



# **How to read a worksheet to cable controller-to-stack connections for multipathed connectivity - shelves with IOM12 modules**

ONTAP Systems

Martin Houser  
October 04, 2021

This PDF was generated from <https://docs.netapp.com/us-en/ontap-systems/sas3/install-cabling-worksheets-how-to-read-multipath.html> on October 26, 2021. Always check docs.netapp.com for the latest.

# Table of Contents

How to read a worksheet to cable controller-to-stack connections for multipathed connectivity - shelves with IOM12 modules ..... 1

# How to read a worksheet to cable controller-to-stack connections for multipathed connectivity - shelves with IOM12 modules

You can use this example to guide you through how to read and apply a completed worksheet to cable controller-to-stack connections for disk shelves with IOM12 modules for multipathed connectivity.

## Before you begin

Your HA pair or single-controller configuration cannot be an AFF A200, AFF A220, FAS2600 series or FAS2700 system. These systems use a unique worksheet:

[Controller-to-stack cabling worksheets and cabling examples for common AFF A200, AFF A220, FAS2600 series and FAS2700 configurations](#)

## About this task

- This procedure references the following worksheet and cabling example to demonstrate how to read a worksheet to cable controller-to-stack connections.

The configuration used in this example is a multipath HA configuration with two quad-port SAS HBAs (eight SAS ports) on each controller and two stacks of disk shelves with IOM12 modules. Port pairs are cabled by skipping every other port pair in the worksheet.



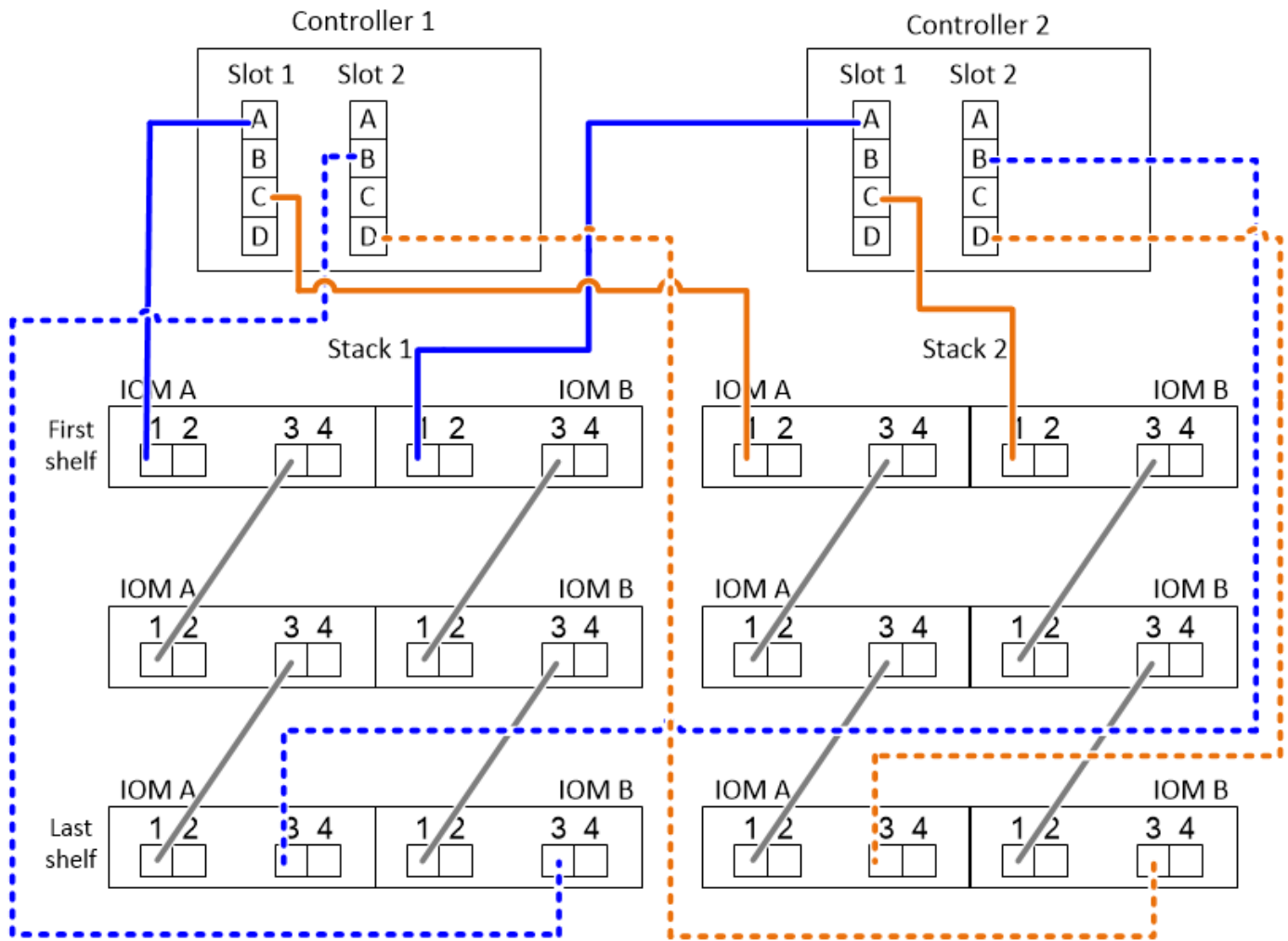
When you have more port pairs than you need to cable the stacks in your system, the best practice is to skip port pairs to optimize the SAS ports on your system. By optimizing SAS ports, you optimize your system's performance.

- If you have a single-controller configuration, skip substeps b and d for cabling to a second controller.
- If needed, you can refer to [SAS cabling rules](#) for information about the controller slot numbering convention, shelf-to-shelf connectivity, and controller-to-shelf connectivity (including the use of port pairs).

The port pairs are cabled using every other port pair in the worksheet: 1a/2b and 1c/2d.

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						

## Multipath HA configuration



### Steps

1. Cable port pair 1a/2b on each controller to stack 1:
  - a. Cable controller 1 port 1a to stack 1, first shelf IOM A port 1.
  - b. Cable controller 2 port 1a to stack 1, first shelf IOM B port 1.
  - c. Cable controller 1 port 2b to stack 1, last shelf IOM B port 3.
  - d. Cable controller 2 port 2b to stack 1, last shelf IOM A port 3.
2. Cable port pair 1c/2d on each controller to stack 2:
  - a. Cable controller 1 port 1c to stack 2, first shelf IOM A port 1.
  - b. Cable controller 2 port 1c to stack 2, first shelf IOM B port 1.
  - c. Cable controller 1 port 2d to stack 2, last shelf IOM B port 3.
  - d. Cable controller 2 port 2d to stack 2, last shelf IOM A port 3.

## 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.