

Cable the MetroCluster IP switches

ONTAP MetroCluster

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Cable the MetroCluster IP switches

Using the port tables with the RcfFileGenerator tool or multiple MetroCluster configurations

You must understand how to use the information in the port tables to correctly generate your RCF files.

Before you begin

Review these considerations before using the tables:

- The following tables show the port usage for site A. The same cabling is used for site B.
- The switches cannot be configured with ports of different speeds (for example, a mix of 100 Gbps ports and 40 Gbps ports).
- Keep track of the MetroCluster port group (MetroCluster 1, MetroCluster 2, etc.). You will need this information when using the RcfFileGenerator tool as described later in this configuration procedure.
- The RcfFileGenerator for MetroCluster IP also provides a per-port cabling overview for each switch. Use this cabling overview to verify your cabling.

Cabling eight-node MetroCluster configurations

For MetroCluster configuration running ONTAP 9.8 and earlier, some procedures that are performed to transition an upgrade require the addition of a second four-node DR group to the configuration to create a temporary eight-node configuration. Beginning with ONTAP 9.9.1, permanent eight-node MetroCluster configurations are supported.

About this task

For such configurations, you use the same method as described above. Instead of a second MetroCluster, you are cabling an additional four-node DR group.

For example, your configuration includes the following:

- Cisco 3132Q-V switches
- MetroCluster 1: FAS2750 platforms
- MetroCluster 2: AFF A700 platforms (these platforms are being added as a second four-node DR group)

Steps

- 1. For MetroCluster 1, cable the Cisco 3132Q-V switches using the table for the FAS2750 platform and the rows for MetroCluster 1 interfaces.
- 2. For MetroCluster 2 (the second DR group), cable the Cisco 3132Q-V switches using the table for the AFF A700 platform and the rows for MetroCluster 2 interfaces.

Platform port assignments for Cisco 3132Q-V switches

The port usage in a MetroCluster IP configuration depends on the switch model and platform type.

Review these guidelines before using the tables:

• If you configure the switch for MetroCluster FC to IP transition, port 5, port 6, port 13, or port 14 can be used to connect the local cluster interfaces of the MetroCluster FC node. Refer to the RcfFileGenerator and the generated cabling files for more details on cabling this configuration. For all other connections, you can use the port usage assignments listed in the tables.

Port usage for FAS2750 or AFF A220 systems and a Cisco 3132Q-V switch

		FAS	2750	
Switch	Port use	\$100 A	A220	
Port	(A-1-) 5-0-1 (MC) (B-35) (A-1-)	IP_Switch_x_1	IP_Switch_	
1-6	Unused	disa	bled	
7	ISL, Local Cluster	ICI I	I Chusten	
8	native speed / 40G / 100G	ISL, LOCA	l Cluster	
9/1		e0a	e0b	
9/2-4	MetroCluster 1,	disa	bled	
10/1	Shared Cluster and MetroCluster interface	e0a	e0b	
10/2-4		disa	bled	
11/1		e0a	e0b	
11/2-4	MetroCluster 2,	disa	bled	
12/1	Shared Cluster and MetroCluster interface	e0a	e0b	
12/2-4		disa	bled	
13/1		e0a	e0b	
13/2-4	MetroCluster 3,	disa	bled	
14/1	Shared Cluster and MetroCluster interface	e0a	e0b	
14/2-4		disa	bled	
15				
16				
17	ISL, MetroCluster	ISL, MetroCluster		
18	native speed 40G	ist, wet	ociustei	
19				
20				
21/1-4				
22/1-4	ISL, MetroCluster	ICI M-A	Cluster	
23/1-4	breakout mode 10G	ist, Meti	roCluster	
24/1-4				
25 - 32	Unused	disa	bled	

Port usage for FAS9000 or AFF A700 systems and a Cisco 3132Q-V switch

Switch	Port use	FAS9000 AFF A700				
Port		IP_Switch_x_1	IP_Switch_x_2			
1	MetroCluster 1,	e4a	e4e / e8a			
2	Local Cluster interface	E4a	e4e / e6a			
3	MetroCluster 2,	e4a	e4e / e8a			
4	Local Cluster interface	e4a	e4e / eoa			
5	MetroCluster 3,	e4a	e4e / e8a			
6	Local Cluster interface	e4a	e4e / e6a			
7	ISL, Local Cluster	ISI Jaco	al Cluster			
8	native speed 40G	ISL, LOCA	Cluster			
9	MetroCluster 1,		e5b			
10	MetroCluster interface	e5a	езр			
11	MetroCluster 2,		e5b			
12	MetroCluster interface	e5a	esp			
13	MetroCluster 3,	oFo.	e5b			
14	MetroCluster interface	e5a	630			
15						
16						
17	ISL, MetroCluster	ICI Mate				
18	native speed 40G	ISL, Ivieti	oCluster			
19						
20						
21/1-4						
22/1-4	ISL, MetroCluster	ICI MA-1-	- Chusto-			
23/1-4	breakout mode 10G	ISL, IVIETI	oCluster			
24/1-4						
25 - 32	Unused	disa	bled			

Port usage for AFF A800 or ASA A800 systems and a Cisco 3132Q-V switch

Switch Port	Port use	AFF A800 ASA A800			
Port		IP_Switch_x_1	IP_Switch_x_		
1	MetroCluster 1,	e0a	e1a		
2	Local Cluster interface	eua	ета		
3	MetroCluster 2,	e0a	e1a		
4	Local Cluster interface	eua	ela		
5	MetroCluster 3,	e0a	010		
6 7	Local Cluster interface	eua	e1a		
	ISL, Local Cluster	ISI Loca	al Cluster		
8	native speed 40G	ISL, LOCA	ii Cluster		
9	MetroCluster 1,	e0b	e1b		
10	MetroCluster interface	dos	elb		
11	MetroCluster 2,	e0b	e1b		
12	MetroCluster interface	doa	erp		
13	MetroCluster 3,	e0b	e1b		
14	MetroCluster interface	eob	erp		
15					
16					
17	ISL, MetroCluster	ISI Moto	ISI Matas Shartan		
18	native speed 40G	ISL, MetroCluster			
19					
20					
21/1-4					
22/1-4	ISL, MetroCluster	ICI Marte	o Chuston		
23/1-4	breakout mode 10G	ISL, Wetr	oCluster		
24/1-4					
25 - 32	Unused	disa	bled		

Platform port assignments for Cisco 3232C or Cisco 9336C switches

The port usage in a MetroCluster IP configuration depends on the switch model and platform type.

Review these considerations before using the tables:

- The following tables show the port usage for site A. The same cabling is used for site B.
- The switches cannot be configured with ports of different speeds (for example, a mix of 100 Gbps ports and 40 Gbps ports).
- If you are configuring a single MetroCluster with the switches, use the **MetroCluster 1** port group.

Keep track of the MetroCluster port group (MetroCluster 1, MetroCluster 2, MetroCluster 3, or MetroCluster 4). You will need it when using the RcfFileGenerator tool as described later in this configuration procedure.

- The RcfFileGenerator for MetroCluster IP also provides a per-port cabling overview for each switch.
 Use this cabling overview to verify your cabling.
- RCF file version v2.10 or later is required for 25G breakout mode for MetroCluster ISLs.
- ONTAP 9.13.1 or later and RCF file version 2.00 are required to use a platform other than FAS8200 or AFF A300 in the "MetroCluster 4" group.

Cabling two MetroCluster configurations to the switches

When cabling more than one MetroCluster configuration to a Cisco 3132Q-V switch, you must cable each MetroCluster according to the appropriate table. For example, if cabling a FAS2750 and an AFF A700 to the same Cisco 3132Q-V switch. Then you cable the FAS2750 as per "MetroCluster 1" in Table 1, and the AFF A700 as per "MetroCluster 2" or "MetroCluster 3" in Table 2. You cannot physically cable both the FAS2750 and the AFF A700 as "MetroCluster 1".

Cabling an AFF A150, ASA A150, FAS2750, AFF A220, FAS500f, AFF C250, ASA C250, AFF A250, or ASA A250 system to a Cisco 3232C or Cisco 9336-FX2C switch

Switch Port Port use	Cabling an A	AFF A150, ASA A150, FAS2750, AFF A220, FAS500		C250, AFF A250	or ASA A250 to a	Cisco 3232C or							
Switch Port use	Cisco 9336-FX2C switch												
Switch Port Port			\ \rac{1}{2}	۸150	FAS:	500f							
Switch Port Port Switch Port Port Switch Port Port Port Port Switch Port					AFF C250								
Port	Switch	Port use			ASA	C250							
ASA A250	Port	Fort use			AFF	A250							
1 - 6			AFF	AZZU	ASA	A250							
Total Cluster			IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2							
St. Local Cluster Local Clus	1 - 6	Unused	disa	bled	disa	bled							
S	7	ISL, Local Cluster	ICL Loss	I Cluston	ICI Loss	l Clustor							
9/2-4	8	native speed / 100G	ISL, LOCA	Cluster	ISL, LOCA	i Ciuster							
10/1	9/1		e0a	e0b	e0c	e0d							
10/2-4	9/2-4	MetroCluster 1,	disa	bled	disa	bled							
11/1	10/1	Shared Cluster and MetroCluster interface	e0a	e0b	e0c	e0d							
11/2-4	10/2-4		disa	bled	disa	bled							
12/1 Shared Cluster and MetroCluster interface e0a e0b e0c e0d	11/1		e0a	e0b	e0c	e0d							
12/2-4	11/2-4	MetroCluster 2,	disa	bled	disa	bled							
13/1	12/1	Shared Cluster and MetroCluster interface	e0a	e0b	e0c	e0d							
13/2-4	12/2-4		disa	bled	disa	bled							
14/1	13/1		e0a	e0b	e0c	e0d							
14/2-4 disabled disabled 15 16 17 ISL, MetroCluster 18 native speed 40G / 100G ISL, MetroCluster 19 20 ISL, MetroCluster 21/1-4 ISL, MetroCluster ISL, MetroCluster 23/1-4 breakout mode 10G / 25G ISL, MetroCluster	13/2-4	MetroCluster 3,	disa	bled	disa	bled							
15	14/1	Shared Cluster and MetroCluster interface	e0a	e0b	e0c	e0d							
16	14/2-4		disabled		disa	bled							
17 ISL, MetroCluster 18 native speed 40G / 100G 19 20 21/1-4 22/1-4 ISL, MetroCluster 23/1-4 breakout mode 10G / 25G ISL, MetroCluster ISL, MetroCluster ISL, MetroCluster ISL, MetroCluster ISL, MetroCluster ISL, MetroCluster	15												
18 native speed 40G / 100G ISL, MetroCluster 19 20 21/1-4 ISL, MetroCluster 22/1-4 ISL, MetroCluster breakout mode 10G / 25G ISL, MetroCluster ISL, MetroCluster ISL, MetroCluster	16												
18	17	ISL, MetroCluster	ICI MatraClustor		ICL Material Charter								
20 21/1-4 22/1-4 ISL, MetroCluster ISL, MetroClust	18	native speed 40G / 100G	ist, ivieti	ociuster	ist, weti	ociuster							
21/1-4 22/1-4 ISL, MetroCluster 23/1-4 breakout mode 10G / 25G ISL, MetroCluster ISL, MetroCluster	19												
22/1-4 ISL, MetroCluster 23/1-4 breakout mode 10G / 25G ISL, MetroCluster ISL, MetroCluster	20												
23/1-4 breakout mode 10G / 25G ISL, MetroCluster ISL, MetroCluster	21/1-4												
23/1-4 breakout mode 10G / 25G	22/1-4	ISL, MetroCluster	ICI Mark	Cl+	ICL Master	Cl t							
		breakout mode 10G / 25G	ISL, Meti	ociuster	ist, Meti	ociuster							
- 1 - 1 	24/1-4												
25/1 e0a e0b e0c e0d			e0a	e0b	e0c	e0d							
25/2-4 MetroCluster 1, disabled disabled		MetroCluster 1,	disa	bled	disa	bled							
26/1 Shared Cluster and MetroCluster interface e0a e0b e0c e0d		Shared Cluster and MetroCluster interface	e0a	e0b	e0c	e0d							
26/2-4 disabled disabled			disa	bled	disa	bled							
27 - 32 Unused disabled disabled		Unused	disa	bled	disa	bled							
33 - 34 Unused (Cisco 9336C-FX2 only) disabled disabled	33 - 34	Unused (Cisco 9336C-FX2 only)	disa	bled	disa	bled							

Cabling a FAS8200 or an AFF A300 system to a Cisco 3232C or Cisco 9336C switch

Cablin	ng a FAS8200 or AFF A300 to a Cisco 32320	C or Cisco 9336C-FX2	switch			
Control		FAS	8200			
Switch Port	Port use	AFF .	A300			
Port		IP_Switch_x_1	IP_Switch_x_2			
1/1		e0a	e0b			
1/2-4	MetroCluster 1,	disa	bled			
2/1	Local Cluster interface	e0a	e0b			
2/2-4		disa	bled			
3/1		e0a	e0b			
3/2-4	MetroCluster 2,	disa	bled			
4/1	Local Cluster interface	e0a	e0b			
4/2-4		disabled				
5/1		e0a	e0b			
5/2-4	MetroCluster 3,		bled			
6/1	MetroCluster interface	e0a	e0b			
6/2-4	Wetrocluster interface		bled			
7	ISL, Local Cluster	uisa	bied			
8	native speed / 100G	ISL, Loca	l Cluster			
9/1	native speed / 1000	e1a	e1b			
9/2-4	MetroCluster 1,		bled			
10/1	MetroCluster 1, MetroCluster interface	e1a	e1b			
10/1	Metrocluster interface		bled			
11/1		e1a	e1b			
11/2-4	MetroCluster 2,		bled			
12/1	MetroCluster interface	e1a	e1b			
12/2-4	Wettocluster Interface		bled			
		e1a	e1b			
13/1	MetroCluster 3,		bled			
13/2-4	MetroCluster 3, MetroCluster interface	e1a	e1b			
14/1	Wettocluster Interface		bled			
14/2-4 15		uisa	bied			
16	ISL, MetroCluster					
17 18	native speed 40G / 100G	ISL, MetroCluster				
	native speed 400 / 1000					
19 20						
21/1-4	ICL Material Charter					
22/1-4	ISL, MetroCluster	ISL, Meti	roCluster			
23/1-4	breakout mode 10G / 25G					
24/1-4		-1-	-11-			
25/1	Matura Classica A	e1a	e1b			
25/2-4	MetroCluster 4,		bled			
26/1	MetroCluster interface	e1a	e1b			
26/2-4			bled			
27 - 28	Unused		bled			
29/1		e0a	e0b			
29/2-4	MetroCluster 4,	disabled				
30/1	Local Cluster interface	e0a	e0b			
30/2-4			bled			
25 - 32	Unused		bled			
33 - 34	Unused (Cisco 9336C-FX2 only)	disa	bled			

If you are upgrading from older RCF files, the cabling configuration might be using ports in the "MetroCluster 4" group (ports 25/26 and 29/30).

Cabling an AFF A320, FAS8300, AFF C400, ASA C400, AFF A400, ASA A400, FAS8700, FAS9000, AFF A700, AFF C800, ASA C800, AFF A800, ASA A800, FAS9500, AFF A900, or ASA A900 system to a Cisco 3232C or Cisco 9336C-FX2 switch

	Cabling a AFF A320, FAS8300, AFF C4	00, ASA C400, AFF A	400, ASA A400 F	AS8700, FAS9000	, AFF A700, AFF (2800, ASA C800, A	AFF A800, ASA A8	800, FAS9500, AF	A900 or ASA A9	00 to a Cisco 323	2C or Cisco 9336	C-FX2 switch	
Switch Port	Port use	AFF	A320	AFF ASA	8300 C400 C400 8700	AFF ASA	A400 A400		9000 A700	ASA	C800 C800 A800 A800	AFF	9500 A900 A900
			IP Switch x 2	IP Switch x 1	IP Switch x 2	IP Switch x 1	IP Switch x 2	IP Switch x 1	IP Switch x 2	IP Switch x 1	IP Switch x 2	IP Switch x 1	IP Switch x 2
1 2	MetroCluster 1, Local Cluster interface	e0a	e0d	e0c	e0d	e3a	e3b	e4a	e4e / e8a	e0a	e1a	e4a	e4b(e) / e8a Note 1
3 4	MetroCluster 2, Local Cluster interface	e0a	e0d	e0c	e0d	e3a	e3b	e4a	e4e / e8a	e0a	e1a	e4a	e4b(e) / e8a Note 1
5	MetroCluster 3, Local Cluster interface	e0a	e0d	e0c	e0d	e3a	e3b	e4a	e4e / e8a	e0a	e1a	e4a	e4b(e) / e8a Note 1
7 8	ISL, Local Cluster native speed / 100G	ISL, Loca	l Cluster	ISL, Loca	al Cluster	ISL, Loca	l Cluster	ISL, Loca	ıl Cluster	ISL, Loca	l Cluster	ISL, Loca	al Cluster
9	MetroCluster 1, MetroCluster interface	e0g	e0h	e1a	e1b	e1a	e1b	e5a	e5b	e0b	e1b	e5b	e7b
11 12	MetroCluster 2, MetroCluster interface	e0g	e0h	e1a	e1b	e1a	e1b	e5a	e5b	e0b	e1b	e5b	e7b
13 14	MetroCluster 3, MetroCluster interface	e0g	e0h	e1a	e1b	e1a	e1b	e5a	e5b	e0b	e1b	e5b	e7b
15 16 17 18 19 20	ISL, MetroCluster native speed 40G / 100G	ISL, Met	roCluster	ISL, Met	roCluster	ISL, Met	roCluster	ISL, Met	roCluster	ISL, Metr	oCluster	ISL, Met	roCluster
21/1-4 22/1-4 23/1-4 24/1-4	ISL, MetroCluster breakout mode 10G / 25G	ISL, Met	roCluster	ISL, Met	roCluster	ISL, Met	roCluster	ISL, Met	roCluster	ISL, Metr	SL, MetroCluster ISL, 1		roCluster
25 26	MetroCluster 4, MetroCluster interface	e0g	e0h	e1a	e1b	e1a	e1b	e5a	e5b	e0b	e1b	e5b	e7b
27 - 28	Unused	disa	disabled		bled	disa	bled	disa	bled	disa	bled	disa	bled
29 30	MetroCluster 4, Local Cluster interface	e0a	e0d	e0c	e0d	e3a	e3b	e4a	e4e / e8a	e0a	e1a	e4a	e4b(e) / e8a Note 1
31 - 32	Unused	disa	bled	disa	bled	disa	bled	disabled		disabled		disa	bled
33 - 34	Unused (Cisco 9336C-FX2 only)	disa	bled	disa	bled	disa	bled	disa	bled	disa	bled	disa	bled

Note 1: If you are using an X91440A adapter (40Gbps), then use either ports e4a and e4e or e4a and e8a. If you are using an X91153A adapter (100Gbps), then use either ports e4a and e4b or e4a and e8a.



Using ports in the "MetroCluster 4" group requires ONTAP 9.13.1 or later.

Platform port assignments for a Cisco 9336C-FX2 shared switch

The port usage in a MetroCluster IP configuration depends on the switch model and platform type.

Review these considerations before using the tables:

- At least one MetroCluster configuration or DR group must support switch attached NS224 shelves.
- Platforms that do not support switch-attached NS224 shelves can only be connected as a second MetroCluster configuration or as a second DR group.
- The RcfFileGenerator only shows eligible platforms when the first platform is selected.
- Connecting one eight-node or two four-node MetroCluster configurations requires ONTAP 9.14.1 or later.

Cabling an AFF A320, AFF C400, ASA C400, AFF A400, ASA A400, AFF A700, AFF C800, ASA C800, AFF A800, AFF A900, or ASA A900 system to a Cisco 9336C-FX2 shared switch

		Cabling	an AFF A320, AFF C4	00, ASA C400, AFF A	400, ASA A400, AFF	A700, AFF C800, ASA	C800, AFF A800 , AF	F A900, or ASA A900	to a Cisco 9336C-FX2	shared switch			
Switch Port	Port Use	AFF		ASA	C400 C400	ASA	A400 A400		A700	ASA AFF	C800 C800 A800	ASA	A900 A900
1	MetroCluster 1.	IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2 e4b(e) / e8a
2	Local Cluster interface	e0a	e0d	e0c	e0d	e3a	e3b	e4a	e4e / e8a	e0a	ela	e4a	Note 1
4	MetroCluster 2, Local Cluster interface	e0a	e0d	e0c	e0d	e3a	e3b	e4a	e4e / e8a	e0a	e1a	e4a	e4b(e) / e8a Note 1
5	Storage shelf 1 (9)	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b
6	Storage shell 1 (9)	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b
7	ISL, Local Cluster native speed / 100G	ISL, Loca	l Cluster	ISL, Loca	al Cluster	ISL, Loca	al Cluster	ISL, Loca	l Cluster	ISL, Loca	l Cluster	ISL, Loca	al Cluster
9	MetroCluster 1, MetroCluster interface	e0g	e0h	e1a	e1b	e1a	e1b	e5a	e5b	e0b	e1b	e5b	e7b
11	MetroCluster 2, MetroCluster interface	e0g	e0h	ela	e1b	e1a	e1b	e5a	e5b	e0b	e1b	e5b	e7b
13 14 15 16	ISL MetroCluster, native speed 40G / 100G breakout mode 10G / 25G	ISL, Meti	roCluster	ISL, Met	roCluster	ISL, Met	roCluster	ISL, Met	roCluster	ISL, Met	roCluster	ISL, Met	roCluster
17	MetroCluster 1, Ethernet Storage Interface	e0c	e0f	e4a	e4b / e5b	e0c	e0d / e5b	e3a	e3b / e7b	e5a	e5b / e3b	e3a (option 1) e2a (option 2) e1a (option 3)	e3b (option 1 e10b (option e11b (option
19 20	MetroCluster 2, Ethernet Storage Interface	e0c	e0f	e4a	e4b / e5b	e0c	e0d / e5b	e3a	e3b / e7b	e5a	e5b / e3b	e3a (option 1) e2a (option 2) e1a (option 3)	e3b (option : e10b (option e11b (option
21	Storage shelf 2 (8)	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0t
22	Storage stiell 2 (6)	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0l
23	Storage shelf 3 (7)	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0
24	Storage stiell 5 (7)	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0
25	Storage shelf 4 (6)	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0
26		NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0i
27	Storage shelf 5 (5)	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0
28		NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0
29	Storage shelf 6 (4)	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0
30		NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0
31	Storage shelf 7 (3)	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0
32		NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0
33	Storage shelf 8 (2)	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0
34		NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0
35	Storage shelf 9 (1)	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, e0b	NSM-1, e0a	NSM-1, et
36	5	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e0b	NSM-2, e0a	NSM-2, e

Note 1: If you are using an X91440A adapter (40Gbps), then use either ports e4a and e4e or e4a and e8a. If you are using an X91153A adapter (100Gbps), then use either ports e4a and e4b or e4a and e8a.

Cabling an AFF A150, ASA A150, FAS2750 or AFF A220 system to a Cisco 9336C-FX2 shared switch

		AFF A150				
Switch		ASA	A150			
Port	Port Use	FAS	2750			
POIL		AFF	A220			
8		IP_Switch_x_1	IP_Switch_x_2			
1 - 6	Unused	disa	bled			
7	ISL, Local Cluster	ISI Loss	Chietor			
8	native speed / 100G	ISL, Local Cluster				
9/1	MotroCluster 1	e0a	e0b			
9/2-4	MetroCluster 1, Shared Cluster and MetroCluster	disa	bled			
10/1	interface	e0a	e0b			
10/2-4	interrace	disa	bled			
11/1	Motro Cluster 2	e0a	e0b			
11/2-4	MetroCluster 2, Shared Cluster and MetroCluster	disa	bled			
12/1	interface	e0a	e0b			
12/2-4	interrace	disa	bled			
13	ISI MatroCluster					
14	ISL MetroCluster, native speed 40G / 100G	ISL, MetroCluster				
15						
16	breakout mode 10G / 25G					
17-36	Unused	disa	bled			

Cabling a FAS500f, AFF C250, ASA C250, AFF A250, or ASA A250 system to a Cisco 9336C-FX2 shared switch

Cabling a F	AS500f, AFF C250, ASA C250, AFF A250, A	ASA A250 to a Cisco	9336C-FX2 shared		
	switch				
		FAS500f			
		AFF (C250		
Switch	Port Use	ASA	C250		
Port	roit ose	AFF	A250		
		ASA /	A250		
		IP_Switch_x_1	IP_Switch_x_2		
1 - 6	Unused	disa	bled		
7	ISL, Local Cluster	ISI Loca	l Cluster		
8	native speed / 100G	152, 200	relaster		
9/1	MetroCluster 1,	e0c	e0d		
9/2-4	Shared Cluster and MetroCluster	disa	bled		
10/1	interface	e0c	e0d		
10/2-4	interrace	disabled			
11/1	MetroCluster 2,	e0c	e0d		
11/2-4	Shared Cluster and MetroCluster	disa	bled		
12/1	interface	e0c	e0d		
12/2-4	interrace	disa	sabled		
13	ISL MetroCluster,				
14	native speed 40G / 100G	ISL, MetroCluster			
15	breakout mode 10G / 25G				
16	breakout mode 100 / 250				
17-36	Unused	disa	bled		

Cabling a FAS8200 or AFF A300 system to a Cisco 9336C-FX2 shared switch

		123.555	1400 B.C			
Switch		FAS8200				
Port	Port Use	The same terms to the same ter	A300			
Market S		IP_Switch_x_1	IP_Switch_x_			
1/1		e0a	e0b			
1/2-4	MetroCluster 1,	disa	bled			
2/1	Local Cluster interface	e0a	e0b			
2/2-4		disa	bled			
3/1		e0a	e0b			
3/2-4	MetroCluster 2,	disa	bled			
4/1	Local Cluster interface	e0a	e0b			
4/2-4		disa	bled			
5-6	Unused	disa	sabled			
7	ISL, Local Cluster	ISL, Local Cluster				
8	native speed / 100G	ISE, Local Cluster				
9/1		e1a	e1b			
9/2-4	MetroCluster 1,	disa	bled			
10/1	MetroCluster interface	e1a	e1b			
10/2-4		disa	bled			
11/1		e1a	e1b			
11/2-4	MetroCluster 2,	disa	bled			
12/1	MetroCluster interface	e1a	e1b			
12/2-4		disabled				
13	ISL MetroCluster,					
14	native speed 40G / 100G	ISI Mot	roCluster			
15	The second secon	ist, wet	ociustei			
16	breakout mode 10G / 25G					
17-36	Unused	disa	blod			

Cabling a FAS8300, FAS8700, FAS9000, or FAS9500 system to a Cisco 9336C-FX2 shared switch

·	Cabling	a FAS8300, FAS8700, I	FAS9000, or FAS9500	to a Cisco 9336C-FX	2 shared switch			
Switch Port	Port Use	1	FAS8300 FAS8700		FAS9000		9500	
Port		IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2	
2	MetroCluster 1, Local Cluster interface	e0c	e0d	e4a	e4e / e8a	e4a	e4b(e) / e8a Note 1	
3 4	MetroCluster 2, Local Cluster interface	e0c	e0d	e4a	e4e / e8a	e4a	e4b(e) / e8a Note 1	
5-6	Unused	disabled		disa	disabled		disabled	
7	ISL, Local Cluster native speed / 100G	ISL, Loca	ISL, Local Cluster		ISL, Local Cluster		ISL, Local Cluster	
9 10	MetroCluster 1, MetroCluster interface	e1a	e1b	e5a	e5b	e5b	e7b	
11 12	MetroCluster 2, MetroCluster interface	e1a	e1b	e5a	e5b	e5b	e7b	
13 ISL MetroCluster, 14 native speed 40G / 100G 15 breakout mode 10G / 25G		ISL, Met	ISL, MetroCluster		ISL, MetroCluster		ISL, MetroCluster	
17-36	Unused	disa	bled	disabled		disabled		

Note 1: If you are using an X91440A adapter (40Gbps), then use either ports e4a and e4e or e4a and e8a. If you are using an X91153A adapter (100Gbps), then use either ports e4a and e4b or e4a and e8a.

Platform port assignments for Broadcom supported BES-53248 IP switches

The port usage in a MetroCluster IP configuration depends on the switch model and platform type.

The switches cannot be used with remote ISL ports of different speeds (for example, a 25 Gbps port connected to a 10 Gbps ISL port).

Review this information before using the tables:

• If you configure the switch for MetroCluster FC to IP Transition, the following ports are used depending on the target platform that you choose:

Target platform	Port
FAS500f, AFF C250, ASA C250, AFF A250, ASA A250, FAS8300, AFF C400, ASA C400, AFF A400, ASA A400, or FAS8700 platforms	ports 1 - 6, 10Gbps
FAS8200 or AFF A300 platforms	ports 3 - 4 and 9 - 12, 10Gbps

AFF A320 systems configured with Broadcom BES-53248 switches might not support all features.

Any configuration or feature that requires that the local cluster connections are connected to a switch is not supported. For example, the following configurations and procedures are not supported:

- Eight-node MetroCluster configurations
- Transitioning from MetroCluster FC to MetroCluster IP configurations
- Refreshing a four-node MetroCluster IP configuration (ONTAP 9.8 and later)

Notes referenced in the tables:

• Note 1: Using these ports requires an additional license.

• Note 2: Only a single four-node MetroCluster using AFF A320 systems can be connected to the switch.

Features that require a switched cluster are not supported in this configuration, including the MetroCluster FC to IP transition and tech refresh procedures.

- **Note 3**: The BES-53248 switch requires all ports in a four-port group to operate at the same speed. To connect a mix of AFF 150, ASA A150, FAS2750, AFF A220 and FAS500f, AFF C250, ASA C250, AFF A250, and ASA A250 platforms, switch ports that are located in separate four-port groups must be used. If you require this type of configuration, the following applies:
 - In the RcfFileGenerator for MetroCluster IP, drop-down fields for "MetroCluster 1" and "MetroCluster 2" are only populated after you select a platform for MetroCluster 3 or "MetroCluster 4". Refer to Using the port tables with the RcfFileGenerator tool or multiple MetroCluster configurations for more information on how to use the port tables.
 - If both MetroCluster configurations are using the same the platform, NetApp recommends that you select the group "MetroCluster 3" for one configuration and the group "MetroCluster 4" for the other configuration. If the platforms are different, then you must select "MetroCluster 3" or "MetroCluster 4" for the first configuration, and select "MetroCluster 1" or "MetroCluster 2" for the second configuration.

Cabling an AFF A150, ASA A150, FAS2750, AFF A220, FAS500f, AFF C250, ASA C250, AFF A250 or ASA A250 to a Broadcom BES-53248 switch

Cabling an	AFF A150, ASA A150, FAS2750, AFF A220, FAS500	f, AFF C250, ASA C2	250, AFF A250 or A	SA A250 to a Broad	dcom BES-53248	
		switch				
			4450	FAS500f AFF C250 ASA C250		
			A150			
Physical		ASA	A150			
Port	Port use	FAS	2750	AFF A250		
1010		AFF	A220	ASA A250		
		ID C :: 1 4	ID C 11 1 2			
		IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2	
1 - 4	Unused	disal	oled	disab	led	
5	MetroCluster 1, Shared Cluster and	e0a	e0b	e0c	e0d	
6	MetroCluster interface (note 3)	Coa	COD	606	eou	
7	MetroCluster 2, Shared Cluster and	e0a	- 01-	e0c	e0d	
8	MetroCluster interface (note 3)	eua	e0b	euc	eud	
9	MetroCluster 3, Shared Cluster and	e0a	e0b	e0c	e0d	
10	MetroCluster interface (note 3)	eua	eob	euc		
11	MetroCluster 4, Shared Cluster and	e0a	e0b	e0c	e0d	
12	MetroCluster interface (note 3)	eoa	eob	600	eou	
13	ISL, MetroCluster					
14	native speed	ISL, MetroCluster		ISI MatraCluster		
15	10G / 25G	ISL, WIELI	ociustei	ISL, MetroCluster		
16	100 / 230					
	Ports not licensed (17 - 54)					
53	ISL, MetroCluster, native speed	ISL Moto	no Cluston	ISL Material Charter		
54	40G / 100G (note 1)	ist, Meti	roCluster	ISL, MetroCluster		
55	ISL, Local Cluster	ISI Jaco	J. Chuston	ISL Loos	A Chuston	
56	native speed / 100G	ISL, LOCA	al Cluster	ISL, Local Cluster		

Cabling a FAS8200, AFF A300, or AFF A320 system to a Broadcom BES-53248 switch

Physical Port	Port use	FAS8200 AFF A300			
		IP_Switch_x_1	IP_Switch_x_2		
1	MetroCluster 1, Local Cluster interface	e0a	e0b		
2	The trade of the trade of the trade		COD		
3	MetroCluster 2, Local Cluster interface	e0a	e0b		
4	Not used during Transition	Cou			
5	MetroCluster 1,	e1a	e1b		
6	MetroCluster interface	CIG			
7	MetroCluster 2,	e1a	e1b		
8	MetroCluster interface	CIA	610		
9 - 12	Unused	disabled			
13	ISL, MetroCluster	î .			
14	native speed	ISL, MetroCluster			
15	10G / 25G				
16	100 / 230				
***	Ports not licensed (17 - 54)				
53	ISL, MetroCluster, native speed	ISI MatraCluster			
54	40G / 100G (note 1)	ISL, MetroCluster			
55	ISL, Local Cluster	ISI Jaco	Chuston		
56	native speed / 100G	ISL, Local Cluster			

		AFF A320				
Physical Port	Port use	IP_Switch_x_1 IP_Switch_				
1 - 12	Ports not used (note 2)	disabled				
13	ISI Matra Chuatan	ISL, MetroCluster				
14	ISL, MetroCluster					
15	native speed 10G / 25G					
16	100 / 250					
	Ports not licensed (17 - 54)					
53	ISL, MetroCluster, native speed	ISL, MetroCluster				
54	40G / 100G (see note 1)	ISL, Met	rociuster			
55	MetroCluster 1, MetroCluster interface	200	e0h			
56	(note 2)	e0g	eon			

Cabling a FAS8300, AFF C400, ASA C400, AFF A400, ASA A400 or FAS8700 system to a Broadcom BES-53248 switch

	Cabling a FAS8300, AFF C400, ASA C400, AFF A	400, ASA A400 or FA	AS8700 to a Broado	com BES-53248 swi	tch	
Physical Port	Port use	AFF	3300 C400 C400	AFF A400 ASA A400		
7011		FASS IP_Switch_x_1	3700 IP_Switch_x_2	IP_Switch_x_1		
1 - 12	Ports not used (see note 2)	disa	bled	disabled		
13 14 15	ISL, MetroCluster native speed	ISL, Metr	oCluster	ISL, MetroCluster		
16 	10G / 25G Ports not licensed (17 - 48)					
49 50	MetroCluster 5, Local Cluster interface (note 1)	e0c e0d		e3a	e3b	
51 52	MetroCluster 5, MetroCluster interface (note 1)	e1a e1b		e1a	e1b	
53 54	ISL, MetroCluster, native speed 40G / 100G (note 1)	ISL, MetroCluster		ISL, MetroCluster		
55 56	ISL, Local Cluster native speed / 100G	ISL, Loca	l Cluster	ISL, Local Cluster		

Platform port assignments for NVIDIA supported SN2100 IP switches

The port usage in a MetroCluster IP configuration depends on the switch model and platform type.

Supported configurations

The following configurations are not currently supported:

MetroCluster FC-to-IP Transition

Review these considerations before using the configuration tables

- Connecting an eight-node or two four-node MetroCluster configurations requires ONTAP 9.14.1 or later and RCF file version 2.00 or later.
- If you cable multiple MetroCluster configurations then follow the respective table. For example:
 - If you cable two four-node MetroCluster configurations of type AFF A700, then connect the first MetroCluster shown as "MetroCluster 1", and the second MetroCluster shown as "MetroCluster 2" in the AFF A700 table.



Ports 13 and 14 can be used in native speed mode supporting 40 Gbps and 100 Gbps, or in breakout mode to support 4×25 Gbps or 4×10 Gbps. If they use native speed mode they are represented as ports 13 and 14. If they use breakout mode, either 4×25 Gbps or 4×10 Gbps, then they are represented as ports 13s0-3 and 14s0-3.

The following sections describe the physical cabling outline. You can also refer to the RcfFileGenerator for detailed cabling information.

Cabling an AFF A150, ASA A150, FAS500f, AFF C250, ASA C250, AFF A250 or ASA A250 system to a NVIDIA SN2100 switch

C	Cabling a AFF A150, ASA A150, FAS500f, AFF C250	, ASA C250, AFF A2	50 or ASA A250 to	a NVIDIA SN2100 s	witch	
				FAS500F		
		AEE	A150	AFF C250		
Switch	Port use	ASA		ASA C250		
Port	Fort use	ASA	A130	AFF A250		
				ASA A250		
		IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2	
1 - 6	Unused	disa	bled	disa	bled	
7s0		e0c	e0d	e0c	e0d	
7s1-3	MetroCluster 1,	disa	bled	disabled		
8s0	Shared Cluster and MetroCluster interface	e0c	e0d	e0c	e0d	
8s1-3		disa	bled	disabled		
9s0		e0c	e0d	e0c	e0d	
9s1-3	MetroCluster 2,	disa	bled	disabled		
10s0	Shared Cluster and MetroCluster interface	e0c	e0d	e0c	e0d	
10s1-3		disa	bled	disabled		
11s0		e0c	e0d	e0c	e0d	
11s1-3	MetroCluster 3,	disa	bled	disabled		
12s0	Shared Cluster and MetroCluster interface	e0c e0d		e0c	e0d	
12s1-3		disa	bled	disa	bled	
13 / 13s0-3	MetroCluster ISL	ISI Met	·oCluster	ISI MatraCluster		
14 / 14s0-3	40/100G or 4x25G or 4x10G	ISE, WIEL	ociustei	ISL, MetroCluster		
15	ISL, Local Cluster	151 1000	l Cluster	ICL I I Charter		
16	100G	ist, Loca	ii Ciustei	ISL, Local Cluster		

Cabling a FAS8300, AFF C400, ASA C400, AFF A400, ASA A400, FAS8700, FAS9000, AFF A700, AFF C800, ASA C800, AFF A800, ASA A800, FAS9500, AFF A900, or ASA A900 system to a NVIDIA SN2100 switch

	Cabling a FAS8300, AFF C400, ASA C400, AFF A400, ASA A400, FAS8700, FAS9000, AFF A700, AFF C800, ASA C800, AFF A800, ASA A800, FAS9500, AFF A900 or ASA A900 to a NVIDIA SN2100 switch										
Switch Port	Port use	FAS8300 AFF C400 ASA C400 FAS8700		AFF A400 ASA A400		FAS9000 AFF A700		AFF C800 ASA C800 AFF A800 ASA A800		FAS9500 AFF A900 ASA A900	
		IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2	IP_Switch_x_1	IP_Switch_x_2
2	MetroCluster 1, Local Cluster interface	e0c	e0d	e3a	e3b	e4a	e4e / e8a	e0a	e1a	e4a	e4b(e) / e8a Note 1
3 4	MetroCluster 2, Local Cluster interface	e0c	e0d	e3a	e3b	e4a	e4e / e8a	e0a	ela	e4a	e4b(e) / e8a Note 1
5	MetroCluster 3, Local Cluster interface	e0c	e0d	e3a	e3b	e4a	e4e / e8a	e0a	e1a	e4a	e4b(e) / e8a Note 1
7 8	MetroCluster 1, MetroCluster interface	ela	e1b	e1a	e1b	e5a	e5b	e0b	e1b	e5b	e7b
9	MetroCluster 2, MetroCluster interface	ela	e1b	e1a	e1b	e5a	e5b	e0b	e1b	e5b	e7b
11 12	MetroCluster 3, MetroCluster interface	e1a	e1b	e1a	e1b	e5a	e5b	e0b	e1b	e5b	e7b
13 / 13s0-3 14 / 14s0-3	MetroCluster ISL 40/100G or 4x25G or 4x10G	ISL, MetroCluster		ISL, MetroCluster		ISL, MetroCluster		ISL, MetroCluster		ISL, MetroCluster	
15 16	ISL, Local Cluster 100G	ISL, Local Cluster		ISL, Local Cluster		ISL, Local Cluster		ISL, Local Cluster		ISL, Local Cluster	

Note 1: If you are using an X91440A adapter (40Gbps), then use either ports e4a and e4e or e4a and e8a. If you are using an X91153A adapter (100Gbps), then use either ports e4a and e4b or e4a and e8a.

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