

## What's New - ThinkSystem V2 Servers Article

Lenovo Infrastructure Solutions Group announces the next-generation Lenovo ThinkSystem servers showcasing a unique balance of performance, security and efficiency – all built on 3rd Gen Intel® Xeon® Scalable processors and PCIe Gen4.

As companies of all sizes continue to work on solving real-world challenges – they require powerful infrastructure solutions to help them gain faster insights and remain competitive. With this new generation of ThinkSystem solutions, Lenovo introduces innovations for real-world workloads including high performance computing (HPC), artificial intelligence (AI), modeling and simulation, cloud, virtual desktop infrastructure (VDI) and advanced analytics.



The new servers can be divided into two groups based on customer workload:

- Mainstream servers in rack, tower and blade form factor offering enhanced performance, reliability, flexibility and security:
  - ThinkSystem SR650 V2 - 2U rack server
  - ThinkSystem SR630 V2 - 1U rack server
  - ThinkSystem ST650 V2 - tower server
  - ThinkSystem SN550 V2 - blade server
- HPC/AI performance-optimized servers that provide massive computing power in minimal floor space with reduced energy consumption:
  - ThinkSystem SR670 V2 - 3U GPU-optimized air-cooled server
  - ThinkSystem SD650 V2 - water-cooled CPU-optimized server
  - ThinkSystem SD650-N V2 - water-cooled GPU-optimized server
  - ThinkSystem SD630 V2 - air-cooled 2U4N dense compute nodes

## ThinkSystem V2 servers

Learn more about each of the new servers from Lenovo.

### ThinkSystem SR650 V2

Ideal for scalability from SMB to large enterprises and managed cloud service providers, the 2U two-socket server is engineered for speed and expansion, with flexible storage and I/O for business-critical workloads. It provides outstanding performance and memory capacity supported by Intel Optane persistent memory 200 series for database and virtual machine deployments, with support for PCIe Gen4 networking to reduce data bottlenecks.



Learn more:

- [Product web page \(US\)](#)
- [Datasheet](#)
- [Product guide](#)
- [Interactive 3D Tour](#)
- [Walkthrough video](#)

### ThinkSystem SR630 V2

Built for business-critical versatility, the 1U two-socket server features optimized performance and density for hybrid data center workloads such as cloud, virtualization, analytics, computing and gaming. Like the SR650 V2, it provides high performance and memory capacity with support for Intel Optane persistent memory 200 series, and support PCIe Gen4 high-speed networking.



Learn more:

- [Product web page \(US\)](#)
- [Datasheet](#)
- [Product guide](#)
- [Walkthrough video](#)

### ThinkSystem ST650 V2

A versatile mainstream tower server with enterprise manageability and redundancy, the ST650 V2 includes the industry's latest technology best suited to remote offices, branch offices (ROBO), technology and retail, while optimizing workloads. Support for up to 32x 2.5-inch drive bays or 16x 3.5-inch drive bays to maximize internal storage capacity. Can be converted to a 4U rack if desired.



Learn more:

- [Product web page \(US\)](#)
- [Datasheet](#)
- [Product guide](#)
- [Walkthrough video](#)

## ThinkSystem SN550 V2

Designed for enterprise performance and flexibility in a compact footprint, the newest building block in the Flex System family, this blade server node is optimized for performance, efficiency and security – designed to tackle business-critical workloads such as cloud, server virtualization, databases and VDI.

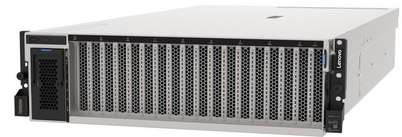


Learn more:

- [Product web page \(US\)](#)
- [Datasheet](#)
- [Product guide](#)

## ThinkSystem SR670 V2

This highly versatile acceleration platform is designed for HPC and AI training workloads, supporting the NVIDIA Ampere datacenter GPU portfolio. With six base configurations that support four high-performance SXM4 GPUs or up to eight PCIe double-wide GPUs, the SR670 V2 allows customers the flexibility to GPUs and supporting I/O that they need. SXM4 configurations feature the Lenovo Neptune liquid-to-air heat exchanger that provides the benefits of liquid cooling without the adding plumbing.



Learn more:

- [Product web page \(US\)](#)
- [Datasheet](#)
- [Product guide](#)
- [Interactive 3D Tour](#)

## ThinkSystem SD650 V2

Based on industry-acclaimed fourth generation, Lenovo Neptune cooling technology, utilizes a highly reliable copper loop and cold plate architecture removing up to 90% of the systems heat (1). The ThinkSystem SD650 V2 is built to tackle compute-intensive workloads such as HPC, AI, cloud, grid and advanced analytics.



Learn more:

- [Product web page \(US\)](#)
- [Datasheet](#)
- [Product guide](#)

## ThinkSystem SD650-N V2

Expanding the Lenovo Neptune platform, direct water-cooling technology for GPUs, this server combines two 3rd Gen Intel Xeon Scalable processors with four NVIDIA A100 SXM4 GPUs to deliver maximum performance in a dense 1U package. A rack of Lenovo ThinkSystem SD650-N V2 delivers enough compute performance to place in the top 300 of the TOP500 list of supercomputers (2)



Learn more:

- [Product web page \(US\)](#)
- [Datasheet](#)
- [Product guide](#)
- [Interactive 3D Tour](#)

## ThinkSystem SD630 V2

This ultra-dense, ultra-agile server handles twice the workloads per server rack unit of rack space vs. traditional 1U servers. By leveraging Lenovo Neptune Thermal Transfer Modules, the SD630 V2 supports processors up to 250W, driving 1.5 times the performance of the previous generation in the same rack space (3).



Learn more:

- [Product web page \(US\)](#)
- [Datasheet](#)
- [Product guide](#)

## Additional resources

For additional resources about the new servers:

- [ThinkSystem Server Comparison](#)
- [Intel Xeon Scalable Processor Reference for Lenovo ThinkSystem Servers](#)
- [ThinkSystem and ThinkAgile GPU Summary](#)
- [Lenovo Server Operating System Interoperability Guide \(OSIG\)](#)
- [ThinkSystem SSD Portfolio](#)

See our partner page on Intel's launch page "[How Wonderful Gets Done](#)"?

## ThinkSystem security

With the ThinkSystem V2 servers, Lenovo is now enhancing security aspects of the servers, both in the manufacturing supply chain and in the delivery of firmware updates.

### Intel Transparent Supply Chain

With Intel ThinkSystem servers and Intel Transparent Supply Chain, you can add a layer of protection in your data center and have peace of mind that the server hardware you bring into it is safe authentic and with documented, testable, and provable origin.

Lenovo has one of the world’s best supply chains, as ranked by Gartner Group, backed by extensive and mature supply chain security programs that exceed industry norms and US Government standards. Now we are the first Tier 1 manufacturer to offer Intel® Transparent Supply Chain in partnership with Intel, offering you an unprecedented degree of supply chain transparency and assurance.

For more information on this offering, see the paper *Introduction to Intel Transparent Supply Chain on Lenovo ThinkSystem Servers*, available from <https://lenovopress.com/lp1434>.

### Platform Firmware Resiliency - Lenovo ThinkShield

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.

The systems includes Platform Firmware Resiliency (PFR) hardware Root of Trust (RoT) which enables the system to be NIST SP800-193 compliant. This offering further enhances key platform subsystem protections against unauthorized firmware updates and corruption, to restore firmware to an integral state, and to closely monitor firmware for possible compromise from cyber-attacks.

PFR operates upon the following server components:

- UEFI image – the low-level server firmware that connects the operating system to the server hardware
- XCC image – the management “engine” software that controls and reports on the server status separate from the server operating system
- FPGA image – the code that runs the server’s lowest level hardware controller on the motherboard

The Lenovo Platform Root of Trust Hardware performs the following three main functions:

- Detection – Measures the firmware and updates for authenticity
- Recovery – Recovers a corrupted image to a known-safe image
- Protection – Monitors the system to ensure the known-good firmware is not maliciously written

These enhanced protection capabilities are implemented using a dedicated, discrete security processor whose implementation has been rigorously validated by leading third-party security firms. Security evaluation results and design details are available for customer review – providing unprecedented transparency and assurance.

The systems includes support for Secure Boot, a UEFI firmware security feature developed by the UEFI Consortium that ensures only immutable and signed software are loaded during the boot time. The use of Secure Boot helps prevent malicious code from being loaded and helps prevent attacks, such as the installation of rootkits. Lenovo offers the capability to enable secure boot in the factory, to ensure end-to-end protection. Alternatively, Secure Boot can be left disabled in the factory, allowing the customer to enable it themselves at a later point, if desired.

The following table lists the relevant feature code(s).

Table 1. Secure Boot options

Part number	Feature code	Description	Purpose
-------------	--------------	-------------	---------

**Tip:** If Secure Boot is not enabled in the factory, it can be enabled later by the customer. However once Secure Boot is enabled, it cannot be disabled.

- (1) Based on internal research by Lenovo - 90% heat removal via water. Jan-Mar 2021
- (2) Avg Rmax Perf per node ~ 50TF \* 36 Nodes (1 rack) = 1.8PF >1.79PF in position 297 on the November 2020 TOP500 list
- (3) Intel Xeon 8360Y CPU has 36 cores with floating point (FP) results of 419 vs. Intel Xeon 8280 CPU has 28 cores with FP results of 270 = 1.55x FP performance improvement

## **Related product families**

Product families related to this document are the following:

- [ThinkSystem SD630 V2 Server](#)
- [ThinkSystem SD650 V2 server](#)
- [ThinkSystem SD650-N V2 server](#)
- [ThinkSystem SN550 V2 Server](#)
- [ThinkSystem SR630 V2 Server](#)
- [ThinkSystem SR650 V2 Server](#)
- [ThinkSystem SR670 V2 Server](#)
- [ThinkSystem ST650 V2 server](#)

## Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service. Lenovo may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

Lenovo (United States), Inc.  
8001 Development Drive  
Morrisville, NC 27560  
U.S.A.  
Attention: Lenovo Director of Licensing

LENOVO PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Lenovo may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary. Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk. Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

© Copyright Lenovo 2026. All rights reserved.

This document, LP1459, was created or updated on April 6, 2021.

Send us your comments in one of the following ways:

- Use the online Contact us review form found at:  
<https://lenovopress.lenovo.com/LP1459>
- Send your comments in an e-mail to:  
[comments@lenovopress.com](mailto:comments@lenovopress.com)

This document is available online at <https://lenovopress.lenovo.com/LP1459>.

## Trademarks

Lenovo and the Lenovo logo are trademarks or registered trademarks of Lenovo in the United States, other countries, or both. A current list of Lenovo trademarks is available on the Web at <https://www.lenovo.com/us/en/legal/copytrade/>.

The following terms are trademarks of Lenovo in the United States, other countries, or both:

Lenovo®

Neptune®

ThinkAgile®

ThinkShield®

ThinkSystem®

The following terms are trademarks of other companies:

Intel®, the Intel logo, Intel Optane®, and Xeon® are trademarks of Intel Corporation or its subsidiaries.

Other company, product, or service names may be trademarks or service marks of others.