

Five Highlights of the Lenovo ThinkSystem SR650 V3 Server

Article

The ThinkSystem SR650 V3, with dual 4th Gen Intel® Xeon® Scalable processors, is designed for performance. With a GPU-rich 2U platform, an abundance of TruDDR5 memory for speed, and increased I/O lanes for optimized data transfer rates, the SR650 V3 is ideal for complex workloads like AI, HPC, cloud service computing, virtualization and IT infrastructure. Lets take a look at five highlights of the SR650 V3 server.



Figure 1. Lenovo ThinkSystem SR650 V3

1. Support for Complex Workloads

The ThinkSystem SR650 V3 offers high performance, storage and memory capacity to tackle today's workloads. With flexible storage and networking options the SR650 V3 can easily scale for changing needs. The SR650 V3 supports a wide range of workloads and is ideal for:

- Enterprise IT infrastructure
- Data Analytics
- Public, Private, and Hybrid Cloud Application
- AI/ML applications
- High Performance Computing (HPC)
- 5G/Networking

These complex workloads require servers with performance, speed and capacity for smooth operations and the SR650 V3 is ready to deliver.

2. Flexible Storage

The SR650 V3 has a tremendous amount of storage and flexibility in a 2U server. The SR650 V3 has three drive bay zones and supports up to 20x 3.5-inch or 40x 2.5-inch hot-swap drive bays or a combination of drive bays, depending on the selected chassis and backplane configuration. The server also supports configurations without any drive bays if desired.

The three drive bay zones are as follows:

- Front:
 - Up to 12x 3.5-inch hot-swap bays, or
 - Up to 24x 2.5-inch hot-swap bays
- Middle:
 - 4x 3.5-inch hot-swap bays, or
 - 8x 2.5-inch hot-swap bays
- Rear:
 - Up to 4x 3.5-inch hot-swap bays, or
 - Up to 8x 2.5-inch hot-swap bays
 - Also supports 2x 7mm hot-swap drives bays

All drives are hot-swap and are accessible from the front, from the rear, or from drive bays that are located in the middle of the server (accessible when you remove the top cover of the server).

The server also supports one or two M.2 drives, installed in an M.2 adapter internal to the server.

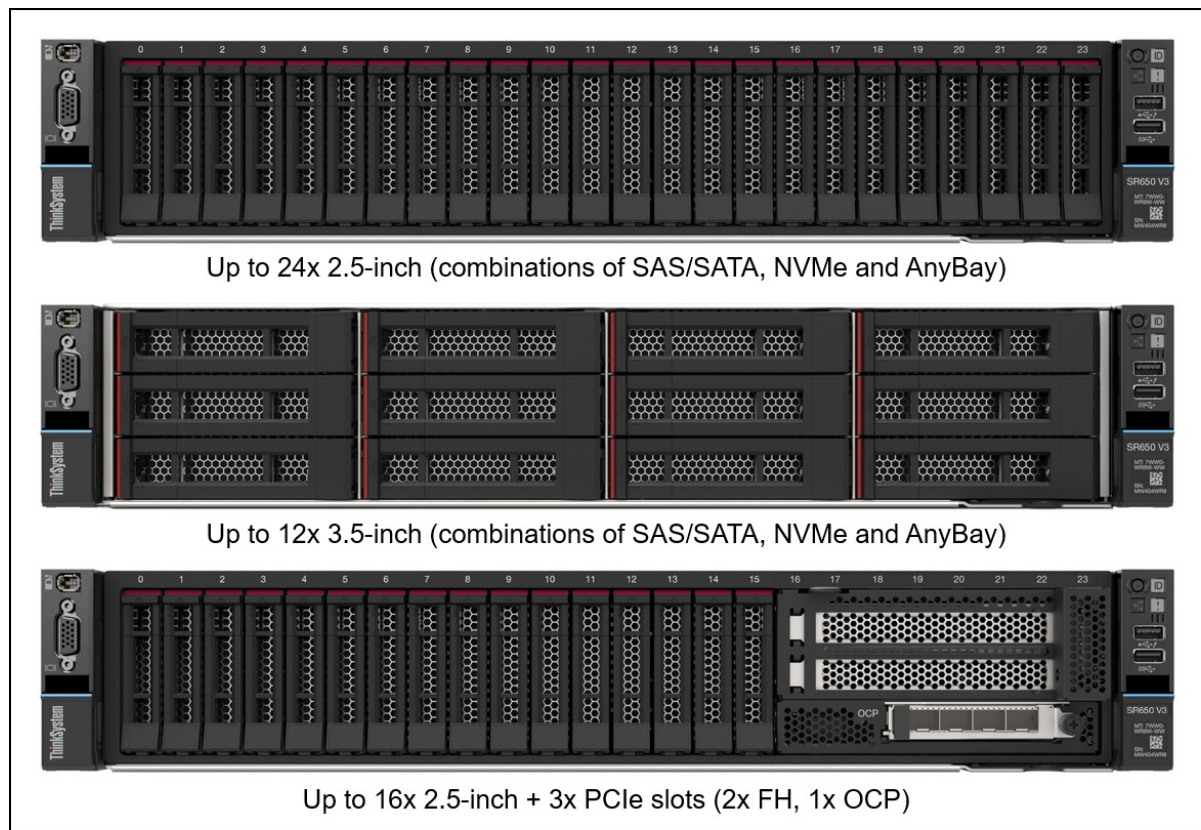


Figure 2. Front view of the ThinkSystem SR650 V3

3. Flexible PCIe and GPU Support

The SR650 V3 supports a total of up to 10x rear-accessible PCIe slots, plus a dedicated OCP 3.0 SFF slot for networking. The SR650 V3 can also support up to 8x single wide GPUs or 3x double-wide GPUs for substantial processing power in a 2U system.

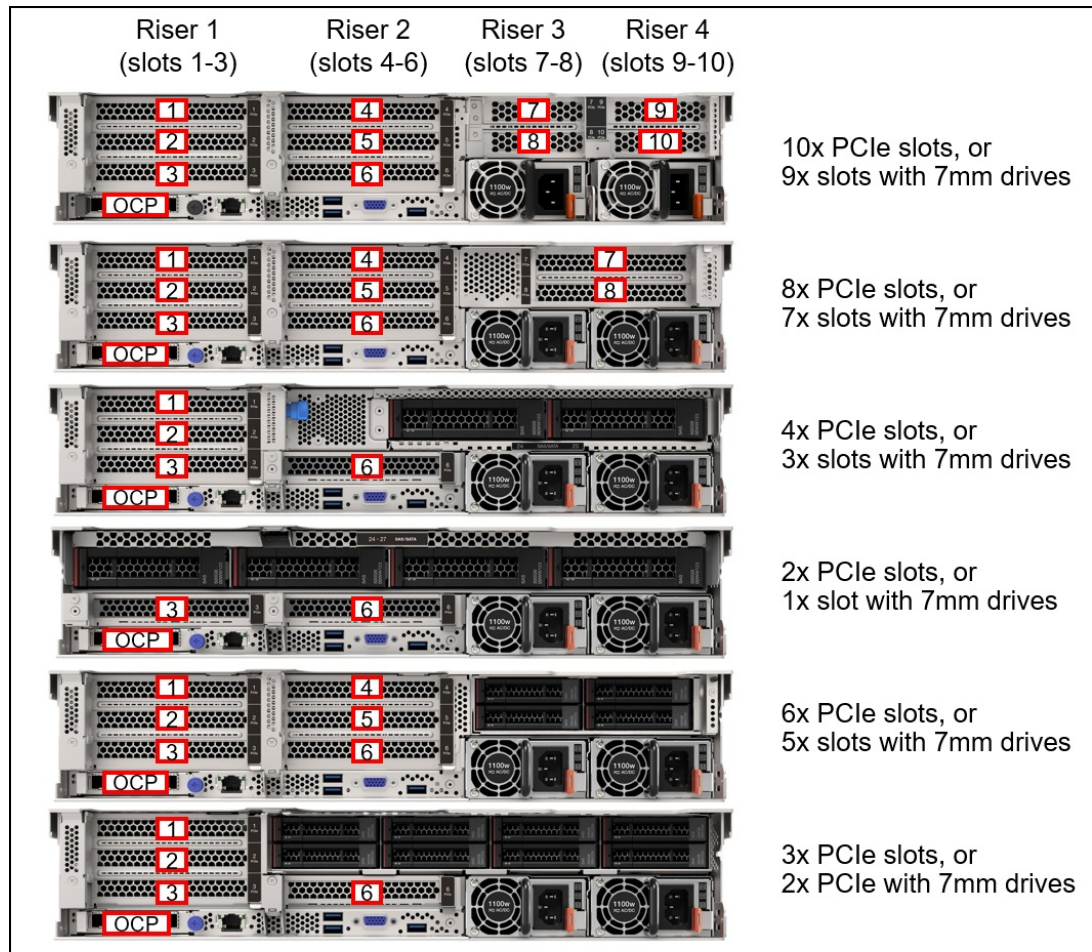


Figure 3. SR650 V3 rear slot configurations

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 SR650 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 SR650 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 SR650 V3 server also offers the following optional physical security features:

- Optional chassis intrusion switch
- 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 SR650 V3 resources:

- [SR650 V3 Datasheet](#)
- [SR650 V3 Product Guide](#)
- [SR650 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](#)

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Related product families

Product families related to this document are the following:

- [ThinkSystem SR650 V3 Server](#)

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