



Install and cable MetroCluster components for two-node SAS-attached stretch configurations

ONTAP MetroCluster

NetApp
July 19, 2022

This PDF was generated from https://docs.netapp.com/us-en/ontap-metrocluster/install-stretch/reference_sas_optical_mc_configuring_a_stretch_mcc_system_with_sas_disk_shelves_and_sas_optical_cables.html on July 19, 2022. Always check docs.netapp.com for the latest.

Table of Contents

- Install and cable MetroCluster components for two-node SAS-attached stretch configurations 1
 - Installing and cabling MetroCluster components for two-node SAS-attached stretch configurations 1
 - Racking the hardware components 1
 - Cabling the controllers to each other and the storage shelves 2
 - Cabling the cluster peering connections 3
 - Cabling the management and data connections 3

Install and cable MetroCluster components for two-node SAS-attached stretch configurations

Installing and cabling MetroCluster components for two-node SAS-attached stretch configurations

The storage controllers must be cabled to the storage media and to each other. The storage controllers must also be cabled to the data and management network.

Before you begin any procedure in this document

The following overall requirements must be met before completing this task:

- Prior to installation you must have familiarized yourself with the considerations and best practices for installing and cabling disk shelves for your disk shelf model.
- All MetroCluster components must be supported.

[NetApp Interoperability Matrix Tool](#)

In the IMT, you can use the Storage Solution field to select your MetroCluster solution. 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.

About this task

- The terms node and controller are used interchangeably.

Racking the hardware components

If you have not received the equipment already installed in cabinets, you must rack the components.

This task must be performed on both MetroCluster sites.

Steps

1. Plan the positioning of the MetroCluster components.

The amount of rack space needed depends on the platform model of the storage controllers, the switch types, and the number of disk shelf stacks in your configuration.

2. Using standard shop practices for working with electrical equipment make sure you are properly grounded.
3. Install the storage controllers in the rack or cabinet.

[AFF and FAS Documentation Center](#)

4. Install the disk shelves, daisy-chain the disk shelves in each stack, power them on, and set the shelf IDs.

See the appropriate guide for your disk shelf model for information about daisy-chaining disk shelves and setting shelf IDs.



Shelf IDs must be unique for each SAS disk shelf within each MetroCluster DR group (including both sites). When manually setting shelf IDs, you must power-cycle the disk shelf.

Cabling the controllers to each other and the storage shelves

The controller FC-VI adapters must be cabled directly to each other. The controller SAS ports must be cabled to both the remote and local storage stacks.

This task must be performed at both MetroCluster sites.

Steps

1. Cable the FC-VI ports.



The above illustration is a typical representative cable connection. The specific FC-VI ports will vary by controller module.

- FAS8200 and AFF A300 controller modules can be ordered with one of two options for FC-VI connectivity:
 - Onboard ports 0e and 0f are configured in FC-VI mode.
 - Ports 1a and 1b on an FC-VI card go in slot 1.
- AFF A700 and FAS9000 storage systems controller modules use four FC-VI ports each.
- AFF A400 and FAS8300 storage system controller modules use FC-VI ports 2a and 2b.

2. Cable the SAS ports.

The following illustration shows the connections. Your port usage might be different depending on the available SAS and FC-VI ports on the controller module.



Cabling the cluster peering connections

You must cable the controller module ports used for cluster peering so that they have connectivity with the cluster on their partner site.

This task must be performed on each controller module in the MetroCluster configuration.

At least two ports on each controller module should be used for cluster peering.

The recommended minimum bandwidth for the ports and network connectivity is 1 GbE.

Steps

1. Identify and cable at least two ports for cluster peering and verify they have network connectivity with the partner cluster.

Cluster peering can be done on dedicated ports or on data ports. Using dedicated ports provides a higher throughput for the cluster peering traffic.

[Cluster and SVM peering express configuration](#)

Cabling the management and data connections

You must cable the management and data ports on each storage controller to the site networks.

This task must be repeated for each new controller at both MetroCluster sites.

You can connect the controller and cluster switch management ports to existing switches in your network. In addition you can connect controller to new dedicated network switches such as NetApp CN1601 cluster management switches.

Steps

1. Cable the controller's management and data ports to the management and data networks at the local site.

[AFF and FAS Documentation Center](#)

Copyright Information

Copyright © 2022 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system- without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

Trademark Information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.