

System configurations and diagrams

System configuration, system block diagram, chassis configuration, and RAID configuration

Lenovo ThinkSystem SR650 system configuration

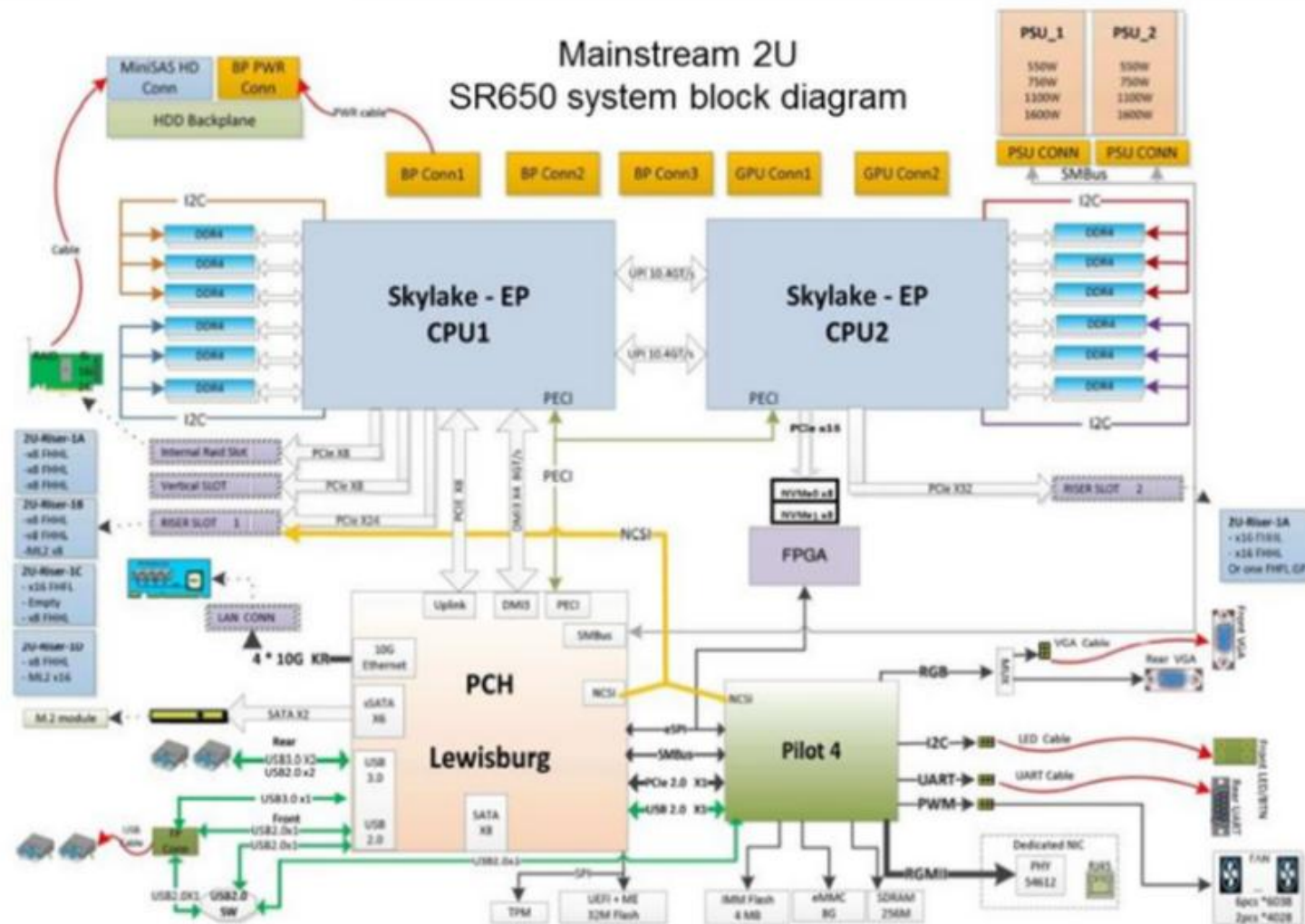
Complete these procedures to configure your system:

1. Set the network connection for the Lenovo XClarity Controller. Before you can access the Lenovo XClarity Controller over your network, you need to specify how Lenovo XClarity Controller will connect to the network. Depending on how the network connection is implemented, you might need to specify a static IP address also.
2. Set the front USB 2.0 connector for Lenovo XClarity Controller connection.
3. Install firmware updates.
4. Configure the firmware.
5. Configure the memory. Memory performance depends on several variables, such as memory mode, memory speed, memory ranks, memory population, and processor.
6. Configure RAID arrays. Using a Redundant Array of Independent Disks (RAID) to store data remains one of the most common and cost-efficient methods to increase server's storage performance, availability, and capacity.
7. Back up the server configuration. After setting up the server or making changes to the configuration, it is a good practice to make a complete backup of the server configuration.

System block diagram

HDD Backplane:

- Eight 3.5-inch SAS/SATA with front access
- Twelve 3.5-inch SAS/SATA/NVMe with front access
- Eight 2.5-inch SATA/SAS/NVMe with front access
- Sixteen 2.5-inch SATA/SAS/NVMe with front access
- Twenty-four 2.5-inch SATA/SAS/NVMe with front access



SR650 RAID configurations

Detailed information about RAID management tools and resources is available at [Lenovo RAID Management Tools and Resources](#).

Click different configurations to view more information.

3.5-inch drives up to 12 bays

2.5-inch drives up to 24 bays (part one)

2.5-inch drives up to 24 bays (part two)

3.5-inch drives up to 12 bays

X

Eight 3.5-inch SAS/SATA

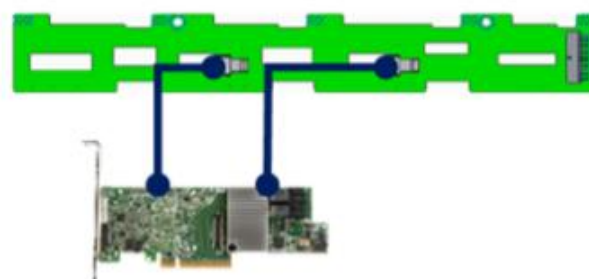
Twelve 3.5-inch SAS/SATA

Eight 3.5-inch SAS/SATA
+ four AnyBay

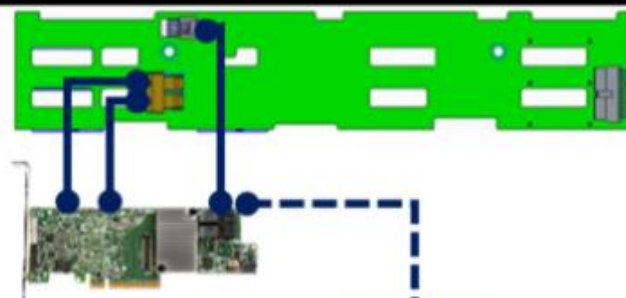
Front view



Rear view

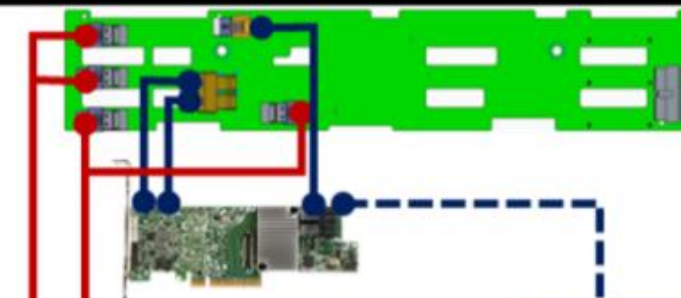


One 8i RAID or HBA



One 16i RAID or HBA

Rear
HDD



One 16i RAID or HBA

System
board NVMe
connector

Rear
HDD

2.5-inch drives up to 24 bays (part one)



Eight 2.5-inch
SAS/SATA

Four 2.5-inch SAS/
SATA + four AnyBay

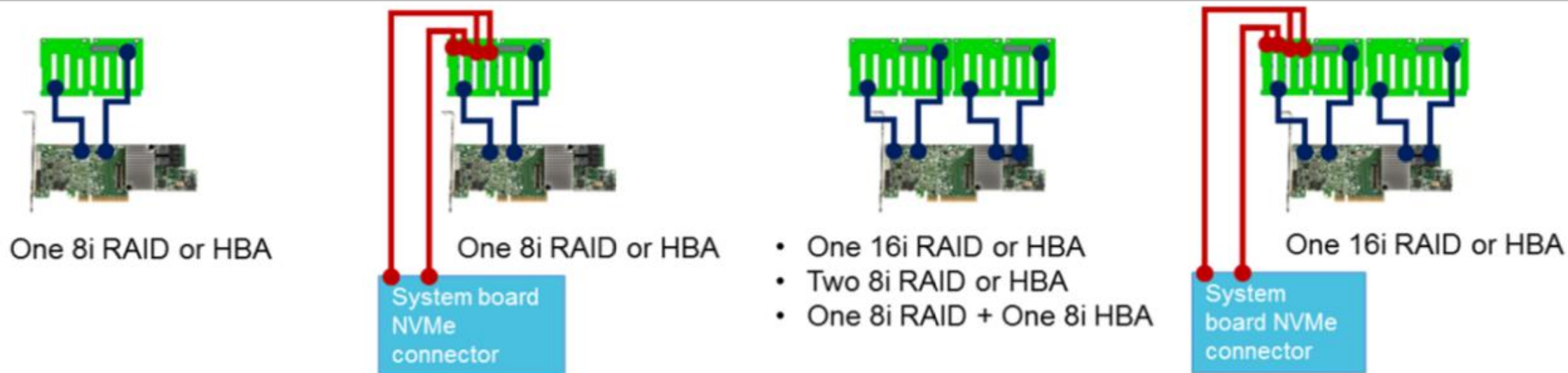
Sixteen 2.5-inch
SAS/SATA

Twelve 2.5-inch
SAS/SATA + four
AnyBay

Front view



Rear view



2.5-inch drives up to 24 bays (part two)



Eight 2.5-inch
SAS/SATA +
eight AnyBay

Twenty-four 2.5-inch
SAS/SATA

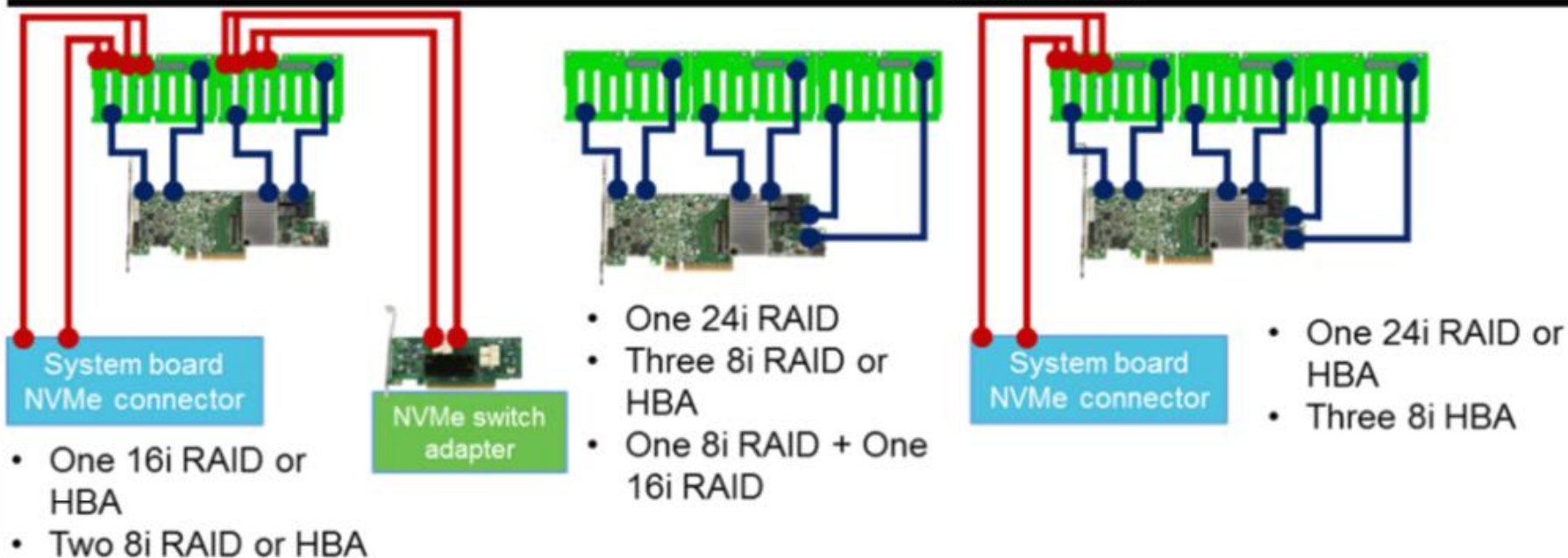
Twenty 2.5-inch
SAS/SATA + four
AnyBay

No backplane / No HDD

Front View



Rear View



SR650 chassis configurations

Click different chassis configurations to view more information.

Eight and twelve 3.5-inch drives

Eight to sixteen 2.5-inch SAS/SATA drives

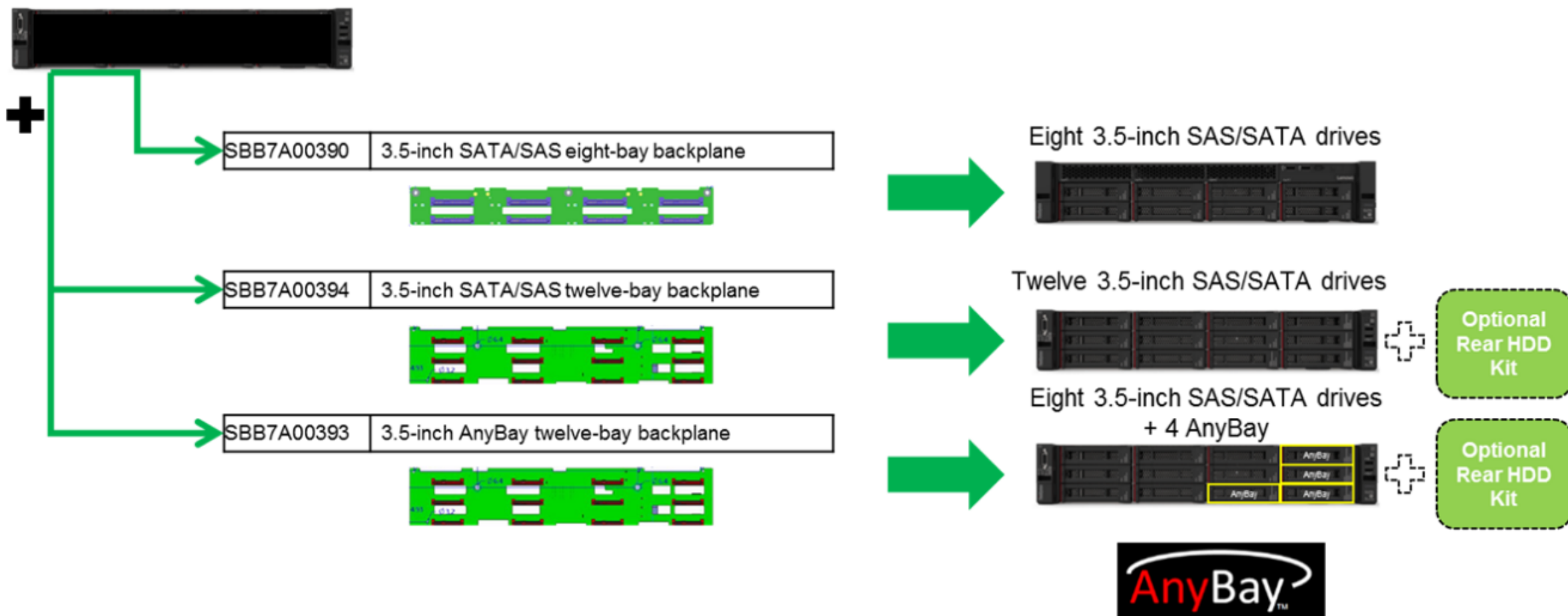
Sixteen 2.5-inch drives with AnyBay

Twenty-four 2.5-inch SAS/SATA drives

Twenty-four 2.5-inch drives with AnyBay

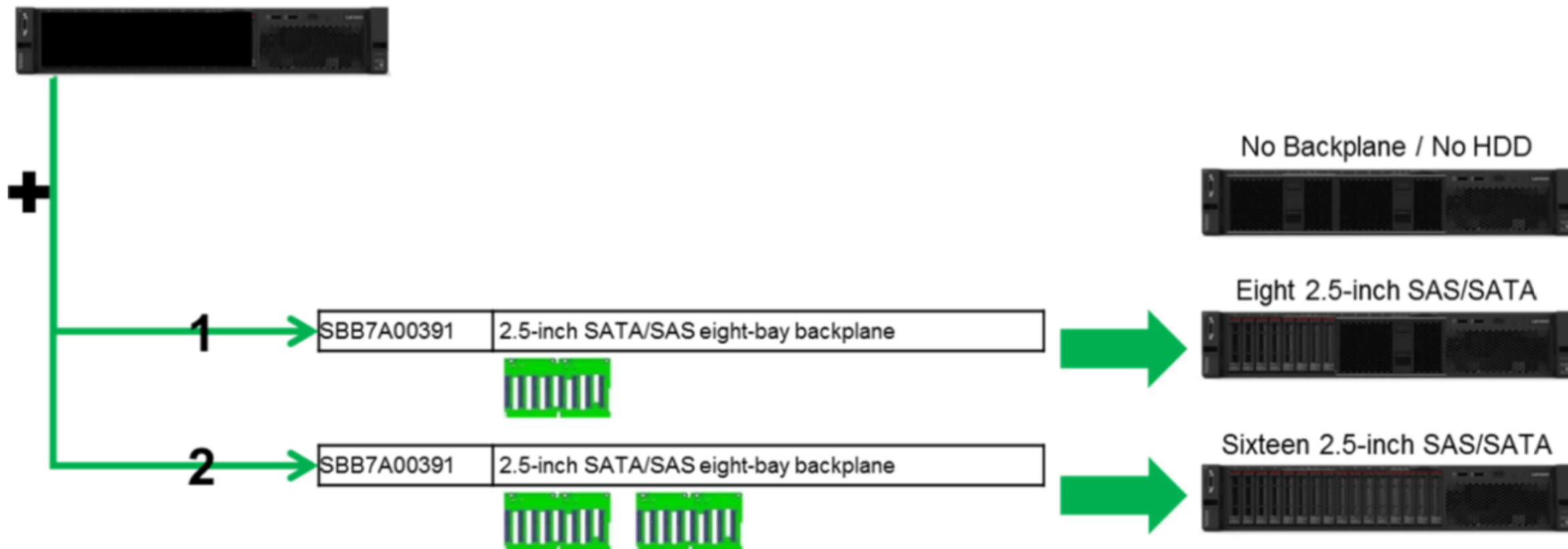
Eight and twelve 3.5-inch drives in a five-fan chassis (SBB7A00262)

X

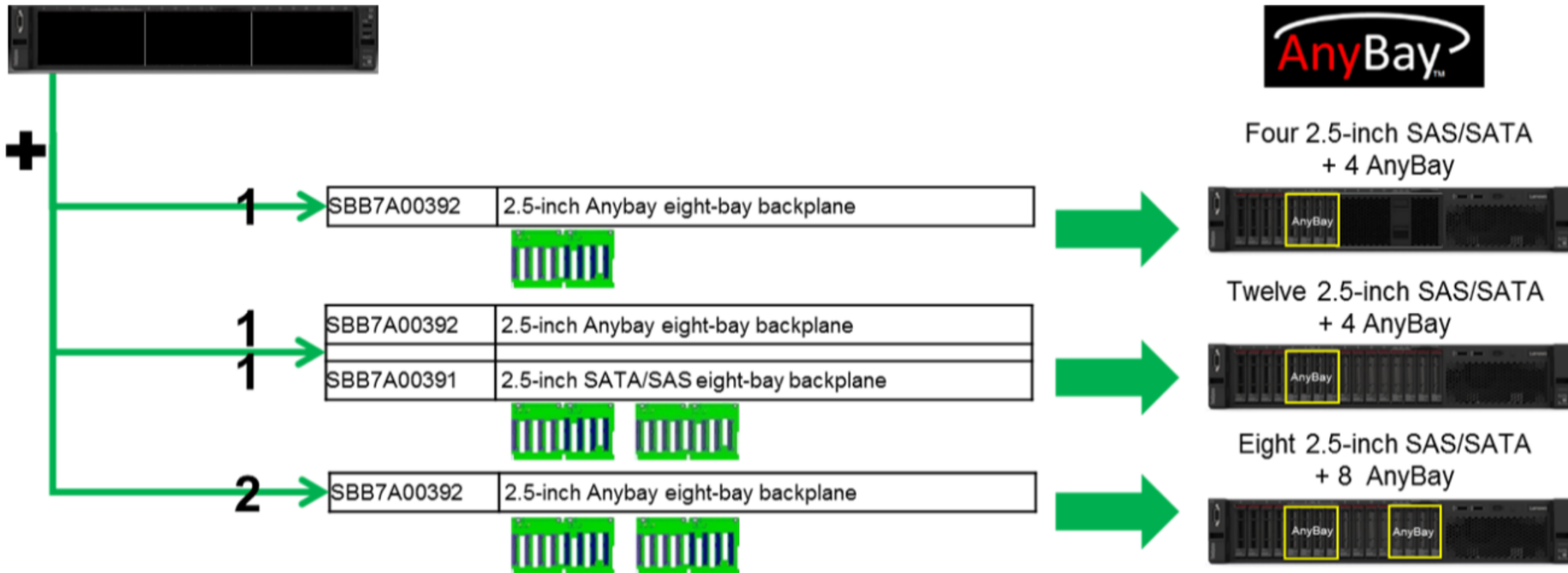


Eight to sixteen 2.5-inch SAS/SATA drives with a front I/O assembly and USB in a five-fan right blank chassis (SBB7A00263)

X

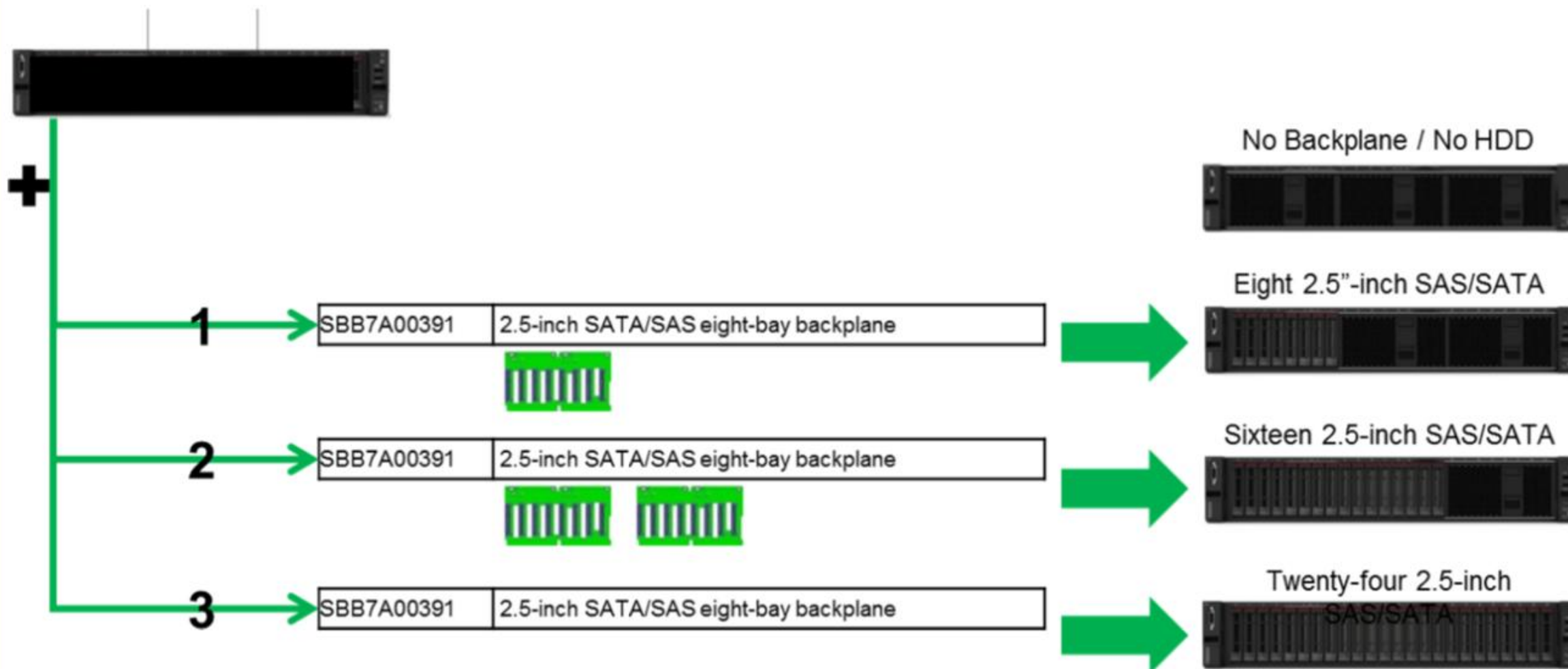


Sixteen 2.5-inch drives with a front I/O assembly in a five-fan chassis (SBB7A00264)

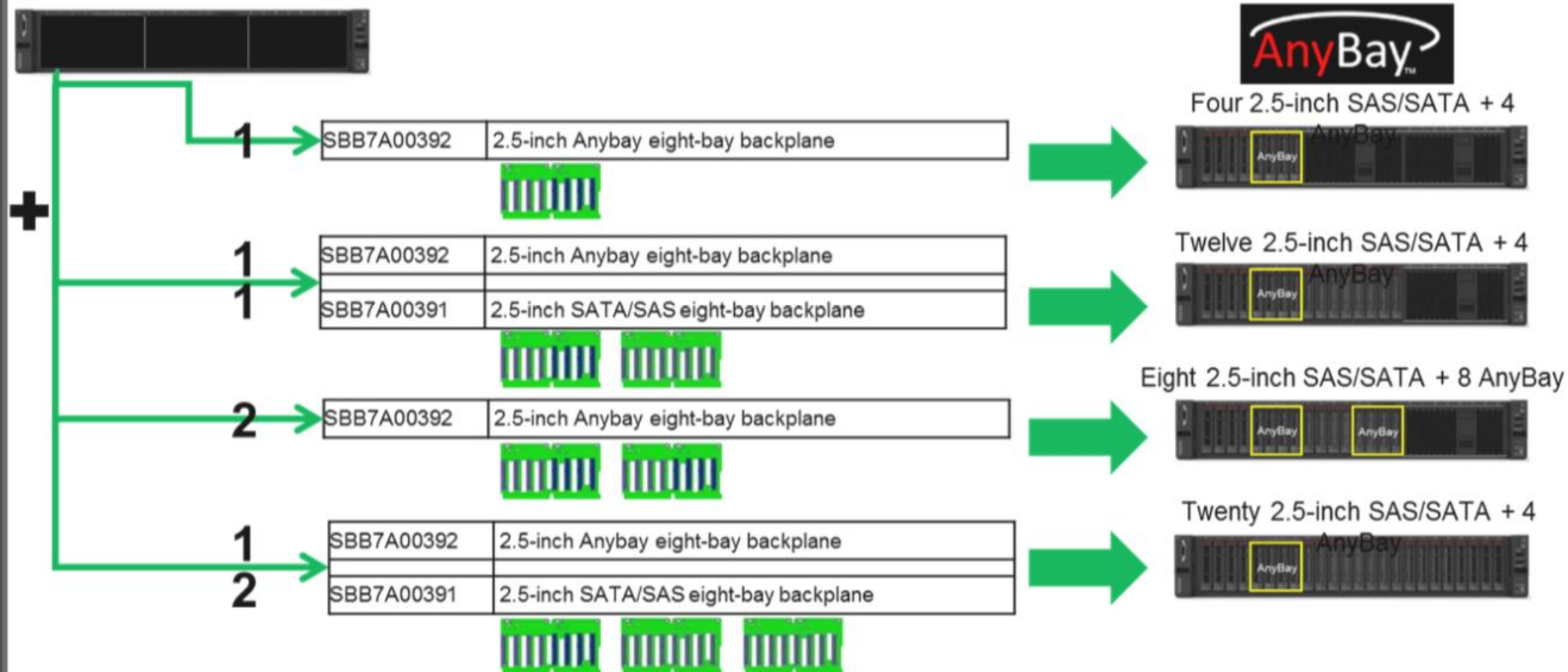


Twenty-four 2.5-inch drives with a front I/O assembly in a five-fan chassis (SBB7A00264)

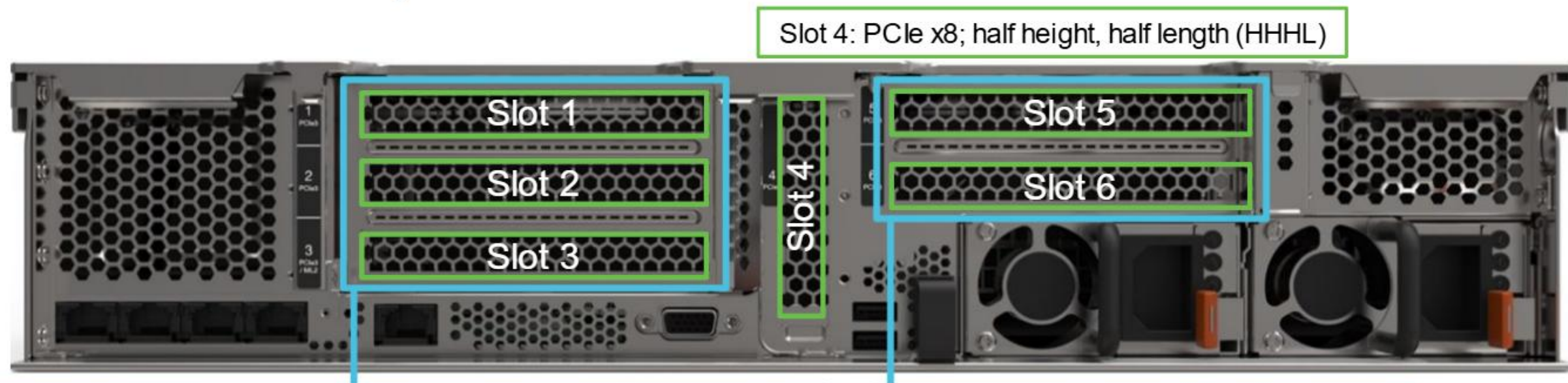
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Twenty-four 2.5-inch drives with a front I/O assembly in a five-fan chassis (SBB7A00264)



Lenovo ThinkSystem SR650 PCIe riser cards and slots



Riser 1

- Option 1: x8/x8/x8 (slot 1, 2, 3); FHHL
- Option 2: x16/x8 (slot 1,3); FHHL (GPU Support)
- Option 3: x8/x16 ML2 (slot 1, 3); FHHL
- Option 4: x8/x8/x8 ML2 (slot 1, 2, 3); FHHL
- Option 5: Two 3.5-inch HDD drive bay*



Riser 2 (A second CPU is required)

- Option 1: x16/x16 (slot 5, 6); FHHL (GPU Support)



*only available with 12x3.5-inch chassis



Option P/N	CTO/SBB	Description
7XH7A02677	SBB7A00251	SR550/SR650 x8/x8/x8 PCIe FH Riser 1 Kit
7XH7A02678	SBB7A00252	SR550/SR650 x16/x8 PCIe FH Riser 1 Kit
7XH7A02681	SBB7A00255	SR650 x8/x16ML2 PCIe FH Riser 1 Kit
7XH7A02680	SBB7A00254	SR550/SR650 x8/x8/x8ML2 PCIe FH Riser 1 Kit
7XH7A02679	SBB7A00253	SR550/SR650 x16/x16 PCIe FH Riser 2 Kit
7XB7A02777	SBB7A00260	SR650 Rear HDD Kit

Lenovo ThinkSystem SR650 PHY cards

Description	PHY chip
PHY1: Two 1 GbE RJ-45 Ports	Two Marvell 88E1514
PHY2: Four 1 GbE RJ-45 Ports	Marvell 88E1543
PHY3: Two 10 GbE SFP+ Ports	Inphi CS4227
PHY4: Four 10 GbE SFP+ Ports	Inphi CS4223
PHY5: Two 10 GbE RJ45 Ports	Intel X557-AT2
PHY6: Four 10 GbE RJ-45 Ports	Intel X557-AT4

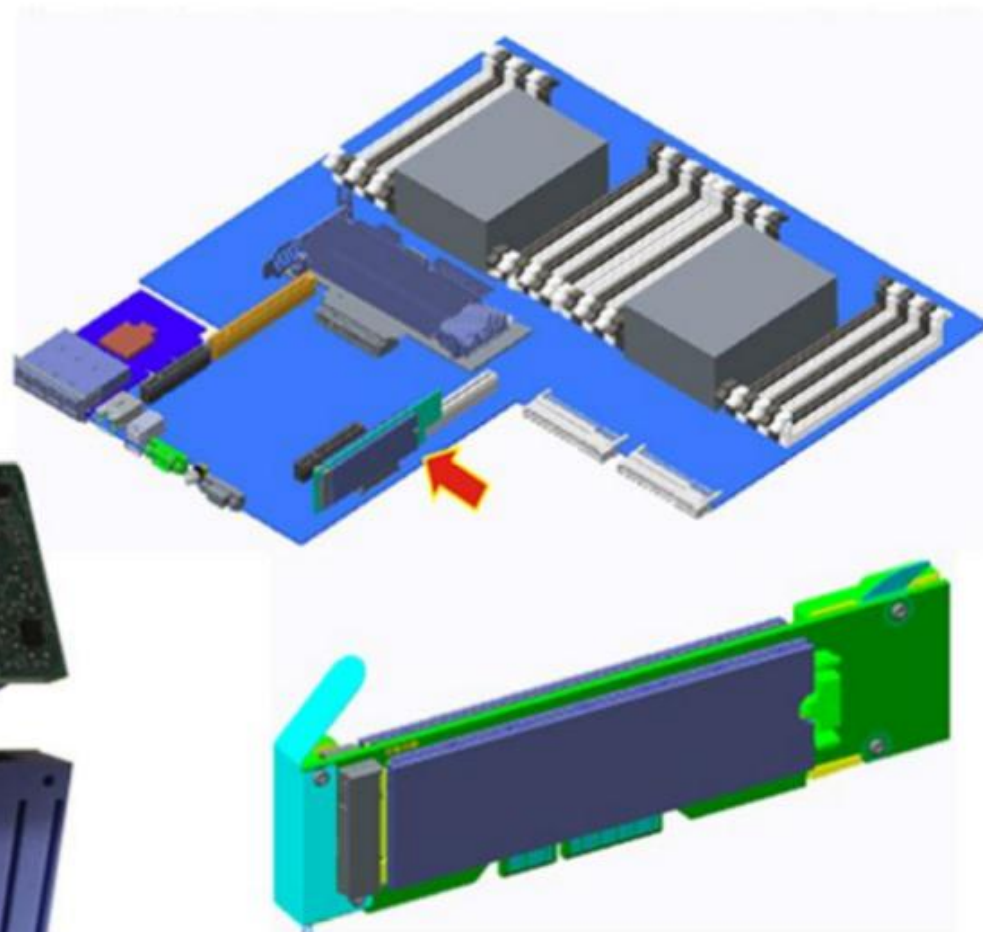


Lenovo ThinkSystem SR650 PCIe riser cards and slots

There are two SATA boot option adapters:

- Single M.2 SATA Boot option adapter
- Dual M.2 SATA Boot option adapter for RAID 1 support

M.2 SATA boot
option adapter
card



M.2 SATA boot option adapter

Summary

This course enabled you to:

- Describe the Lenovo ThinkSystem SR650 (MT 7X05) and (MT 7X06) server and components.
- List the server specifications.
- Describe the new Intel 6137 CPU and the system configuration changes to the ThinkSystem SR650.
- Describe the rich NVMe configuration.
- Describe the server configurations and diagrams.