Five Highlights of the Lenovo ThinkSystem SR850 V3 Server

Article

The ThinkSystem SR850 V3 is a 4-socket server that is densely packed into a 2U rack design. The server offers technology advances, including fourth-generation Intel Xeon Scalable processors, scale-up capacity with up to 16TB of system memory, up to 12x PCIe slots, and up to 24x 2.5-inch drive bays. The SR850 V3 is ideal for mission-critical applications scaling up from 2-socket systems such as enterprise virtualization, CRM, ERP, SQL databases, VDI and small-mid sized SAP HANA computing environments. Lets take a look at five highlights of the SR850 V3 server.

Figure 1. Lenovo ThinkSystem SR850 V3

1. Optimized for Growth with 2U Density

The SR850 V3 delivers high performance, reliability, and versatility to effortlessly tackle the workloads that keep your organization moving, enabling you to quickly respond to the expansion of your data infrastructure needs.

The versatile design of the system enables you to rapidly upgrade its capabilities with more CPUs, memory, and storage capacity to help you keep pace with growing IT needs. The system has the capability to scale from two to four processors that offers a simple “pay as you grow” upgrade for both processors and memory, resulting in greater system performance to handle growing next-generation workloads.

In addition, the SR850 V3 supports ample amounts of ultra-fast DDR5 memory, considerable on-board storage capabilities with support for up to 24 2.5-inch drives, up to 24 direct link NVMe drive support for latency-sensitive applications, and even up to two double-width 350W or four single-width GPUs.

2. Flexible PCIe and GPU Support

The SR850 V3 supports a total of up to 12x rear-accessible PCIe slots, plus two dedicated OCP 3.0 SFF slot for networking. The SR850 V3 server supports Gen4-only or Gen5+Gen4 slot configurations to suit the needs of installed applications.

The SR850 V3 can also support up to 4x single wide GPUs or 2x double-wide GPUs for substantial processing power in a 4 Processor - 2U system.

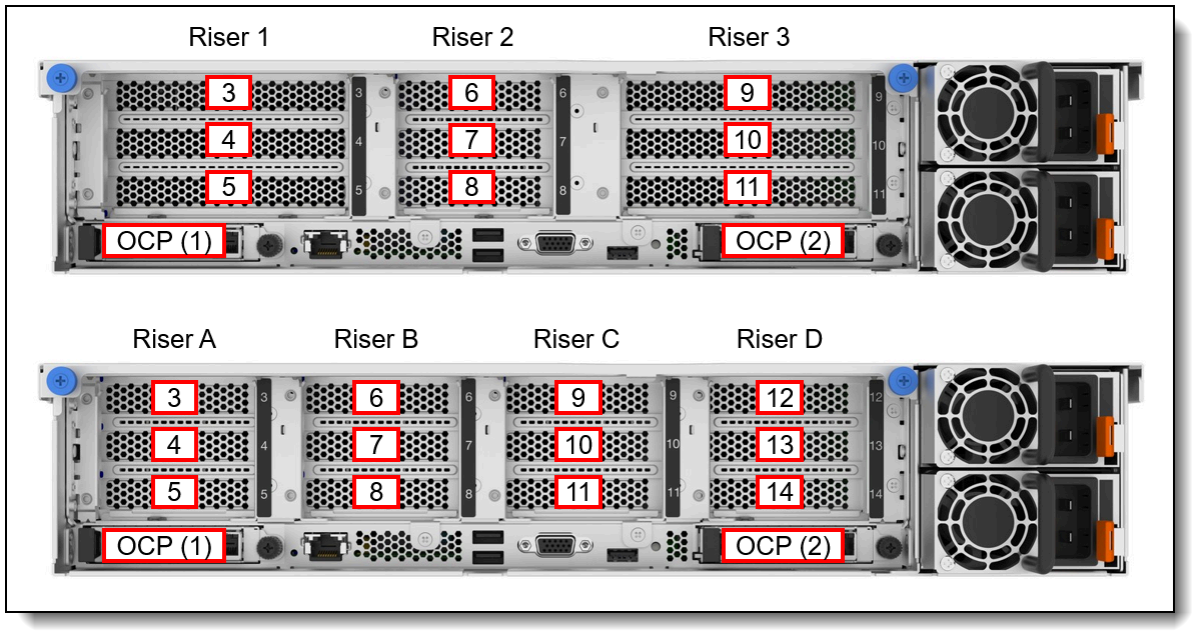

Figure 2. Slots in the SR850 V3

3. Flexible Storage

The SR850 V3 supports up to 24x 2.5-inch SAS/SATA or AnyBay drive bays. All 24x drive bays are hot-swap and all front-accessible. This includes up to 24x NVMe drives to maximize storage performance. All connections are made using onboard connectors. Each x4 drive has a full x4 (four PCIe Gen5 lanes) connection to the processor.

The server also supports internal M.2 drives (one or two, installed in an adapter), or rear-accessible hot-swap 7mm SSDs (installed in the place of two PCIe slots).

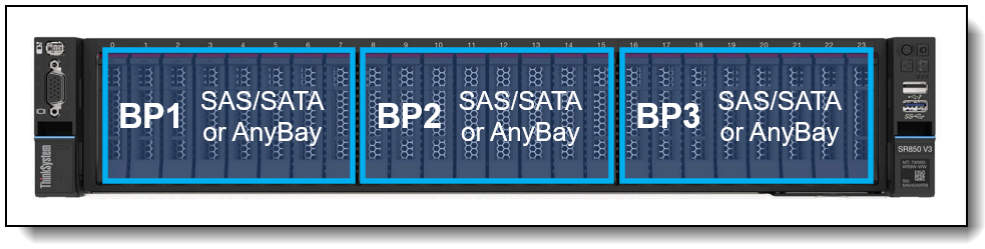

Figure 3. SR850 V3 Front Storage Backplanes

4. Increased Performance, Capacity and Lower Power with DDR5 Memory

DDR5 is the newest RAM available for Lenovo ThinkSystem servers. The DDR means “double data rate”, and the “5” means that this is the fifth generation of this type of RAM.

DDR5 Provides:

- Higher Performance - DDR5 offerings are faster and more efficient than the latest DDR4. DDR5 starts at 4800 MT/s, where DDR4 maxes out at 3200 MT/s.
- Higher Capacity - DDR5 memory supports larger RAM devices than DDR4.
- Lower Power Consumption - Not only do the DIMMs themselves consume less power, but less power is needed to cool them.

5. Enhanced Security

The SR850 V3 includes many security features including Lenovo ThinkShield security software. ThinkShield prevents, detects and remediates against attacks, providing security in the supply chain, below the OS in the server, and from the OS to the cloud. The XClarity system manager simplifies infrastructure processes, handling faults, and adding new servers to the network. It also adds security by monitoring log events.

The SR850 V3 server offers the following electronic security features:

- Secure Boot function of the Intel Xeon processor
- Support for Platform Firmware Resiliency (PFR) hardware Root of Trust (RoT)
- Firmware signature processes compliant with FIPS and NIST requirements
- Administrator and power-on password
- Integrated Trusted Platform Module (TPM) supporting TPM 2.0
- Self-encrypting drives (SEDs)

The SR850 V3 server also offers the following physical security features:

- Optional chassis intrusion switch (standard on some models)
- Optional lockable front security bezel

Lenovo’s ThinkShield Security is a transparent and comprehensive approach to security that extends to all dimensions of our data center products: from development, to supply chain, and through the entire product lifecycle. This includes Platform Firmware Resiliency (PFR) hardware Root of Trust (RoT) which enables the system to be NIST SP800-193 compliant.

Further reading

For further reading, see these SR850 V3 resources:

- SR850 V3 Datasheet
- SR850 V3 Product Guide
- SR850 V3 Product Web page

This article is one in a series on the ThinkSystem V3 servers:

- Five Highlights of the Lenovo ThinkSystem SR630 V3 Server
- Five Highlights of the Lenovo ThinkSystem SR650 V3 Server
- **Five Highlights of the Lenovo ThinkSystem SR850 V3 Server**
- Five Highlights of the Lenovo ThinkSystem SR860 V3 Server
- RAS Features of the Lenovo ThinkSystem Intel Servers

About the author

Randall Lundin is a Senior Product Manager in the Lenovo Infrastructure Solution Group. He is responsible for planning and managing ThinkSystem servers. Randall has also authored and contributed to numerous Lenovo Press publications on ThinkSystem products.

Related product families

Product families related to this document are the following:

- Large Memory Capacity Servers
- ThinkSystem SR850 V3 Server

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