Controller-to-stack cabling worksheet template for multipathed connectivity - shelves with IOM12 modules

ONTAP Systems

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Controller-to-stack cabling worksheet template for multipathed connectivity - shelves with IOM12 modules

By completing the worksheet template, you can define the controller SAS port pairs you can use to cable controllers to stacks of disk shelves with IOM12 modules to achieve multipathed connectivity in an HA pair or single-controller configuration. You can also use the completed worksheet to walk yourself through cabling the multipathed connections for your configuration.

Before you begin

Your HA pair or single-controller configuration cannot be an AFF A200, AFF A220, FAS2600 series or FAS2700 system. If you have one of these configurations, use the following:

Controller-to-stack cabling worksheets and cabling examples for common AFF A200, AFF A220, FAS2600 series and FAS2700 configurations

About this task

- This procedure and worksheet template is applicable to cabling multipathed connectivity for a multipath HA or multipath configuration with one or more stacks.

  Examples of completed worksheets are provided for multipath HA and multipath configurations.

  A configuration with two quad-port SAS HBAs and two stacks of disk shelves with IOM12 modules is used for the worksheet examples.

- The worksheet template allows for up to six stacks; you need to add more columns if needed.
- If needed, you can refer to the SAS cabling rules for information about supported configurations, the controller slot numbering convention, shelf-to-shelf connectivity, and controller-to-shelf connectivity (including use of port pairs).
- If needed, after you complete the worksheet, you can refer to How to read a worksheet to cable controller-to-stack connections for multipathed connectivity

Controller-to-Stack Cabling Worksheet Multipathed Connectivity											
Controller SAS ports	Controllers	Cable to disk shelf IOMs			Stacks						
					1	2	3	4	5	6
		Shelf	IOM	Port	Port pairs					
A and C	1	First	A	1						
	2	First	B	1						
B and D										
	1	Last	B	3						
	2	Last	A	3						

Steps

1. In the boxes above the gray boxes, list all SAS A ports on your system, and then all SAS C ports on your system in sequence of slots (0,1, 2, 3, and so on).

   For example: 1a, 2a, 1c, 2c

2. In the gray boxes, list all SAS B ports on your system, and then all SAS D ports on your system in sequence of slots (0,1, 2, 3 and so on).

   For example: 1b, 2b, 1d, 2d

3. In the boxes below the gray boxes, rewrite the D and B port list so that the first port in the list is moved to the end of the list.

   For example: 2b, 1d, 2d, 1b

4. Circle (designate) a port pair for each stack.

   When all port pairs are being used to cable the stacks in your system, circle port pairs in the order in which they are defined (listed) in the worksheet.

   For example, in a multipath HA configuration with eight SAS ports and four stacks, port pair 1a/2b is cabled to stack 1, port pair 2a/1d is cabled to stack 2, port pair 1c/2d is cabled to stack3, and port pair 2c/1b is cabled to stack 4.

Controller-to-Stack Cabling Worksheet for Multipathed Connectivity											
Controller SAS ports	Controllers	Cable to disk shelf IOMs			Stacks						
					1	2	3	4	5	6
		Shelf	IOM	Port	Port pairs					
A and C	1	First	A	1	1a	2a	1c	2c		
	2	First	B	1						
B and D					~~1b~~	~~2b~~	~~1d~~	~~2d~~		
	1	Last	B	3	2b	1d	2d	1b		
	2	Last	A	3						

   When not all port pairs are needed to cable the stacks in your system, skip port pairs (use every other port pair).

   For example, in a multipath HA configuration with eight SAS ports and two stacks, port pair 1a/2b is cabled to stack 1 and port pair 1c/2d is cabled to stack 2. If two additional stacks are hot-added later, port pair 2a/1d is cabled to stack 3 and port pair 2c/1b is cabled to stack 4.

   When you have more port pairs than you need to cable the stacks in your system, the best practice is to skip port pairs to optimize the SAS ports on your system. By optimizing SAS ports, you optimize your system's performance.

Controller-to-Stack Cabling Worksheet Multipathed Connectivity											
Controller SAS ports	Controllers	Cable to disk shelf IOMs			Stacks						
					1	3 ~~2~~	2 ~~3~~	4	5	6	
		Shelf	IOM	Port	Port pairs						
A and C	1	First	A	1	1a	2a	1c	2c			
	2	First	B	1							
B and D					~~1b~~	~~2b~~	~~1d~~	~~2d~~			
	1	Last	B	3	2b	1d	2d	1b			
	2	Last	A	3							

You can use your completed worksheet to cable your system.

5. If you have a single-controller (multipath) configuration, cross out the information for controller 2.

Controller-to-Stack Cabling Worksheet Multipathed Connectivity											
Controller SAS ports	Controllers	Cable to disk shelf IOMs			Stacks						
					1	2	3	4	5	6	
		Shelf	IOM	Port	Port pairs						
A and C	1	First	A	1	1a	2a	1c	2c			
	~~2~~	~~First~~	~~B~~	~~1~~							
B and D					~~1b~~	~~2b~~	~~1d~~	~~2d~~			
	1	Last	B	3	2b	1d	2d	1b			
	~~2~~	~~Last~~	~~A~~	~~3~~							

You can use your completed worksheet to cable your system.