ThinkSystem SR950

Outstanding compute performance, manageability and resiliency

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 second-generation Intel® Xeon® Processor Scalable family CPUs, delivering up to 36% total performance improvement over the first generation processor.* 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 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

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‡.

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:

- Second-generation Intel® Xeon® Processor Scalable family CPUs; up to 205W and 28 cores per processor.
- 100% more memory—40% faster with 35% 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 24TB 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.

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

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″ 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 the SR950 one of the most versatile systems in the industry. SR950 provides the ultimate in performance, reliability‡ and flexibility for customers with the most demanding workloads.

Workload-Optimized Support

Intel® Optane™ DC Persistent Memory delivers a new, flexible tier of memory designed specifically for data center workloads that offers an unprecedented combination of high-capacity, affordability and persistence. This technology will have a significant impact on real-world data center operations: reduction of restart times from minutes down to seconds, 1.2x virtual machine density, dramatically improved data replication with 14x lower latency and 14x higher IOPS, and greater security for persistent data built into hardware.*

ThinkSystem Server Deployment, Management and Security

Lenovo XClarity Controller is the embedded management engine in all ThinkSystem servers that is designed to standardize, simplify, and automate foundation server management tasks.

Lenovo XClarity Administrator is a virtualized application that centrally manages ThinkSystem servers, storage, and networking, which can reduce provisioning time up to 95% versus manual operation. Running XClarity Integrator helps you streamline IT management, speed provisioning, and contain costs by seamlessly integrating XClarity into an existing IT environment.

ThinkShield is a comprehensive approach to security designed to secure the data center, from the foundation of your infrastructure to the network's edge and guard against a security breach. ThinkShield protects your business with each offering, from development through disposal.

Specifications

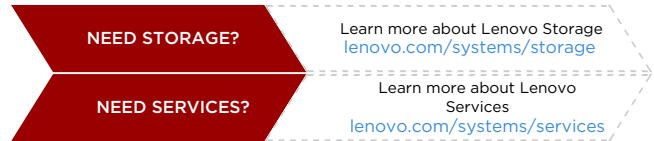|	
Form Factor/Height	Rack/4U
Processor (Max)	Up to 8 second-generation Intel® Xeon® Platinum processors, up to 28x cores per processor, up to 205W
Memory (Max)	Up to 24TB in 96 slots, using 256GB DIMMs; 2666MHz / 2933MHz TruDDR4, supports Intel® Optane™ DC Persistent Memory
Expansion Slots	Up to 17x 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 2.5″ bays supporting SAS/SATA HDDs/SSDs, including 12x 2.5″ 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, 1600W or 2000W AC 80 PLUS Platinum
Security and Availability Features	Lenovo ThinkShield, TPM 1.2/2.0; PFA; Hot-swap/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	Optional HW RAID; 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 management
OSes Supported	Microsoft Windows Server, SUSE, Red Hat, VMware vSphere; Visit lenovopress.com/osig for details.
Limited Warranty	1-year and 3-year customer replaceable unit and onsite service, next business day 9x5; optional service upgrades

About Lenovo

Lenovo (HKSE: 992) (ADR: LNVGY) is a US$45 billion Fortune 500 company and a global technology leader in driving Intelligent Transformation. Lenovo's data center solutions (ThinkSystem, ThinkAgile) are creating the capacity and computing power that are changing business and society.

For More Information

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

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Learn more about Lenovo Storage
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* Based on Intel Internal testing, August 2018. † ITIC 2018 Global Reliability Report. ¥ Performance improvement based on Intel projections. ** Compared to Lenovo System x3950.