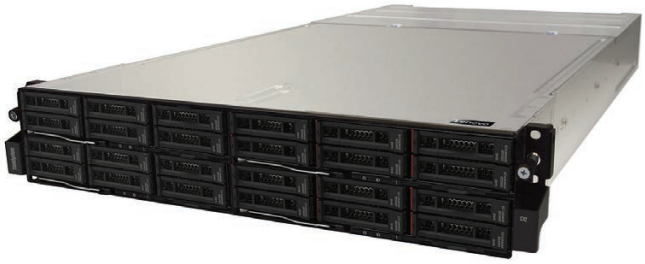
Lenovo ThinkSystem SD530 and D2 Enclosure

Ready to adapt when you are



Ready For What's Next

Easily adjusting to new environments and different conditions has been the dictionary definition of adaptability. Now, Lenovo ThinkSystem SD530 redefines IT adaptability. SD530 is a single platform designed to excel not only at critical enterprise workload environments (such as virtualization, hyperconverged infrastructure, and cloud), but also at high performance computing (HPC) and artificial intelligence (AI). Combining the efficiency and density of blades with the value and simplicity of rack-based servers, SD530 could very well be the most adaptable server on Earth.

ThinkSystem SD530 consists of a modular 2U Lenovo D2 Enclosure containing up to four front-access SD530 servers (nodes). Each node, incorporating two powerful Intel® Xeon® processor Scalable family CPUs, achieves up to 56 percent faster performance than the previous generation. The innovative design of the D2 enclosure provides the flexibility to meet varied needs in the modern data center. For example, multiple D2 Enclosures can be easily daisy-chained together and then managed as a single unit, which reduces cabling costs by as much as 92 percent, compared to the previous generation*, and simplifies administration.

Ultra-dense, Ultra-agile

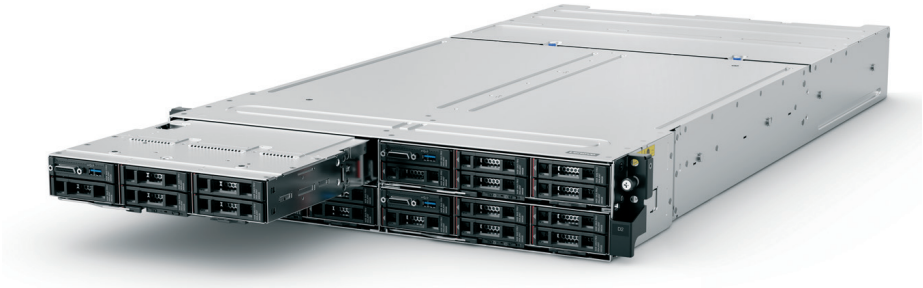
Today's IT managers are always driven to do more with less. The SD530 handles twice the workloads per U of traditional 1U servers. In a single 42U rack you can mount up to 76 servers with: Up to 152 processors, 2,128 cores, 77.8TB of memory, and 3.6PB of storage†. SD530 provides 32 more cores per U than the previous generation* while maintaining drive density of up to 6 SFF drives per node with up to two direct-connect NVMe SSDs—all within industry-standard racks.

For software-defined storage and hyperconverged workloads that need significant local storage, SD530 offers ideal storage density and capacity. Support for U.2 SSDs provides ample performance to meet increasing business demands. Internal M.2 boot drives enable increased capacity and significantly more reliability than the SATADOM solutions used today.

Lenovo™

Maximum Compute Capability

SD530 is engineered to run the highest-core Intel® Xeon® Platinum processors, to power through your most demanding HPC/AI workloads. The innovative D2 Enclosure can accept an optional 1U tray that supports two GPUs or accelerators per node (two trays max per D2 Enclosure). Additional memory and storage technology enhancements provide exceptional performance and flexibility in any environment:



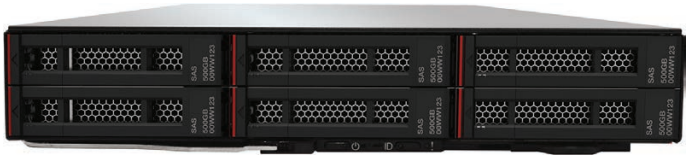
The revolutionary design of rear shuttles used with the D2 Enclosure provides maximum I/O flexibility for the SD530 ultra-dense platform.

- 50 percent increase in memory channels and capacity, with an 11 percent increase in memory speed vs. the prior generation 2U/4-node platform*
- Twice the SAS bandwidth of the previous generation, with support for 12Gb SAS
- Twice the storage capacity of the prior platform* for hyperconverged environments

Transformative Agility

ThinkSystem SD530 was engineered for flexibility. By utilizing a single platform designed to excel at both enterprise and HPC workloads, it enables you to reduce qualification and test times and increase your flexibility by using common components and management.

This is accomplished through the revolutionary design of the D2 Enclosure. The front of the unit holds up to four nodes that are "warm-swappable" to maximize uptime. Individual nodes can be removed without powering down the remaining three nodes. Each SD530 node contains processors, memory, and up to six SFF storage devices.



The SD530 delivers the density of blades with the economics of rack systems.

The rear of the D2 Enclosure contains a "shuttle" with power supplies, fans, adapter slots, and networking and management ports. By disaggregating the adapter slots and NICs (both LOM and PCIe) from the nodes, the unique shuttle designs provide maximum I/O flexibility. The enclosure supports either of two shuttles:

- The **x16 Simple-Swap PCIe Shuttle**, with four PCIe x16 low-profile adapter slots (one per node)—maximizing I/O performance
- The **x8 PCIe Shuttle**, with eight PCIe x8 low-profile adapter slots (two per node)—maximizing the number of adapter slots

Both shuttles support 10Gb Base-T, 10Gb SFP+, or no-LOM options, enabling you to install only the LOM/NICs you need for the best networking options within your budget. The shuttles support a wide array of high-speed interconnect fabrics, including OmniPath and InfiniBand for HPC/AI environments, as well as a full range of Ethernet and Fibre Channel cards for more traditional enterprise and cloud environments.

Easily Managed

Lenovo XClarity Controller is an all-new hardware embedded management engine common in every ThinkSystem server. XClarity Controller features an uncluttered graphical user interface, industry standard Redfish-compliant REST APIs, and enables booting in half the time of prior generation servers, with up to 6x faster firmware updates. The dual-port XClarity Controller management module reduces cabling cost and complexity by as much as 92 percent, compared to the previous generation.

Lenovo XClarity Administrator is a virtualized application that centrally manages ThinkSystem servers, storage, and networking. Via reusable patterns and policies, it ramps up and scales infrastructure provisioning and maintenance. It serves as a central integration point to extend your data center management processes to physical IT. Running XClarity Integrators in external IT applications, or integrating through REST APIs, helps you further speed services provisioning, streamline IT management, and contain costs.

Lenovo servers continue to be the industry's #1 most reliable[§], with the industry's highest customer satisfaction[‡] rating.

Lenovo Services

Supporting the full life cycle of your investment, Lenovo Services are the perfect complement to Lenovo's world-class enterprise products: Lenovo ThinkSystem servers, storage and networking offerings.

As the trusted services provider for thousands of companies around the world, Lenovo has the expertise and experience to help with everything from solutions architecture to implementation, integration, and migration, to proactive management services.

Lenovo Services guarantee you a superior service experience, and are delivered through Lenovo service professionals and the network of Lenovo Authorized Service Providers.

Why Lenovo

Lenovo is a global Fortune 500 company and a leader in providing innovative consumer, commercial, and enterprise technology. Lenovo enterprise systems deliver industry-leading performance, reliability, and security in virtualized and cloud environments for analytics, database, virtual desktop, infrastructure, and web workloads. Lenovo also offers simplified and extensible systems management tools so you can manage your infrastructure on your own terms. Consistently ranked #1 in reliability and customer satisfaction, the Lenovo enterprise server, storage, and networking portfolio provides the hardware for businesses that never stand still.

Specifications

Form Factor/Height	2U rack enclosure; 4 independent compute nodes
Processor (Max)	Up to 2x Intel® Xeon® Platinum processors, up to 165W
Memory (Max)	Up to 1TB in 16x slots, using 64GB DIMMs; 2666MHz TruDDR4
Expansion Slots	1x shuttle per D2 enclosure: either **x8 PCIe Shuttle** with 8x PCIe 3.0 x8 slots (2 per node); or **x16 PCIe Shuttle** with 4x PCIe 3.0 x16 slots (1 per node). Up to 2x external 1U trays (with up to 2 GPUs per node each)
Drive Bays (Total/Hot-Swap)	Up to 24x (6x per node) HS SFF SAS/SATA HDDs/SSDs; up to 8x (2x per node) HS SFF NVMe SSDs
Network Interface	Opt. 8-port EIOM 10Gb SFP+ (two ports per node); Opt. 8-port EIOM 10GbaseT RJ45 (two ports per node)
Power Supply (Std/Max)	2x hot-swap/redundant 1+1 1600W/2000W; or 1x non-redundant 1100W
Hot-Swap Components	Power supplies, fans, SAS/SATA/NVMe storage devices; compute nodes are warm-swap
RAID Support	SW RAID supports JBOD; Entry RAID; opt. HW RAID 12Gb supports JBOD; **plus** M.2 boot support with optional RAID
Systems Management	XClarity Controller embedded management, XClarity Administrator centralized infrastructure delivery, XClarity Integrator plugins, and XClarity Energy Manager centralized server power
Operating Systems Supported	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware vSphere. Visit lenovopress.com/osig for details.
Limited Warranty	3-year customer replaceable unit and onsite service, next business day 9x5, opt. service upgrades

† Assumes 4U of rack occupied by networking or other components; * Compared to Lenovo NeXtScale nx360 M5.
§ 2016-2017 Global Hardware, Server OS Reliability Report, ITIC; October 2016; ‡ 2H16 Corporate IT Buying Behavior and Customer Satisfaction Study, TBR; December 2016.

Featured Options

7.68TB 12Gb 2.5-inch SAS Hot-Swap SSD	U.2 1.92TB NVMe PCIe 3.0 Hot-Swap SSD	64GB TruDDR4 LRDIMM
7N47A00122	**7N47A00096**	**7X77A01305**
High-capacity ultra-fast SAS solid-state drive with 12Gb transfer rate. Perfect for storage tiering.	NVMe flash drives deliver lower latency and higher throughput than SAS or SATA.	Lenovo TruDDR4 2666MHz high-performance memory. Increases reliability and performance for mission-critical workloads.

Visit Options for more information

For More Information

To learn more about the Lenovo ThinkSystem SD530, contact your Lenovo representative or Business Partner or visit: **www.lenovo.com/thinksystem**. For detailed specifications, consult the SD530 Product Guide.

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