

Smarter technology for all

Servicing the ThinkSystem SR675 V3

ES72367

November 2024

Lenovo

Prerequisites

- [ES42430 – AMD EPYC processor architecture for ThinkSystem V3 servers](#)
- [ES51757B – Introducing ThinkSystem tools](#)
- [ES52374 – ThinkSystem tools for the ThinkSystem V3 platform](#)
- [ES41759C – ThinkSystem problem determination](#)
- [ES51780C – Servicing the ThinkSystem storage controllers](#)

Objectives

After completing the course, you will be able to:

- Describe the ThinkSystem SR675 V3 server and components
- List the SR675 V3 server specifications
- Describe the SR675 V3 server configurations and block diagrams
- Describe the SR675 V3 server management tools
- Describe the problem determination steps and explain how to troubleshoot issues with the SR675 V3

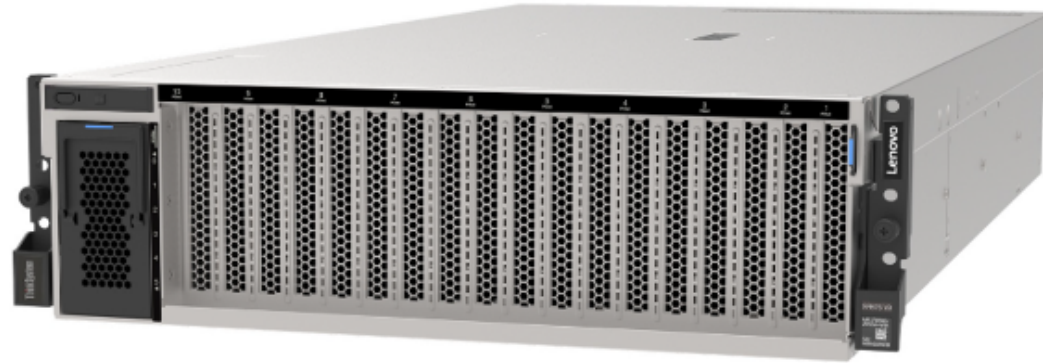
Product overview

Product description and front, rear, and inside views

Lenovo

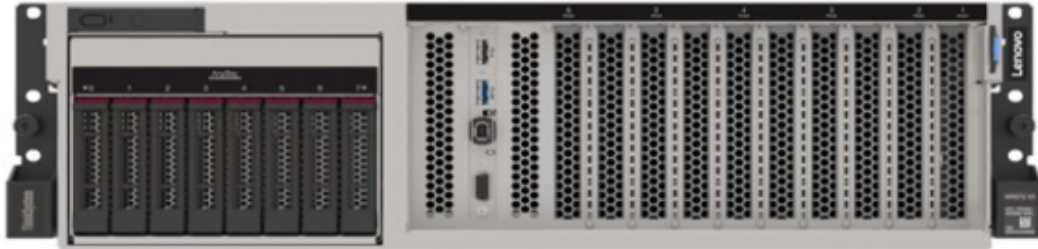
ThinkSystem SR675 V3 product overview

The ThinkSystem SR675 V3 is a versatile, GPU-rich, 3U, two-socket rack server. It supports four or eight double-width (DW) GPUs including the new NVIDIA H100 and A40 Tensor Core GPUs, AMD Instinct MI210 GPU, or the NVIDIA HGX H100 / H200 4-GPU (SXM form-factor) offering with the NVIDIA NVLink feature and the Lenovo Neptune hybrid liquid-to-air cooling module (LACM). The SR675 V3 supports one or two 4th and 5th Gen AMD EPYC (9004 and 9005 Series) processors.



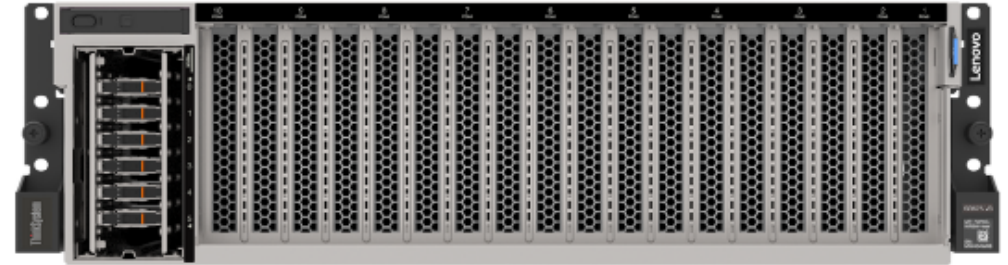
ThinkSystem SR675 V3 with PCIe DW GPUs

4-DW GPUs



- One or two AMD EPYC 9004 or 9005 Series CPUs
- PCIe 5.0 support
- Two FHFL front I/Os (Gen 5)
- Up to eight 2.5-inch AnyBay drive bays (SAS/SATA/PCIe 5.0)
- Up to four FHHL rear slots (PCIe 4.0/5.0)
- Up to 24 6000 MHz DDR5 DIMMs
- Up to **four** DW GPUs
- Optional rear OCP adapter slot (PCIe 4.0)
- Optional external LCD diagnostic handset
- Common Lenovo ThinkSystem XClarity management tools

8-DW GPUs



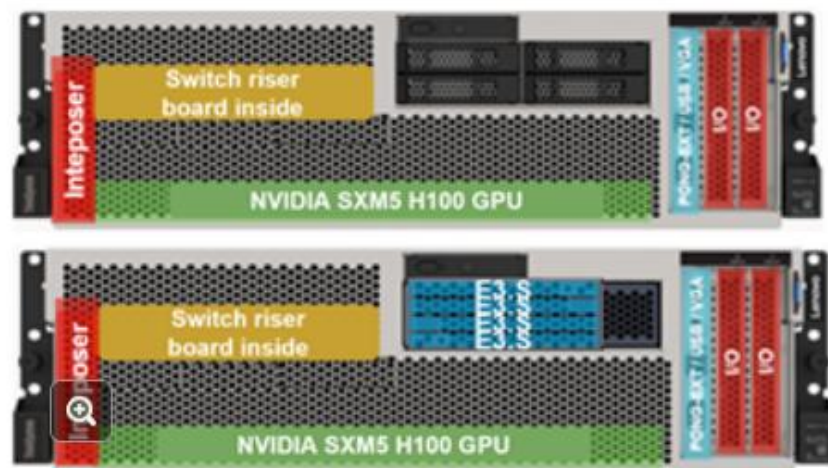
- Two AMD EPYC 9004 or 9005 Series CPUs
- PCIe 5.0 support
- Two FHFL front I/Os (PCIe 5.0)
- Up to six E1.S 5.9 mm drive bays (PCIe 4.0)
- Up to four E3.S 1T (one thick) drive bays (PCIe 5.0)
- Up to four FHHL rear slots (PCIe 4.0/5.0)
- Up to 24 6000 MHz DDR5 DIMMs
- Up to **eight** DW GPUs
- Optional rear OCP adapter slot (PCIe 4.0)
- Common Lenovo ThinkSystem XClarity management tools

Note 1: 8-DW GPU models do not have a front KVM port, USB ports, or external LCD diagnostic handset port.

Note 2: 8-DW GPU models do not support a one-CPU configuration.

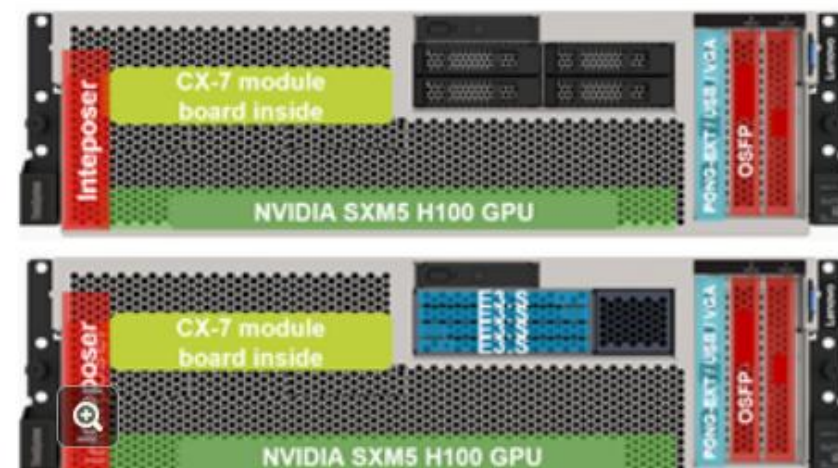
ThinkSystem SR675 V3 with NVIDIA SXM5 GPU

SXM5 with PCIe switch board



- One or two AMD EPYC 9004 or 9005 Series CPUs
- **PCIe 5.0 switch board for SXM GPU internal PCIe lane connections**
- Two FHHL front I/O adapters (PCIe 5.0)
- Up to four 2.5-inch NVMe drive bays (PCIe 4.0)
- Up to four E3.S drive bays (PCIe 5.0)
- Four FHHL rear slots (PCIe 5.0)
- Up to 24 6000 MHz DDR5 DIMMs
- Optional rear OCP adapter slot (PCIe 4.0)
- Optional external LCD diagnostic handset
- NVIDIA HGX H100 or H200 4-GPU (SXM form-factor) with NVLink technology
- Common Lenovo ThinkSystem XClarity management tools

SXM5 with CX-7 module board



- One or two AMD EPYC 9004 or 9005 Series CPUs
- **NVIDIA ConnectX-7 (CX7) module board for SXM GPU internal PCIe lane connections**
- Two OSFP front connectors
- Up to four 2.5-inch NVMe drive bays (PCIe 4.0)
- Up to four E3.S drive bays (PCIe 5.0)
- Three FHHL rear slots (PCIe 4.0/5.0)
- Up to 24 6000 MHz DDR5 DIMMs
- Optional rear OCP adapter slot (PCIe 4.0)
- Optional external LCD diagnostic handset
- NVIDIA HGX H100 or H200 4-GPU (SXM form-factor) with NVLink technology
- Common Lenovo ThinkSystem XClarity management tools

SR670 V2 and SR675 V3 specification comparison

	SR670 V2	SR675 V3
CPU	Two 3 rd Generation Intel Xeon Scalable processors	One or two AMD EPYC 9004 or 9005 Series processors
DIMM	32 DDR4 DIMM slots	24 DDR5 DIMM slots
Internal storage	<ul style="list-style-type: none"> • 2.5-inch drives • 3.5-inch drives • E1.S 5.9 mm drives • PCIe flash storage adapter • Intel PMem 	<ul style="list-style-type: none"> • 2.5-inch drives • E1.S 5.9 mm drives • E3.S 1T drives
Network	<ul style="list-style-type: none"> • 1 GbE management network port • Optional rear OCP adapter slot 	<ul style="list-style-type: none"> • 1 GbE management network port • Optional rear OCP adapter slot
PCIe devices	• Up to eight DW GPUs or four NVIDIA A100 SXM GPUs	• Up to eight DW GPUs or NVIDIA H100 / H200 SXM GPUs
PSU	Up to four PSUs (1800 W or 2400 W)	Up to four PSUs (1800 W, 2400 W, or 2600 W)
BMC	XClarity Controller (XCC)	XClarity Controller 2 (XCC2)
Others	3U rack <ul style="list-style-type: none"> • Traditional system board • TPM module 	3U rack with new ThinkSystem V3 system board assembly design: <ul style="list-style-type: none"> • Firmware and security Root of Trust module • System I/O board • Processor board

Chassis front views

Click the buttons to see front views of the SR675 V3 chassis.

4-DW GPU models



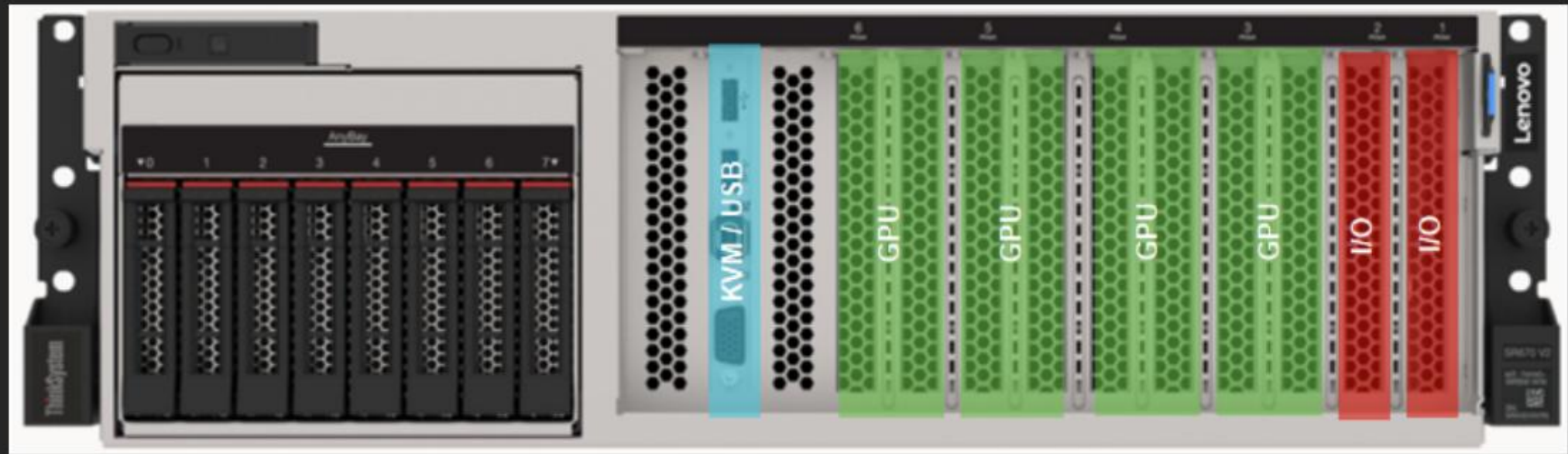
8-DW GPU models



SXM5 GPU models

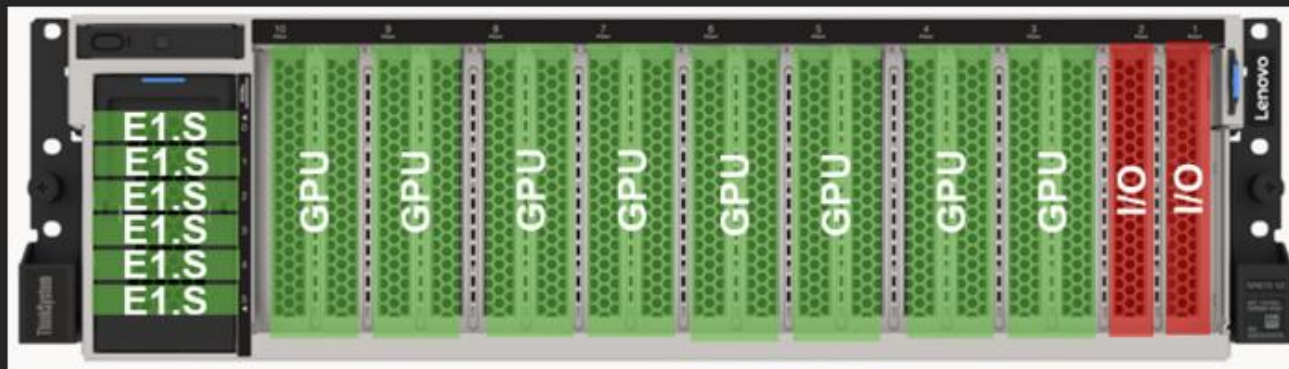


SR675 V3 4-DW GPU models

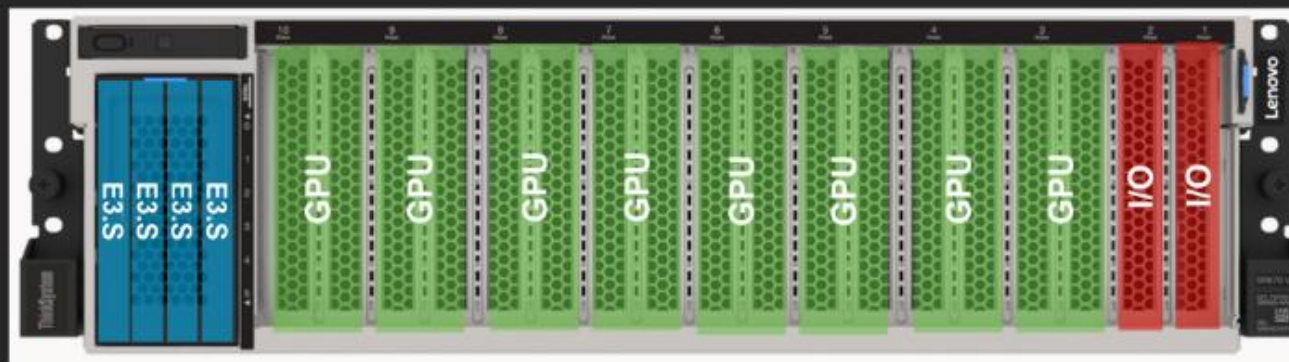


With eight 2.5-inch hot-swap drives

SR675 V3 8-DW GPU models



With six E1.S hot-swap drives

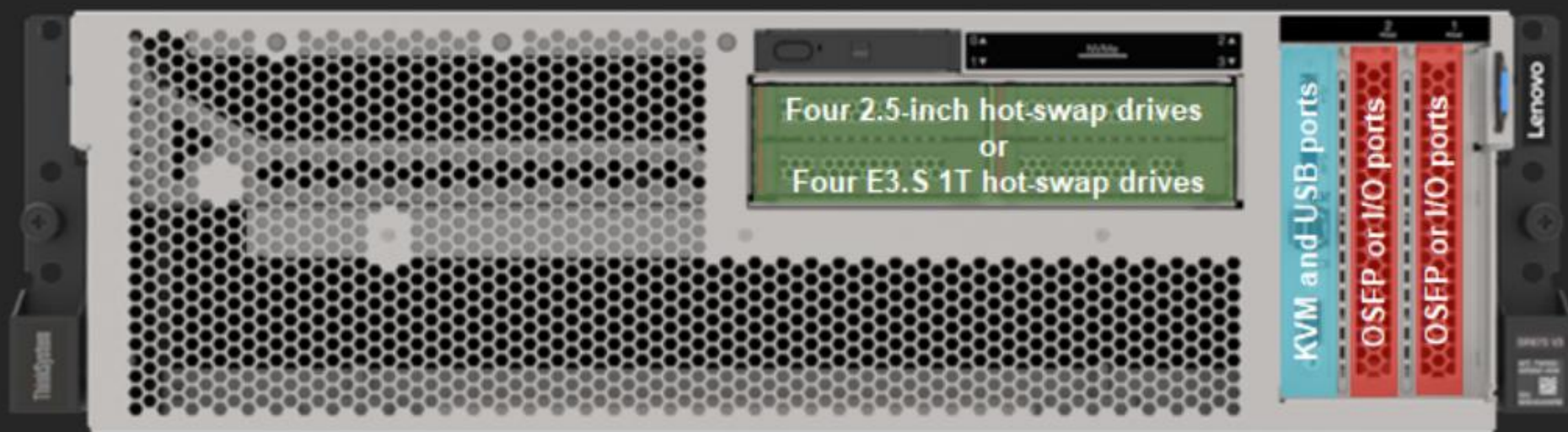


With four E3.S 1T hot-swap drives

Note: The 8-DW GPU models do not support a front KVM port or USB ports.



SR675 V3 SXM5 GPU models



SR675 V3 chassis design

The SR675 V3 chassis includes a front-end chassis and rear chassis.

The front-end chassis contains the GPUs, interposer board, and drives.

The rear chassis contains the system fans, processor board, modular BMC board (system I/O board and Root of Trust security module (RoT module)), CPUs, DIMMs, and PSUs.

Click the buttons to see schematic diagrams of the SR675 V3 chassis.

4-DW GPU models



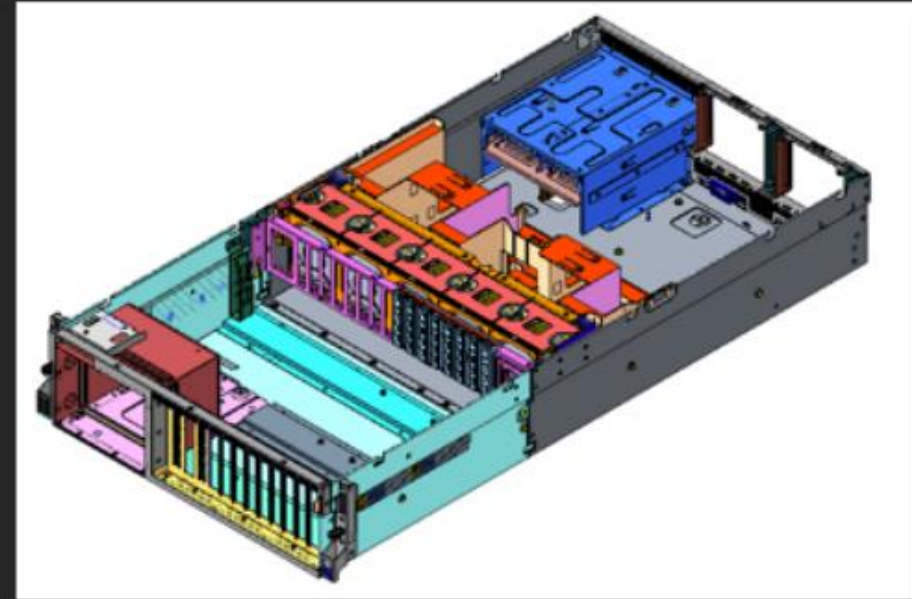
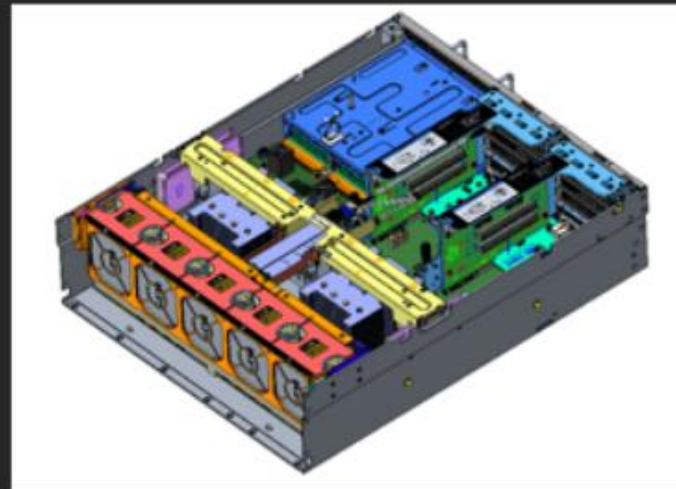
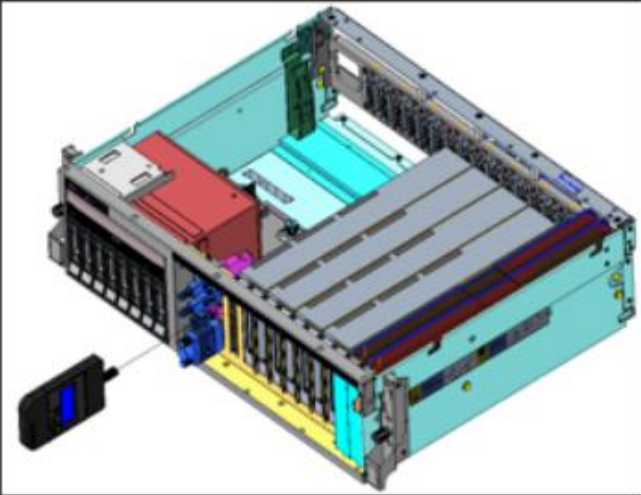
8-DW GPU models



SXM5 GPU models



SR675 V3 4-DW GPU models

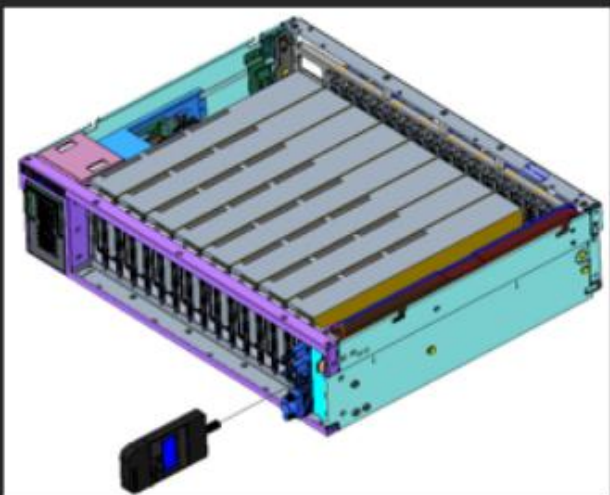


Front-end 4-DW GPU chassis

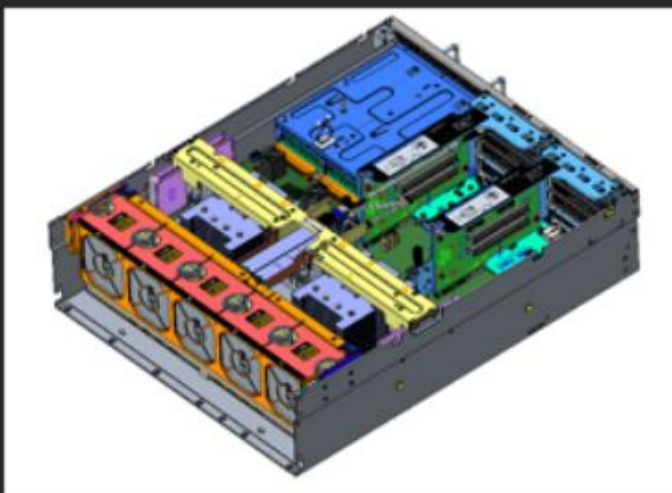
Common rear chassis

Note: These pictures are schematic diagrams. In the field, you will not need to assemble or disassemble the front-end chassis and rear chassis.

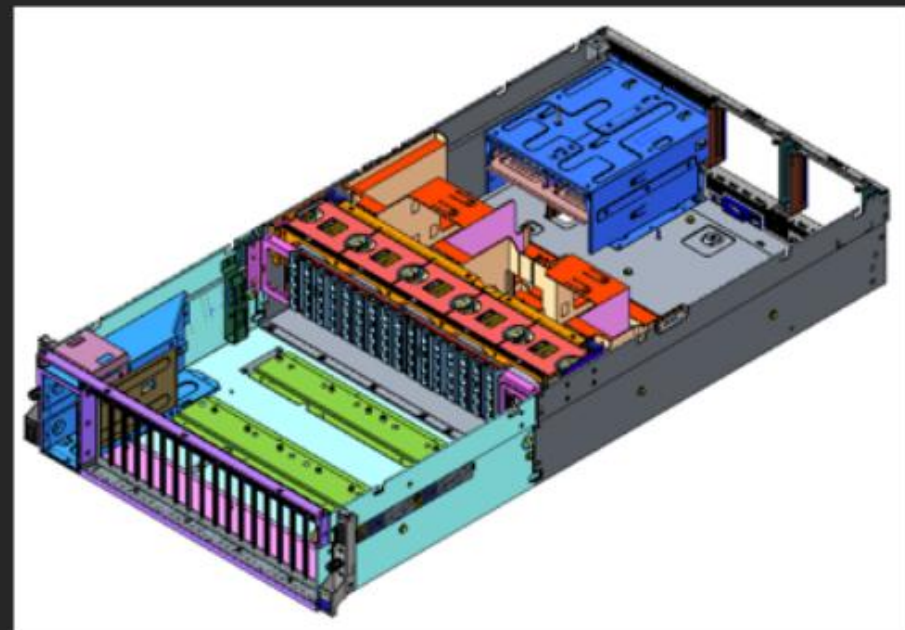
SR675 V3 8-DW GPU models



Front-end 8-DW GPU chassis

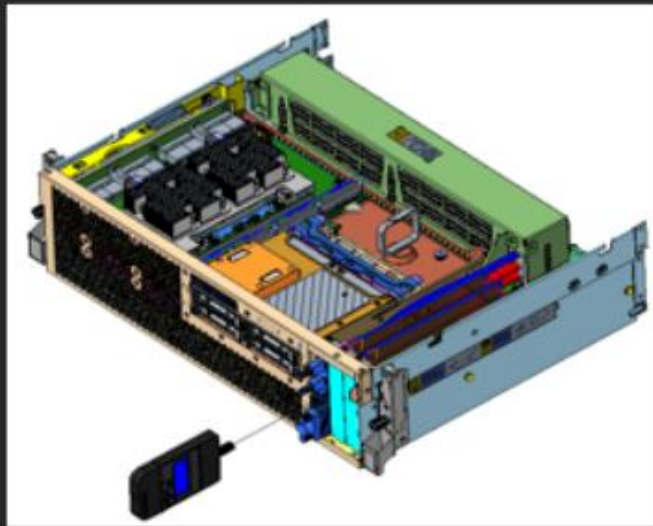


Common rear chassis

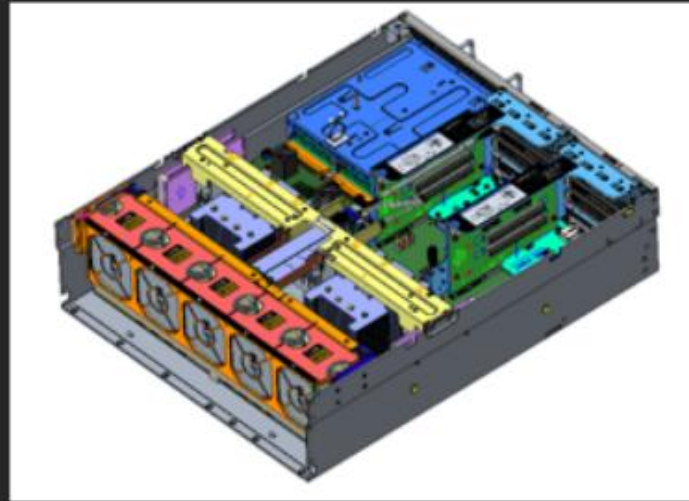


Note: These pictures are schematic diagrams. In the field, you will not need to assemble or disassemble the front-end chassis and rear chassis.

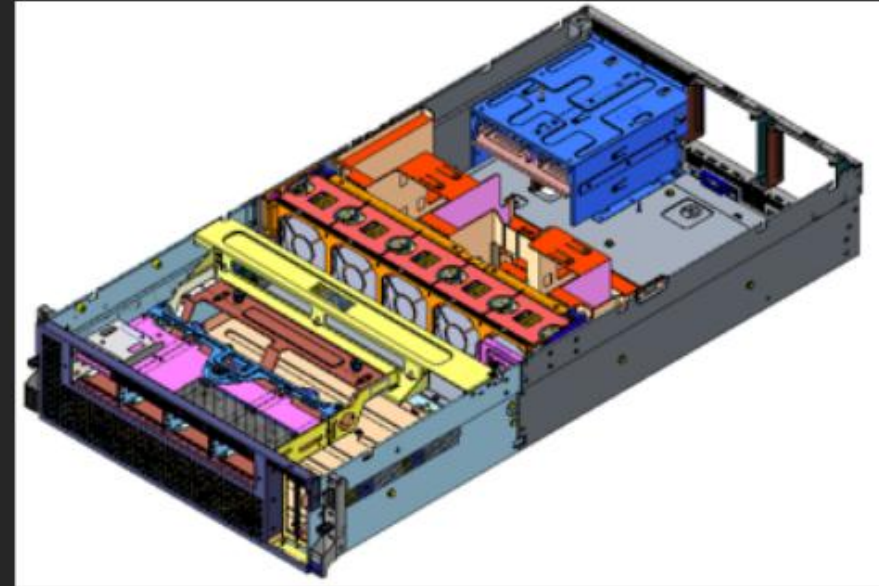
SR675 V3 SXM5 GPU models



Front-end SXM5 GPU chassis



Common rear chassis



Note: These pictures are schematic diagrams. In the field, you will not need to assemble or disassemble the front-end chassis and rear chassis.

Top view

Click the buttons to see top views of the SR675 V3.

4-DW GPU models



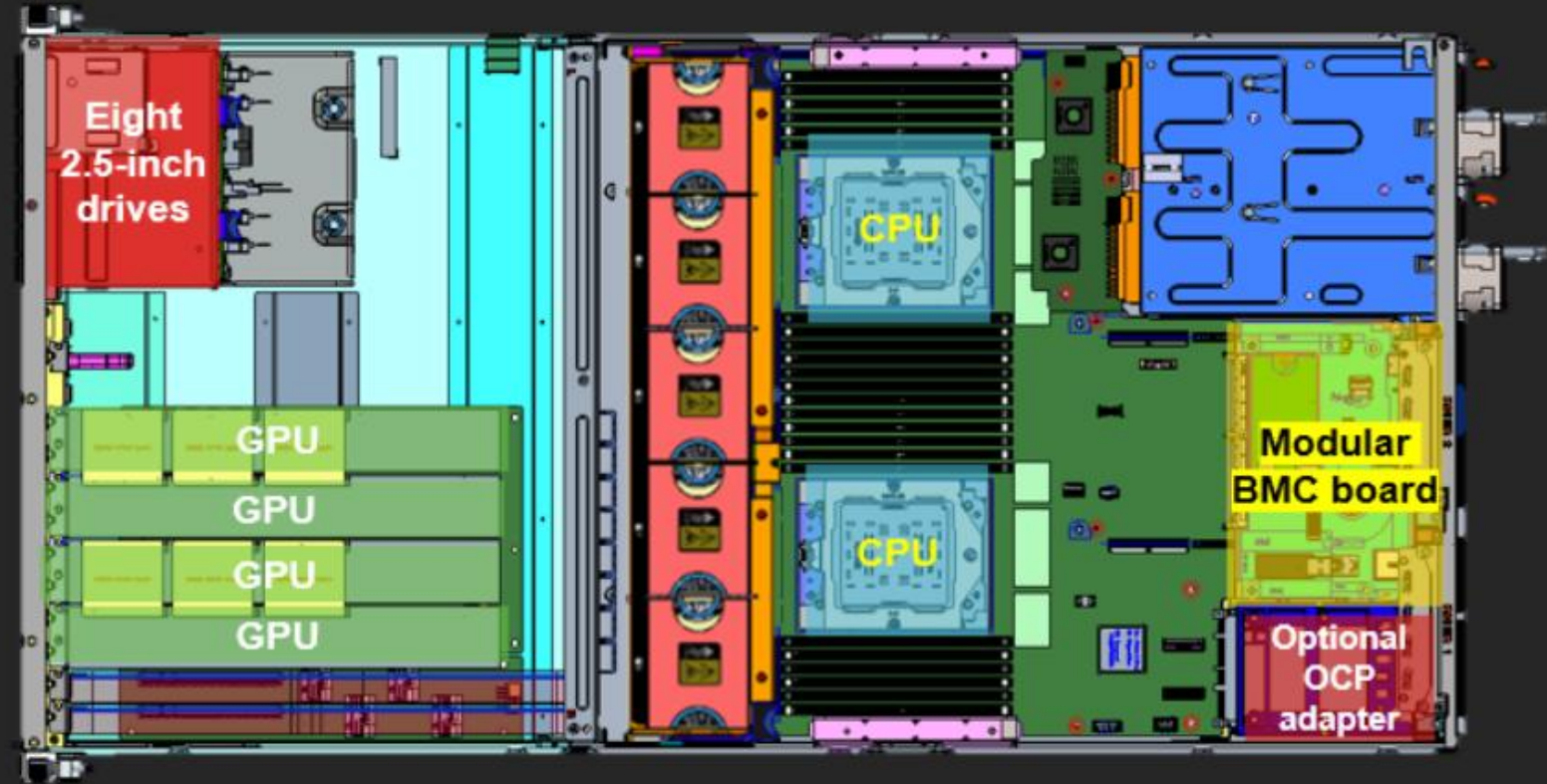
8-DW GPU models



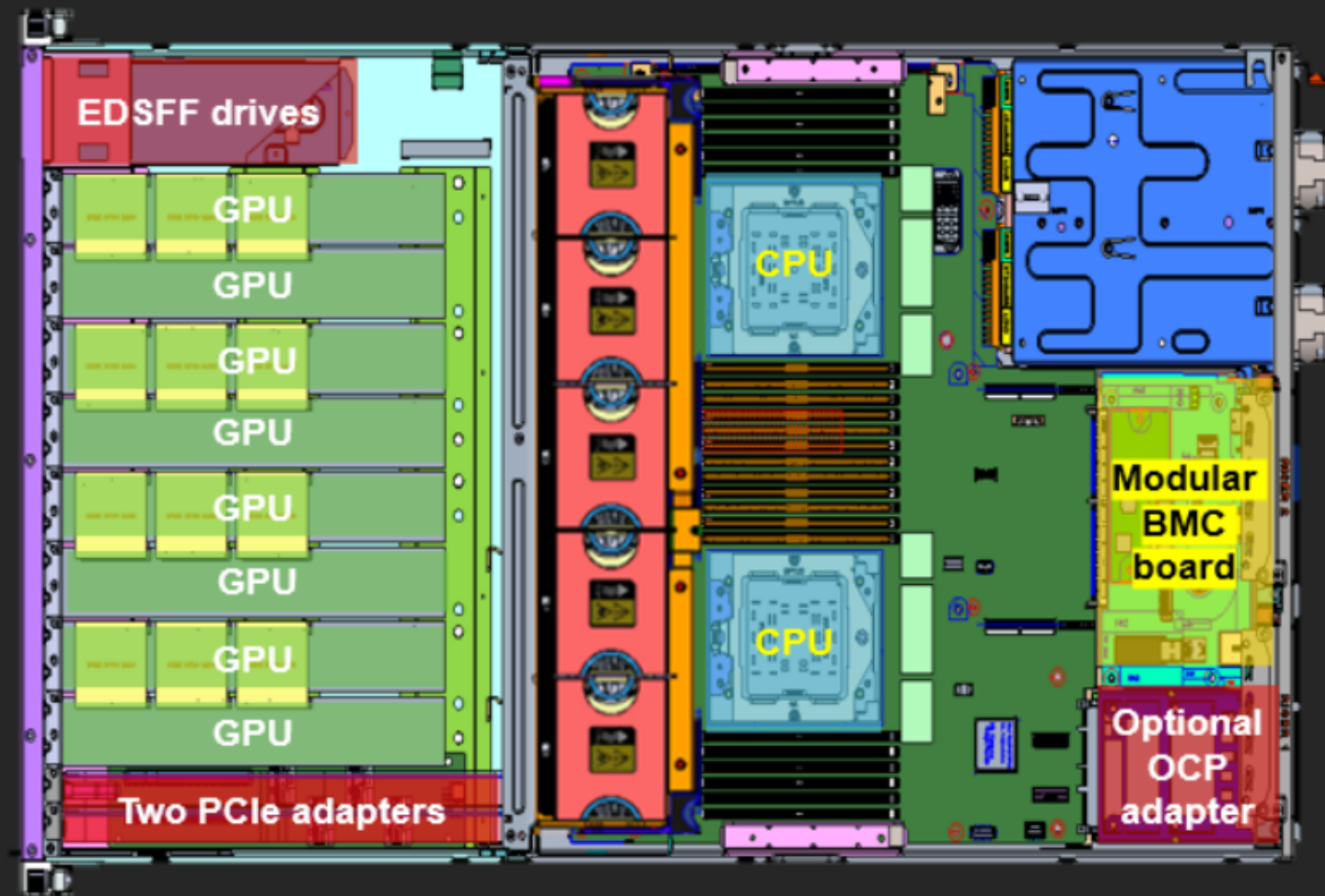
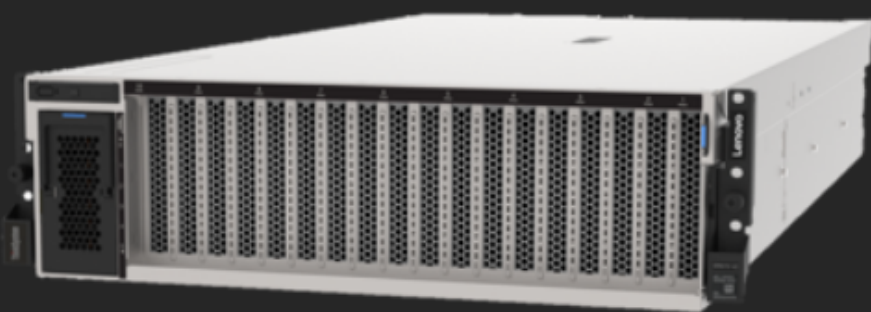
SXM5 GPU models



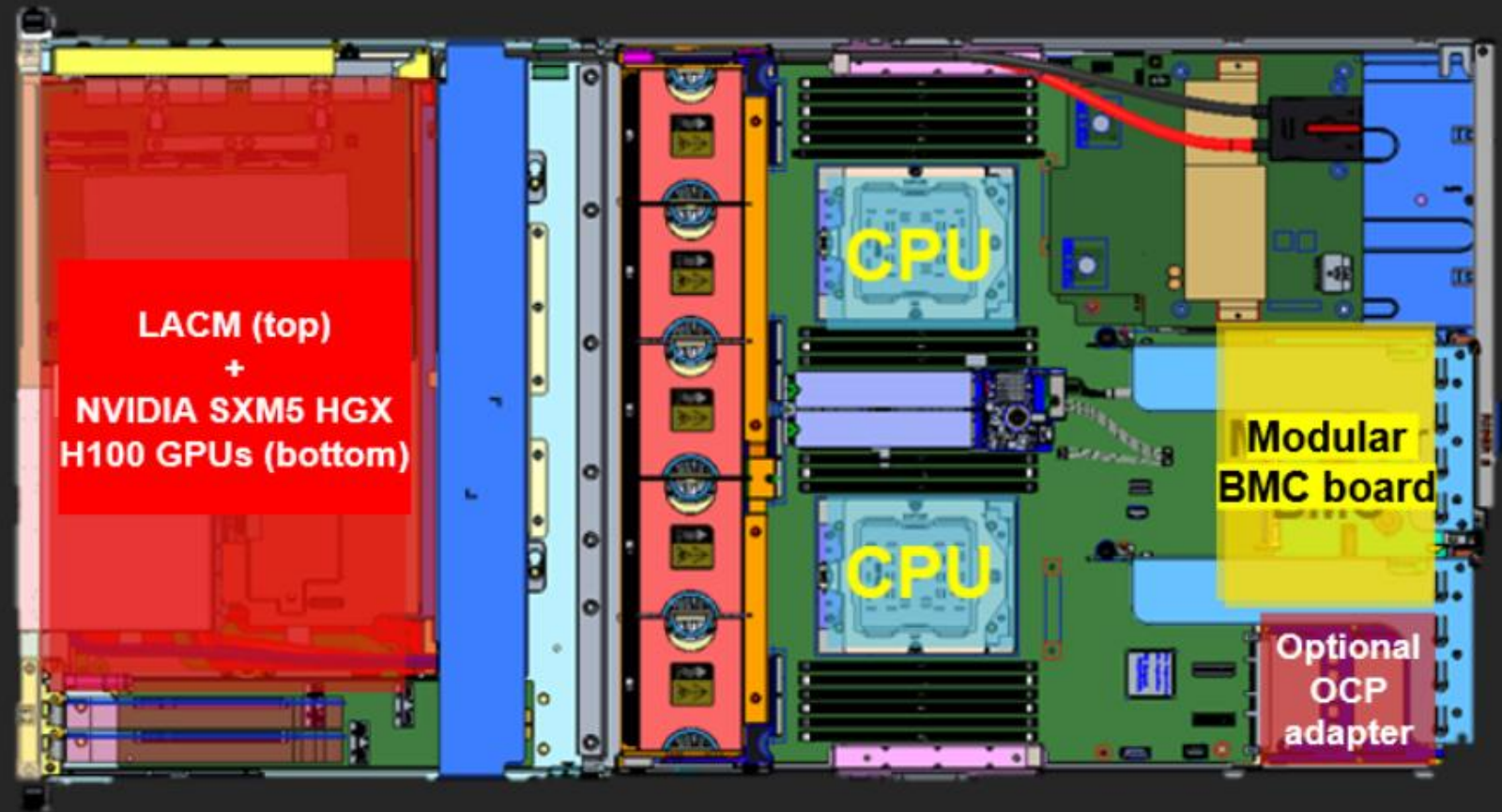
SR675 V3 4-DW GPU models



SR675 V3 8-DW GPU models



SR675 V3 SXM5 GPU models



Inside exploded view

Click the buttons to see inside exploded views of the SR675 V3.

4-DW GPU models



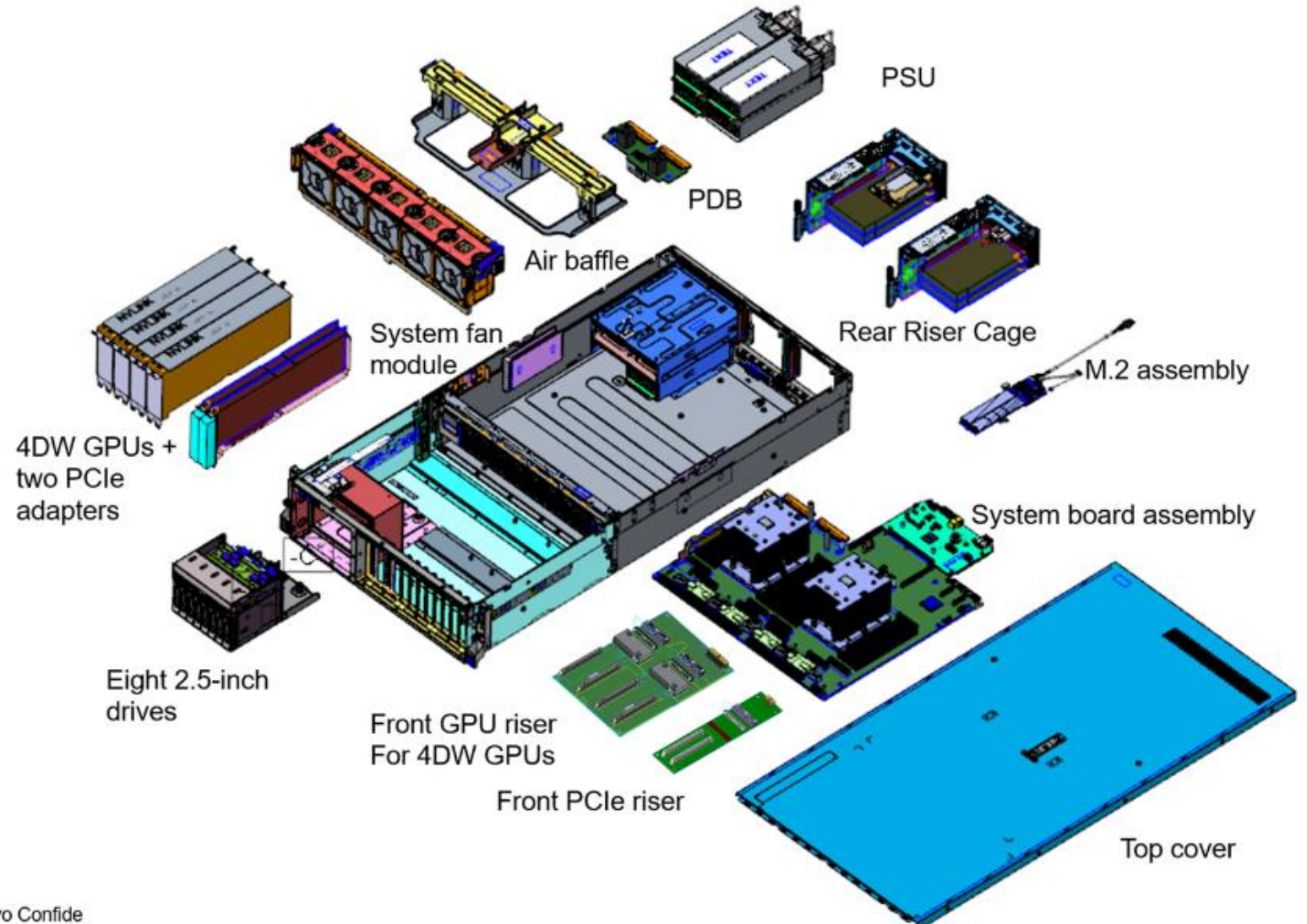
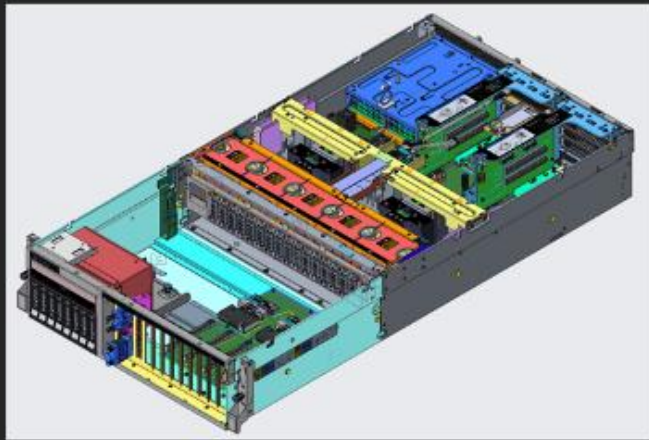
8-DW GPU models



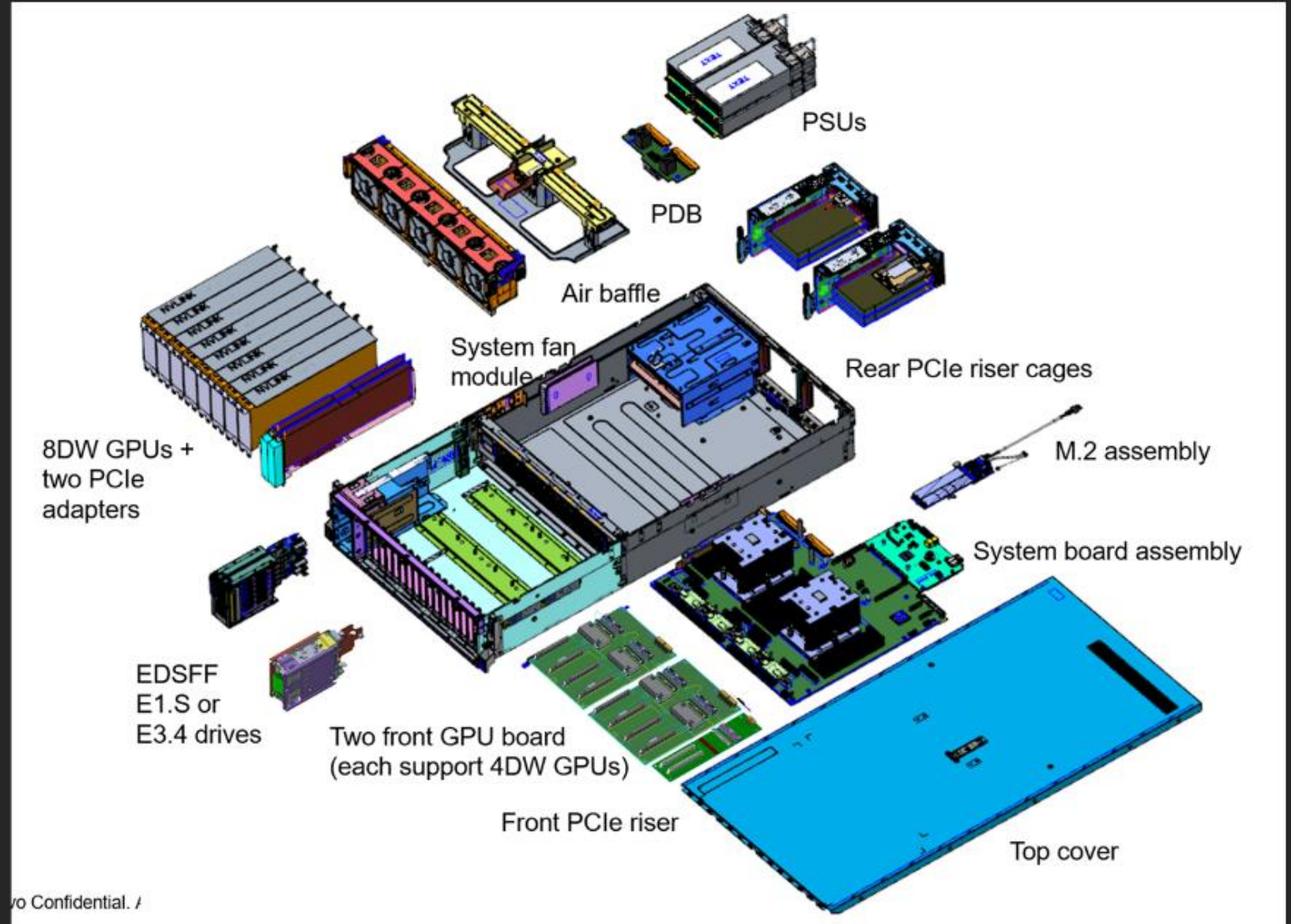
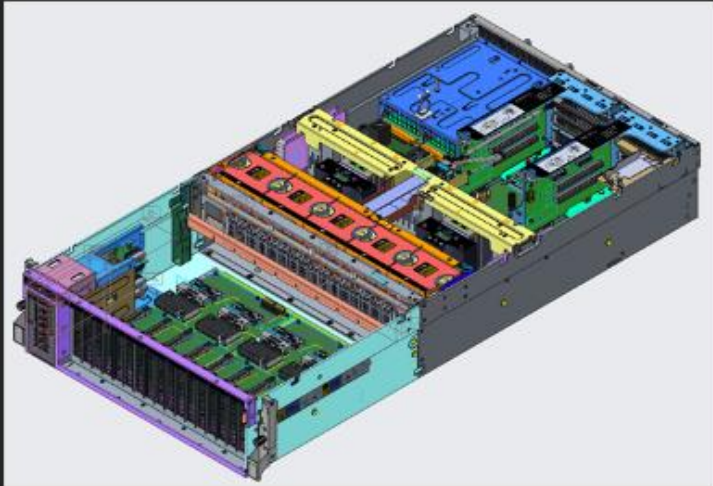
SXM5 GPU models



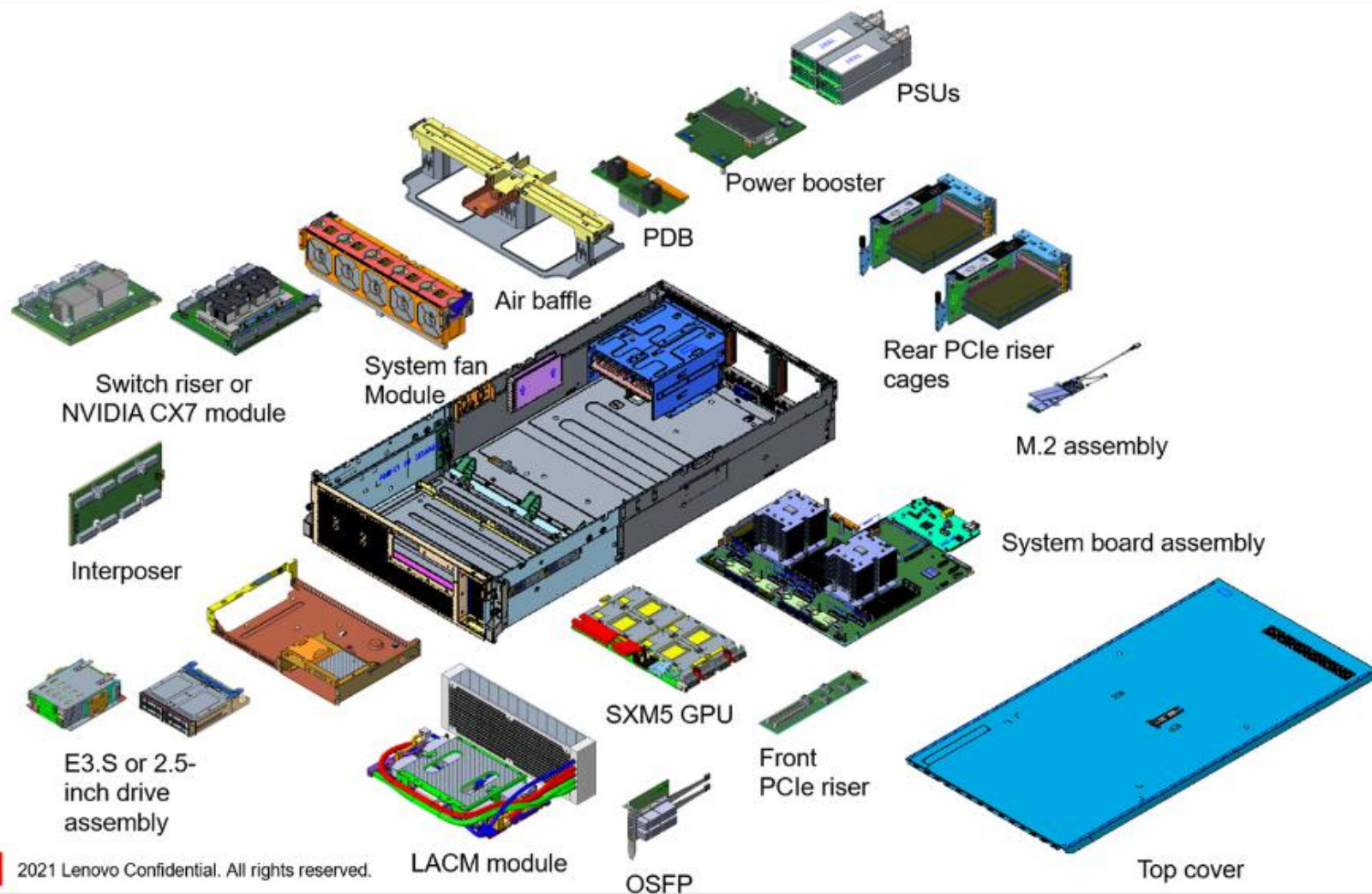
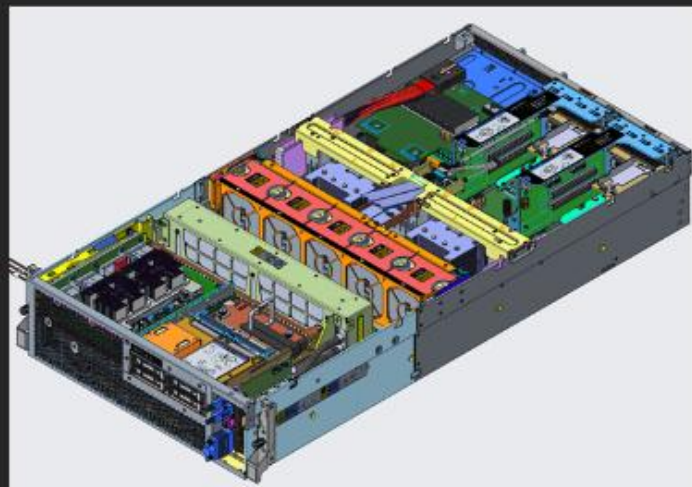
SR675 V3 4-DW GPU models



SR675 V3 8-DW GPU models



SR675 V3 SXM5 GPU models



Rear view

