Servicing the ThinkSystem SR645

ES72021

June 2020

Prerequisites

- ES41999 – ThinkSystem servers architecture – AMD EPYC processor models
  https://lenovoedu.lenovo.com/course/view.php?idnumber=ES41999
- ES51780B – Servicing the Lenovo ThinkSystem storage controllers
  https://lenovoedu.lenovo.com/course/view.php?idnumber=ES51780B
- ES51757 – Introducing ThinkSystem tools
  https://lenovoedu.lenovo.com/course/view.php?idnumber=ES51757
- ES41759 – ThinkSystem problem determination
  https://lenovoedu.lenovo.com/course/view.php?idnumber=ES41759

Objectives

After completing the course, you will be able to:

- Describe the Lenovo ThinkSystem SR645 server and components
- List the SR645 server specifications
- Describe the SR645 server configurations and diagrams
- Describe the SR645 server management tools
- Describe the problem determination steps and explain how to troubleshoot issues with the SR645

Product overview

Product description and front, rear, and inside views

ThinkSystem SR645 product overview

The Lenovo ThinkSystem SR645 is a 1U 2-socket rack server that features the next-generation AMD EPYC 7002 Series processors (code name: Rome). The SR645 supports various drive and PCIe slot configurations, and it is ideal for I/O-intensive workloads, including database, analytics, virtualized environment, and hybrid cloud applications.
The SR645 has two machine types: the 7D2X (3-year warranty) and the 7D2Y (1-year warranty).

SR645 specifications

Attribute	Specifications
Form factor	1U rack mount
Processor	Two AMD EPYC 7002 Series processors, scalable to 64 cores
Memory	32 DIMM slots, supports up to 2 TB 3200 TruDDR4 RDIMMs
M.2 drives	One side-by-side M.2 adapter, supports up to 480 GB SATA M.2 drives
Drive bays	• Front: Up to ten 2.5-inch or four 3.5-inch SAS/SATA/NVMe drive bays • Rear: Two 2.5-inch SAS/SATA or NVMe drive bays, or two 7 mm SATA or NVMe boot drive bays
Network interface	OCP 3.0
I/O expansion slots	• Up to eight rear PCIe slots: three PCIe risers • One OCP network adapter slot • Up to three single-wide GPU adapters
Cooling	Up to eight hot-swap system fans (N+2 redundancy)
Power supplies	Up to two hot-swap power supplies

Note: For the latest specifications, refer to the following Lenovo Press product guide:
https://lenovopress.com/lp1280-thinksystem-sr645-server

SR645 front views

Click the pictures to see more information.

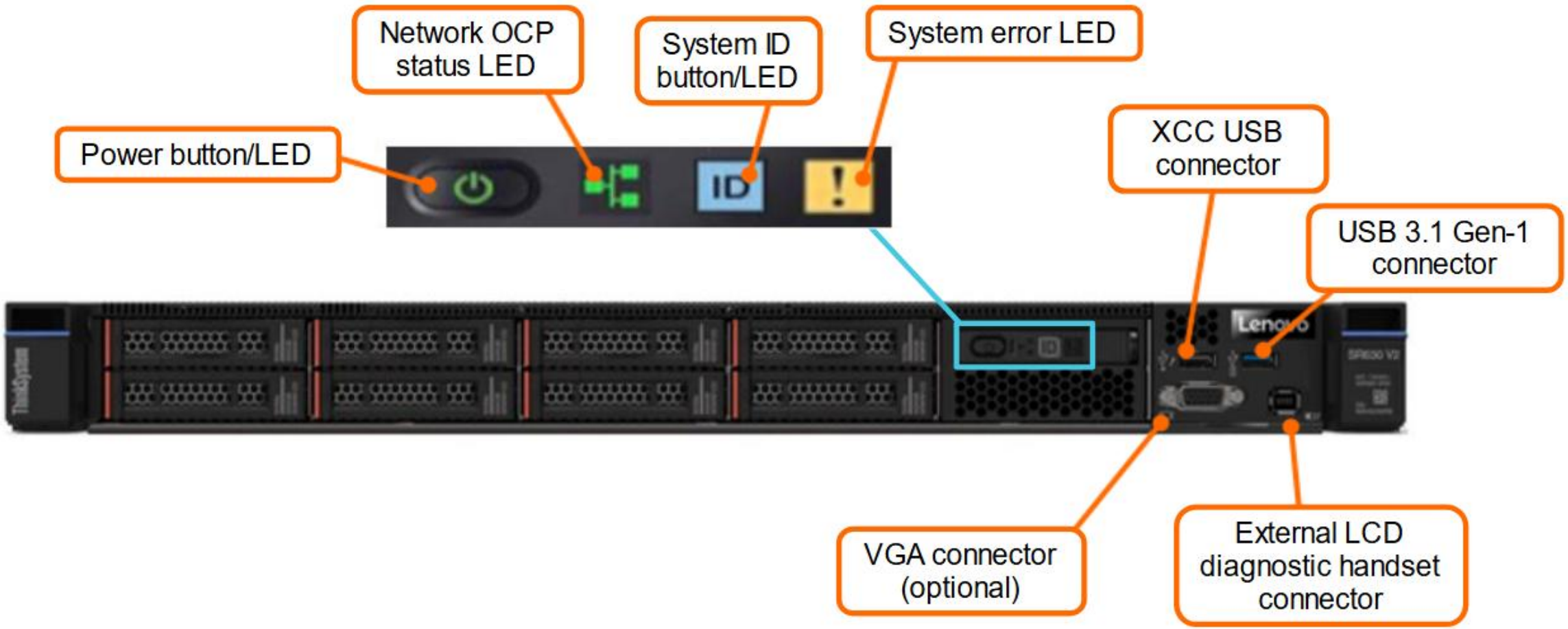
Eight 2.5-inch drives configuration

Ten 2.5-inch drives configuration

Four 3.5-inch drives configuration

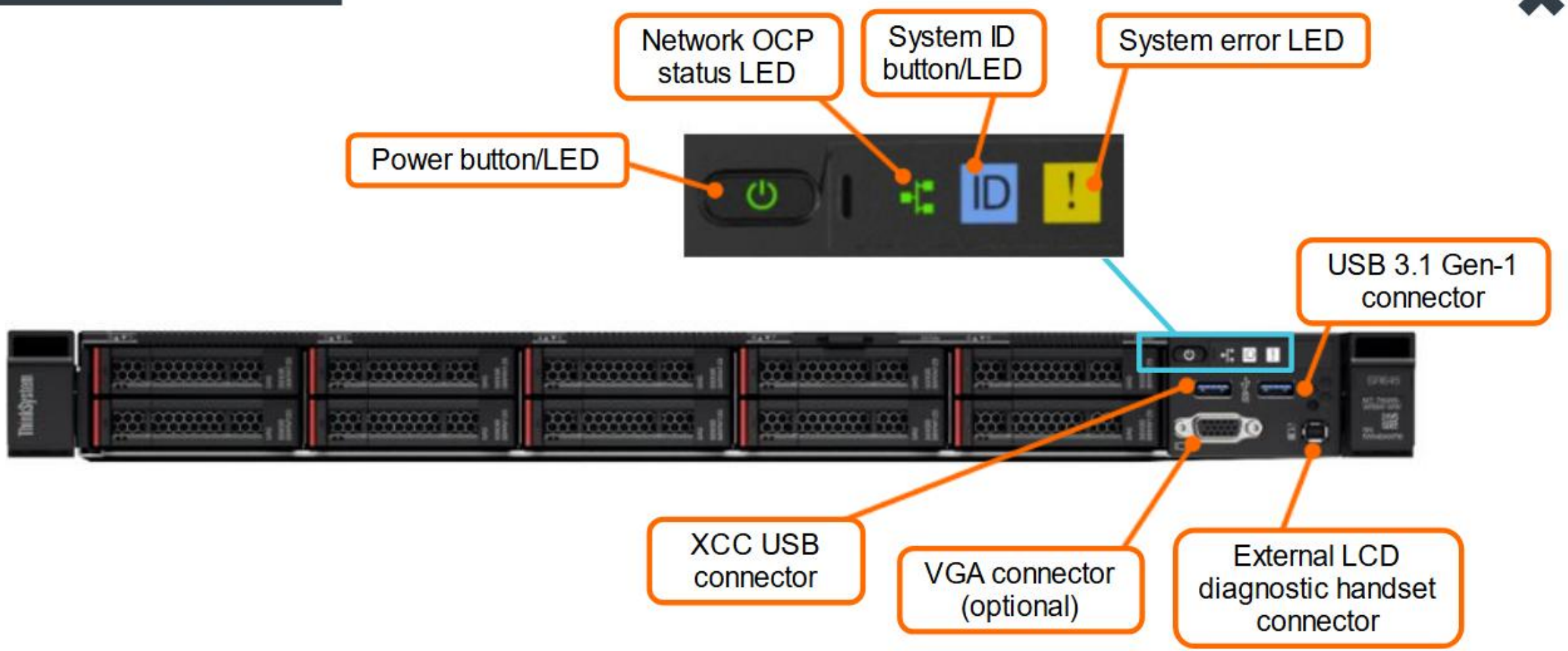
SR645 front views

Eight 2.5-inch drives configuration



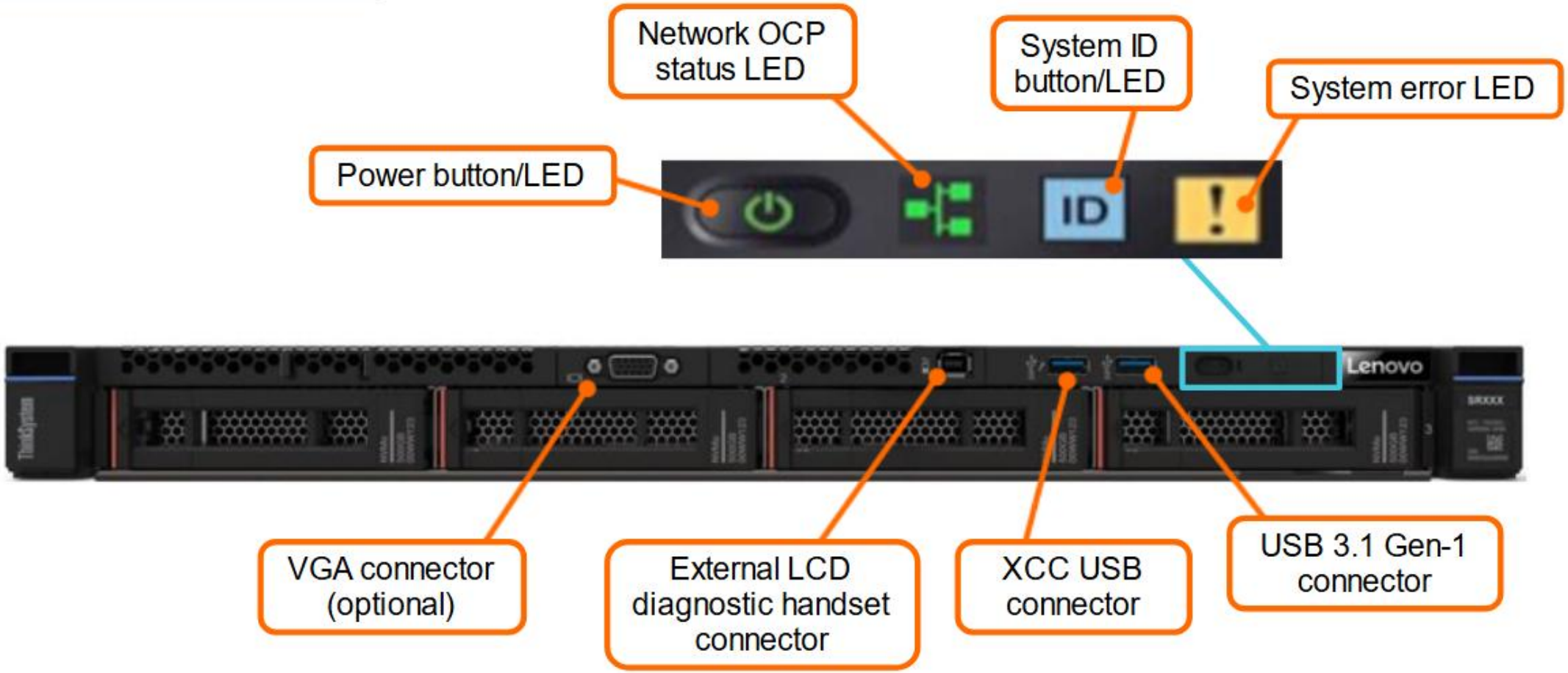
SR645 front views

Ten 2.5-inch drives configuration



SR645 front views

Four 3.5-inch drives configuration



SR645 rear views

Click each number in turn to see the different SR645 rear configurations.

1 2 3 4 5

Lenovo

SR645 rear views

Three PCIe x16 slots, low-profile configuration

1 2 3 4 5

SR645 rear views

One PCIe slot and two 2.5-inch SAS/SATA drive bays

- PCIe slot 1: PCIe x16, low-profile
- At present, the rear drive kit does not support NVMe drives

1 2 3 4 5

SR645 rear views

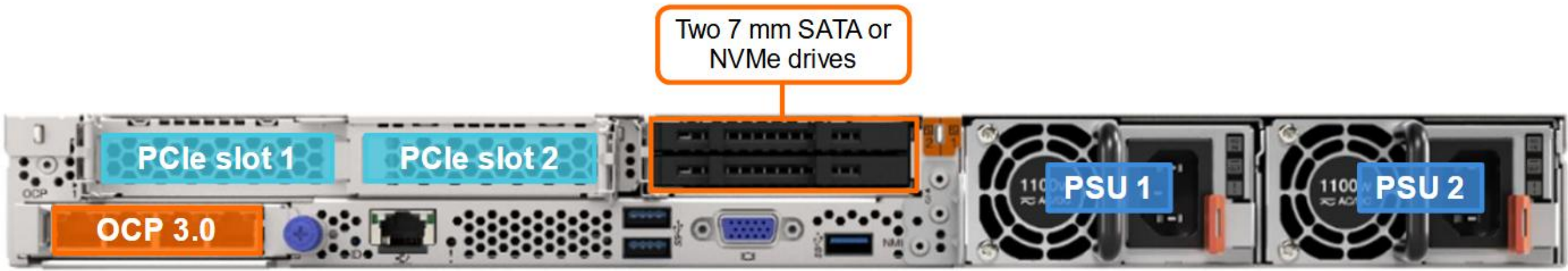
Two PCIe slots:

- PCIe slot 1: PCIe x16, low-profile
- PCIe slot 2: PCIe x16, full-height

1 2 3 4 5

SR645 rear views

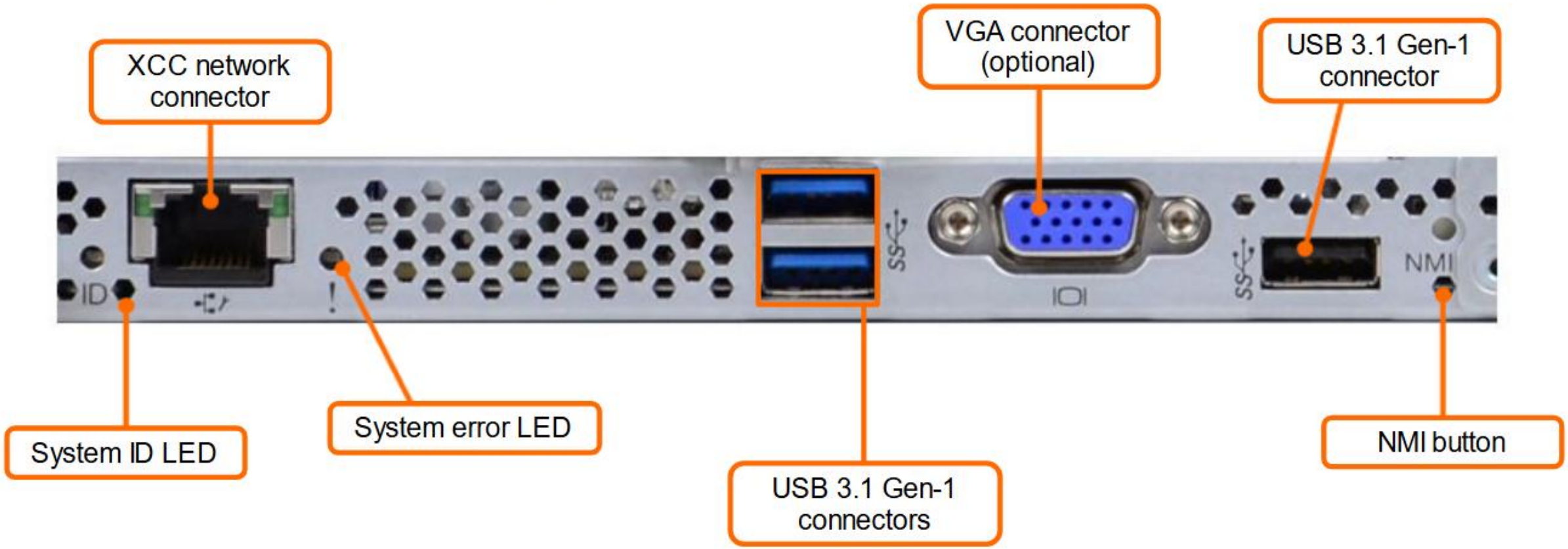
Two PCIe slots and two 7 mm hot-swap drive bays
- PCIe slot 1: PCIe x16, low-profile
- PCIe slot 2: PCIe x16, low-profile
- PCIe slot 3: Two 7 mm hot-swap SATA or NVMe drive bays



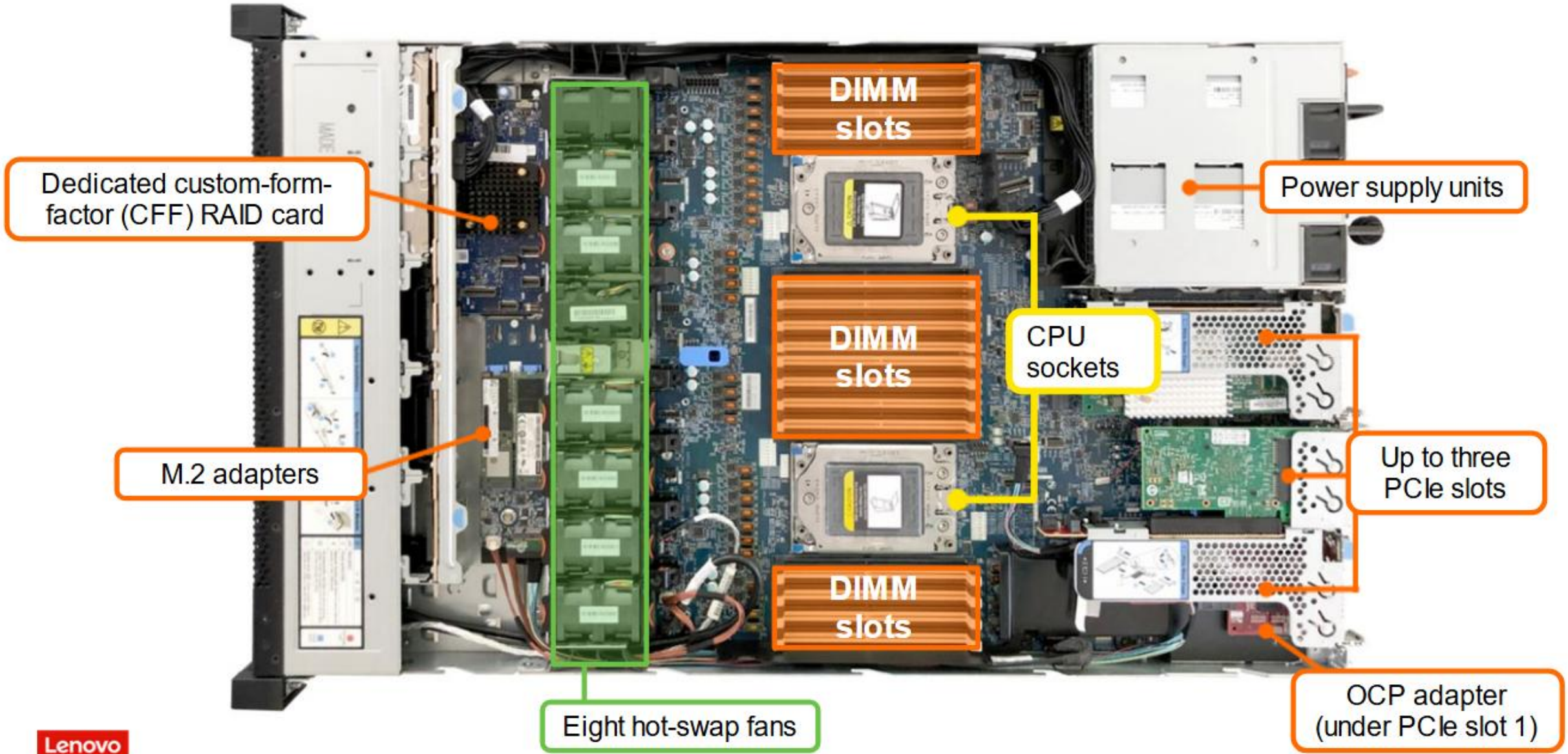
Note: The 7 mm drives work as an alternative boot drives solution and support RAID 0/1 configurations.

SR645 rear views

The rear I/O connectors on the system board



SR645 internal view



LCD diagnostic panel/handset

The SR645 supports the optional integrated LCD diagnostic panel and external LCD diagnostic handset. The panel can be used to quickly access system information, such as active errors, system health status, firmware version, network connection status, and health information. A demo video is available on the course landing page.

Integrated LCD diagnostic panel

External LCD diagnostic handset