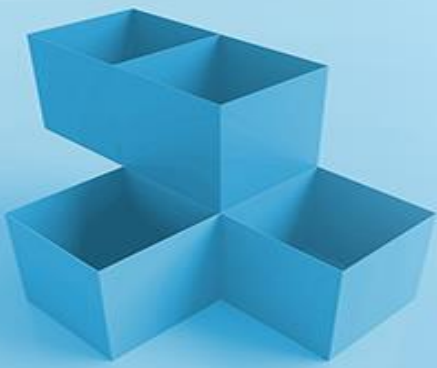


# ONTAP MetroCluster IP Implementation



Delivery: Instructor-Led Training

Duration: 2 Days

Training Units: 16

## Course Description

In this course, you learn how to cable and set up a MetroCluster environment. You will complete participatory exercises to practice the configuration and verification steps. You also learn how to identify component failures and practice recovery steps.

## Audience

NetApp employees, partner professional service implementation engineers, and customers.

## Prerequisites

- **Required**
  - Completion of the “ONTAP PS Professional Compliance Program” or an equivalent program
  - *ONTAP Cluster Administration*
- **Recommended**
  - *MetroCluster in ONTAP Overview for Support Partners*
  - *ONTAP MetroCluster Troubleshooting Essentials*

## Objectives

This course focuses on enabling you to do the following:

- Describe the major architectural components of a NetApp MetroCluster environment
- Identify how to cable nodes and back-end IP switches
- Set up back-end IP switches
- Configure the clusters at both local and remote sites in a MetroCluster environment
- Set up a MetroCluster configuration and serve data to clients
- Detect and recover from failures in a MetroCluster environment
- Install and configure NetApp ONTAP Mediator service

## Course Content

This course includes the following modules, lessons, and exercises:

Module	Lessons	Exercises
<p><b>Module 1: Introduction to MetroCluster software</b></p>	<ul style="list-style-type: none"> <li>Review the basic concepts of NetApp MetroCluster high-availability (HA) and disaster recovery software</li> <li>Discuss the components of a MetroCluster IP configuration</li> <li>Review the hardware that MetroCluster IP configurations support</li> <li>Describe the tools and documentation that you need to configure a MetroCluster IP environment</li> </ul>	<ul style="list-style-type: none"> <li>Identify the lab environment</li> <li>Identify a supported configuration in the IMT</li> <li>Connect to both clusters</li> </ul>
<p><b>Module 2: MetroCluster IP racking and cabling</b></p>	<ul style="list-style-type: none"> <li>Explain the disk requirements for NetApp MetroCluster IP configurations</li> <li>Explain the racking recommendations for MetroCluster IP configurations</li> <li>Describe the cable diagrams for MetroCluster IP configurations</li> </ul>	<ul style="list-style-type: none"> <li>Cable SAS shelf connections</li> <li>Cable controller connections</li> <li>Cable cluster peering connections</li> <li>Cable an ISL between the switches at Site A and the switches at Site B</li> <li>Assign shelf IDs</li> </ul>
<p><b>Module 3: Switch configuration</b></p>	<ul style="list-style-type: none"> <li>Locate the NetApp MetroCluster IP reference configuration file (RCF) and firmware files</li> <li>Explain how to set up virtual LANs (VLANs) in MetroCluster IP configurations</li> <li>Explain how to upgrade and configure Cisco IP switches</li> <li>Explain how to upgrade and configure Broadcom IP switches</li> </ul>	<ul style="list-style-type: none"> <li>Examine the switch and reference configuration file</li> <li>Download and run the RCF File Generator for MetroCluster IP</li> <li>Configure a Cisco switch</li> </ul>
<p><b>Module 4: Preparing the clusters</b></p>	<ul style="list-style-type: none"> <li>Configure disk ownership in a MetroCluster IP environment</li> <li>Configure a cluster</li> </ul>	<ul style="list-style-type: none"> <li>Review the cluster LIFs</li> <li>Configure the network and storage objects</li> </ul>
<p><b>Module 5: MetroCluster configuration</b></p>	<ul style="list-style-type: none"> <li>Prepare two clusters for NetApp MetroCluster configuration</li> <li>Configure two clusters to become MetroCluster configurations</li> <li>Verify a MetroCluster configuration</li> <li>Configure a storage VM (storage virtual</li> </ul>	<ul style="list-style-type: none"> <li>Prepare the MetroCluster IP for configuration</li> <li>Mirror the root aggregate and create data aggregates</li> <li>Enable the MetroCluster software</li> <li>Use the CLI to verify a MetroCluster environment</li> </ul>

Module	Lessons	Exercises
	<p>machine, also known as SVM) in a MetroCluster environment</p> <ul style="list-style-type: none"> <li>SVM configuration in a MetroCluster environment</li> </ul>	<ul style="list-style-type: none"> <li>Use Active IQ Config Advisor to verify a MetroCluster environment</li> <li>Create a storage VM for the iSCSI protocol in a MetroCluster environment</li> <li>Create a storage VM for CIFS protocol in a MetroCluster environment</li> </ul>
<p><b>Module 6: Failure scenarios</b></p>	<ul style="list-style-type: none"> <li>Show how to respond to component failures in a MetroCluster environment</li> <li>Perform planned and unplanned switchovers</li> <li>Complete the steps in a switchback</li> <li>Explain correct LIF placement</li> </ul>	<ul style="list-style-type: none"> <li>Start Iometer traffic to a LUN and a share</li> <li>Detect the loss of a node by performing a storage failover and giveback</li> <li>Detect the loss of configuration replication service connections</li> <li>Perform a planned switchover</li> <li>Perform a takeover and giveback during a switchover</li> <li>Perform a switchback of a planned switchover</li> </ul>
<p><b>Module 7: ONTAP Mediator service</b></p>	<ul style="list-style-type: none"> <li>Explain the components of ONTAP Mediator</li> <li>Install ONTAP Mediator</li> <li>Configure ONTAP Mediator</li> <li>Administer ONTAP Mediator</li> </ul>	<ul style="list-style-type: none"> <li>Install the ONTAP Mediator</li> <li>Add the ONTAP Mediator to a MetroCluster environment</li> <li>Test the ONTAP Mediator</li> <li>Observe a disaster situation where ONTAP Mediator does not help</li> </ul>
<p><b>Module 8: MetroCluster transition</b></p>	<ul style="list-style-type: none"> <li>Understand the transition process from MetroCluster FC to MetroCluster IP</li> <li>Review the detailed workflow used for a MetroCluster transition</li> </ul>	<p>None</p>

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