

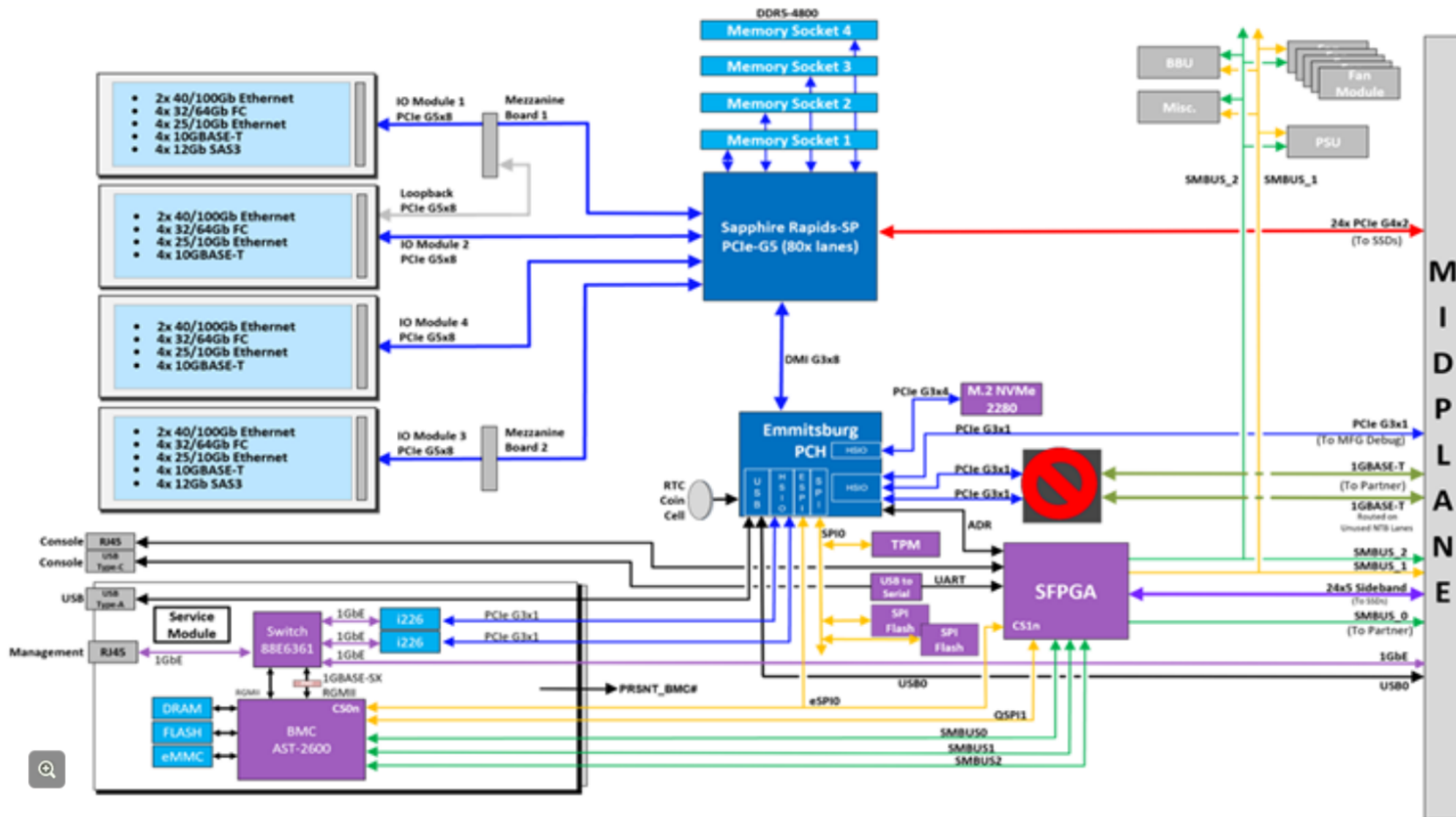
System configurations and diagrams: DG5200 and DG7200

Block diagram, storage configurations, clustering, and cabling

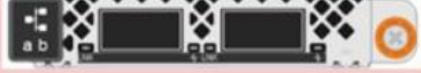
Lenovo

System configurations and diagrams: DG5200 and DG7200

DG5200 and DG7200 controller block diagram



Supported I/O modules

Card description	Connectivity	Slot priority	Image
Two-port, 40/100 Gb Ethernet, QSFP28 (RoCEv2)	Cluster, HA Storage Host	4, 2 3, 1 4, 2, 1, 3	
Two-port, 10/25 Gb Ethernet, SFP28 ¹	Host	2, 1, 3	
Four-port, 10/25 Gb Ethernet, SFP28 (IPSec support)	Cluster, HA Host	4, 2 2, 1, 3	
Four-port, 10GBASE-T, RJ45	Host	2, 1, 3	
Four-port, 64 Gb Fiber Channel, SFP+ (initiator/target)	Host	2, 1, 3	
Four-port, 12 Gb SAS, mini-SAS HD	Storage, Tape	3, 1	
Two-port, 40/100 Gb Ethernet, QSFP28	MetroCluster	4, 2	
¹ The two-port 25 GbE I/O module can also be used for a cluster and HA, but it must be set up in the configurator for host I/O only			

Supported drives

Category	DG5200 DG7200
NVMe QLC SSDs • 15.36 TB SED • 30.72 TB SED • 61.44 TB SED	Yes
• All drives will be sold in two-drive packs	

DM/DG Series storage cluster node limits

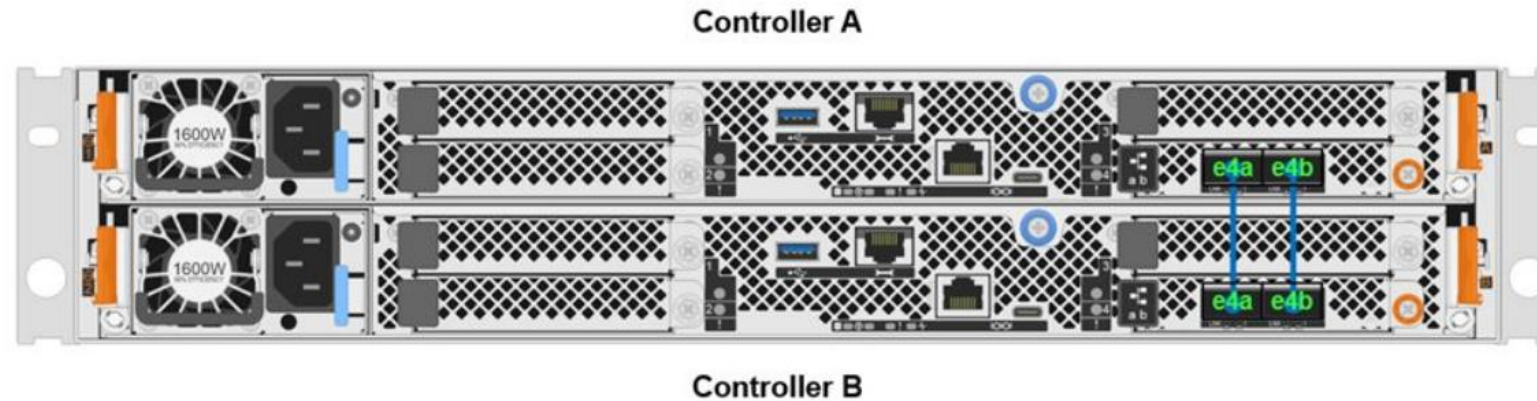
Maximum cluster nodes	NAS	SAN
DM3200F, DM5000F, DM7200F DG5200, DG7200 DM5200H	24	12

Maximum cluster nodes (mixed)	NAS	SAN
DM3200F, DM5000F, DM7200F DG5200, DG7200 DM5200H DM5000F, DM5100F, DM7000F, DM7100F DM3000H, DM3010H, DM5000H, DM7000H, DM7100H DG5000, DG7000	24	12

DG5200 and DG7200 clustering overview

- The DG5200 and DG7200 storage systems with 100 GbE I/O modules provide both HA and clustering connectivity to support both switchless and switched cluster configurations.
- The default configuration is a single 100 GbE I/O module installed in I/O slot 4 in both controllers.
The two-port card uses ports e4a and e4b for HA and clustering connectivity.
- There is also an optional configuration of two 100 GbE I/O modules installed in I/O slot 4 and slot 2 in both controllers.
The two-port card uses ports e2a and e4a for HA and clustering connectivity, with the remaining ports (e2b and e4b) used for host connectivity.

Two-node switchless clustering



For switchless clustering, the system requires two 100 GbE cluster interconnections, and a two-port 100 GbE I/O module card should be installed in slot 4.

HA & cluster interconnects

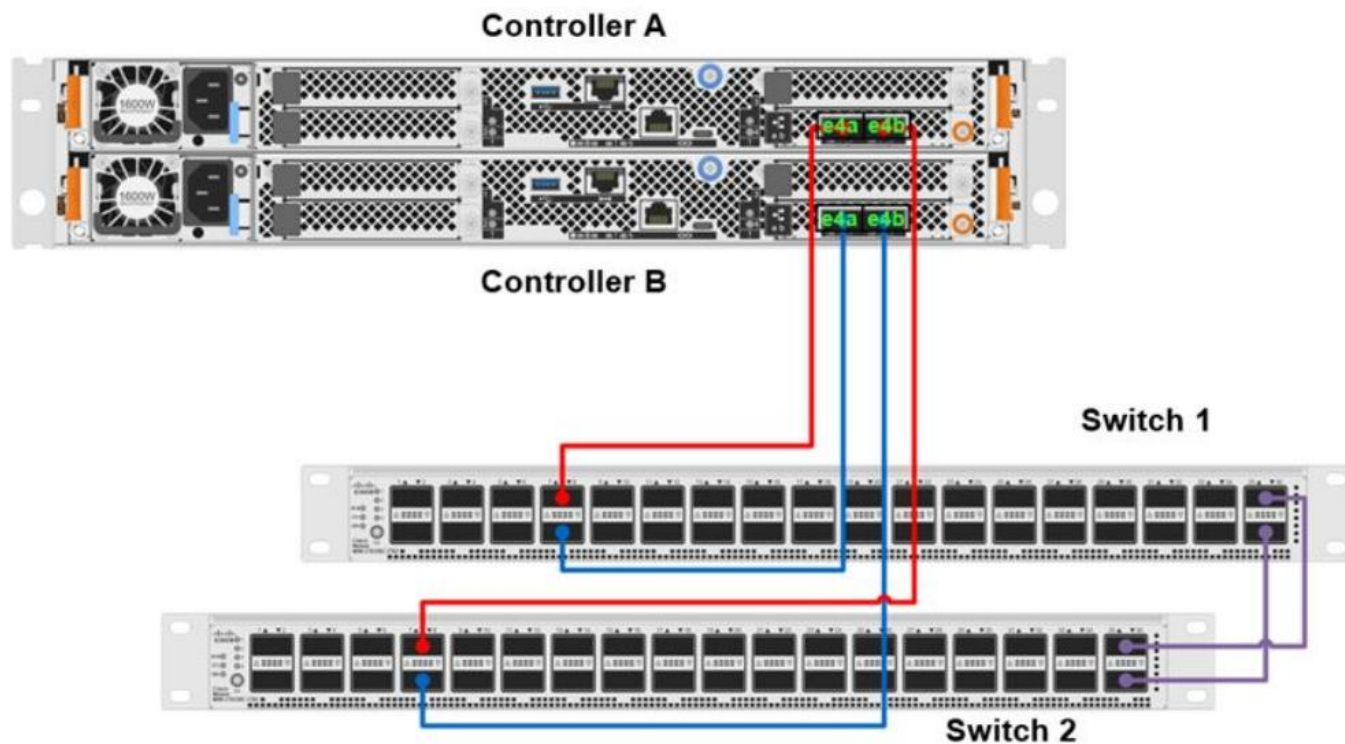
No	From	To
1	Controller A_e4a	controller B_e4a
2	Controller A_e4b	controller B_e4b

Switched clustering

For switched clustering, two 100 GbE cluster interconnections are required. A two-port 100 GbE I/O module card should be installed in slot 4, and SFP28 cables should be used to connect each controller to each switch

HA & cluster interconnects

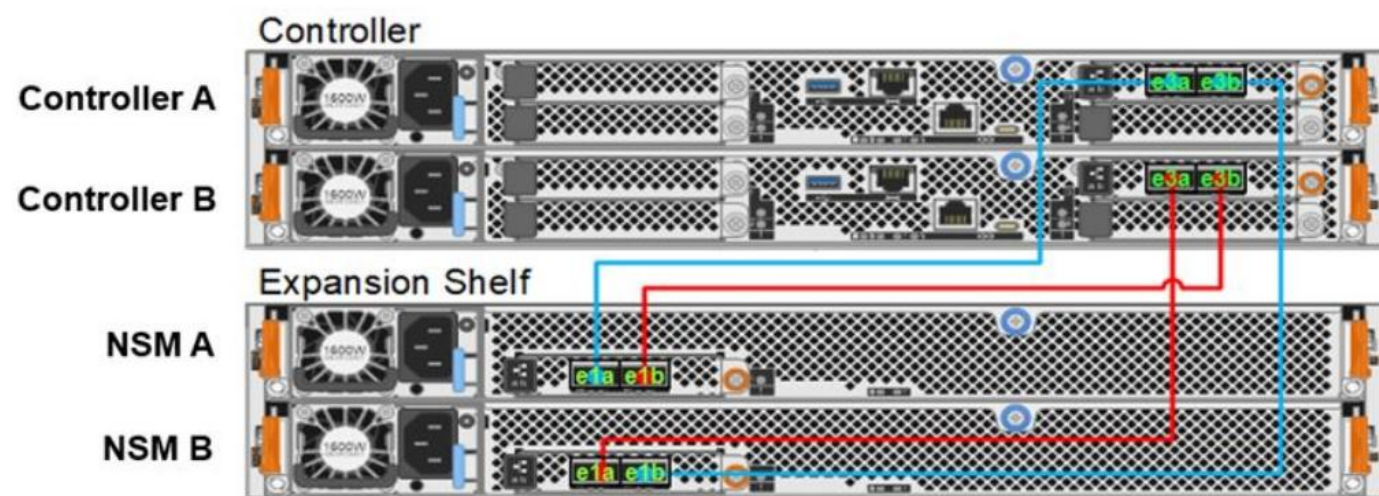
No	From	To
1	Controller A_e4a	Switch 1
2	Controller B_e4a	Switch 1
3	Controller A_e4b	Switch 2
4	Controller B_e4b	Switch 2



Direct connection – single NVMe expansion shelf

A two-port 100 GbE I/O module should be installed in slot 3, and QSFP28 cables should be used to connect each controller to each NSM.

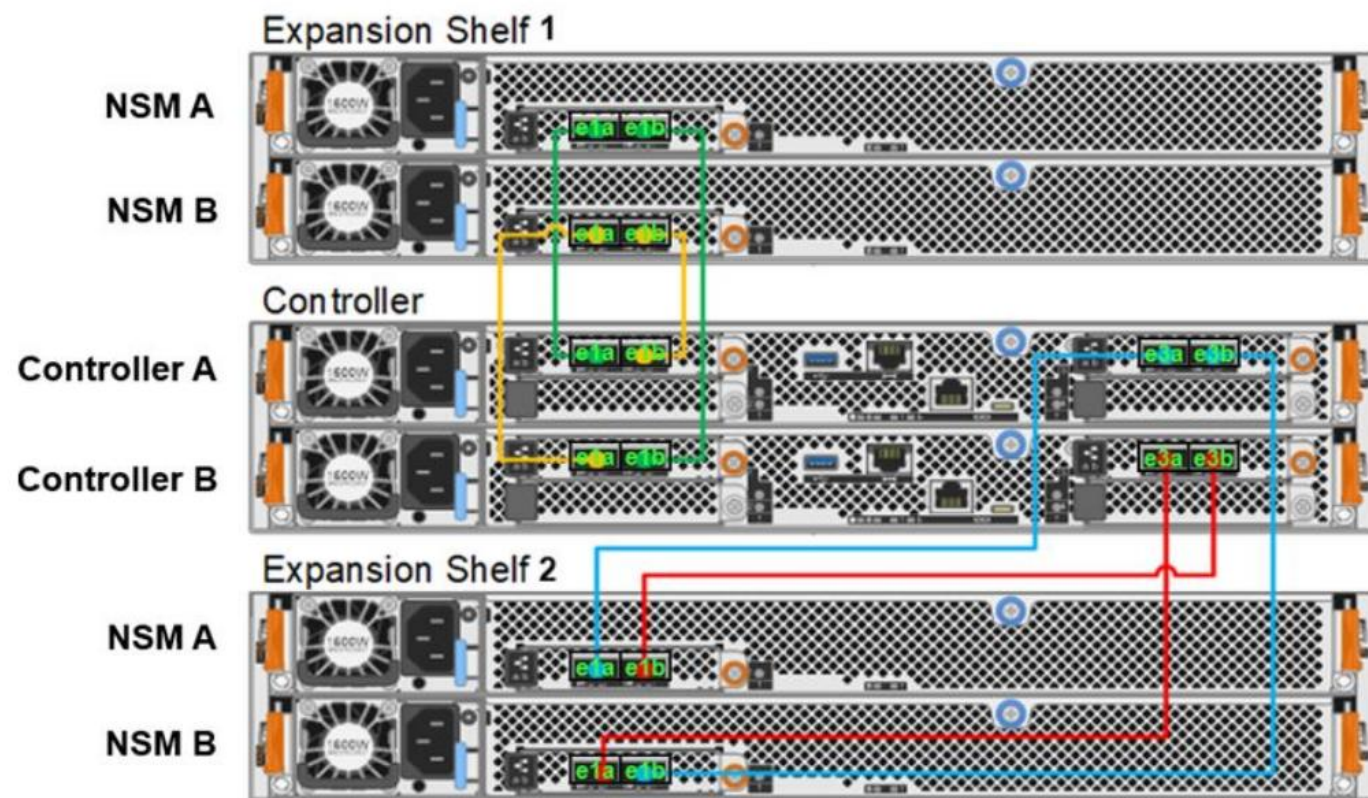
No	From	To
1	Controller A_e3a	NSM A_e1a
2	Controller A_e3b	NSM B_e1b
3	Controller B_e3a	NSM B_e1a
4	Controller B_e3b	NSM A_e1b



Direct connection – dual NVMe expansion shelves

Two-port 100 GbE I/O modules should be installed in slots 1 and 3, and QSFP28 cables should be used to connect each controller to each NSM.

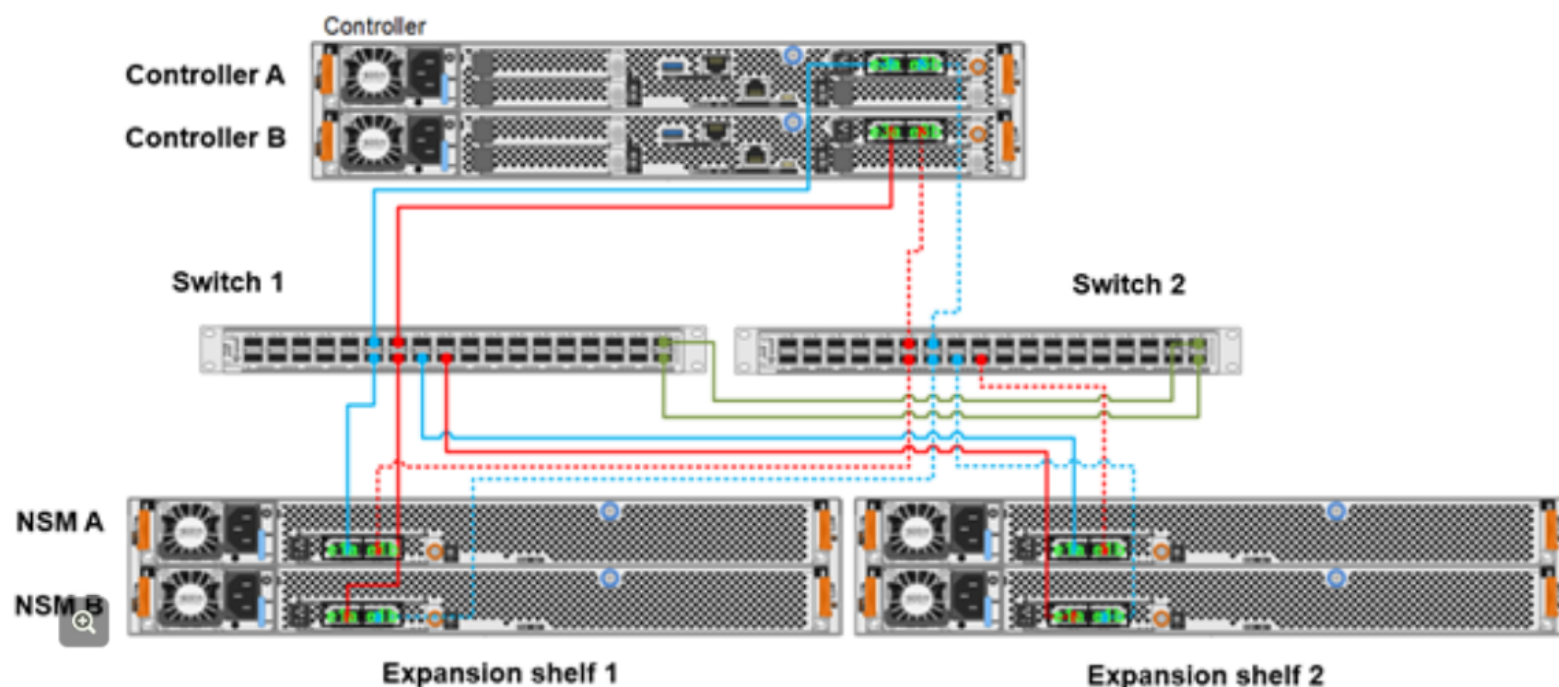
No	From	To
1	Controller A_e1a	Shelf 1 NSM A_e1a
2	Controller A_e1b	Shelf 1 NSM B_e1b
3	Controller B_e1a	Shelf 1 NSM B_e1a
4	Controller B_e1b	Shelf 1 NSM A_e1b
5	Controller A_e3a	Shelf 2 NSM A_e1a
6	Controller A_e3b	Shelf 2 NSM B_e1b
7	Controller B_e3a	Shelf 2 NSM B_e1a
8	Controller B_e3b	Shelf 2 NSM A_e1b



Switch connection – dual NVMe expansion shelves

A two-port 100 GbE I/O module is installed in slot 3, and QSFP28 cables are used to connect the switches to the controllers and NSMs.

No	From	To
1	Controller A_e3a	Switch 1
2	Controller A_e3b	Switch 2
3	Controller B_e3a	Switch 1
4	Controller B_e3b	Switch 2
5	Shelf 1 NSM A_e1a	Switch 1
6	Shelf 1 NSM A_e1b	Switch 2
7	Shelf 1 NSM B_e1a	Switch 1
8	Shelf 1 NSM B_e1b	Switch 2
9	Shelf 2 NSM A_e1a	Switch 1
10	Shelf 2 NSM A_e1b	Switch 2
11	Shelf 2 NSM B_e1a	Switch 1
12	Shelf 2 NSM B_e1b	Switch 2



Direct connection – SAS expansion shelf

A four-port 12 Gb SAS I/O module is installed in slot 3, and mini-SAS HD cables are used to connect the IOMs.

No	From	To
1	Controller A_3a	Shelf 1 IOM A_1
2	Controller A_3d	Shelf 3 IOM B_3
3	Controller B_3a	Shelf 1 IOM B_1
4	Controller B_3d	Shelf 3 IOM A_3
5	Shelf 1 IOM A_3	Shelf 2 IOM A_1
6	Shelf 1 IOM B_3	Shelf 2 IOM B_1
7	Shelf 2 IOM A_3	Shelf 3 IOM A_1
8	Shelf 2 IOM B_3	Shelf 3 IOM B_1

