

Lenovo ThinkSystem SR950

“Always-on” reliability on x86



The Critical Nucleus

Lenovo ThinkSystem SR950 is designed for your most demanding, mission-critical workloads, such as in-memory databases, large transactional databases, batch and real-time analytics, ERP, CRM, and virtualized server workloads. The powerful 4U ThinkSystem SR950 can grow from two to eight Intel® Xeon® processor Scalable family CPUs, achieving up to 135 percent faster performance than the previous generation. The modular design of SR950 speeds upgrades and servicing with easy front and rear access to all major subsystems, to keep your data flowing.

Reliability Redefined

Core business workloads require systems that can provide continuous availability. In the past, to get high availability, customers often had to sacrifice performance with expensive proprietary platforms that locked them into inflexible ecosystems. The modular Lenovo ThinkSystem SR950 is designed from the

ground up to deliver “always-on” reliability on an x86 platform. Featuring multiple levels of resiliency to protect data, the ThinkSystem SR950 is built to ensure continuous operation:

- Predictive Failure Analysis alerts administrators to impending failure of processors, memory, PSUs, system fans, adapter slots, HDDs/SSDs, and VRMs, allowing servicers to schedule planned downtime, rather than reacting to sudden failure
- Independently-powered light path diagnostic LEDs light up beside the failing component for instant identification, enabling fast servicing and reduced downtime
- Machine Check Architecture (MCA) Recovery provides OS-layer assisted recovery from uncorrectable data errors, to prevent system reset
- Adaptive Double Device Data Correction protects the system from memory errors while effecting a repair
- Fatal Error Handling enables override of application shutdown by setting a custom handler of fatal errors

Lenovo™

These are only a few of the many technologies that deliver the exceptional system availability and continuous application performance needed for mission-critical core applications. In addition, Lenovo servers continue to be the industry's #1 most reliable[†], with the industry's highest customer satisfaction[§] rating.

Unparalleled Performance

To deliver real-time insights for real-time businesses, ThinkSystem SR950 boosts application performance with a combination of CPU, memory, storage, and I/O technology enhancements, to provide the fastest throughput for your most data-hungry workloads:

- Intel® Xeon® processor Scalable family CPUs; up to 205W and 28 cores per processor.
- 100 percent more memory—40 percent faster with 35 percent lower latency than the prior generation*.
- LAN Direct—Double the number of integrated networking ports, two standard with two optional, to increase performance, without using PCIe slots.
- Direct-connect NVMe ports—Up to 12 motherboard connections for NVMe storage provide ultra-fast read/writes and reduce costs by eliminating some or all PCIe switch adapters. SR950 offers three times the NVMe storage capacity of the prior-generation 8-CPU system**, and storage can be tiered for faster application performance, to provide the most cost-effective solution.

With increased performance across CPU, memory, storage, and I/O, SR950 expands on industry-standard technology to establish new thresholds of performance. Incorporating up to eight Intel Xeon Platinum processors, SR950 supports up to 12TB of memory and 224 processing cores in only 4U of rack space. This makes it ideal for mission-critical applications, in-memory databases, or large analytics workloads on a dense, extremely scalable, high-availability platform.

Unique Modular Design

The ability to scale up your systems is a requirement that has been more easily said than done. The unique modular design of SR950 redefines scalability by putting everything within reach. All major subsystems are easily accessed from either the front or rear and can be quickly added or replaced without removing the chassis. Housing both 4- and 8-socket configurations in the same chassis, SR950 features:

- Upper and lower compute trays that hold up to 4 CPUs, 48 DIMMs and 12 2.5-inch storage bays apiece—all in a 4U chassis, which is half the rack space of the previous-generation eight CPU system. The compute trays slide out of the front of the chassis for easy upgrades and serviceability.
- Up to 19 adapter slots—including 11 PCIe x16 slots, for nearly twice the x16 expansion of the previous generation, making the system ideal for I/O-intensive workloads.
- An innovative midplane interconnect that improves system cooling and reduces costs.

This flexibility of I/O and storage makes ThinkSystem SR950 one of the most versatile systems in the industry. SR950 provides the ultimate in performance, reliability[†], flexibility, and customer satisfaction[§] for customers with the most demanding workloads.



Upper and lower compute trays slide out the front of the chassis for easy upgrades and serviceability



ThinkSystem Server Deployment and Management

Lenovo XClarity Controller is an all-new hardware embedded management engine built into every ThinkSystem server. Designed for data centers that put a premium on precision and efficiency, it has a simple, uncluttered graphical user interface. XClarity Controller is built for ease of interoperability, incorporating Redfish-compliant REST APIs. And it boots to the operating system in half the time of prior-generation servers, and with up to six times faster firmware updates.

Lenovo XClarity Administrator is a virtualized software application designed to centrally manage ThinkSystem servers, storage, and networking. It provides discovery and inventory management, software-based configuration patterns, policy-based firmware management, and provisioning of operating systems and hypervisors to multiple systems. It also serves as a centralized point of integration to extend your existing standardized data center processes. Running XClarity Integrators from your external IT applications, or integrating with open REST APIs, allows you to use familiar tools and consoles to deploy and manage Lenovo infrastructure.

Specifications

Form Factor/Height	Rack/4U
Processor (Max)	Up to 8x Intel® Xeon® Platinum processors, up to 28x cores per processor, up to 205W
Memory (Max)	Up to 12TB in 96 slots, using 128GB DIMMs; 2666MHz TruDDR4
Expansion Slots	Up to 14x rear PCIe, (11x x16 +, 3x x8), 2x shared ML2 and PCIe x16) and 1x LOM; plus 2x front dedicated-RAID
Internal Storage (Total/Hot-swap)	Up to 24x SFF bays supporting SAS/SATA HDDs/SSDs, including 12x SFF NVMe SSDs
Network Interface	Up to 2x (1/2/4-port) 1GbE, 10GbE, 25GbE, or InfiniBand ML2 adapters; plus 1x (2/4-port) 1GbE or 10GbE LOM card
Power Supply (Std/Max)	Up to 4x shared 1100W or 1600W AC 80 PLUS Platinum
Security and Availability Features	TPM 1.2/2.0; PFA; HS/redundant drives, fans, and PSUs; internal light path diagnostic LEDs; front-access diagnostics via dedicated USB port
Hot-Swap/Redundant Components	Power supplies, fans, SAS/SATA/NVMe storage
RAID Support	Software RAID std.; opt. hardware RAID; M.2 boot support with opt. RAID.
Systems Management	XClarity Controller embedded management, XClarity Administrator centralized infrastructure delivery, XClarity Integrator plugins, and XClarity Energy Manager centralized server power management
Operating Systems Supported	Microsoft Windows Server, SLES, RHEL, VMware vSphere; Visit lenovopress.com/osig for details.
Limited Warranty	1- or 3-year customer replaceable unit and onsite service, next business day 9x5; opt. service upgrades

* Performance improvement based on Intel preliminary projections.; ** Compared to Lenovo System x3950.; † 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

3.84TB Mainstream NVMe PCIe 3.0 Flash Adapter	2.5-inch 7.68TB SAS 12Gb Hot-Swap SSD	128GB TruDDR4 2666MHz (8Rx4 1.2V) 3DS RDIMM
7N47A00098	7N47A00122	7X77A01307
High-performance, low-latency flash adapter optimized for mixed workloads	High-performance, reliable storage solution for read-intensive, high-capacity enterprise applications	TruDDR4 2666MHz DIMM increases memory capacity and performance for memory-intensive workloads

Visit [Options](#) for more information.

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.

For More Information

To learn more about the Lenovo ThinkSystem SR950, contact your Lenovo representative or Business Partner or visit: www.lenovo.com/thinksystem. For detailed specifications, consult the [SR950 Product Guide](#).

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