

# ThinkSystem SR850

## Perfectly balanced, optimized for growth



### Growth is Inevitable

The Lenovo ThinkSystem SR850 is built to deliver the performance and reliability you require today, with the scalability and versatility you'll need as you advance toward the "future-defined" data center.

The flexible 2U SR850 can scale from two to four powerful second-generation Intel® Xeon® Processor Scalable family CPUs delivering up to 36% total performance improvement over the first generation.\* The SR850 also delivers up to 233% more cores and 400% more memory than the previous-generation server\*\*, achieving up to 76% faster performance.

Built for standard workloads like general business applications and server consolidation, it can also accommodate high-growth areas such as databases and virtualization. The agile design of ThinkSystem SR850 provides rapid upgrades for processors and memory, and its large, flexible storage capacity helps you keep pace with data growth.

### Intelligently Designed for Value

When expansion is inevitable, systems have to respond quickly. However, if that response is beyond your budget, system capabilities don't really matter. If you are locked into an inflexible proprietary ecosystem that makes growth painfully expensive, you could face daunting choices between progress and budget. ThinkSystem SR850 is smartly designed to deliver affordable scalability in a standard x86 platform.

In today's data-critical world, customers are looking for additional storage that's both high performing and flexible. SR850 provides the ultimate flexibility in processor, memory, and storage selection, to meet your workload requirements:

- Easy upgrade using a mezzanine design that snaps into place and adds two CPUs and 24 more DIMM slots
- Large memory capacity with 4 CPUs, ideal for a wide range of applications
- Lenovo AnyBay drive bays accommodate SAS, SATA, and NVMe storage devices in the same bays
- Direct-connect NVMe ports—Four direct motherboard connections for NVMe storage provide ultra-fast read/writes and reduce costs by eliminating PCIe switch adapters. Plus, storage can be tiered for faster application performance, to provide the most cost-effective solution.

With four of the latest Intel® Xeon® processors installed, SR850 can support up to 6TB of memory and 112 processing cores in only 2U of rack space. This enables you to run a wide variety of applications, from databases to client virtualization, to server consolidation projects. The SR850 design allows for drive configuration flexibility, as well as providing tremendous memory density, in the same 2U as many 2-socket servers.

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These are merely a few of the incorporated technologies that create the exceptional performance, scalability, and value needed for enterprise-class workloads, both today and into the future.

### The Confidence to Run Anything

Because your business depends on your systems, you need servers built for reliability. The ThinkSystem SR850 delivers multiple layers of reliability from the processors up, so you can have the confidence that you're running your workloads on a platform built to stay up.

- Enterprise-class CPU reliability, availability, and serviceability (RAS) features
- Light path diagnostics—Onboard component LEDs to instantly identify components needing replacement, for faster serviceability and reduced downtime
- TPM 2.0—Secures and authenticates the system to prevent unauthorized intrusion
- Predictive Failure Analysis—Identifies a failing component prior to failure, to enable scheduled parts replacement—rather than reacting after a failure—and minimizes or avoids downtime.

With reliability and security designed into the system, SR850 builds on industry-standard technologies to deliver an economical, dependable platform for the most demanding users and applications.

### Optimized with the Future in Mind

The capability to expand your system goes beyond just putting more existing components inside. You must be able to take advantage of emerging technologies to increase performance and capabilities for competitive advantage. SR850 has multiple features that enable you to take advantage of tomorrow's technologies:

- Unique dense scalability—from two CPUs and 24 DIMMs to four CPUs and 48 DIMMs, in a 2U system

- Up to eight NVMe storage bays for ultrafast read/write storage that can be tiered for greater application performance.
- Easy expansion with up to nine PCIe slots (including two x16), one LOM slot, and one ML2 slot
- M.2 storage for rapid OS boot, faster than either USB keys or SD cards; frees up drive bays for data storage

### 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 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	2U rack server
Processor (Max)	2 or 4 second-generation Intel® Xeon® Processor Scalable family CPUs, up to 165W
Memory (Max)	Up to 6TB in 48x slots using 128GB DIMMs; 2666MHz / 2933MHz TruDDR4
Expansion Slots	Up to 9x PCIe plus 1x LOM; optional 1x ML2 slot
Internal Storage	Up to 16x 2.5" storage bays supporting SAS/SATA HDD and SSDs or up to 8x 2.5" NVMe SSD; plus up to 2x mirrored M.2 boot
Network Interface	Multiple options with 1GbE, 10GbE, 25GbE, 32GbE, 40GbE or InfiniBand PCIe adapters; one (2-/4-port) 1GbE or 10GbE LOM card
Power Supply (Std/Max)	2x hot-swap/redundant: 750W/1100W/1600W 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; diagnostic LCD panel
RAID Support	HW RAID (up to 16 ports) with flash cache; up to 16-port HBAs
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, RHEL, SLES, VMware vSphere. Visit <a href="https://lenovopress.com/osig">lenovopress.com/osig</a> for more information.
Limited Warranty	1-year and 3-year customer replaceable unit and onsite service, next business day 9x5; optional service upgrades

For More Information

To learn more about the ThinkSystem SR850, contact your Lenovo representative or Business Partner or visit: [lenovo.com/thinksystem](https://lenovo.com/thinksystem). For detailed specifications, consult the [SR850 Product Guide](#).

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\* Based on Intel internal testing, August 2018. \*\* Compared to Lenovo System x3750 M4.

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