

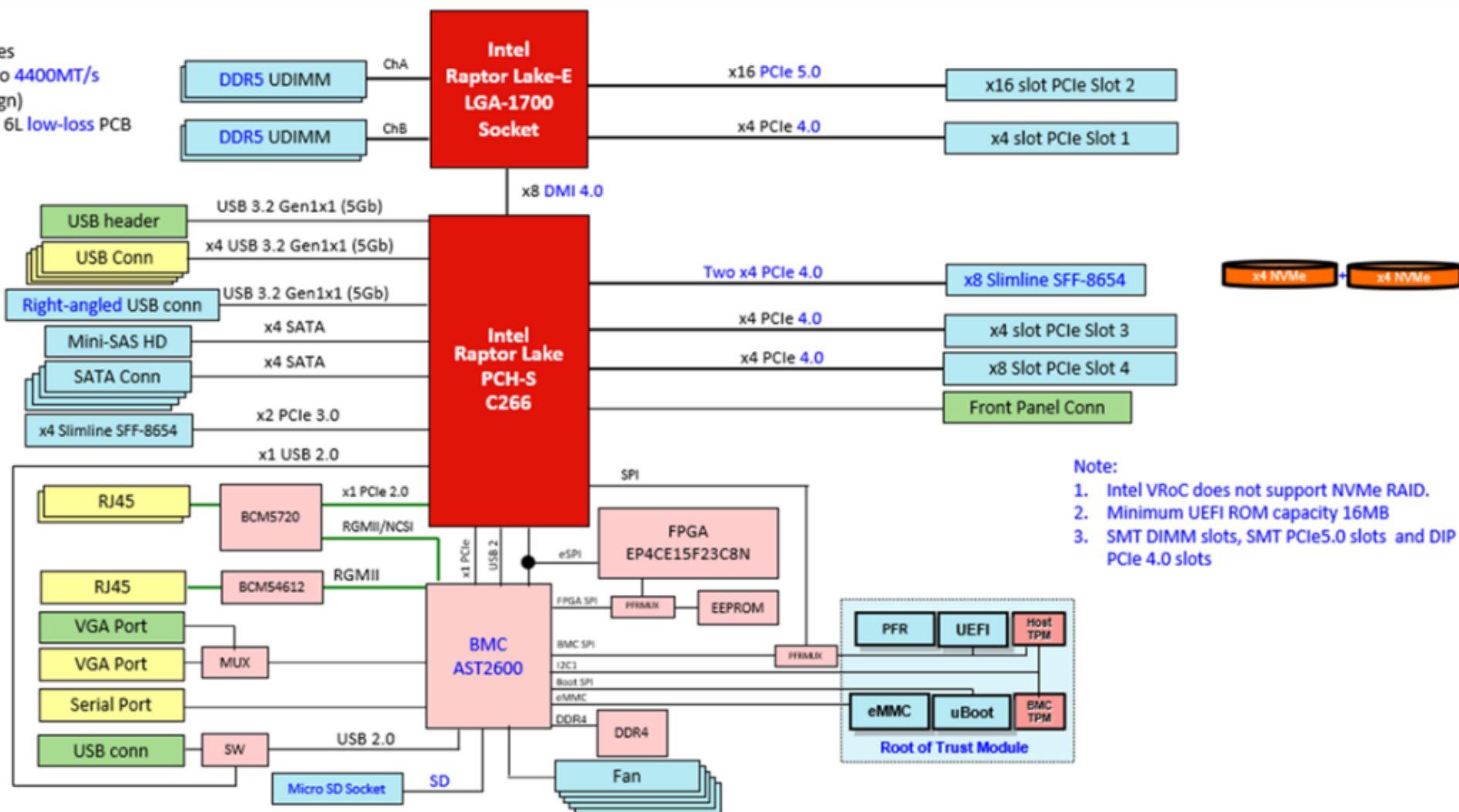
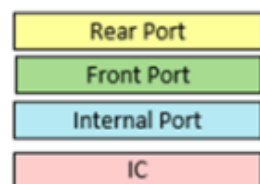
System configurations and diagrams

The ST250 V3 system block diagram and hardware configurations

Lenovo

System block diagram

CPU: max TDP 95W, up to 8 cores
Memory: 2 channels, 2SPC, up to 4400MT/s
DIMM pitch: 335 mils (CRB design)
PCB: 254mm x 243mm x 62 mil, 6L low-loss PCB



Note:

1. Intel VROC does not support NVMe RAID.
2. Minimum UEFI ROM capacity 16MB
3. SMT DIMM slots, SMT PCIe5.0 slots and DIP PCIe 4.0 slots

Features and specifications

Components	Specification
Form factor	Tower (can also be installed with a rack mount kit to become a 4U rack server)
Processor	One Intel Xeon E2400 series processor, Socket V1 (LGA 1700), up to eight cores at 95 W
Chipset	Intel C266
Memory	- Up to four DIMM slots - Lenovo TruDDR5 UDIMMs are supported - DIMMs operate at up to 4400 MHz
Memory maximum	Up to 128 GB with four 32 GB UDIMMs 4400 MHz TruDDR5
Disk drive bays	- Four or eight 3.5-inch simple-swap SATA HDD, SATA SSD, SAS HDD (up to two NVMe SSDs) - Four or eight 3.5-inch hot-swap SATA HDD, SATA SSD, SAS HDD - Eight or 16 2.5-inch hot-swap SATA HDD, SATA SSD, SAS HDD - Hybrid four 3.5-inch and eight 2.5-inch hot-swap SATA HDD, SATA SSD, SAS HDD - Two 5.25-inch media bay (ODD/Tape) - One Internal USB 3.2 Gen 1 port (5 Gb) - Optional two M.2 kit (SATA, in PCIe slots)
Network interfaces	- Two 1 GbE RJ45 ports embedded on the system board (LOM) - One XCC management RJ45 1 GbE port

Note: For the latest specifications, refer to the [Lenovo Press product guide](#)

Features and specifications

Components	Specification
HBA/RAID Support	Support for HW RAID adapters
Ports	• Front: One USB 2.0 (XCC Mobile), one USB 3.2 Gen 1 (5 Gb) • Rear: Four USB 3.2 Gen 1 (5 Gb) ports, two RJ45 Ethernet ports, one dedicated management port, one serial port, one VGA port, one NMI button
PCIe slots	Four PCIe expansion slots are available: • Slot 1: PCIe 4.0 x4 lane in x4 slot (open-ended), TDP 25 W, FH/HL • Slot 2: PCIe 5.0 x16 lane in x16 slot, TDP 75 W, FH/HL • Slot 3: PCIe 4.0 x4 lane in x4 slot (open-ended), TDP 25 W, FH/HL • Slot 4: PCIe 4.0 x4 lane in x8 slot, TDP 25 W, FH/HL
GPU support	Optional NVIDIA Quadro T1000 or NVIDIA Quadro T400 GPU (can only be installed in PCIe slot 2)
Fans	• Two front fans • One rear fan • One CPU fan • All fans are simple-swap fans
Power	• Fixed 300 W (Gold) / 500 W (Titanium) Power Supply Unit (PSU) • Redundant CRPS (Platinum) / CRPS (Titanium) PSU • Fixed and Redundant PSU meets ErP lot 9

Note: For the latest specifications, refer to the [Lenovo Press product guide](#)

Drive configurations



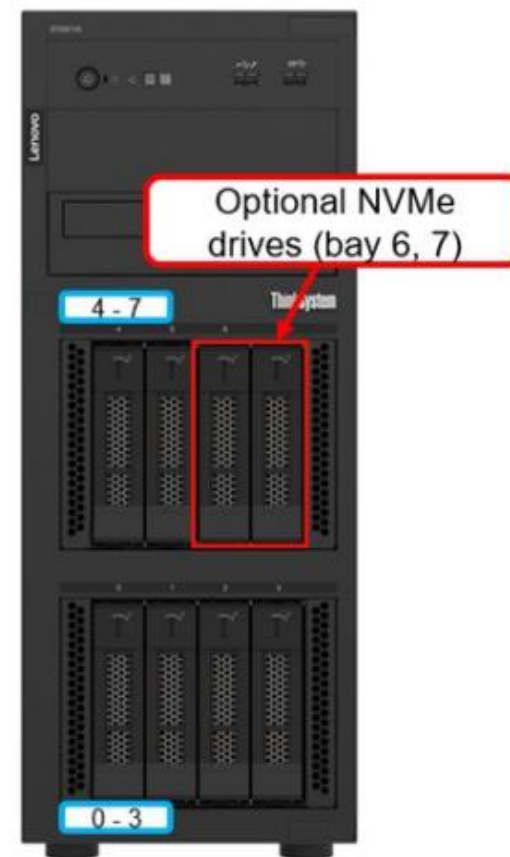
16 2.5-inch hot-swap drives



Eight 2.5-inch hot-swap drives + four 3.5-inch hot-swap drives



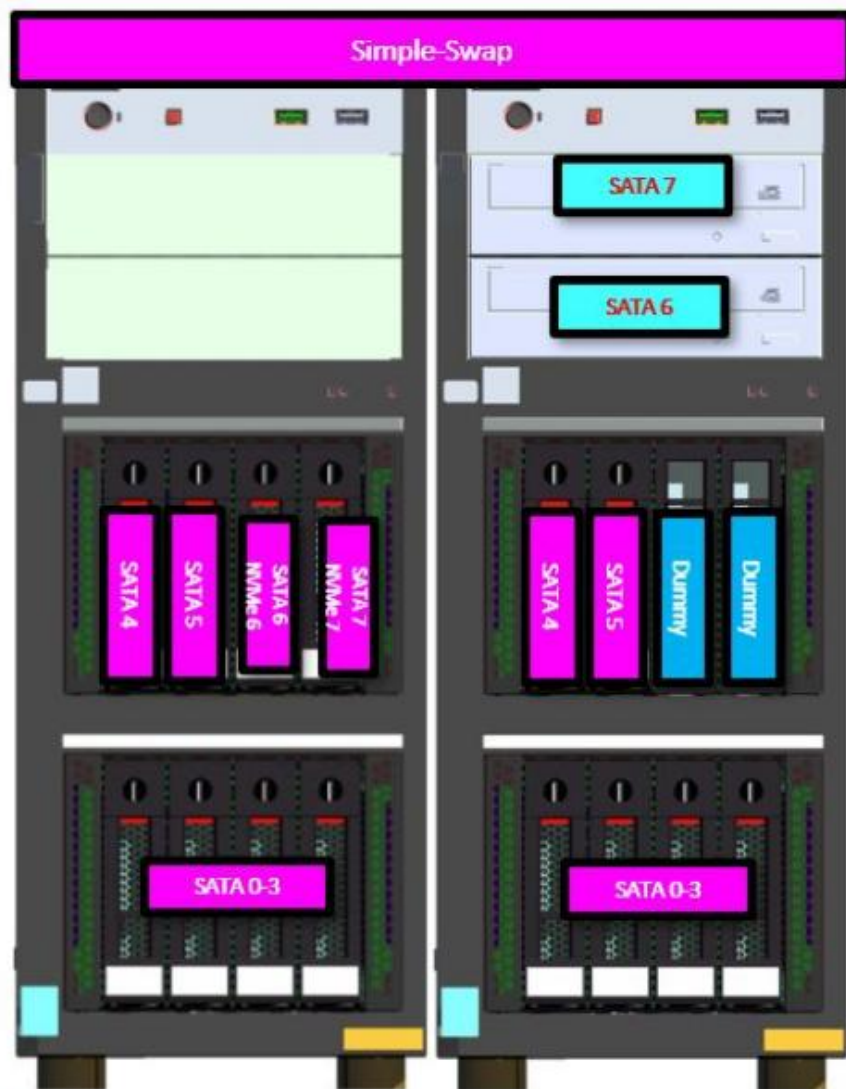
Eight 3.5-inch hot-swap drives



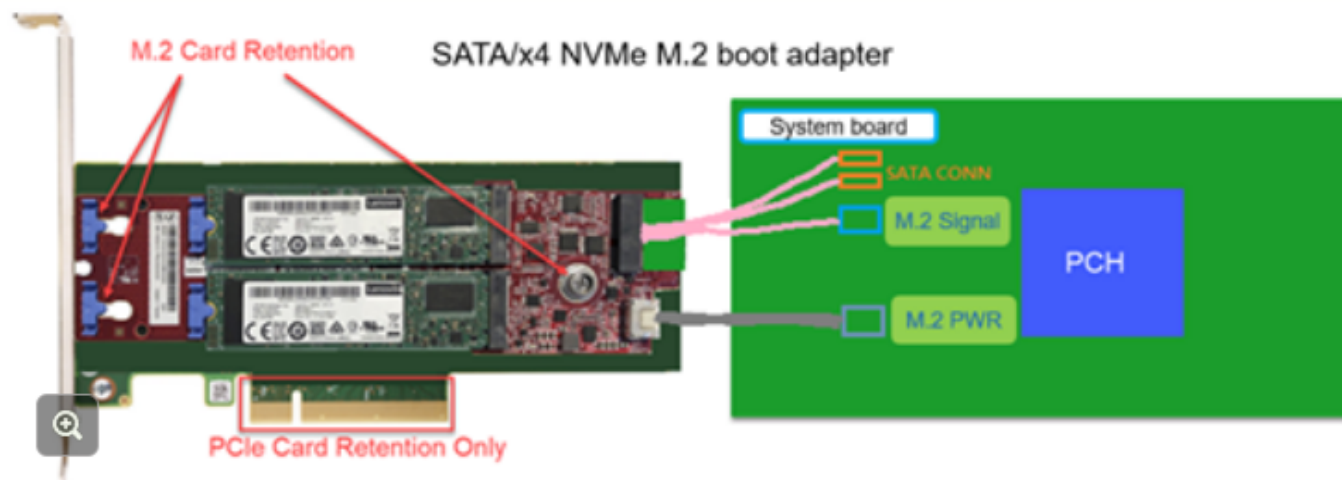
Eight 3.5-inch simple-swap drives

Note: The configuration with eight 3.5-inch simple-swap drives supports two optional NVMe drive in slot 6 and slot 7.

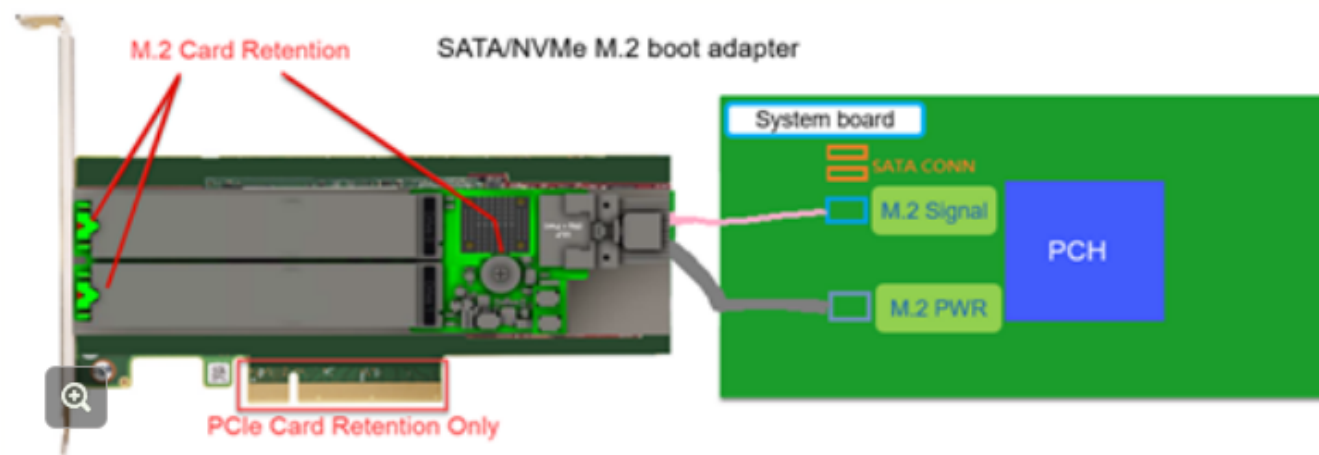
HDD numbering



M.2 boot adapter and PCIe slot



- The M.2 boot adapter can only be installed in PCIe slot 4
- The SATA/NVMe M.2 boot adapter will be supported through RMK (post launch)



Note: The system supports M.2 SATA drives only. M.2 NVMe is not supported.

RAID features for RAID adapters and M.2 adapters

Description	SBB	JBOD	RAID 0	RAID 1	RAID 5	RAID 6	RAID 10	RAID 50	RAID 60	1 Triple	10 Triple
ThinkSystem RAID 5350-8i PCIe 12Gb Adapter	SBB7A41245	Y	Y	Y	Y	N	Y	N	N	N	N
ThinkSystem RAID 9350-8i 2GB Flash PCIe 12Gb Adapter	SBB7A41246	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
ThinkSystem RAID 9350-16i 4GB Flash PCIe 12Gb Adapter	SBB7A41248	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
ThinkSystem RAID 940-8i 4GB Flash PCIe Gen4 12Gb Adapter	SBB7A01511	Y	Y	Y	Y	Y	Y	Y	Y	N	N

M.2 adapter	RAID support	Installation rule	Note
SATA/x4 NVMe M.2 boot adapter	VROC SATA RAID 0,1	Two M.2 SATA SSD for VROC RAID support	Supported on the SR250 V3 and ST250 V3
SATA/NVMe M.2 boot adapter	SATA HW RAID 0,1	Two M.2 SATA SSD for RAID support	Supported on the SR250 V3 It will be supported on the ST250 V3 through RMK (post launch)

PCIe slot rules

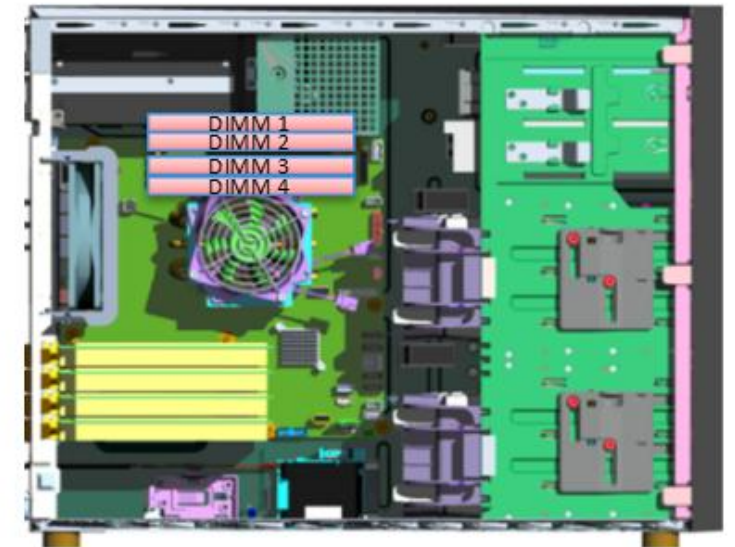
Slot number	Specification	GPU	M.2 boot adapter	Internal RAID adapter	External RAID adapter	NIC
Slot 1	X4, open-ended	N/A	N/A	N/A	4	1
Slot 2	X16, closed-ended	1	N/A	1	1	4
Slot 3	X4, open-ended	N/A	N/A	3	3	2
Slot 4	X8, closed-ended	N/A	1	2	2	3

- A GPU can only be installed in slot 2
- When a GPU is installed, slot 3 must be empty
- For better airflow, an M.2 boot adapter can only be installed in slot 4
- The Broadcom 57414 10/25GbE SFP28 2-port PCIe Ethernet Adapter and Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter can only be installed in slots 1 or 4
- When a ThinkSystem Intel E810-DA2 Ethernet Adapter is installed, the following adapters are not supported (refer to the Support Tip [HT513226](#) for more details):
 - Other ThinkSystem Intel Ethernet Adapters
 - ThinkSystem RAID 9350-16i 4GB Flash PCIe 12Gb Adapter
 - ThinkSystem RAID 9350-8i 2GB Flash PCIe 12Gb Adapter
 - ThinkSystem RAID 5350-8i PCIe 12Gb Adapter
 - ThinkSystem 4350-8i SAS/SATA 12Gb HBA

Memory population order

Channel	Channel B	Channel B	Channel A	Channel A
DIMM	UDIMM1	UDIMM0	UDIMM1	UDIMM0
Slot number	DIMM1	DIMM2	DIMM3	DIMM4
1 UDIMM			1	
2 UDIMMs	2		1	
3 UDIMMs	2		1	3
4 UDIMMs	2	4	1	3

- 16 GB and 32 GB ECC UDIMMs are supported
- Non-ECC UDIMMs, VLP DDR5 UDIMMs, RDIMMs, 3DS-RDIMMs, LRDIMMs, DCPMMs, and MCRDIMMs are not supported



System limitations

- System thermals might be impacted if the NVMe is above 18 W
- ErP LOT 9 and Energy Star 4.0 (ES 4.0) are supported with limited configurations

	SR250 V3	ST250 V3
ErP LOT 9	Supported in all configurations	Supported in all configurations except CPU G7400T/G7400
Energy Star 4.0	Supported in all configurations except CPU G7400T/G7400/E-2414/E-2434	Supported in all configurations except CPU G7400T/G7400/E-2414/E-2434

- The ST250 V3 has a thermal limitation for GPUs: when a GPU is in slot 2, slot 3 must be left empty
- Intel VROC does not support NVMe RAID (Catlow platform limitation)
- The CRPS can be installed upside down – use SSL/labels and the user manual to determine its orientation

