

SD530 V3 and SD550 V3 common configurations

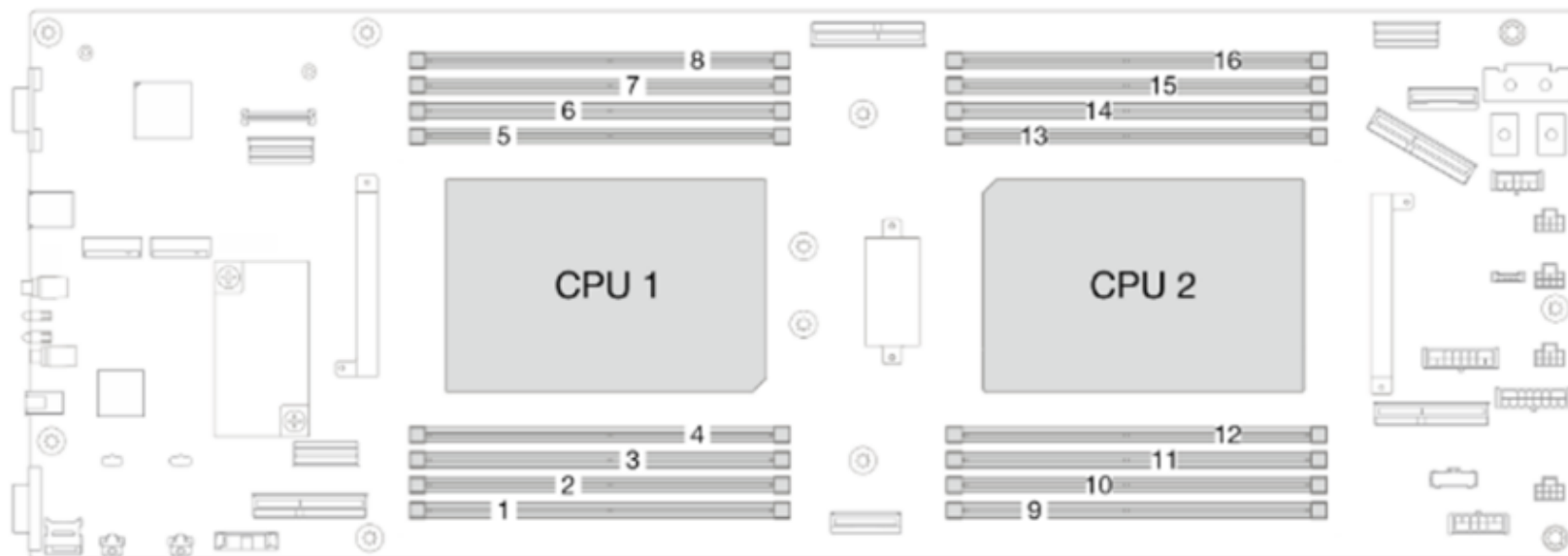
Memory population and system configuration highlights

Lenovo

Memory modules and processors

The SD530 V3 and SD550 V3 system boards have two CPUs and 16 DIMM slots supporting RDIMMs and 3DS RDIMMs.

- At least one DIMM is required for each processor. For optimal performance, it is recommended that at least eight DIMMs per processor are installed.
- The server has an automatic DIMM enablement capability, which means it is not necessary to manually enable new DIMMs with Setup Utility.



DIMM population sequence – independent mode

Independent memory mode offers high memory performance but no failover protection. The DIMM installation order depends on the number of processors and memory modules in the node.

Total DIMMs	Processor 1							
	8	7	6	5	4	3	2	1
1					4			
2 *		7			4			
4 *		7		5	4		2	
6 †		7	6	5	4		2	1
8 † ‡	8	7	6	5	4	3	2	1
Note: * When there are two or four DIMMs installed per processor, 24 GB or 48 GB DIMMs are not supported.								

Total DIMMs	Processor 1							
	8	7	6	5	4	3	2	1
2					4			
4 *		7			4			
8 *		7		5	4		2	
12 †		7	6	5	4		2	1
16 † ‡	8	7	6	5	4	3	2	1
Total DIMMs	Processor 2							
	9	10	11	12	13	14	15	16
2					13			
4 *		10			13			
8 *		10		12	13		15	
12 †		10	11	12	13		15	16
16 † ‡	9	10	11	12	13	14	15	16
Note: * When there are two or four DIMMs installed per processor, 24 GB or 48 GB DIMMs are not supported.								

DIMM population sequence – mirroring mode

Memory mirroring mode offers full redundancy but halves memory capacity. It pairs memory channels, duplicating data. If a failure happens, the controller switches to the backup channel. The installation order depends on the number of processors and DIMMs.

Total DIMMs	Processor 1							
	8	7	6	5	4	3	2	1
8†‡	8	7	6	5	4	3	2	1

Total DIMMs	Processor 1							
	8	7	6	5	4	3	2	1
8†‡	8	7	6	5	4	3	2	1

Total DIMMs	Processor 2							
	9	10	11	12	13	14	15	16
16†‡	9	10	11	12	13	14	15	16

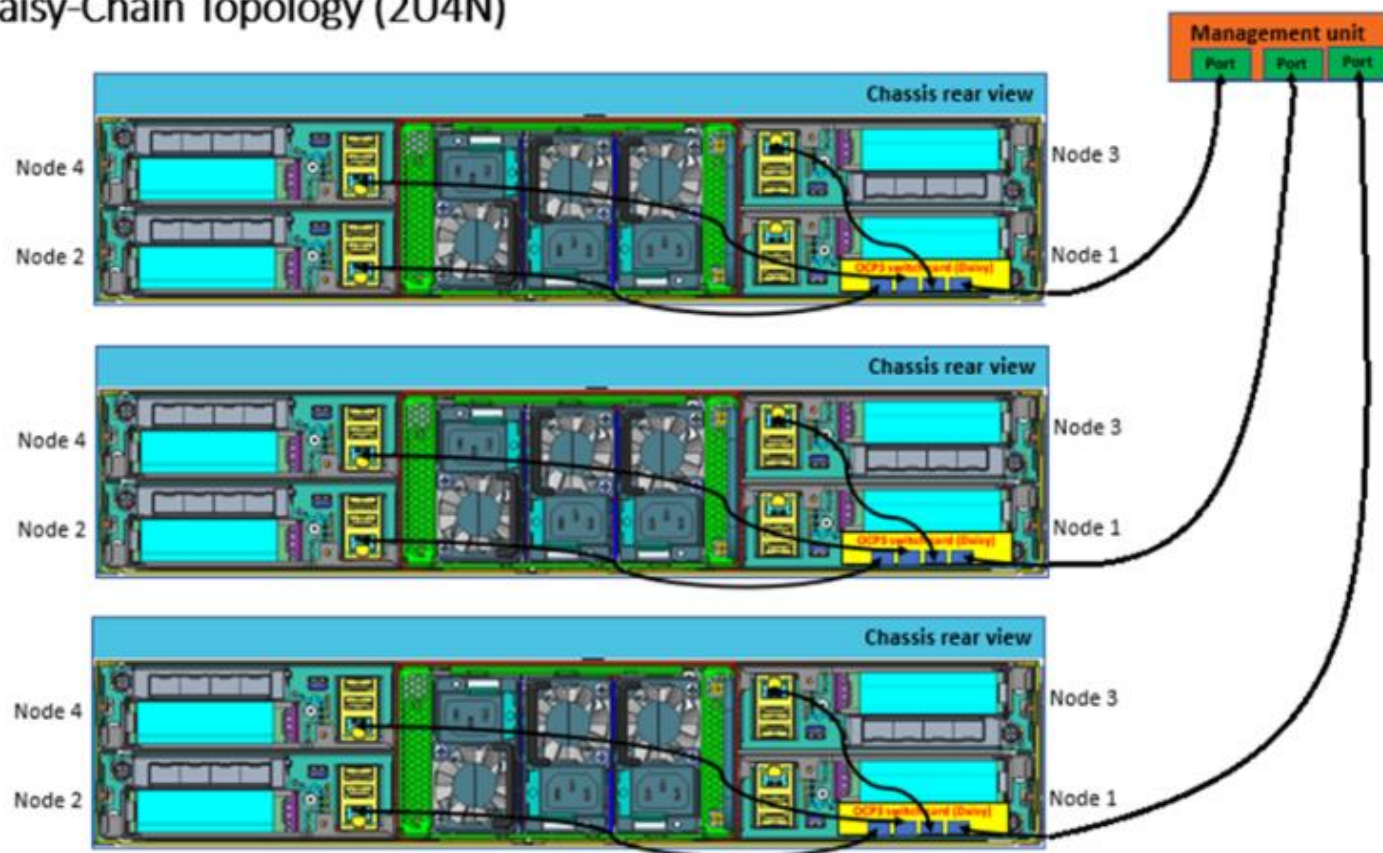
Note:
† Sub NUMA Clustering (SNC2) feature can only be enabled when DIMMs are populated in this specified sequence. The SNC2 feature can be enabled via UEFI.

‡ DIMM configurations that support Software Guard Extensions (SGX), see [“Enable Software Guard Extensions \(SGX\)” on page 242](#) to enable this feature.

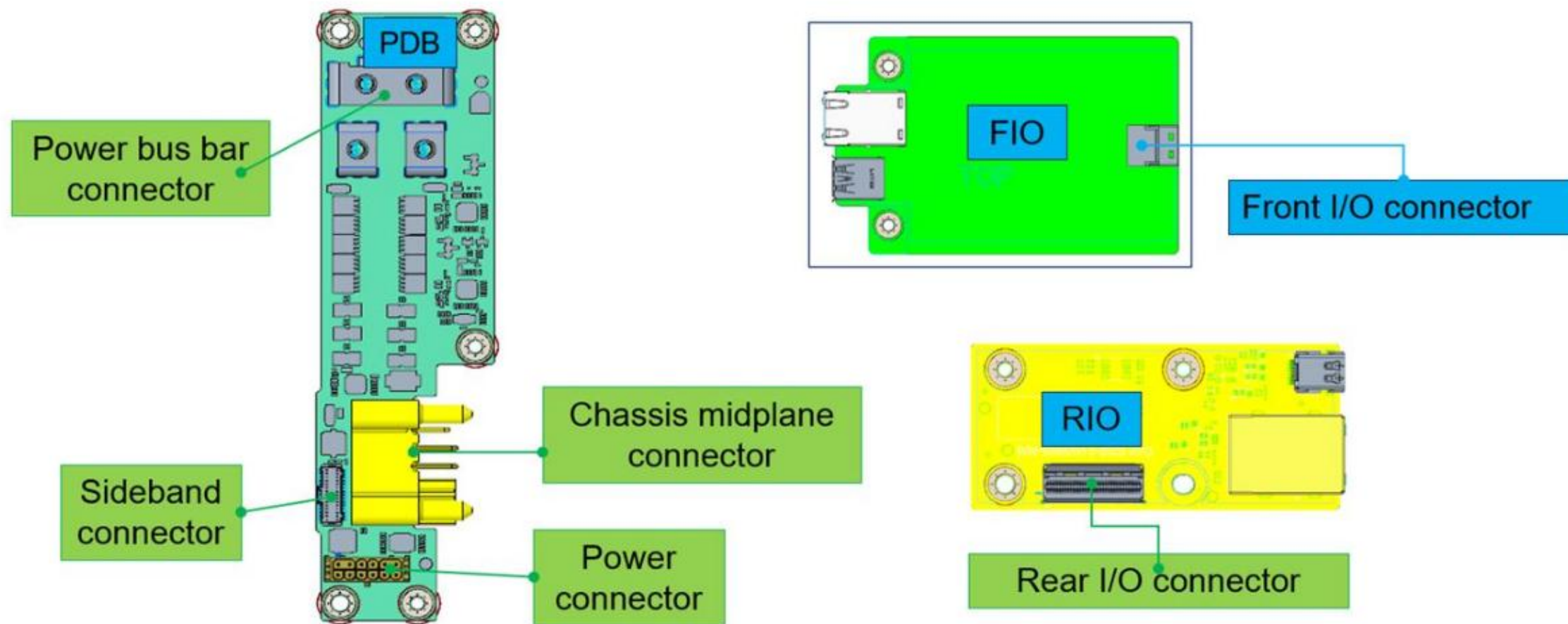
Daisy chain topology

The SD530 V3 and SD550 V3 support daisy chain connections for systems management. The optional daisy card is an OCP NIC 3.0 adapter, offering up to 4 to 1 management port consolidation. It is designed to fit into a server OCP slot and, with external cabling, provides a 1 Gbps switch function between the nodes.

Daisy-Chain Topology (2U4N)



Power distribution board (PDB), FIO, RIO



Note: For more information about system cable routing, refer to the *Internal cable routing* sections in the [SD530 V3](#) and [SD550 V3](#) user guides on Lenovo Docs.

System configuration highlights

D3 chassis:

- The single chassis design has less complexity than the shuttle design, and there are no shared I/O options
- Moving the fans from the chassis to the nodes provides better individual node support as there is no single point of failure in the chassis that can impact all the installed nodes
- SMM-free design for chassis management

SD530 V3:

- Support for the E3.S 1T drive configuration
- Support for four nodes in one chassis with high-density cable routing
- No support for a RAID card or hot-swap fan module
- New daisy chain card for systems management has a single point of failure

SD550 V3:

- High flexibility with the six 2.5-inch AnyBay SSD configuration
- Support for 2 nodes in one chassis with high-density cable routing
- No support for the hot-swap fan module
- PCIe expansion slot 1 supports PCIe 4.0, and slot 2 supports PCIe 5.0 FH/HL adapters
- New daisy chain card for systems management has a single point of failure

Multinode server comparison

	SD530	SD530 V3	SD550 V3
Form factor	2U2S	1U2S	2U2S
Processor	Skylake / Cascade Lake	Emerald Rapids	Emerald Rapids
CPU power	Up to 205 W	Up to 350 W	Up to 350 W
Memory	16 DDR4 RDIMMs	16 DDR5 RDIMMs	16 DDR5 RDIMMs
Storage	Six 2.5-inch SAS/SATA drives, four NVMe SSDs, two M.2 boot drives	Two E3.S NVMe SSDs, two M.2 boot drives	Six 2.5-inch SAS/SATA/NVMe SSDs, two M.2 boot drives
RAID	Dedicated RAID slot for HW RAID	VROC, rear PCIe slot for HW RAID	VROC, rear PCIe slot for HW RAID
Networking	two 10 GbE ports	One dedicated 1 GbE port	One dedicated 1 GbE port
PCIe slot	One PCIe x16 or two PCIe x8 HHHL	One OCP and one PCIe FHHL	One OCP and two PCIe HHHL
Fans	Five fans (three 60 mm + two 80 mm)	Four 40 x 56 mm	Three 60 x 56 mm
Front I/O	Buttons: Power button, system ID LEDs: System power, HDD activity, LAN activity, system error, system ID Ports: One USB 3.0, support for XCC mobile, KVM port	Buttons: Power button, system ID LEDs: System power, HDD activity, LAN activity, system error, system ID Ports: One USB 3.2 Gen 1, VGA, serial, handset connector	Buttons: Power button, system ID LEDs: System power, HDD activity, LAN activity, system error, system ID Ports: One USB 3.2 Gen 1, VGA, serial, handset connector
Rear I/O	RJ45 for remote management, USB port for servicing, system error LED, identification LED, status LED, system power LED	USB 3.2 Gen 1, USB 2.0 for XCC mobile, Mini DP port	USB 3.2 Gen 1, USB 2.0 for XCC mobile, Mini DP port
Management	XClarity Controller, TPM 2.0,	XClarity Controller 2 (XCC2), TPM 2.0	XClarity Controller 2 (XCC2), TPM 2.0
Chassis	D2 chassis support 2 PSU	D3 chassis support 3 PSU (2700W)	D3 chassis support 3 PSU (2700W)