

SD650-I V3 overview

Product features, technical specifications

Lenovo

ThinkSystem SD650-I V3 product overview

The ThinkSystem SD650-I V3 server is a fifth-generation Neptune DWC platform. An SD650-I V3 tray combines one CPU compute node and one GPU node mounted on a shared 1U tray with a water loop covering all the major heat sources in the nodes. The SD650-I V3's CPU node is the same as the SD650 V3's CPU node.



Features and specifications

Scroll down for more information

Features	Descriptions
Form factor	1U DWC tray with two nodes
Node type	One CPU compute node (right node) and one GPU node (left node)
CPU	Two 4 th Gen Intel Xeon Scalable processors
GPU	Four Intel OAM GPUs
Storage	<ul style="list-style-type: none">Up to two 2.5-inch 7 mm SATA/NVMe drives in the CPU node onlyUp to one 2.5-inch 15 mm SATA/NVMe drives in the CPU node onlyUp to one M.2 adapter in the CPU node only
DIMM	<p>Sixteen DIMM slots in the CPU node</p> <ul style="list-style-type: none">32 or 64 GB ECC RDIMMs or 128 GB 3DS RDIMMsUp to 1 TB of memory capacity with 64 GB RDIMMs in the CPU nodeUp to 2 TB of memory capacity with 128 GB 3DS RDIMMs in the CPU node
Networking	<ul style="list-style-type: none">A single 1 Gb Ethernet port with RJ45 connector – shared between the operating system and XCCTwo 25 Gb SFP28 ports. One port is shared between the operating system and XCC
PCIe slots	Two PCIe 5.0 x16 slots with a low-profile form factor on the front of the CPU node
Management interface	<ul style="list-style-type: none">XCC2 embedded

Note: For the latest specifications, refer to the SD650-I V3 product guide on Lenovo Press: <https://lenovopress.lenovo.com/>

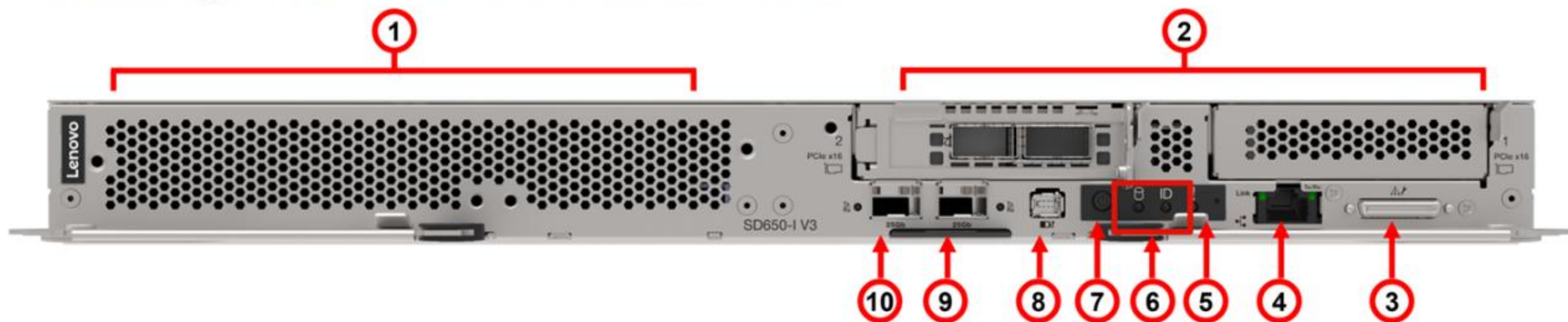
Features and specifications

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Features	Descriptions
GPU	Four Intel OAM GPUs
Storage	<ul style="list-style-type: none">Up to two 2.5-inch 7 mm SATA/NVMe drives in the CPU node onlyUp to one 2.5-inch 15 mm SATA/NVMe drives in the CPU node onlyUp to one M.2 adapter in the CPU node only
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Networking	<ul style="list-style-type: none">A single 1 Gb Ethernet port with RJ45 connector – shared between the operating system and XCCTwo 25 Gb SFP28 ports. One port is shared between the operating system and XCC
PCIe slots	Two PCIe 5.0 x16 slots with a low-profile form factor on the front of the CPU node
Management interface	<ul style="list-style-type: none">XCC2 embeddedSupport for LXCESupport for LXCAOptional external diagnostics handset with an LCD display

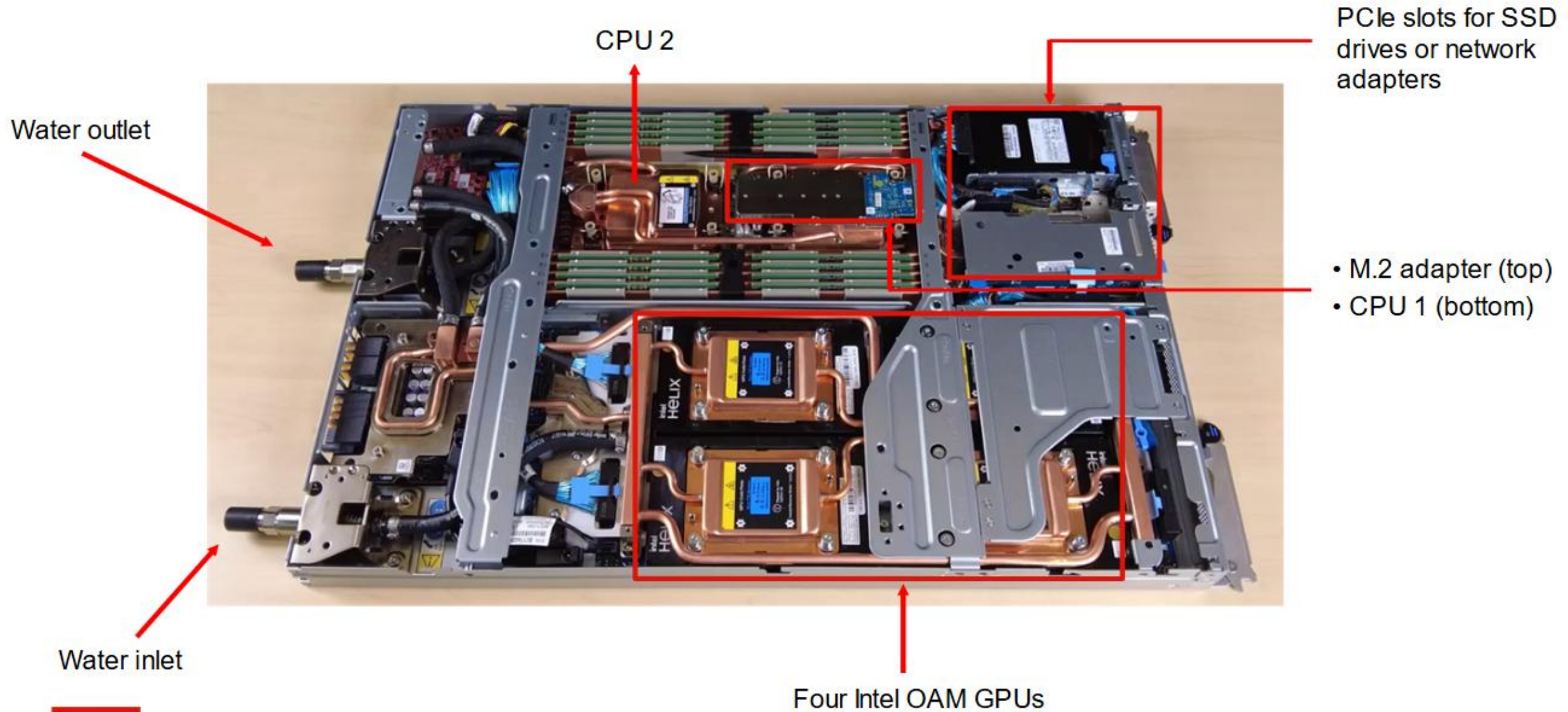
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ThinkSystem SD650 V3 front view

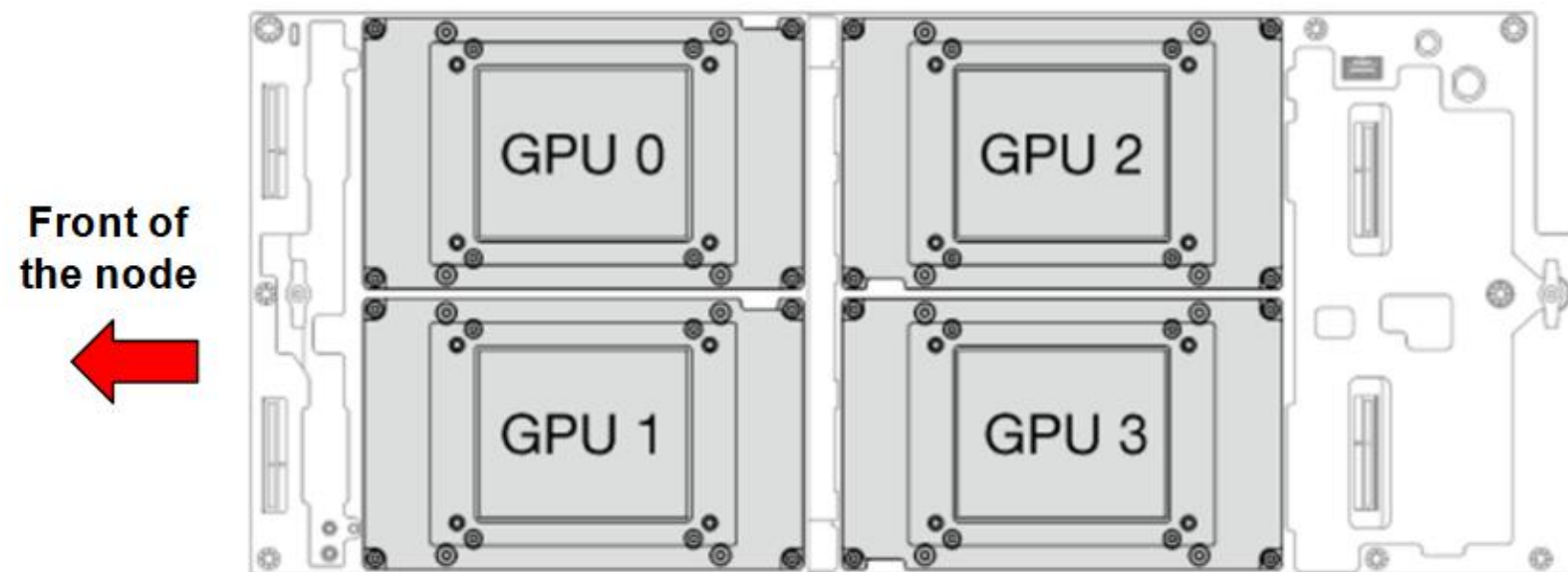


- ① Left GPU node
- ② Right CPU node
- ③ USB 3.0 console breakout cable connector
- ④ 1 Gb RJ45 Ethernet port with share-NIC feature for XCC
- ⑤ NMI button
- ⑥ Front operator panel LEDs
- ⑦ Node power button with LED
- ⑧ External diagnostic handset connector
- ⑨ 25 Gb SFP28 Ethernet port
- ⑩ 25 Gb SFP28 Ethernet port with share-NIC feature for XCC

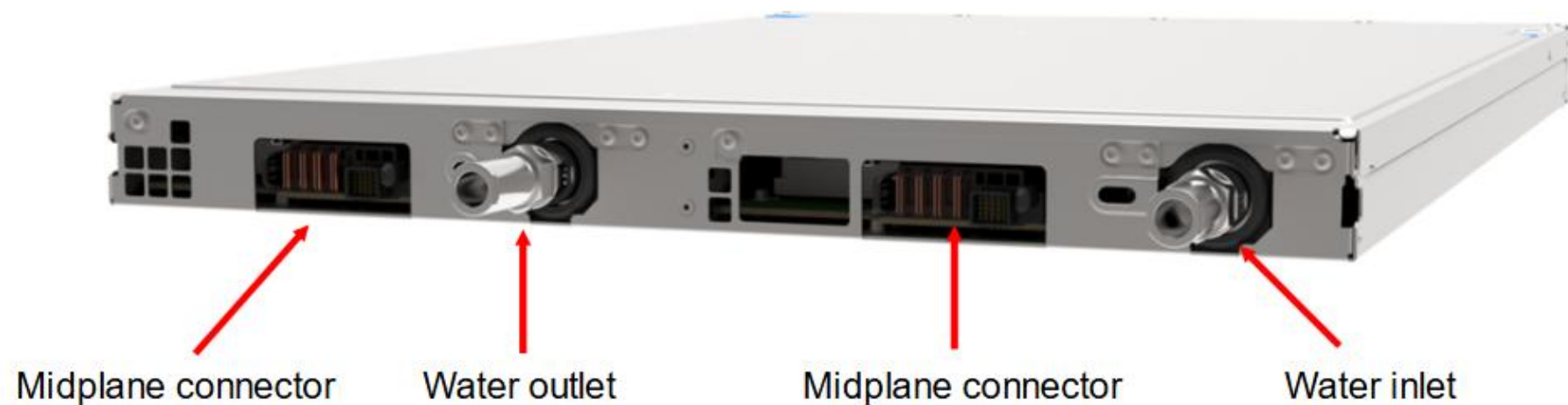
ThinkSystem SD650-I V3 inside view



SD650-I V3 GPU numbering



ThinkSystem SD650-I V3 rear view



ThinkSystem SD650 V3 front configurations



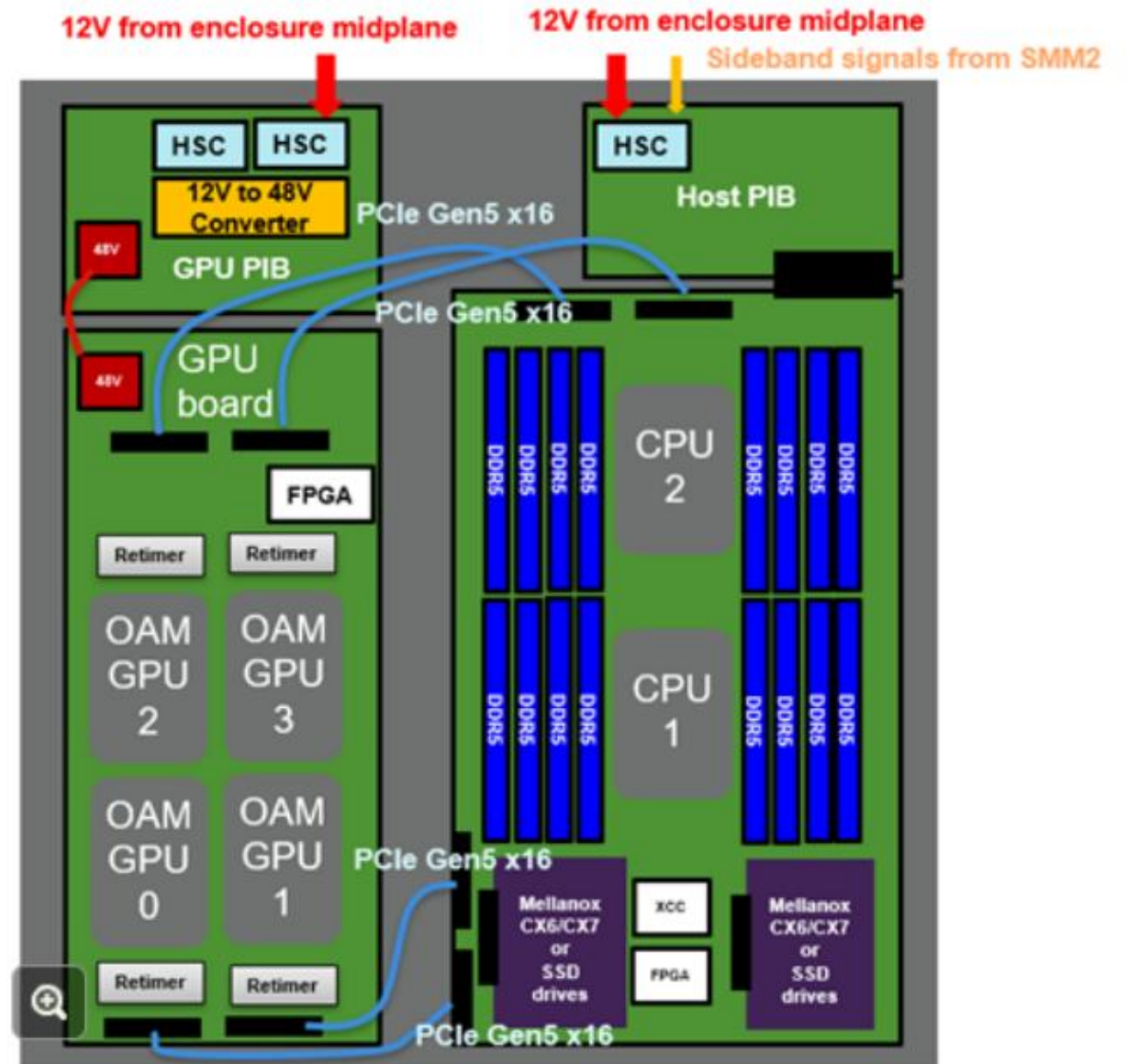
Two PCIe adapters in the CPU node configuration



One PCIe adapter and one drive tray in the CPU node configuration

Note: The SD650-I V3 SSD drives are not hot swappable. Before replacing a drive, power off the node, remove the trays from the enclosure, and remove the top cover.

ThinkSystem SD650-I V3 block diagram



Unlike the NVIDIA GPU design, Intel GPU retimer chips are integrated in the GPU board.

ThinkSystem SD650 V3 breakout cable

As with the SD650 V3, the SD650-I V3 supports a local console through a KVM breakout cable. The cable connects to the port on the front of the CPU node.

