



# **Cabling the FC-VI and HBA ports in a MetroCluster configuration with array LUNs**

## **ONTAP MetroCluster**

NetApp  
April 28, 2021

This PDF was generated from [https://docs.netapp.com/us-en/ontap-metrocluster/install-fc/task\\_cable\\_the\\_fc\\_vi\\_and\\_hba\\_ports\\_to\\_switches\\_in\\_a\\_two\\_node\\_fabric\\_attached\\_mcc\\_configuration\\_with\\_array\\_luns.html](https://docs.netapp.com/us-en/ontap-metrocluster/install-fc/task_cable_the_fc_vi_and_hba_ports_to_switches_in_a_two_node_fabric_attached_mcc_configuration_with_array_luns.html) on April 28, 2021. Always check docs.netapp.com for the latest.

# Table of Contents

- Cabling the FC-VI and HBA ports in a MetroCluster configuration with array LUNs . . . . . 1
  - Cabling the FC-VI and HBA ports in a two-node fabric-attached MetroCluster configuration with array LUNs . . . . . 1
  - Cabling the FC-VI and HBA ports in a four-node fabric-attached MetroCluster configuration with array LUNs . . . . . 2
  - Cabling the FC-VI and HBA ports in an eight-node fabric-attached MetroCluster configuration with array LUNs . . . . . 5

# Cabling the FC-VI and HBA ports in a MetroCluster configuration with array LUNs

For a fabric-attached MetroCluster configuration with array LUNs, you must connect the controllers in a MetroCluster configuration to the storage arrays through FC switches.

## Cabling the FC-VI and HBA ports in a two-node fabric-attached MetroCluster configuration with array LUNs

If you are setting up a two-node fabric-attached MetroCluster configuration with array LUNs, you must cable the FC-VI ports and the HBA ports to the switch ports.

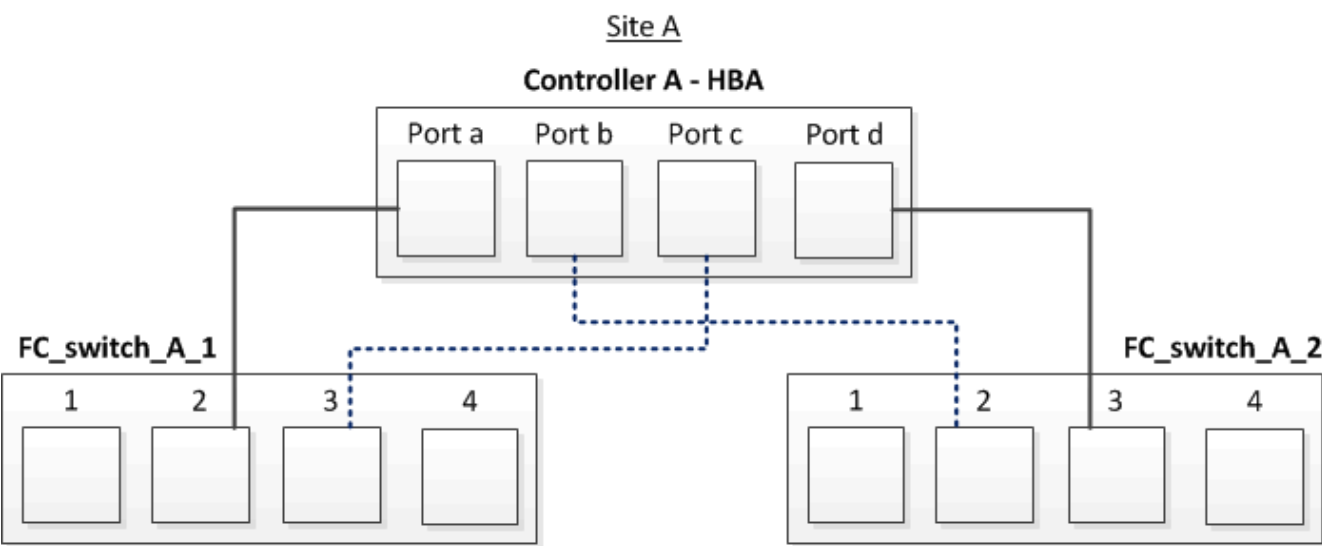
- You must repeat this task for each controller at both of the MetroCluster sites.
- If you plan to use disks in addition to array LUNs in your MetroCluster configuration, you must use the HBA ports and switch ports specified for configuration with disks.
  - [Port assignments for FC switches when using ONTAP 9.1 and later](#)
  - [Port assignments for FC switches when using ONTAP 9.0](#)

### Steps

1. Cable the FC-VI ports from the controller to alternate switch ports.
2. Perform the controller-to-switch cabling at both of the MetroCluster sites.

You must ensure redundancy in connections from the controller to the switches. Therefore, for each controller at a site, you must ensure that both of the HBA ports in the same port pair are connected to alternate FC switches.

The following example shows the connections between the HBA ports on Controller A and ports on FC\_switch\_A\_1 and FC\_switch\_A\_2:



The following table lists the connections between the HBA ports and the FC switch ports in the illustration:

HBA ports	Switch ports
<b>Port pair</b>	
Port a	FC_switch_A_1, Port 2
Port d	FC_switch_A_2, Port 3
<b>Port pair</b>	
Port b	FC_switch_A_2, Port 2
Port c	FC_switch_A_1, Port 3

You should cable the ISLs between the FC switches across the MetroCluster sites.

## Cabling the FC-VI and HBA ports in a four-node fabric-attached MetroCluster configuration with array LUNs

If you are setting up a four-node fabric-attached MetroCluster configuration with array LUNs, you must cable the FC-VI ports and the HBA ports to the switch ports.

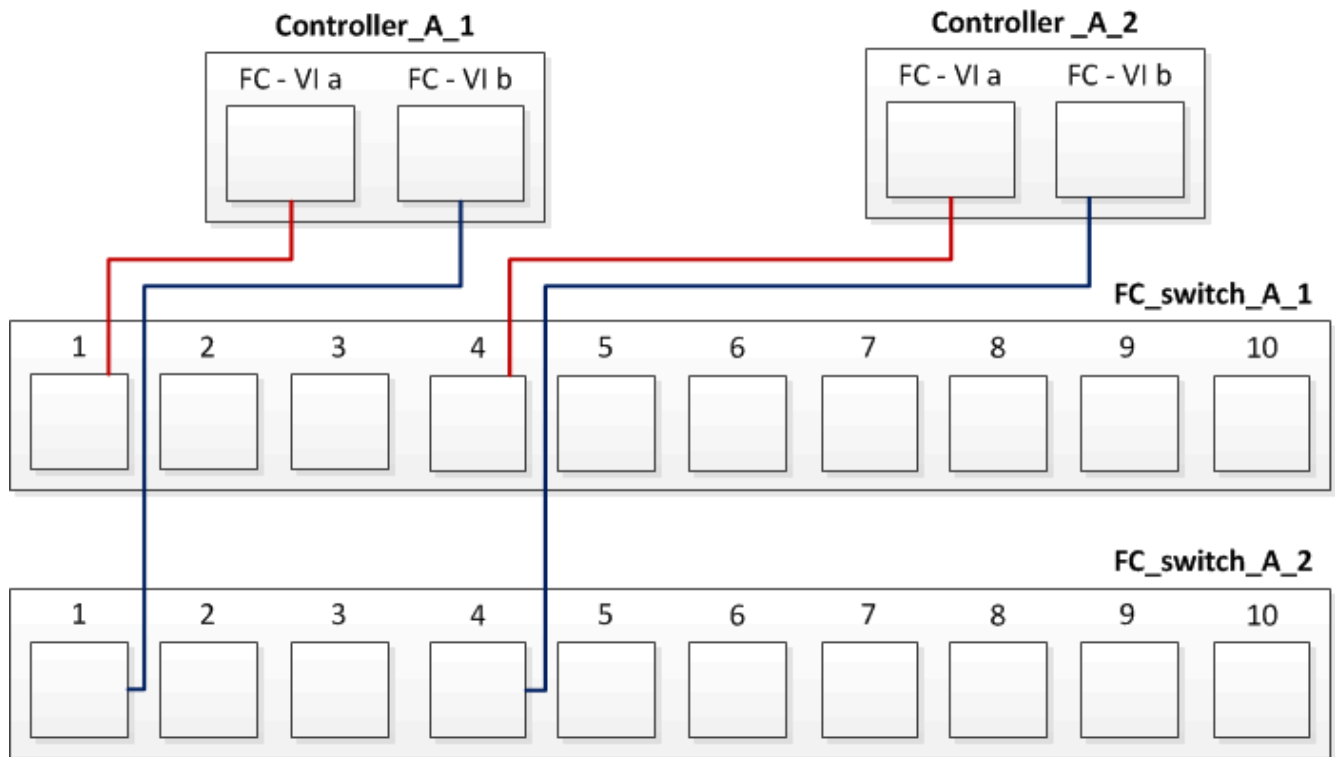
- You must repeat this task for each controller at both of the MetroCluster sites.
- If you plan to use disks in addition to array LUNs in your MetroCluster configuration, you must use the HBA ports and switch ports specified for configuration with disks.
  - [Port assignments for FC switches when using ONTAP 9.1 and later](#)
  - [Port assignments for FC switches when using ONTAP 9.0](#)

### Steps

1. Cable the FC-VI ports from each controller to the ports on alternate FC switches.

The following example shows the connections between the FC-VI ports and switch ports at Site A:

## Site A

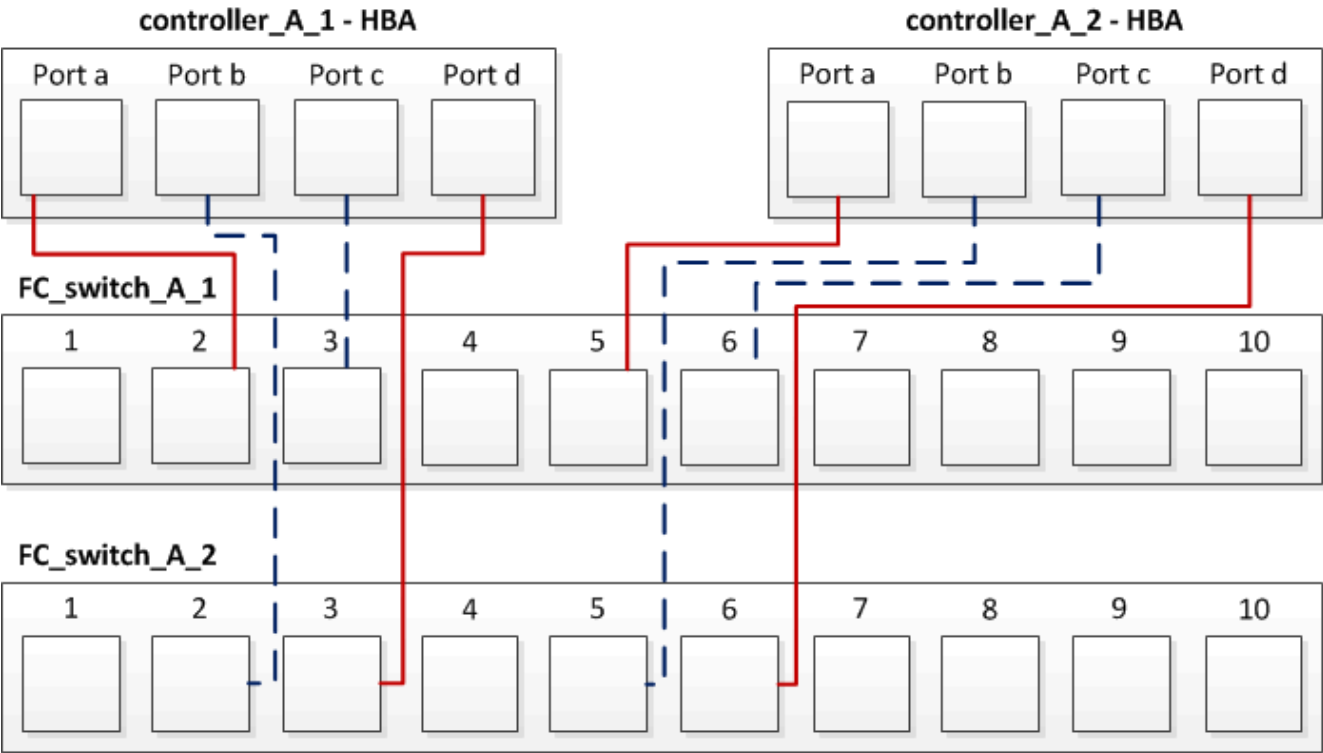


2. Perform the controller-to-switch cabling at both of the MetroCluster sites.

You must ensure redundancy in connections from the controller to the switches. Therefore, for each controller at a site, you must ensure that both of the HBA ports in the same port pair are connected to alternate FC switches.

The following example shows the connections between the HBA ports and switch ports at Site A:

Site A



The following table lists the connections between the HBA ports on controller\_A\_1 and the FC switch ports in the illustration:

HBA ports	Switch ports
<b>Port pair</b>	
Port a	FC_switch_A_1, Port 2
Port d	FC_switch_A_2, Port 3
<b>Port pair</b>	
Port b	FC_switch_A_2, Port 2
Port c	FC_switch_A_1, Port 3

The following table lists the connections between the HBA ports on controller\_A\_2 and the FC switch ports in the illustration:

HBA ports	Switch ports
<b>Port pair</b>	
Port a	FC_switch_A_1, Port 5

HBA ports	Switch ports
Port d	FC_switch_A_2, Port 6
<b>Port pair</b>	
Port b	FC_switch_A_2, Port 5
Port c	FC_switch_A_1, Port 6

You should cable the ISLs between the FC switches across the MetroCluster sites.

## Related information

[Switch ports required for a MetroCluster configuration with array LUNs](#)

# Cabling the FC-VI and HBA ports in an eight-node fabric-attached MetroCluster configuration with array LUNs

If you are setting up an eight-node fabric-attached MetroCluster configuration with array LUNs, you must cable the FC-VI ports and the HBA ports to the switch ports.

- You must repeat this task for each controller at both of the MetroCluster sites.
- If you plan to use disks in addition to array LUNs in your MetroCluster configuration, you must use the HBA ports and switch ports specified for configuration with disks.
  - [Port assignments for FC switches when using ONTAP 9.1 and later](#)
  - [Port assignments for FC switches when using ONTAP 9.0](#)

## Steps

1. Cable the FC-VI ports and HBA ports from each controller to the ports on alternate FC switches.

Configurations using FibreBridge 7500N or 7600N using both FC ports (FC1 and FC2)				
MetroCluster 1 or DR Group 1				
Component	Port	Brocade switch models 6505, 6510, 6520, 7810, 7840, G610, G620, G620-1, G630, G630-1, and DCX 8510-8		2+ Brocade switch G720
		Connects to FC_switch...	Connects to switch port...	Connects to switch port...

controller_x_1	FC-VI port a	1	0	0
	FC-VI port b	2	0	0
	FC-VI port c	1	1	1
	FC-VI port d	2	1	1
	HBA port a	1	2	8
	HBA port b	2	2	8
	HBA port c	1	3	9
	HBA port d	2	3	9
controller_x_2	FC-VI port a	1	4	4
	FC-VI port b	2	4	4
	FC-VI port c	1	5	5
	FC-VI port d	2	5	5
	HBA port a	1	6	12
	HBA port b	2	6	12
	HBA port c	1	7	13
	HBA port d	2	7	13
Stack 1	bridge_x_1a	FC1	1	8
		10	FC2	2
	8	10	bridge_x_1B	FC1
	1	9		11



FC2	2	9	11	Stack 2
bridge_x_2a	FC1	1	10	
	14	FC2	2	
10	14	bridge_x_2B	FC1	FC2
1	11		15	
2	11	15	Stack 3	bridge_x_3a
FC1	1	12*		12*
16	FC2	2		
16	bridge_x_3B	FC1		1
13*		17	FC2	2
13*	17	Stack y	bridge_x_ya	FC1
1	14*		14*	20
FC2	2			20
bridge_x_yb	FC1		1	15*
	21	FC2	2	15*

Cisco 9250i\*

Component	Port	Switch 1	Switch 2
-----------	------	----------	----------

controller_x_1	FC-VI port a	1	-
	FC-VI port b	-	1
	HBA port a	2	-
	HBA port b	-	2
	HBA port c	3	-
	HBA port d	-	3
controller_x_2	FC-VI port a	4	-
	FC-VI port b	-	4
	HBA port a	5	-
	HBA port b	-	5
	HBA port c	6	-
	HBA port d	-	6
controller_x_3	FC-VI port a	7	-
	FC-VI port b	-	7
	HBA port a	8	-
	HBA port b	-	8
	HBA port c	9	-
	HBA port d	-	9

controller_x_4	FC-VI port a	10	-
	FC-VI port b	-	10
	HBA port a	11	-
	HBA port b	-	11
	HBA port c	13	-
	HBA port d	-	13

You should cable the ISLs between the FC switches across the MetroCluster sites.

## Copyright Information

Copyright © 2021 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.