ThinkAgile HX Series with AMD EPYC 9004 processors

Overview and system configurations

Lenovo

Specification overview

	HX645 V3 Integrated System	HX665 V3 Storage	HX665 V3
Base platform	SR645 V3	SR665 V3	SR665 V3
Processor	Two AMD EPYC 9004 Series processors	Two AMD EPYC 9004 Series processors	Two AMD EPYC 9004 Series processors
Memory	64 GB to 6 TB	64 GB to 6 TB	64 GB to 6 TB
Drives (max)	10 front 2.5-inch drives and two rear 2.5-inch drives	12 3.5-inch drives	24 2.5-inch drives
SSD options	1.92 TB to 7.68 TB	1.92 TB to 7.68 TB	1.92 TB to 7.68 TB
HDD options	none	4 TB to 20 TB	none
GPU	Up to two GPU adapters	None	Up to four GPU adapters
Network	Two to four 25 Gb ports via OCP adapter, and optional PCIe adapters for additional ports	Two to four 25 Gb ports via OCP adapter, and optional PCIe adapters for additional ports	Two to four 25 Gb ports via OCP adapter, and optional PCIe adapters for additional ports

Note: For the latest ThinkSystem hardware specifications and features, refer to the Lenovo Press website.

Supported GPUs

GPU	Feature code	HX645 V3	HX665v3	HX665v3 - storage
ThinkSystem NVIDIA A40 48GB PCIe Gen4 Passive GPU	BEL4	0	2	0
ThinkSystem NVIDIA A40 48GB PCIe Gen4 Passive GPU w/o CEC	BQZQ	0	2	0
ThinkSystem NVIDIA A16 64GB Gen4 PCIe Passive GPU	BNFE	0	2	0
ThinkSystem NVIDIA A16 64GB Gen4 PCIe Passive GPU w/o CEC	BQZU	0	2	0
ThinkSystem NVIDIA A30 24GB PCIe Gen4 Passive GPU	BJHG	0	2	0
ThinkSystem NVIDIA A100 80GB PCIe Gen4 Passive GPU w/o CEC	BLK1	0	2	0
ThinkSystem NVIDIA A2 16GB PCIe Gen4 Passive GPU w/o CEC	BQZT	2	4	0

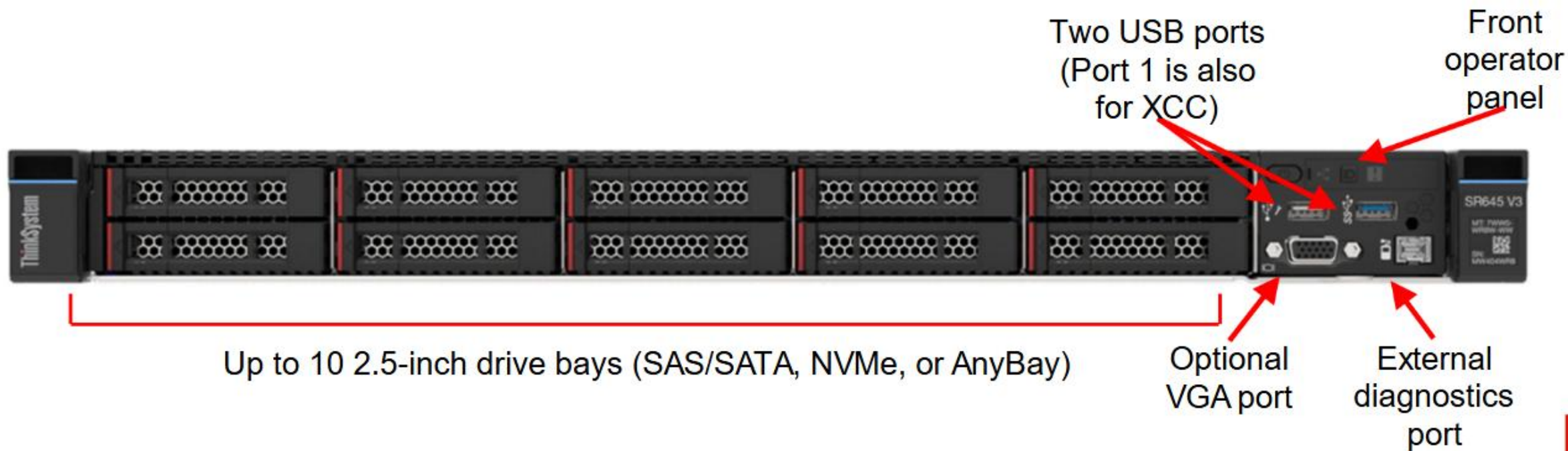**Note:** GPU adapters are only supported with an ESXi hypervisor.

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System configuration rules

- NVMe is supported on the HX645 V3 and HX665 V3
    - The HX645 V3 supports up to four NVMe drives
    - The HX665 V3 configuration with 24 drives supports two to eight NVMe drives with or without SAS/SATA SSDs
    - The HX665 V3 configuration with 16 SAS/SATA drive uses a 440-16i PCIe card for GPUs
- The Broadcom 57504 adapter is supported
- Boot drive and adapter changes
    - The 5350 RAID adapter is supported
    - The single-drive boot option is supported
- 2.5-inch and 3.5-inch hard drives
    - The HX645 V3 and HX665 V3 now only use 2.5-inch all-flash drives
    - 3.5-inch hard drives are supported
- Boot drive and adapter changes
    - The 5350 RAID adapter is supported
    - The single-drive boot option is supported
- 2.5-inch and 3.5-inch hard drives
    - The HX645 V3 and HX665 V3 now only use 2.5-inch all-flash drives
    - 3.5-inch hard drives are supported

Note: For information on the procedure used to replace a failed NVMe drive, refer the Nutanix Hardware Replacement Documentation.

Front view of the HX645 V3

Two USB ports
(Port 1 is also
for XCC)

Front
operator
panel

Up to 10 2.5-inch drive bays (SAS/SATA, NVMe, or AnyBay)
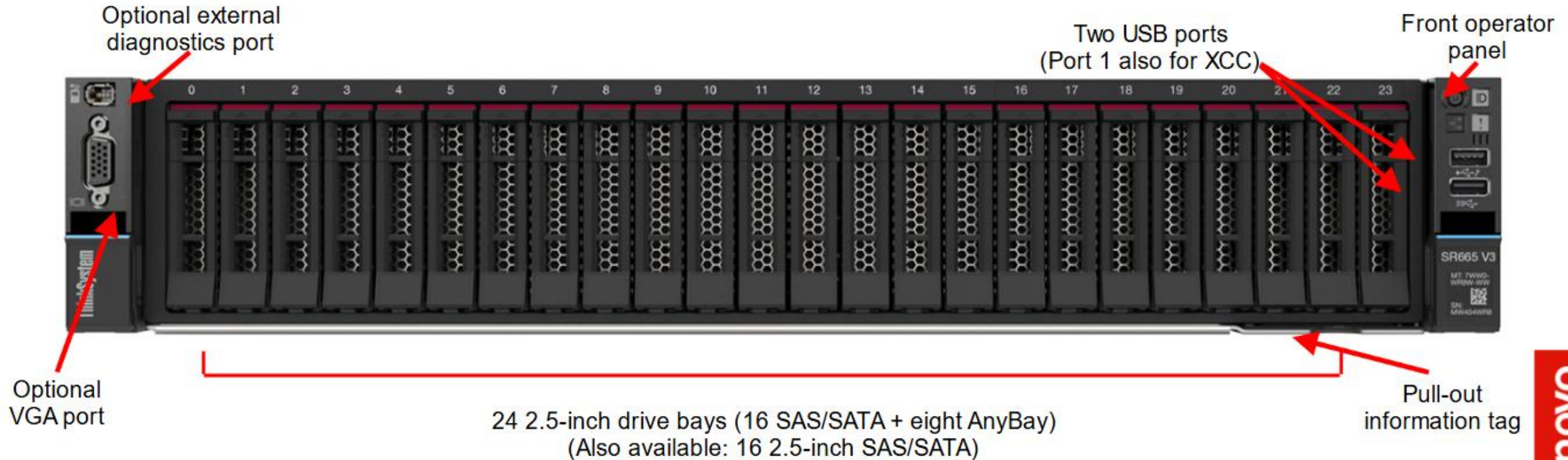
Optional
VGA port

External
diagnostics
port

Front views of the HX665 V3

• Click the buttons to see the 2.5-inch and 3.5-inch drive models

2.5-inch drive model

3.5-inch drive model

Optional external diagnostics port

Two USB ports (Port 1 also for XCC)

Front operator panel

Optional VGA port

Pull-out information tag

24 2.5-inch drive bays (16 SAS/SATA + eight AnyBay)
(Also available: 16 2.5-inch SAS/SATA)

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Front views of the HX665 V3

• Click the buttons to see the 2.5-inch and 3.5-inch drive models
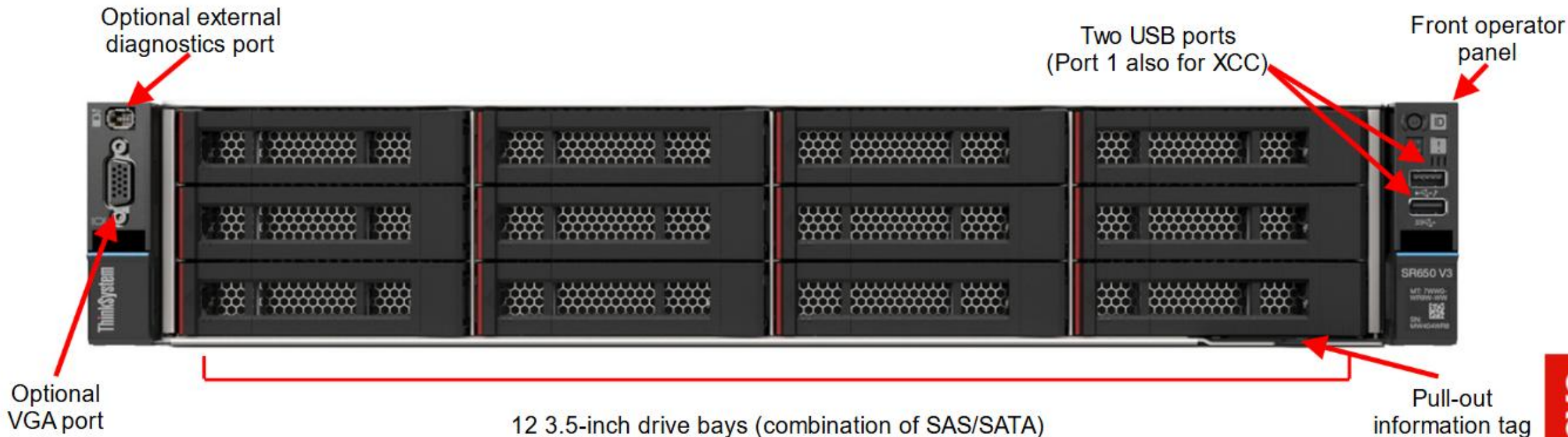
2.5-inch drive model

3.5-inch drive model

Optional external diagnostics port

Two USB ports (Port 1 also for XCC)

Front operator panel

Optional VGA port

12 3.5-inch drive bays (combination of SAS/SATA)

Pull-out information tag

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Rear views of the HX645 V3

- One low-profile and one full-height PCIe slot – both for CPU 1 (no rear drives)

- Three low-profile PCIe slots (no rear drives)

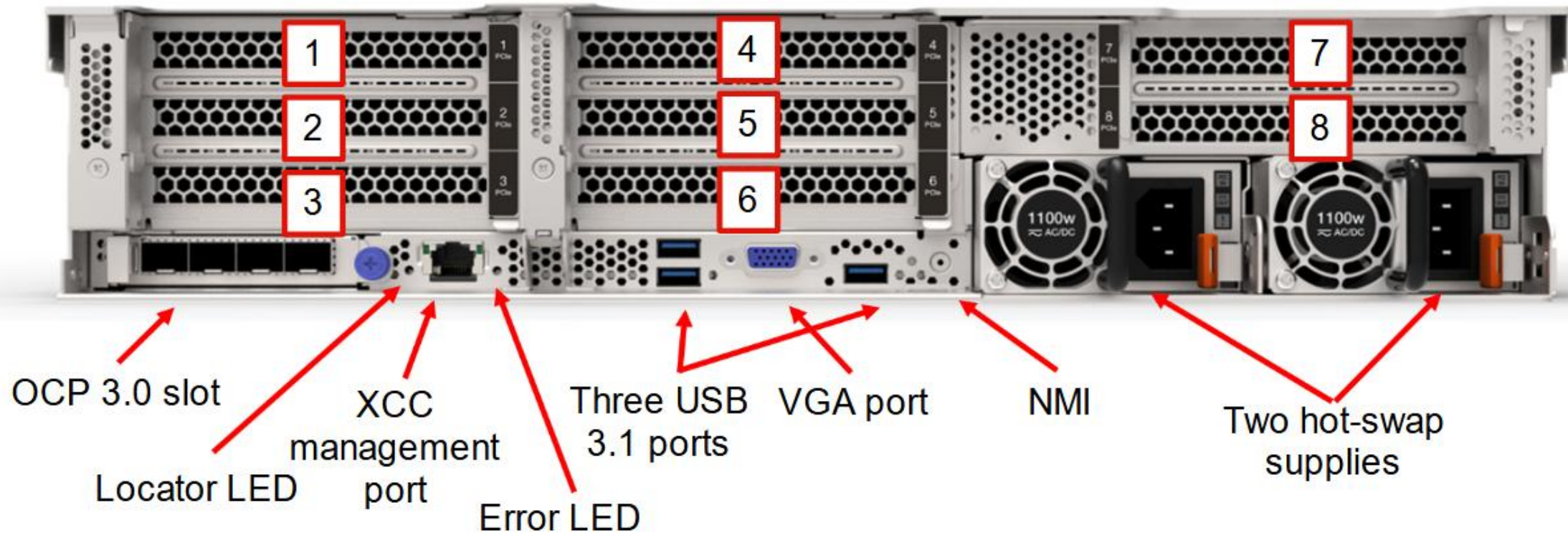- One low-profile and one full-height PCIe slot (no rear drives)

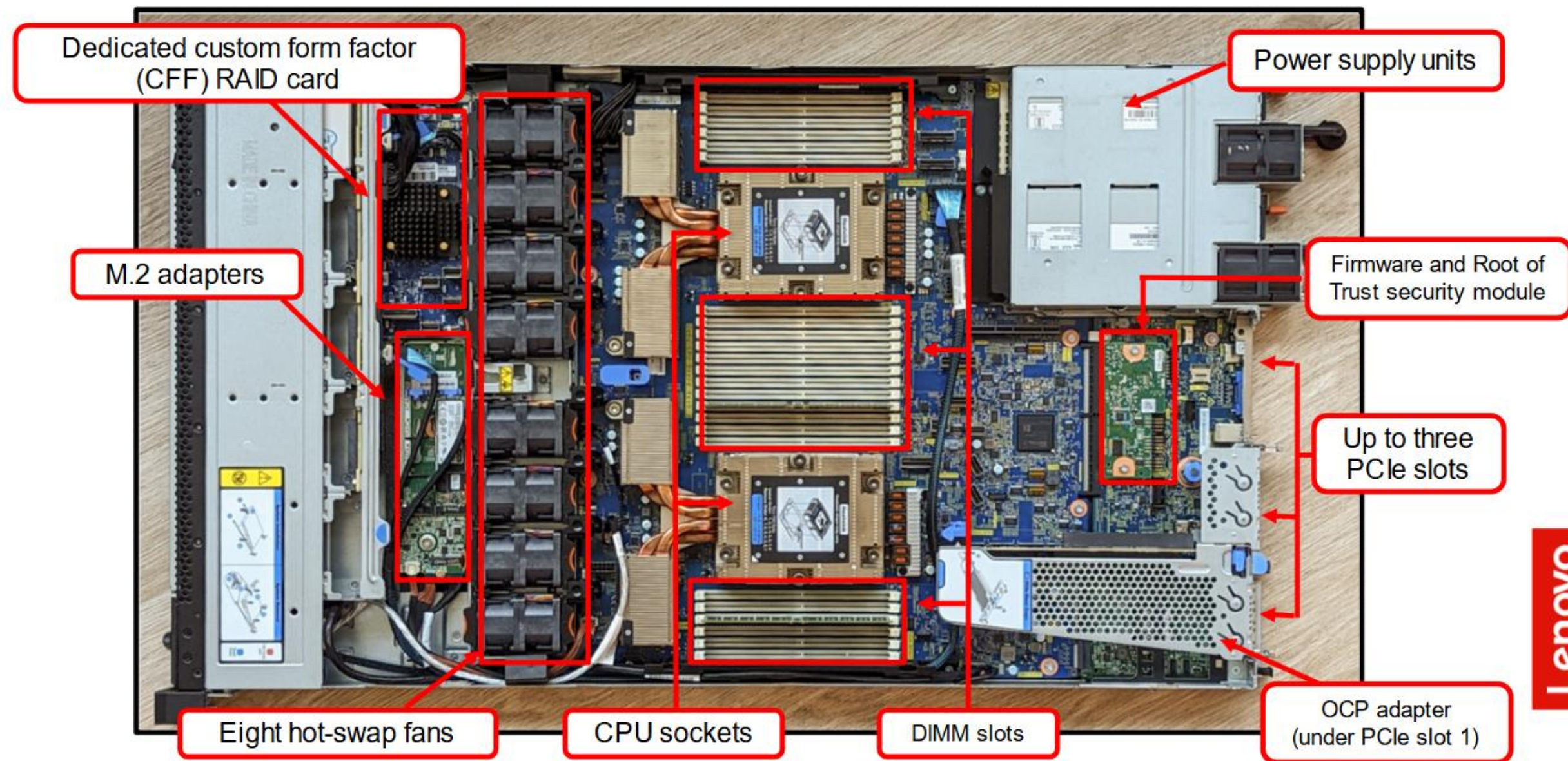- One low-profile PCIe slot and two 2.5-inch hot-swap drives
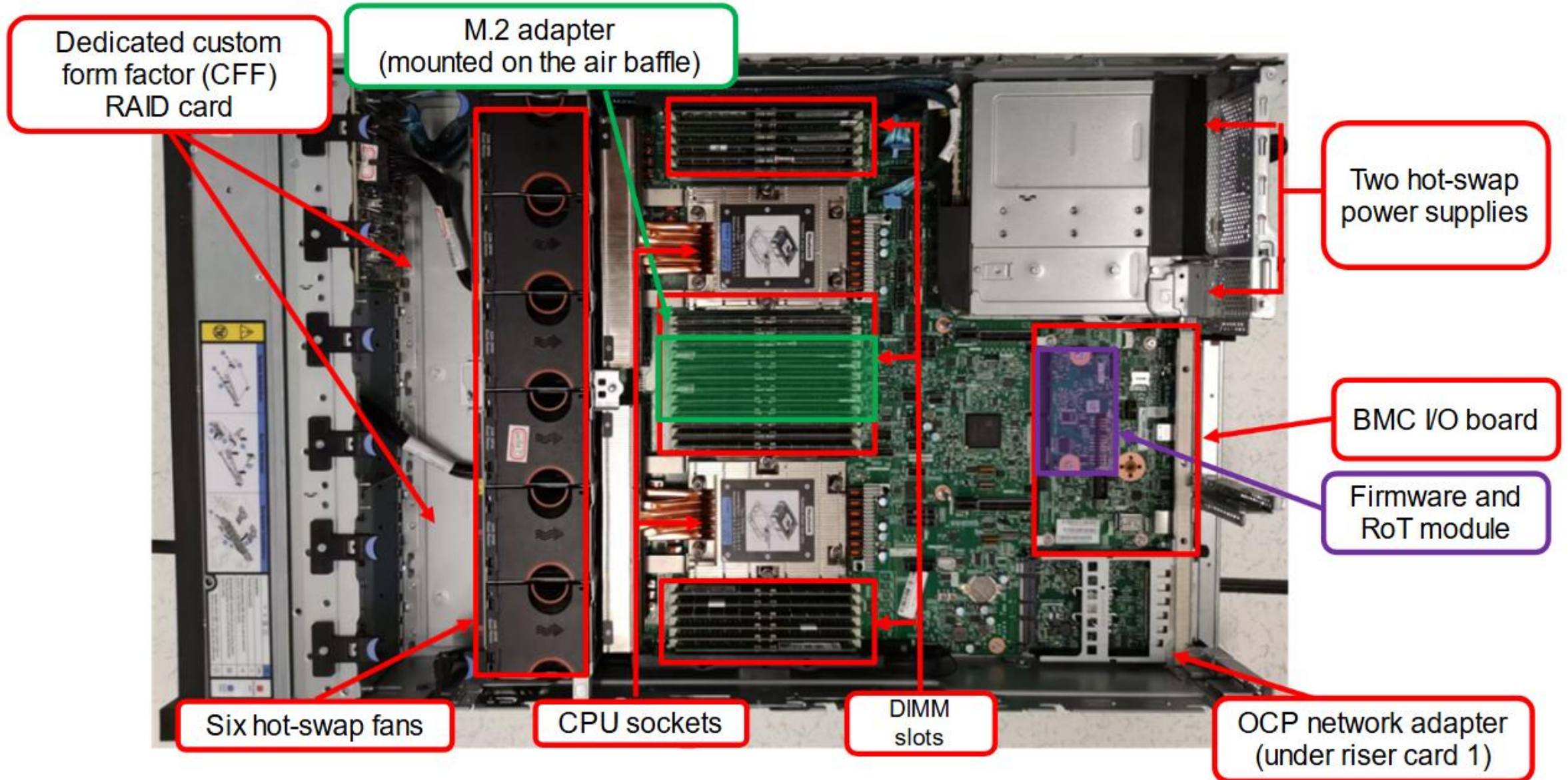
Rear view of the HX665 V3

The following figure shows the components visible at the rear of the system. The HX665 V3 server can support configurations with eight PCIe slots.

OCP 3.0 slot

Locator LED

XCC management port

Error LED

Three USB 3.1 ports

VGA port

NMI

Two hot-swap supplies

Inside view of the HX645 V3

Dedicated custom form factor (CFF) RAID card

Power supply units

M.2 adapters

Firmware and Root of Trust security module

Up to three PCIe slots

Eight hot-swap fans

CPU sockets

DIMM slots

OCP adapter (under PCIe slot 1)

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Inside view of the HX665 V3

Dedicated custom form factor (CFF) RAID card

M.2 adapter (mounted on the air baffle)

Two hot-swap power supplies

BMC I/O board

Firmware and RoT module

Six hot-swap fans

CPU sockets

DIMM slots

OCP network adapter (under riser card 1)

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ThinkAgile HX7576

Lenovo has released a new ThinkAgile HX Series model featuring AMD EPYC processors. The new HX7576 is based on the 2U two-socket ThinkSystem SR665. For more information, refer to the ThinkAgile HX Series with AMD EPYC processors section in this course.

Note: Support for the configuration with 16 NVMe drives will be available with the release of AOS 6.7 in the middle of 2023.

Marketing name	HX7576
Platform	SR665
Processor	AMD EPYC 7003 Series processors
Memory	Lenovo TruDDR4 supported, 64 GB to 2 TB capacity
Drives	• 12 to 16 2.5-inch NVMe drives • Two M.2 drives
SSD/NVMe options (All-Flash config)	Two to 12 of the following: 1.6 TB 1.92 TB 3.2 TB 3.84 TB 6.4 TB 7.68 TB
GPU	N/A
Network	Two to ten 25 GbE ports

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