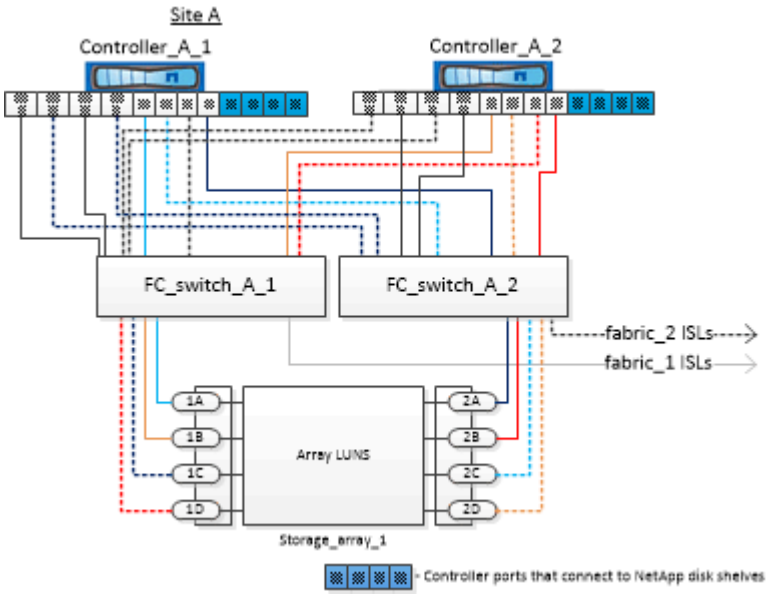
The following illustrations represent examples of a MetroCluster configuration with disks and array LUNs. They both represent the same MetroCluster configuration; the representations for disks and array LUNs are

separated only for simplification.

In the following illustration that shows the connectivity between ONTAP systems and disks, the HBA ports 1a through 1d are used for connectivity with disks through the FC-to-SAS bridges:



In the following illustration that shows the connectivity between ONTAP systems and array LUNs, the HBA ports 0a through 0d are used for connectivity with array LUNs because ports 1a through 1d are used for connectivity with disks:



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