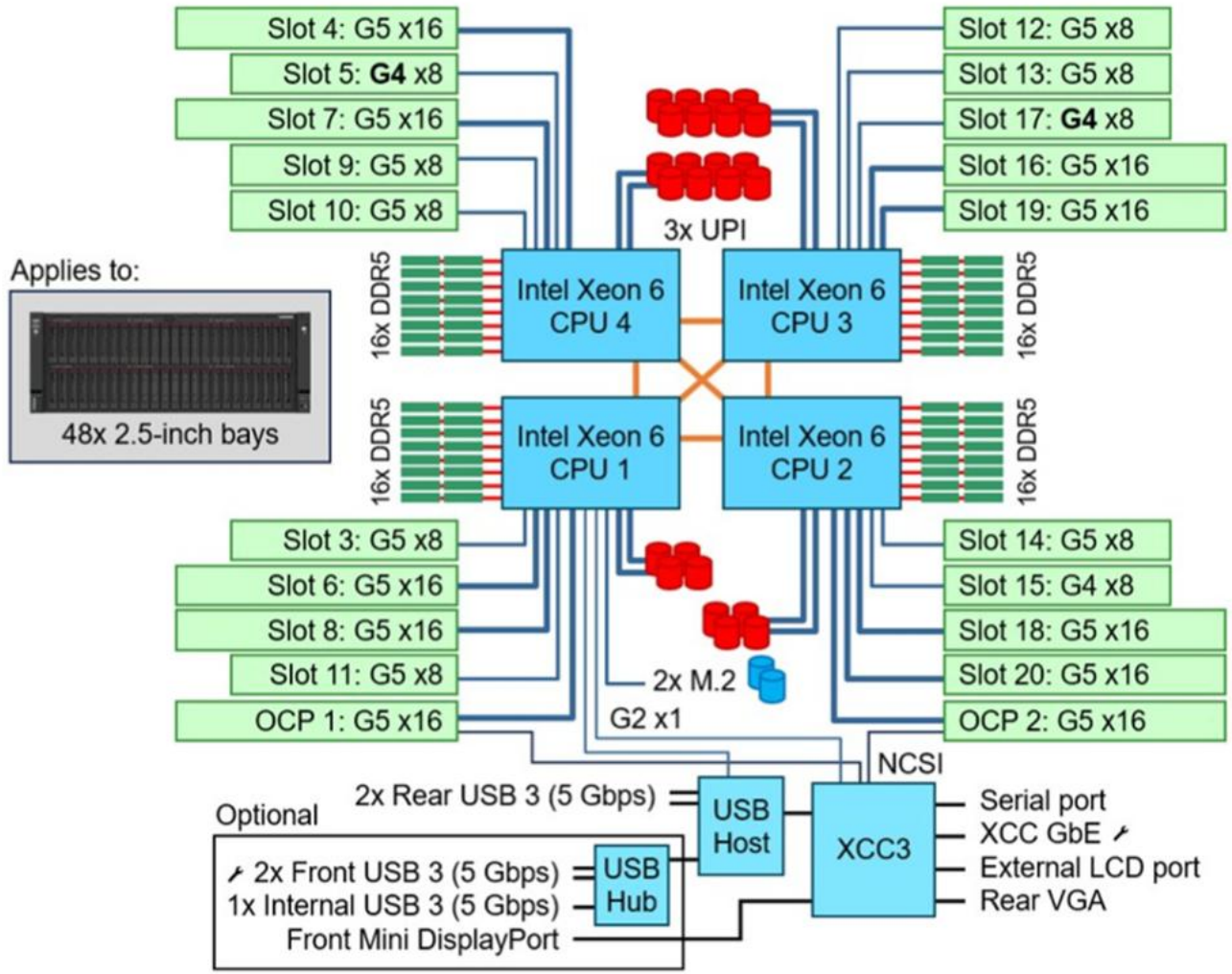
# System configurations and diagrams

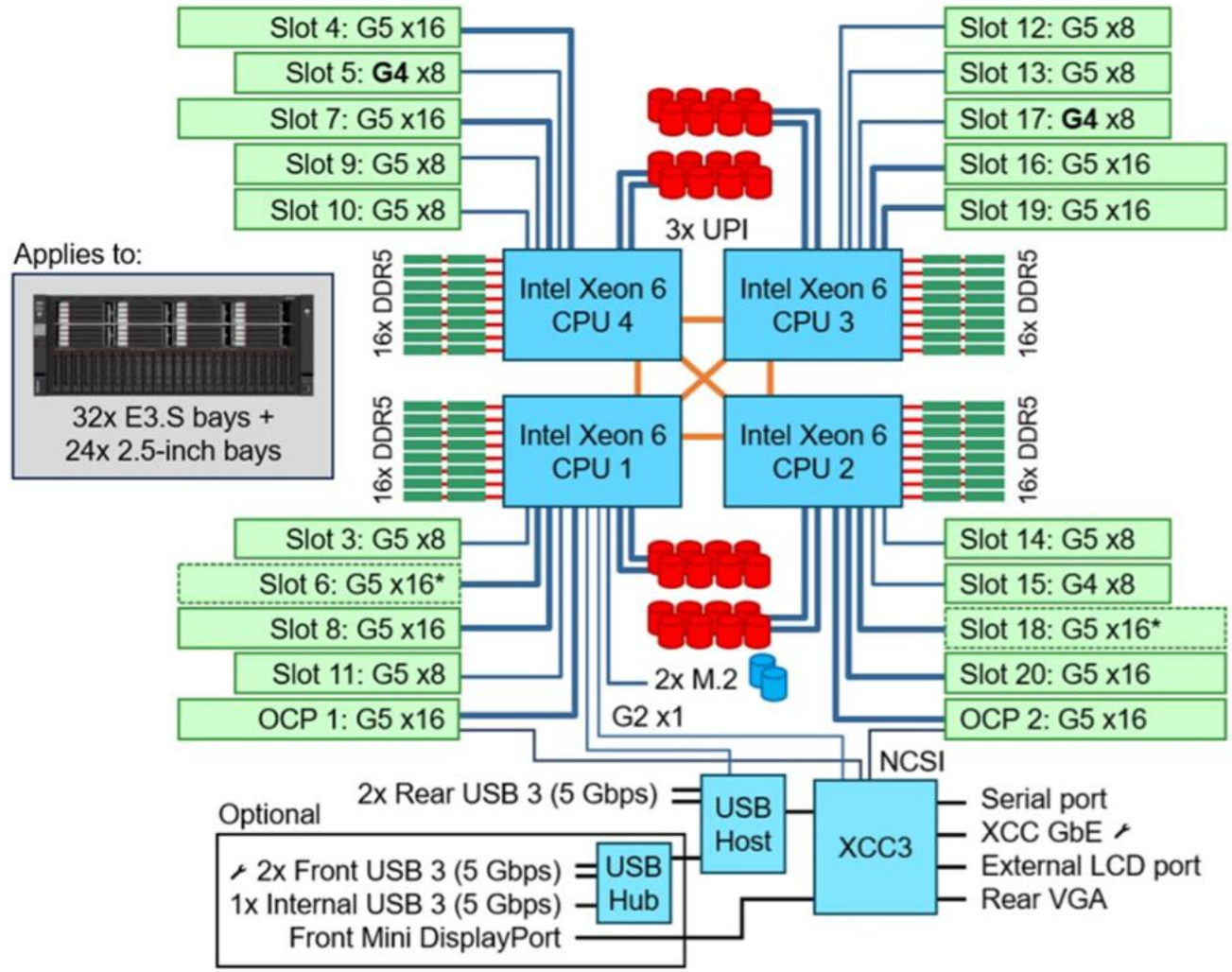
Components overview

# System block diagram – 48 2.5-inch drive model



# System block diagram – E3.S drive model

Slot 6 and Slot 18 are not available if more than four E3.S backplanes are configured.



# SR860 V4 fans

The server has twelve 60 mm, hot-swap, single or dual-rotor, variable-speed fans installed in six modules in vertical bays. The server supports one of the following fan types:

- Standard fan: 60 x 60 x 38 mm, single-rotor, 24000 RPM
- Performance fan: 60 x 60 x 56 mm, dual-rotor, 20000 RPM
- Ultra fan: 60 x 60 x 56 mm, dual-rotor, 21000 RPM

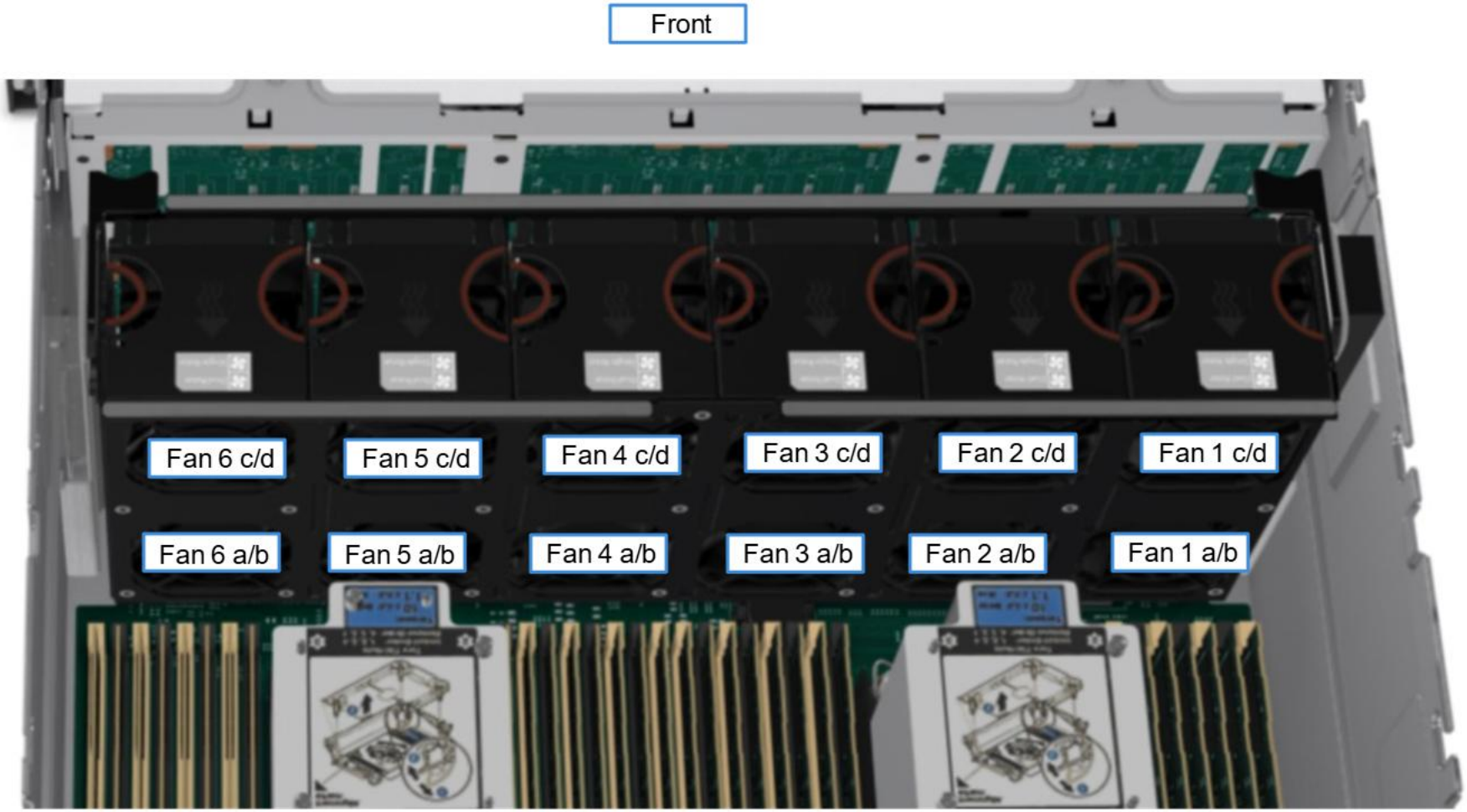
The ultra fan is leveraged from the SR650 V4 to support the following new features in the configuration:

- BHS CPU (350 W)
- DDR5 6400/5200MHz 25 W
- E3.S drives

The server supports operational N+1 redundancy.

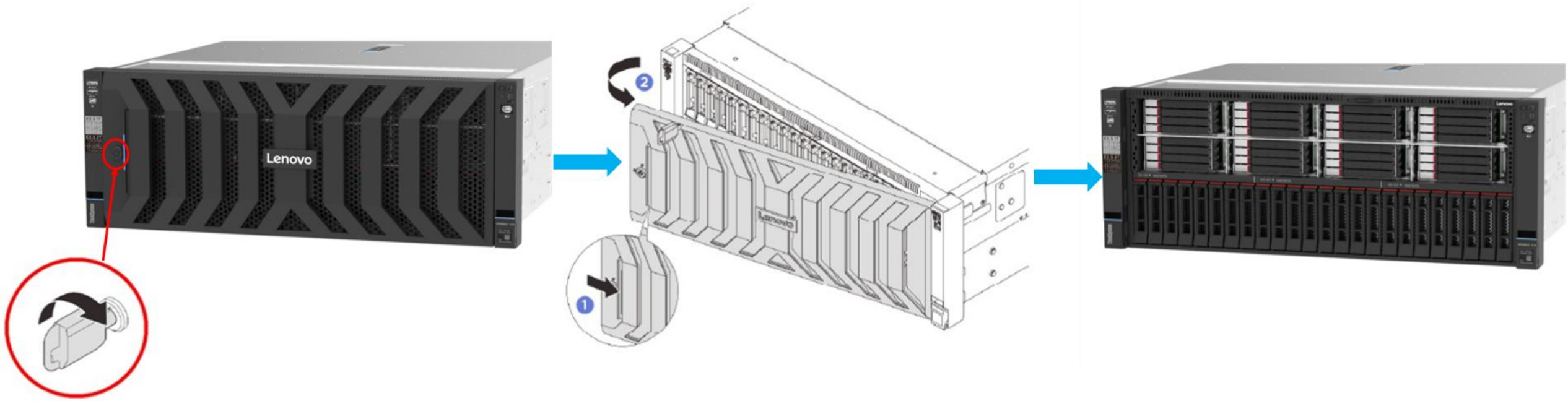
**Note:** A mix of fan types is not supported.

# Fan numbering



# Security bezel

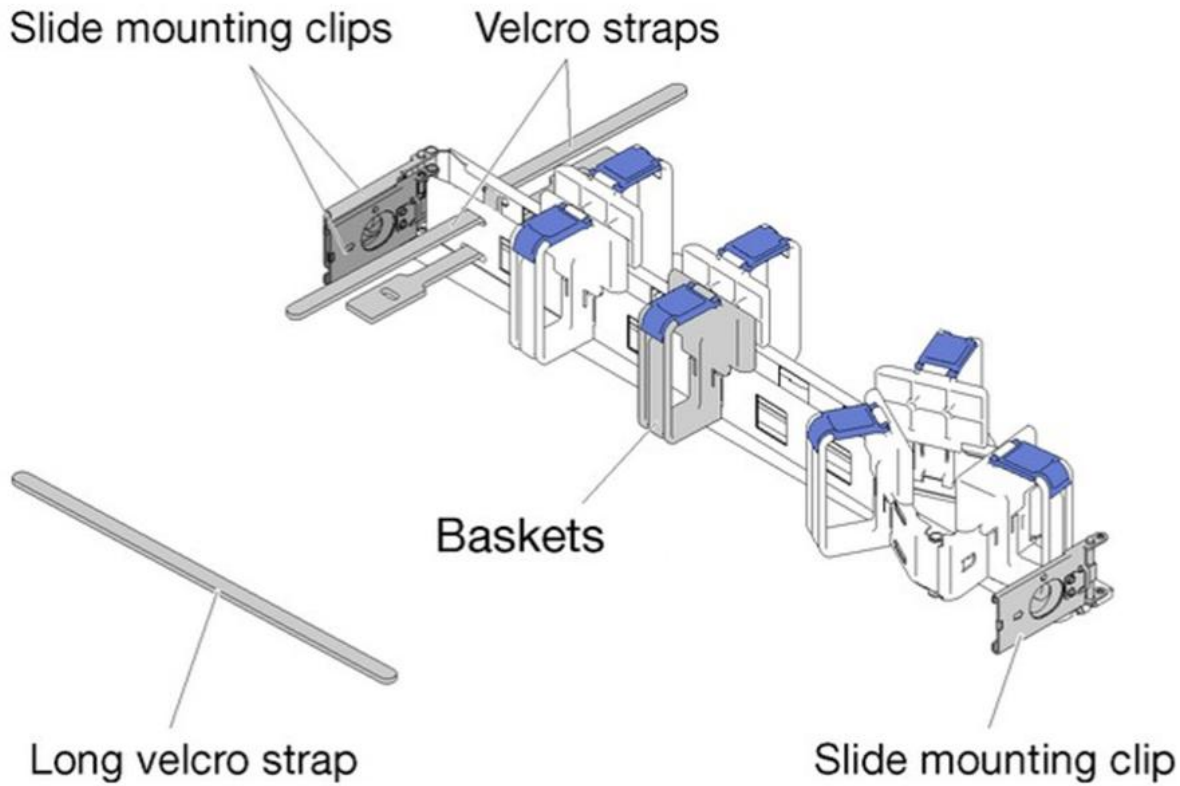
Unlike the SR860 V3, the SR860 V4 supports a security bezel. The removal/installation procedure is the same as with other V4 systems.



# Cable management arm

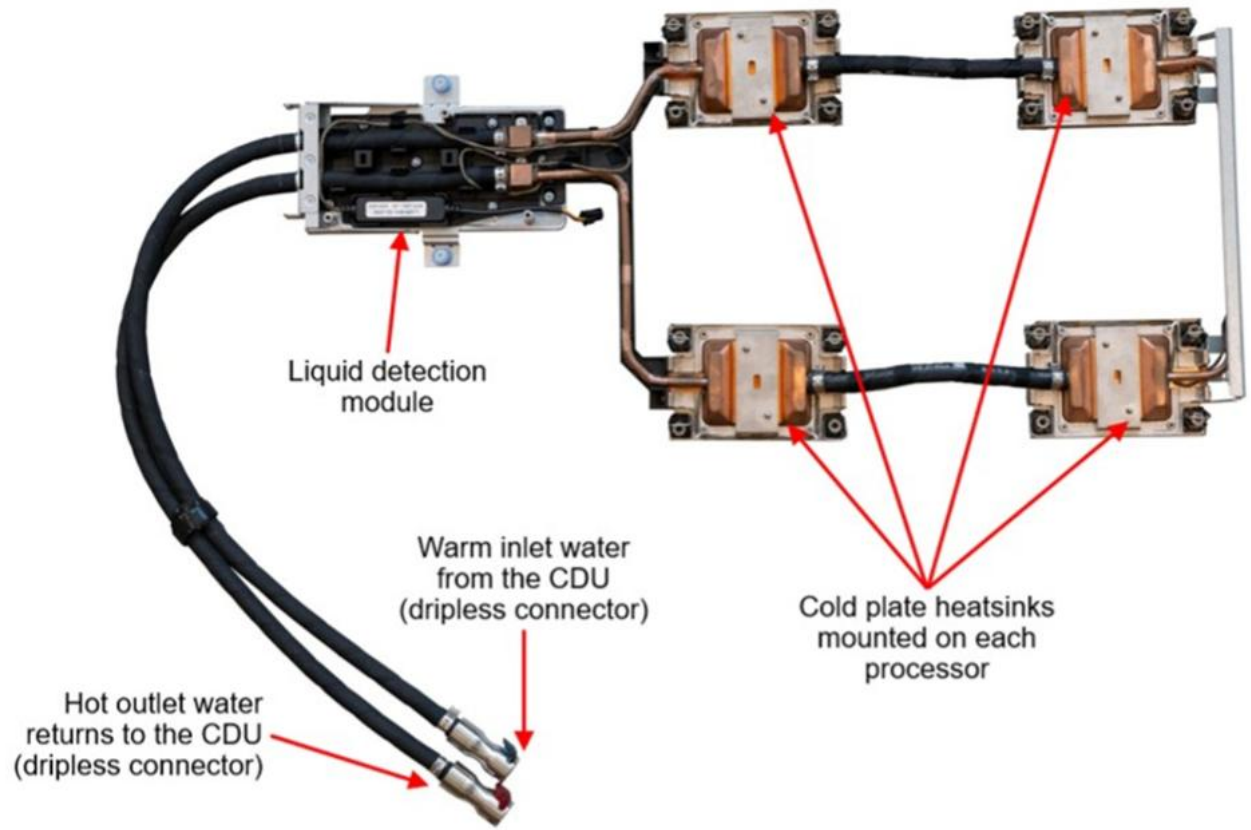
The SR860 V4 supports two types of cable management arm (CMA):

- The 2.5-inch drive model uses the SR860 V3 CMA
- The E3.S drive model uses the SR950 V3 CMA as the chassis is extended by 40 mm. However, the CMA cannot be installed if the server rack depth is less than 110 cm.

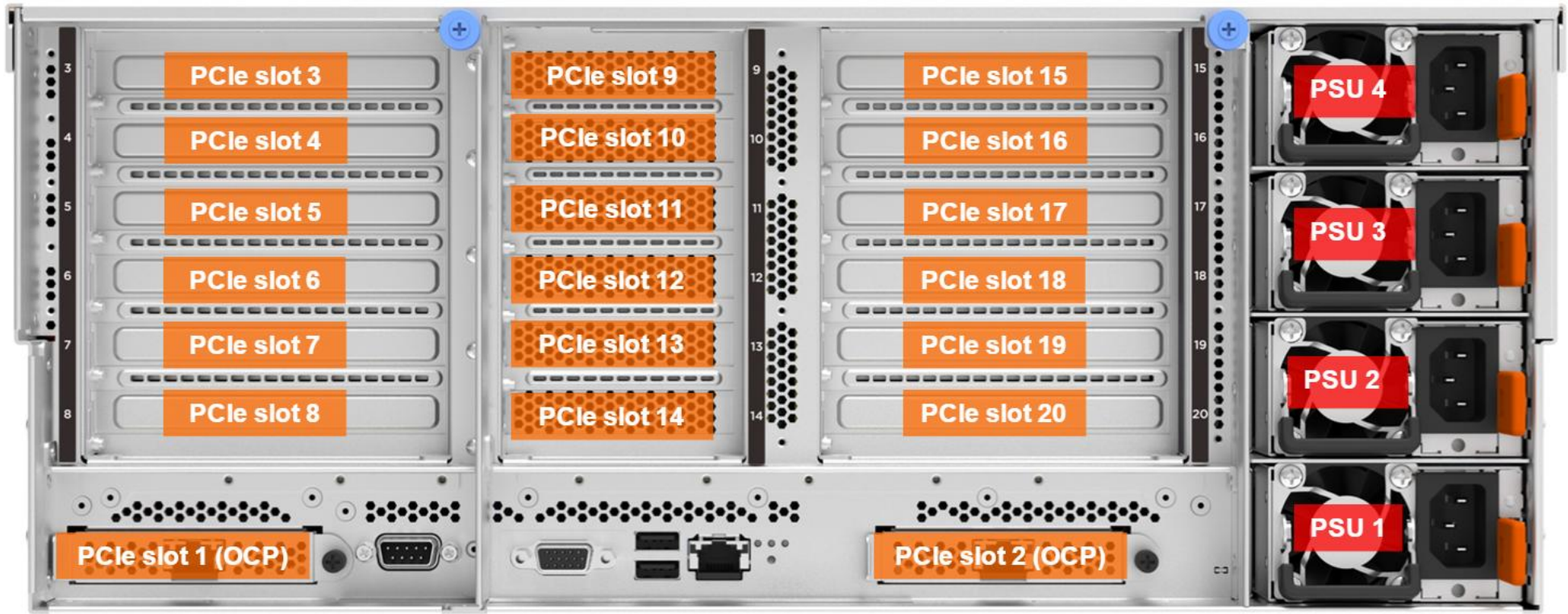


# Lenovo Processor Neptune Core Module introduction

The SR860 V4 supports advanced direct water cooling (DWC) with the Lenovo Processor Neptune Core Module. This module implements a liquid cooling solution that allows heat from the processors to be removed from the rack and data center using an open loop and coolant distribution units (CDU).



# Rear device numbering




**Riser 1**

- Up to six PCIe FH slots

**Riser 2**

- Up to six PCIe LP slots

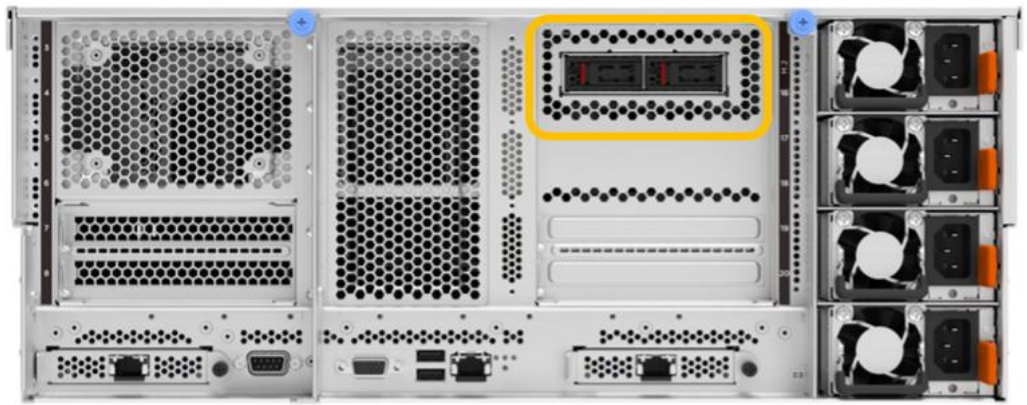
**Riser 3**

- Up to six PCIe FH slots
- Two optional hot-swap (HS) M.2 slots

Four CRPS or CFFv5 PSUs

# Rear HS M.2 configuration

Occupied PCIe slots 15 and 16



Occupied PCIe slot 20

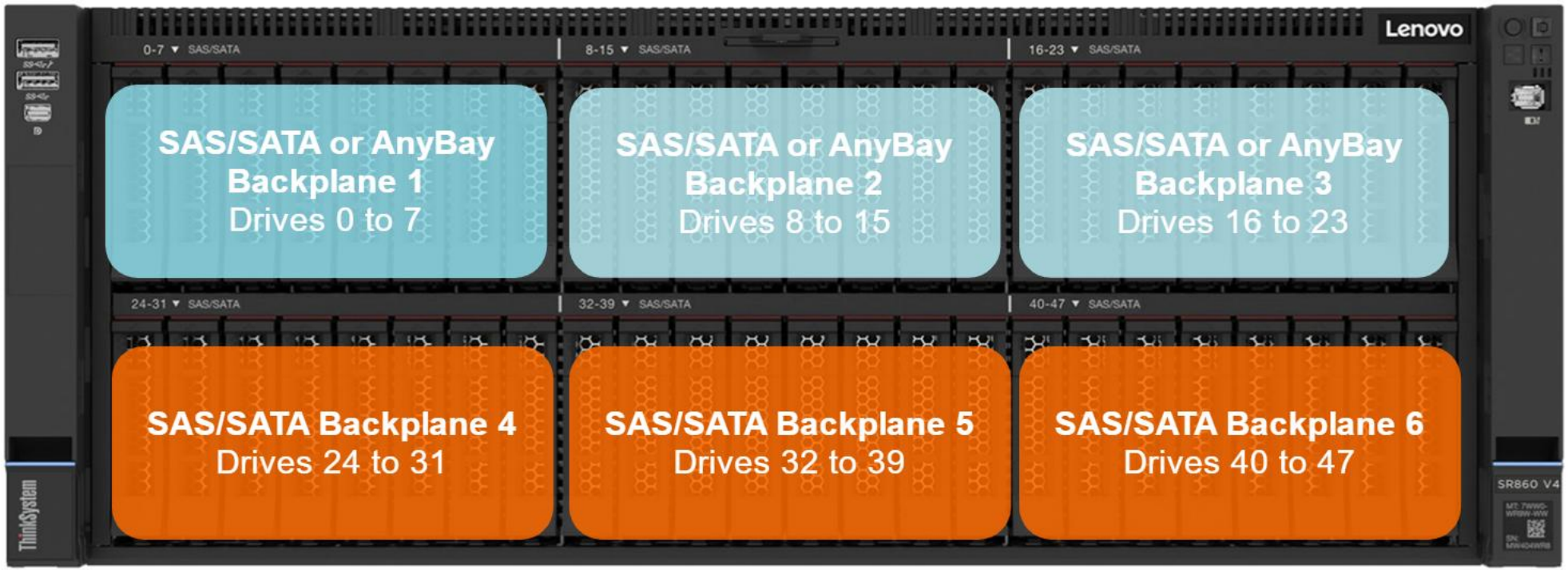
Optional HS M.2 configuration:

- The rear HS M.2 drive cage can be installed in slots 15 and 16 or in slot 20 (the two options use a different riser 3 cage assembly)

**Note:**

- Customers can only select one of the M.2 drive configurations: Internal non-hot-swap, or rear hot-swap.
- The M.2 drives (internal or rear HS M.2) will be marked as PCIe slot 24 and 25 in the XCC inventory information.
- Internal M.2 and rear HS M.2 drives cannot both be installed because they are connected to the same connector on the system board.

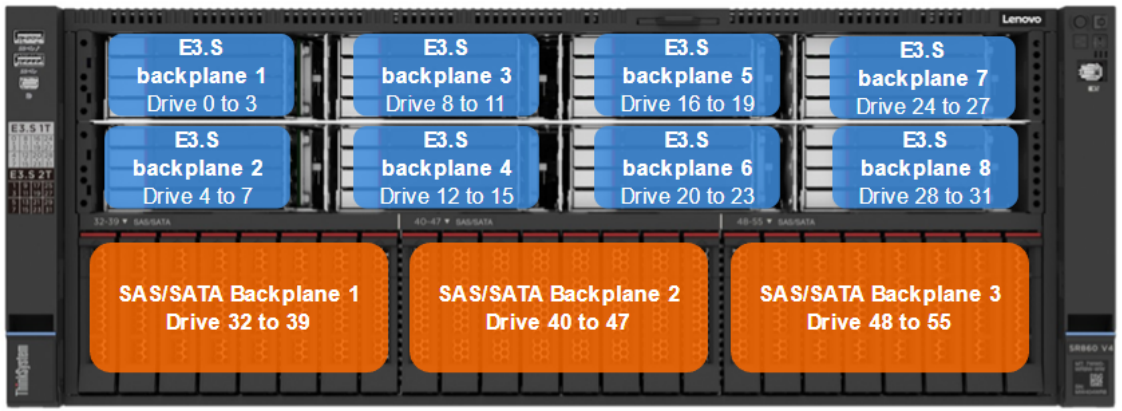
# 48 2.5-inch drive backplane configuration




- Support for up to 48 2.5-inch SAS/SATA drives with six SAS/SATA backplanes
- Support for up to 24 2.5-inch NVMe Gen 4 / Gen 5 drives with three AnyBay backplanes installed on the upper slots (drives 0 to 23) and 24 2.5-inch SAS/SATA drives with three SAS/SATA backplanes (drives 24 to 47)
- NVMe not supported in the bottom slots
- Support for the ThinkSystem 8i or 16i series RAID / HBA adapters – 32i series RAID / HBA adapters are not supported
- Support for up to four RAID batteries

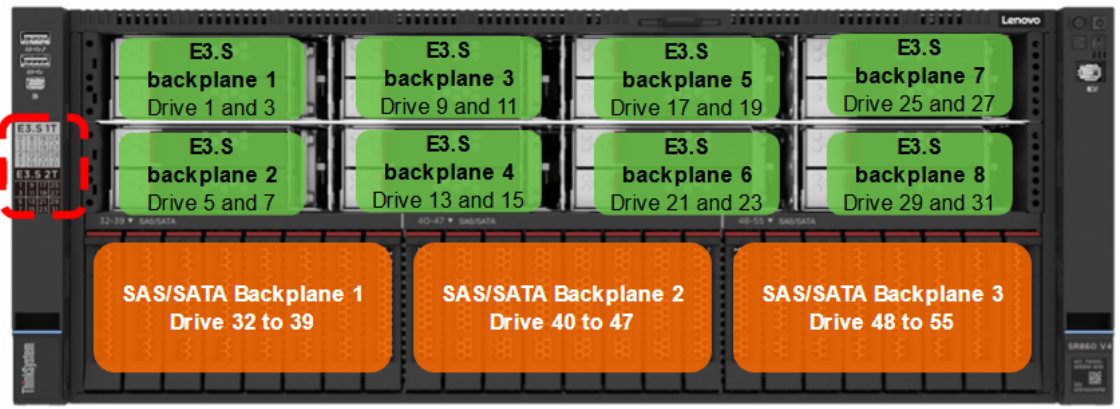
# E.3 drive configurations

E3.S 1T drive numbering





E3.S 2T drive numbering

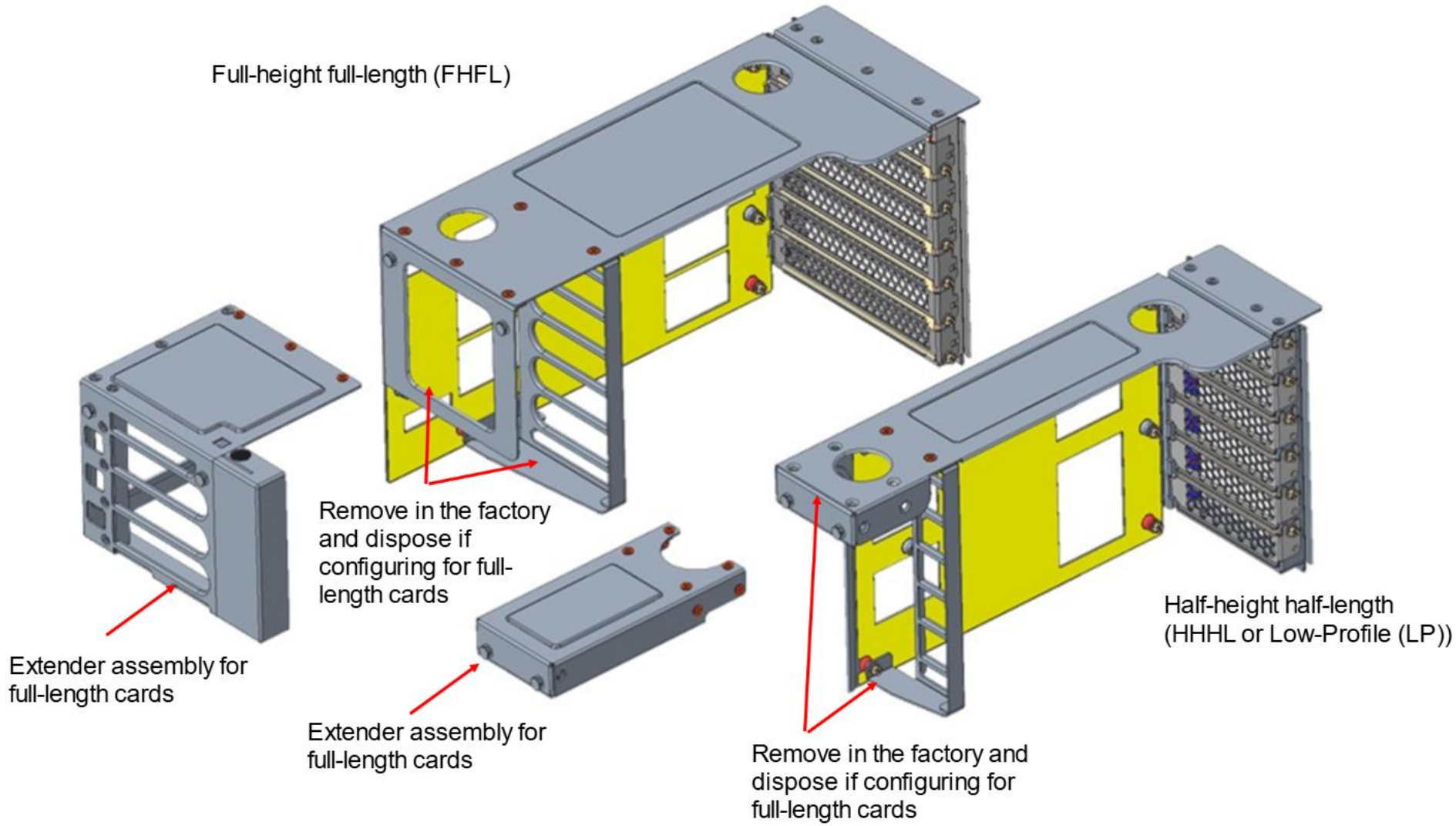



- Support for up to 32 E3.S 1T hot-swap drives or 16 E3.S 2T hot-swap drives
- As 2T drives occupy two slots, only odd numbers are used with this configuration
- Support for up to 24 2.5-inch SAS-4 / SAS-3 / SATA-3 drives with three SAS/SATA backplanes on the lower slots (drives 32 to 55)
- A four-processor configuration is required to support E3.S drives

**Note:** Currently, the SR850 V4 with AnyBay backplane configuration only supports NVMe drives - it does not support SAS or SATA drives.

# PCIe riser cages

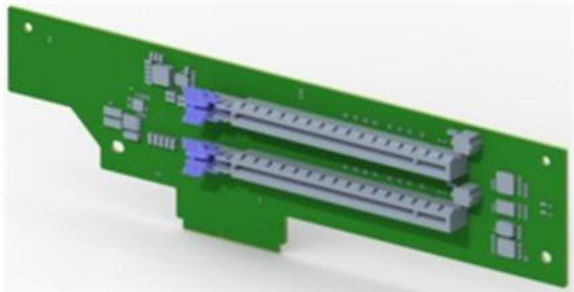
These riser cage designs are the same as those used in the SR860 V3.



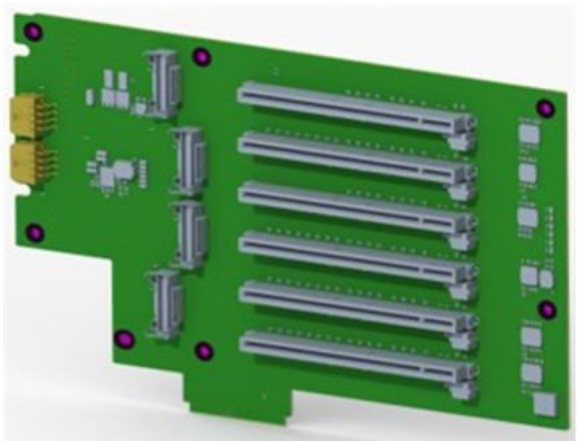
# PCIe riser cards

The SR860 V4 supports the following PCIe Gen 4 or Gen 5 riser cards.

**PCIe Gen 4 riser card I (two-slot), can be installed in riser 1 and riser 3**



**PCIe Gen 5 Riser card II (six-slot, FH), can be installed in riser 1 and riser 3**



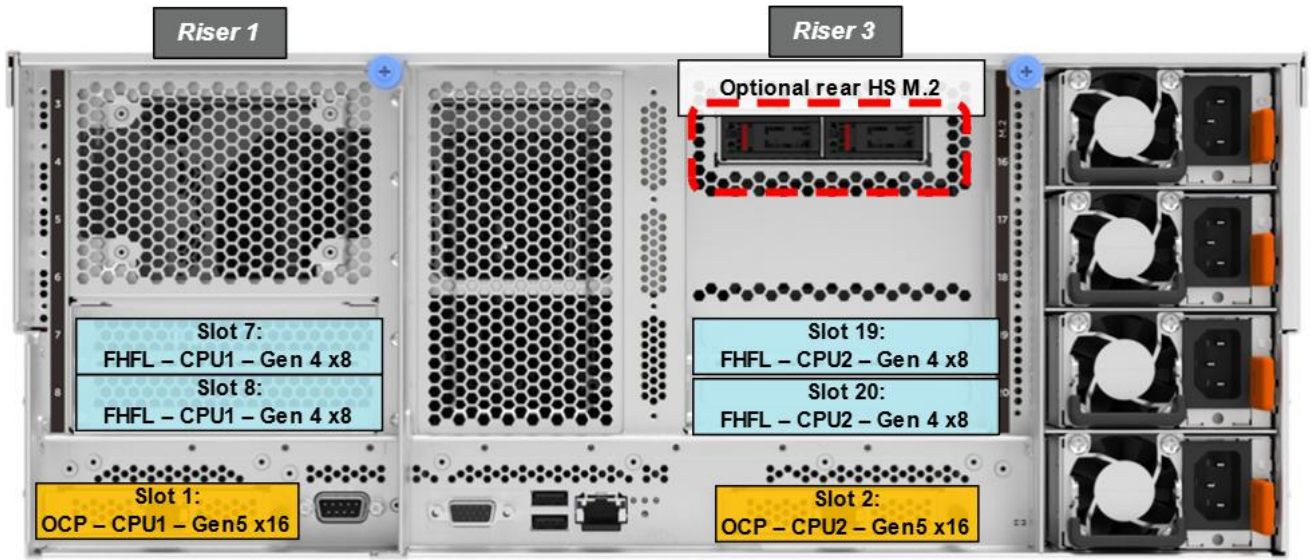
**PCIe Gen 5 riser card III (six-slot, HH), only available for riser 2**

# Riser card support matrix

| Quantity of riser cards installed | Riser 1 | Riser 2 | Riser 3 |
|---|---|---|---|
| 1 | PCIe Gen 4 Riser card I | Empty | Empty |
| | PCIe Gen 5 Riser card II | Empty | Empty |
| | Empty | PCIe Gen 5 riser card III | Empty |
| | Empty | Empty | PCIe Gen 4 Riser card I (M.2) |
| | Empty | Empty | PCIe Gen 5 Riser card II (M.2) |
| 2 | PCIe Gen 4 Riser card I | PCIe Gen 5 riser card III | Empty |
| | PCIe Gen 4 Riser card I | Empty | PCIe Gen 4 Riser card I or PCIe Gen 4 Riser card I (M.2) |
| | PCIe Gen 4 Riser card I | Empty | PCIe Gen 5 Riser card II or PCIe Gen 5 Riser card II (M.2) |
| | PCIe Gen 5 Riser card II | PCIe Gen 5 riser card III | Empty |
| | PCIe Gen 5 Riser card II | Empty | PCIe Gen 4 Riser card I or PCIe Gen 4 Riser card I (M.2) |
| | PCIe Gen 5 Riser card II | Empty | PCIe Gen 5 Riser card II or PCIe Gen 5 Riser card II (M.2) |
| | Empty | PCIe Gen 5 riser card III | PCIe Gen 4 Riser card I (M.2) |
| | Empty | PCIe Gen 5 riser card III | PCIe Gen 5 Riser card II (M.2) |
| 3 | PCIe Gen 4 Riser card I | PCIe Gen 5 riser card III | PCIe Gen 5 Riser card II or PCIe Gen 5 Riser card II (M.2) |
| | PCIe Gen 5 Riser card II | PCIe Gen 5 riser card III | PCIe Gen 4 Riser card I or PCIe Gen 4 Riser card I (M.2) |
| | PCIe Gen 5 Riser card II | PCIe Gen 5 riser card III | PCIe Gen 5 Riser card II or PCIe Gen 5 Riser card II (M.2) |

# PCIe Gen 4 base configurations

The SR860 V4 supports advanced direct water cooling (DWC) with the Lenovo Processor Neptune Core Module. This module implements a liquid cooling solution that allows heat from the processors to be removed from the rack and data center using an open loop and coolant distribution units (CDU).




Four PCIe Gen 4 slots and two OCP Gen 5

- Riser 1 uses PCIe Gen 4 Riser card I
- Riser 3 uses PCIe Gen 4 Riser card I
- No riser 2
- Optional internal M.2 (slots 24, 25) or rear HS M.2 (XCC inventory slots 24, 25)

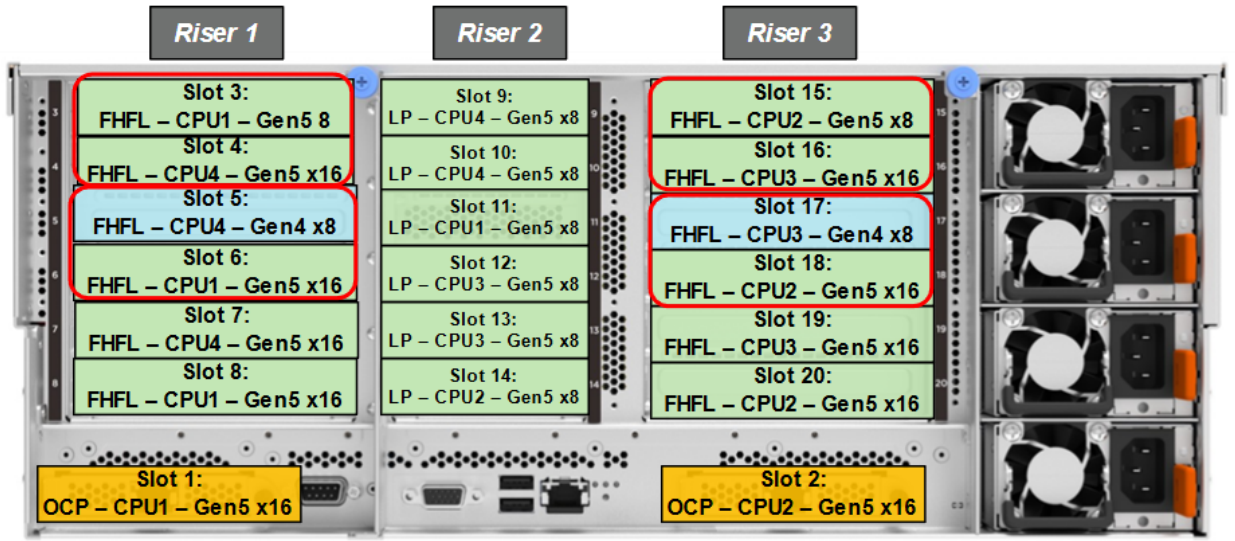
# PCIe Gen 5 maximum configurations

Click the buttons to see the different maximum PCIe slot configurations.

**16 Gen 5 + two Gen 4 + two OCP Gen 5**

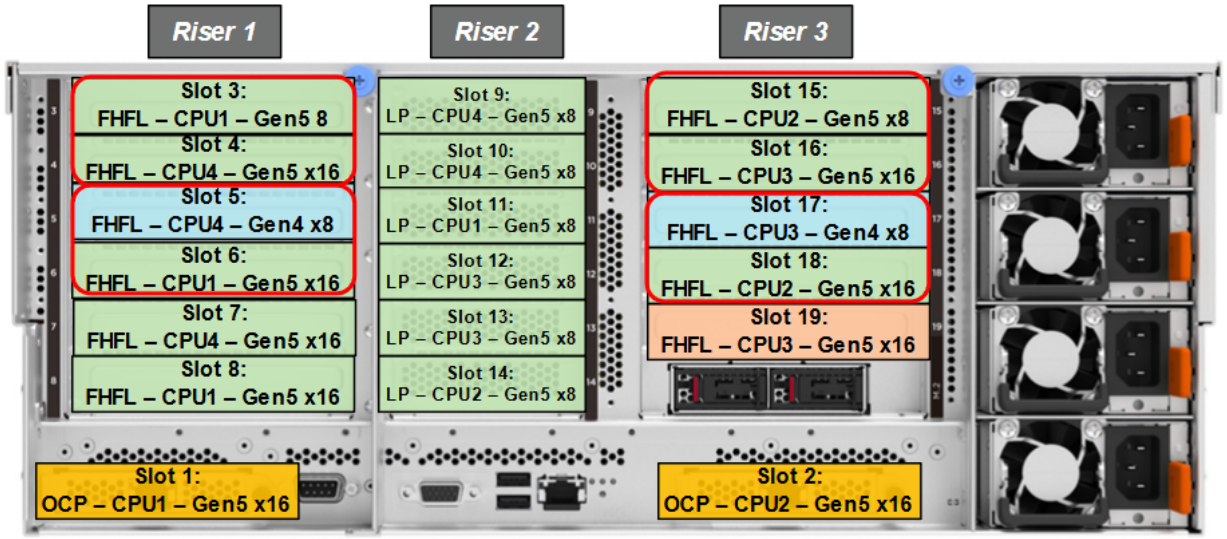
**15 Gen 5 + two Gen 4 + two OCP Gen 5 + two HS M.2**

# 16 Gen 5 + two Gen 4 + two OCP Gen 5




- Riser 1 uses PCIe Gen 5 Riser card II
  - Slot 4 supports a DW FHFL GPU installed in slots 3 and 4
  - Slot 6 supports a DW FHFL GPU installed in slots 5 and 6
- Riser 2 uses PCIe Gen 5 riser card III
- Riser 3 uses PCIe Gen 5 riser card II
  - Slot 16 supports a DW FHFL GPU installed in slots 15 and 16
  - Slot 18 supports a DW FHFL GPU installed in slots 17 and 18

# 15 Gen 5 + two Gen 4 + two OCP Gen 5 + two HS M.2




- Riser 1 uses PCIe Gen 5 riser card II
  - Slot 4 supports a DW FHFL GPU installed in slots 3 and 4
  - Slot 6 supports a DW FHFL GPU installed in slots 5 and 6
- Riser 2 use PCIe Gen 5 Riser card III
- Riser 3 use PCIe Gen 5 Riser card II
  - Slot 16 supports a DW FHFL GPU installed in slots 15 and 16
  - Slot 18 supports a DW FHFL GPU installed in slots 17 and 18
  - Optional external M.2 (slots 24, 25) installed in slot 20