SD530 V3 product overview

Product description and front, rear, and inside views

Product overview

The ThinkSystem SD530 V3 is a 1U two-socket node server that can be installed in the 2U rack-mounted D3 chassis. The SD530 V3 supports up to two 5th Generation Intel Xeon Scalable processors (Intel code name: Emerald Rapids), 16 DDR5 DIMMs, and two E3.S drives.

There are two SD530 V3 machine types:
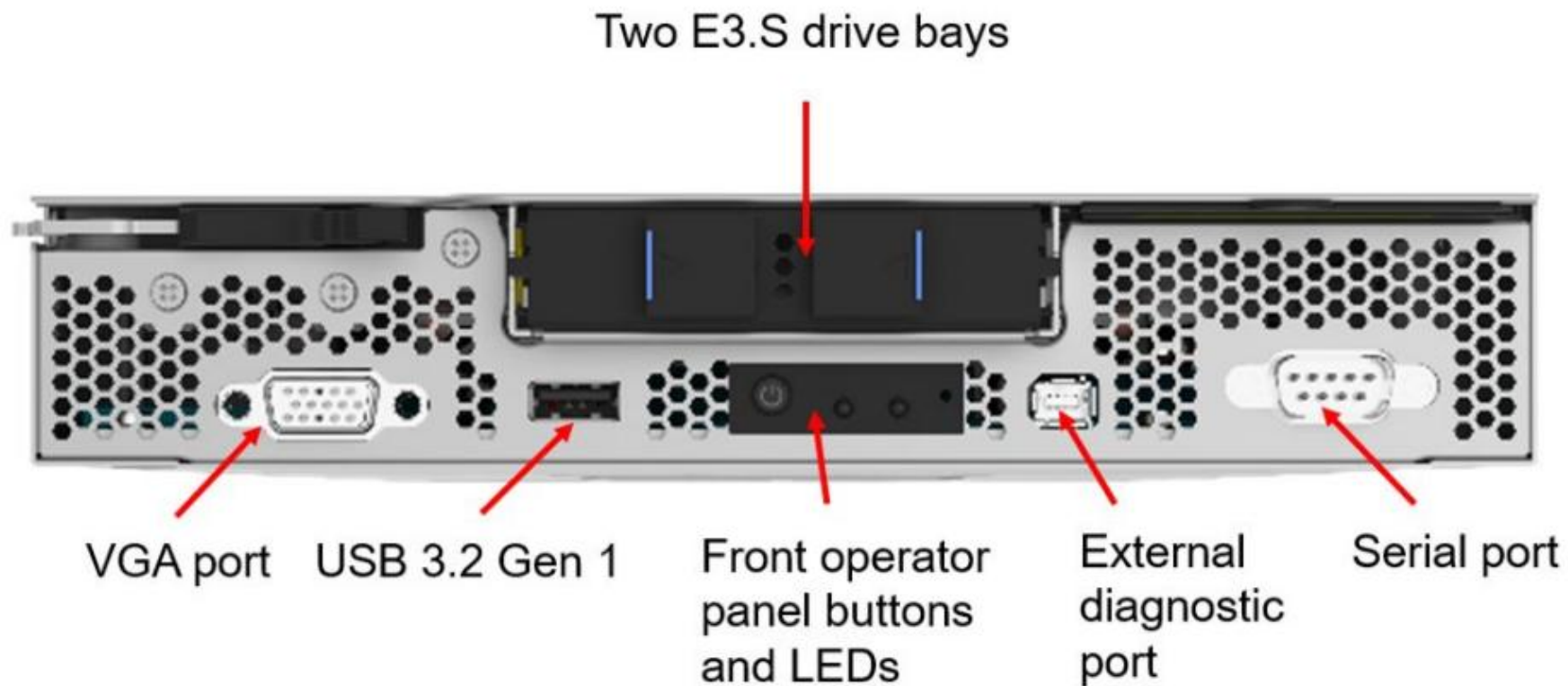• 7DD3: (three-year warranty)
• 7DDA: (one-year warranty)

Lenovo

System specifications

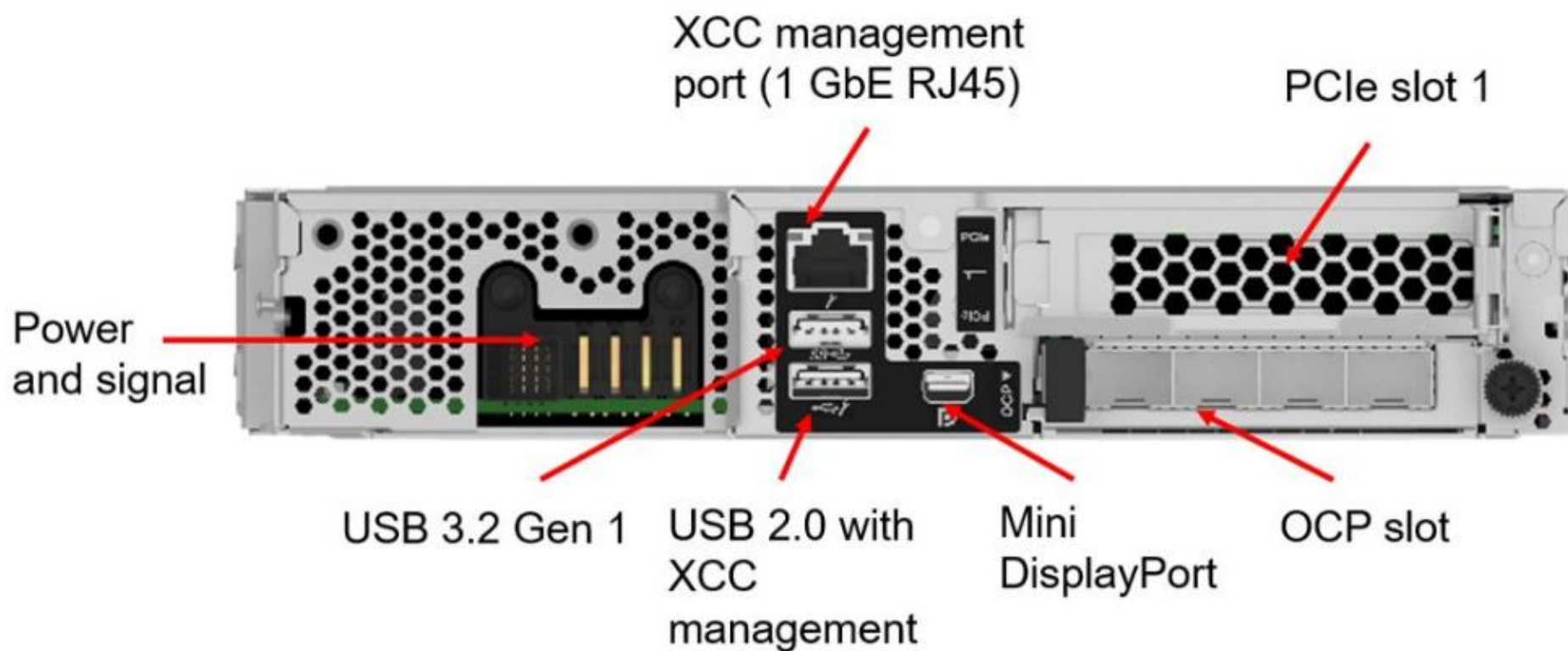| Components	Specification
Machine type	7DD3, 7DDA
Form factor	Half-width, 1U compute node.
Support chassis	2U D3 chassis – up to four SD530 V3 servers per chassis
Processor	One or two 5th Generation Intel Xeon Scalable processors (code name: Emerald Rapids) With one processor installed – support for processors with up to 64 cores, core speeds of up to 3.9 GHz, and TDP ratings of up to 350 W With two processors installed – support for processors with up to 32 cores, core speeds of up to 3.9 GHz, and TDP ratings of up to 205 W
Chipset	Intel C741 "Emmitsburg" chipset
Memory	16 DIMM slots with two processors (eight DIMM slots per processor) per node Each processor has eight memory channels, with one DIMM per channel (DPC) Lenovo TruDDR5 RDIMMs, 3DS RDIMMs, 9x4 and 10x4 RDIMMs are supported – up to 5600 MHz
Memory maximum	Up to 1 TB per node (using either eight 128 GB 3DS RDIMMs or sixteen 64 GB 3DS RDIMMs)
Disk drive bays	• Up to two hot-swap E3.S drives • Up to two SATA/NVMe M.2 drives on system board
Storage controller	• Support SW RAID (VROC) with both simple-swap and hot-swap configurations • Rear slot can be used for a RAID controller (ThinkSystem 440-16e SAS/SATA PCIe Gen4 12Gb HBA)
PCI expansion slots	One PCIe riser on the rear of the node: • One PCIe Gen 5 x16 HHHL slot can support a 75 W PCIe adaptera 75 W PCIe adapter

Lenovo

System specifications

Components	Specification
	Each processor has eight memory channels, with one DIMM per channel (DPC) Lenovo TruDDR5 RDIMMs, 3DS RDIMMs, 9x4 and 10x4 RDIMMs are supported – up to 5600 MHz
Memory maximum	Up to 1 TB per node (using either eight 128 GB 3DS RDIMMs or sixteen 64 GB 3DS RDIMMs)
Disk drive bays	• Up to two hot-swap E3.S drives • Up to two SATA/NVMe M.2 drives on system board
Storage controller	• Support SW RAID (VROC) with both simple-swap and hot-swap configurations • Rear slot can be used for a RAID controller (ThinkSystem 440-16e SAS/SATA PCIe Gen4 12Gb HBA)
PCI expansion slots	One PCIe riser on the rear of the node: • One PCIe Gen 5 x16 HHHL slot can support a 75 W PCIe adaptera 75 W PCIe adapter One OCP module slot
GPUs	Up to one low profile GPU adapter (75 W)
Network	One OCP 3.0 slot: PCIe Gen 5 x16, support for two or four connectors on the OCP 3.0 module connected to CPU 1
Front I/O	• 1x USB 3.2 Gen 1 port, 1x Serial port, 1x VGA Port, 1x External diagnostic port • FIO: Power button/LED, UID LED, Error LED, NMI button
Rear I/O	• 1x RJ-45 1GbE port (XCC management), 1x USB 3.2 Gen 1 port, 1x USB 2.0 port (XCC management), 1x Mini DisplayPort • A group of two or four Ethernet connectors on OCP Ethernet adapter
System fan	Four 4056 fans (40 x 40 x 56 mm)
Management / TPM	Lenovo xClarity Controller 2 (XCC2), TPM 2.0

Note: For more information about the latest specifications, refer to Lenovo Press.

Front view

Two E3.S drive bays

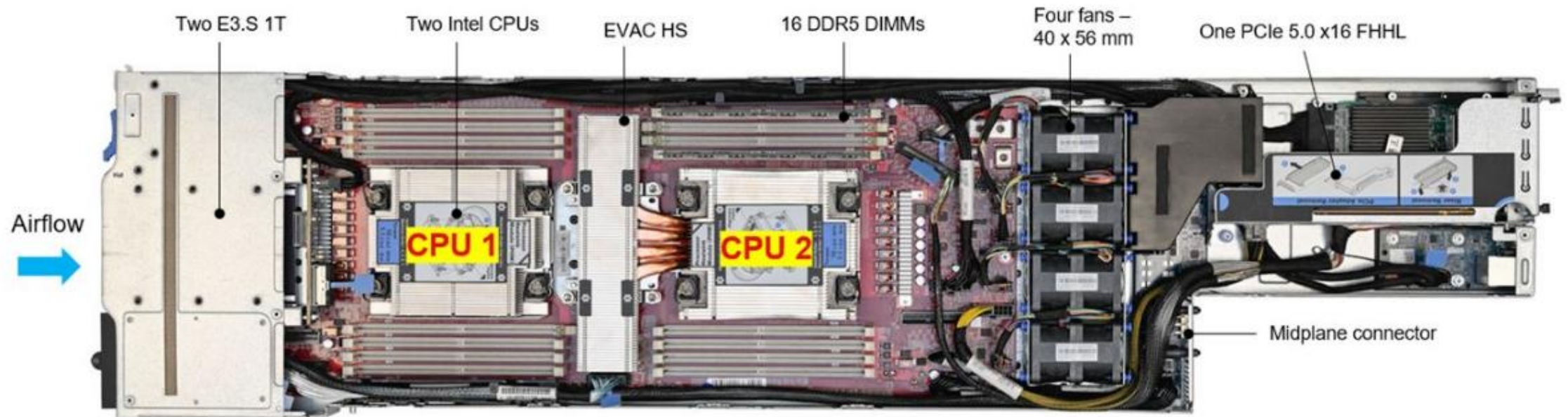VGA port   USB 3.2 Gen 1   Front operator panel buttons and LEDs   External diagnostic port   Serial port

Lenovo

Rear view

Depending on the specific configuration, some of the components or connectors might not be supported.

XCC management port (1 GbE RJ45)

PCIe slot 1

Power and signal
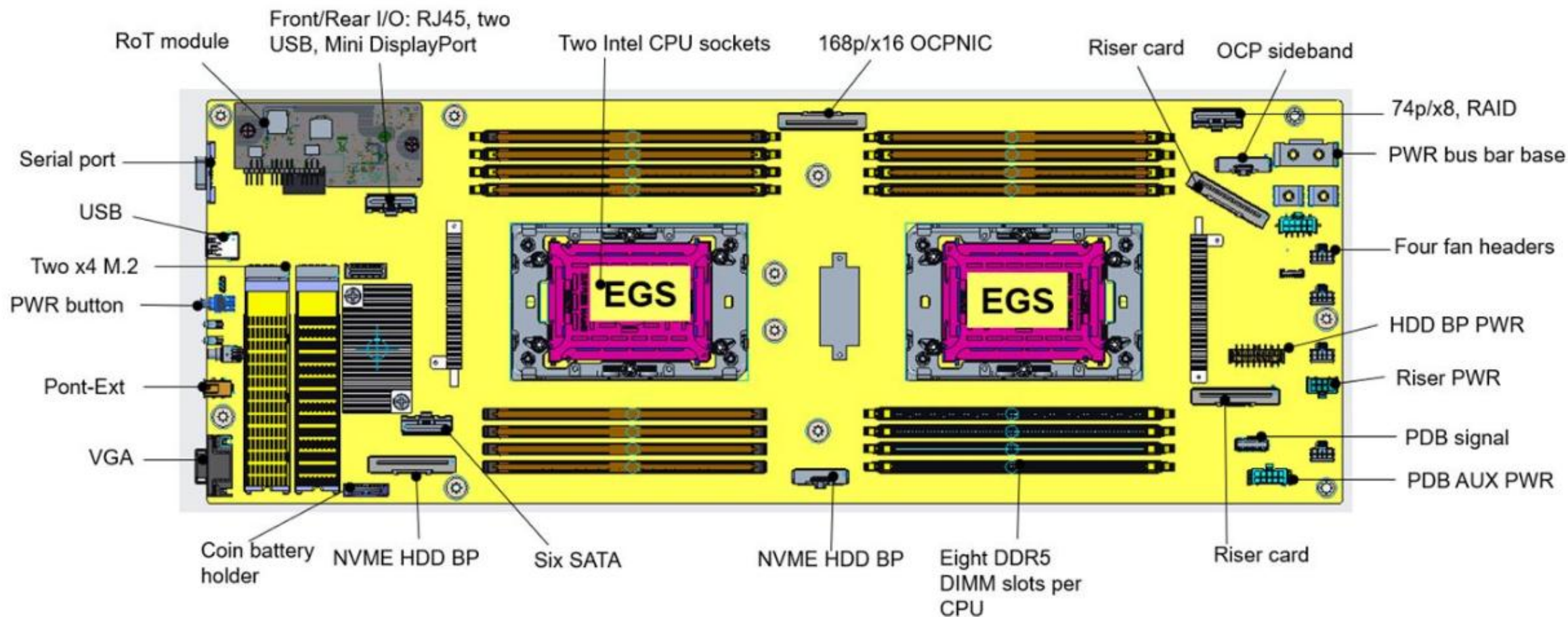
USB 3.2 Gen 1

USB 2.0 with XCC management

Mini DisplayPort

OCP slot

Top view

CPU1 and CPU2 support two types of heat sink. Refer to the Thermal limitations page for CPU heat sink solutions.

Two E3.S 1T   Two Intel CPUs   EVAC HS   16 DDR5 DIMMs   Four fans – 40 x 56 mm   One PCIe 5.0 x16 FHHL

Airflow

CPU 1   CPU 2

Midplane connector

Lenovo

System board connectors

RoT module

Front/Rear I/O: RJ45, two USB, Mini DisplayPort

Two Intel CPU sockets

168p/x16 OCPNIC

Riser card

OCP sideband

74p/x8, RAID

Serial port

PWR bus bar base

USB

Four fan headers

Two x4 M.2

PWR button

HDD BP PWR

Pont-Ext

Riser PWR

VGA

PDB signal

PDB AUX PWR

Coin battery holder

NVME HDD BP

Six SATA

NVME HDD BP

Eight DDR5 DIMM slots per CPU

Riser card

EGS

EGS

Lenovo

Node components

Description	Description
1 Top cover	**16** CMOS battery (CR2032)
2 OCP 3.0 module	**17** Processor
3 Rear I/O module	**18** MicroSD card
4 PCIe filler	**19** Firmware and RoT security module
5 PCIe riser filler	**20** E3.S drive filler
6 PCIe riser	**21** E3.S drive
7 PCIe adatper	**22** E3.S drive backplane
8 GPU air duct	**23** E3.S drive cage
9 Power distribution board	**24** Node tray
10 Fan	**25** Screws
11 System board	**26** Cables
12 External diagnostics handset	**27** 1U standard heat sink and processor carrier
13 M.2 drive	**28** 1U performance heat sink and processor carrier
14 M.2 drive retainer	**29** Power bus bar
15 Memory module	**30** Cable ducts