Choosing between Lenovo ThinkSystem SR850 and SR950

Article (withdrawn product)

Lenovo has two ThinkSystem 4-socket capable rack servers. Which one to choose for your 4-socket workloads might not be an obvious decision. This article helps explain the similarities and differences of the ThinkSystem SR850 and SR950 to help with this decision.

SR850 and SR950 overview

The Lenovo SR850 and SR950 are new 4-socket-capable rack servers with strong performance, memory and storage capabilities. Both servers support demanding workloads such as data analytics, large virtualization and enterprise databases

The Lenovo SR850 is a 2U Rack server capable of up to 4 processors and 48 DIMM. The SR850 features a CPU and Memory mezzanine board. Clients have flexibility to configure from 2 Socket 24 DIMM to 4S 48 DIMMs. The SR850 delivers exceptional price/ performance in a dense 2U rack server.

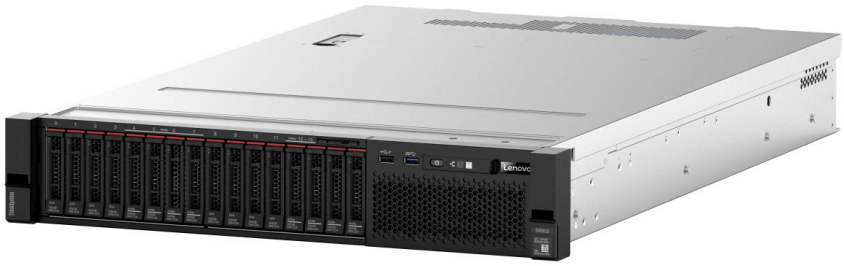

Figure 1. Lenovo ThinkSystem SR850

The Lenovo SR950 is a 4U Rack server capable of up to 8 processors and 96 DIMMs. The SR950 features a modular system with all components accessible via the front or rear of the server. Clients can configure multiple configurations from 2 sockets and 24 DIMM to 8 sockets and 96 DIMMs. The SR950 delivers the highest performance, greatest I/O capabilities and the most NVMe support.

Figure 2. Lenovo ThinkSystem SR950

Common features and capabilities

The SR850 and SR950 share many features and capabilities.

Table 1. Common features

Feature	Feature Description	Customer Benefit
XClarity	Single Management interface across portfolio	Easy to learn and manage - apply cross Lenovo portfolio.
Options	Shared HDD, SSD, PSU, RAID cards, PCIe, etc	Less option parts for clients and business partner to manage and stock
M.2	M.2 embedded OS	Allows for integrated boot media. M.2 provides lower cost, better performance and higher reliability than USB, SD card
NIC options	Modular LOM choices for customization (LOM, ML2, PCIe)	Lower cost I/O and greater choice. Only purchase what you need
Direct NVMe	Direct NVMe connector on the CPU board	Direct NVMe saves PCIe slots and lower cost of ownership compare to the NVMe switch card solution.
2S to 4S Upgrade	Simple 2S to 4S upgrade within the same system	Grow the system as your application needs increase. Only pay for what you need.
RAS	Intel Run Sure and Predictive Failure Analysis (PFA)	Provides outstanding system availability and uninterrupted application performance
Optional Front LCD	Front diagnostic LCD panel display	Used to quickly obtain system status, firmware levels, network information, and health information about the system.

SR850 and SR950 Differences

If you need an 8 socket configuration or the ability to upgrade to the 8 socket configuration in the future, the SR950 is your only choice. If you only need a 4-socket server, you have a choice between the SR850 and SR950. Below are the major differences to help you select between the SR850 and SR950 in a 4-socket configuration.

Table 2. Differences between the SR850 and SR950

Feature/ Capability	SR850 (4S configuration)	SR950 (4S configuration)
Size	2U rack mount	4U rack mount
Sockets	2 to 4 sockets	2 to 4 sockets with ability to upgrade to 8 sockets in future
Storage Bays	Up to 16 2.5” bays	Up to 24 2.5” bays
Memory	Up to 48 DIMM slots and supporting 128GB DIMMs post launch	Up to 48 DIMM slots and supporting 128GB DIMM at launch
NVMe	Up to 8 NVMe drives	Up to 12 NVMe drives
Rear Networking slots	Up to 10 (PCIe, LOM and ML2)	Up to 15 (PCIe, LOM and ML2)
High Bandwidth Networking	Up to 3 (x16) adapter slots in 4S	Up to 7 (x16) adapter slots in 4S
Intel Processor Support	Strong selection of 51xx, 61xx and 81xx CPUs up to 165W	Every available 51xx, 61xx and 81xx CPU including 205W CPUs
Intel 61xx and 81xx CPU Performance	Less performance on average than SR950 (equal performance if using 51xx CPUs)	Maximum system performance

Feature/ Capability	SR850 (4S configuration)	SR950 (4S configuration)
Power Supply	2 power supply bays including 750W PSU	4 power supply bays
SAP HANA	Certified for SAP HANA TDI	Certified SAP HANA Appliance
Cost	Lower base cost	Higher base cost

Further reading

For further reading, see these resources

- Lenovo Press product guide on the SR850
- Lenovo Press product guide on the SR950
- SR850 product web page
- SR950 product web page

This article is one in a series on the ThinkSystem SR950 and SR850 servers:

- Five Highlights of the ThinkSystem SR950
- Five Highlights of the ThinkSystem SR850
- **Choosing between Lenovo ThinkSystem SR850 and SR950**
- Workloads for 4-Socket and 8-Socket Servers
- Usability in the Design of the ThinkSystem SR950
- The Value of Refreshing Your 4-Socket Servers with the ThinkSystem SR950
- ThinkSystem SR950 Memory Decisions
- ThinkSystem SR950 Server Configurations
- The Value of Refreshing Your 8-Socket Servers with the ThinkSystem SR950
- Lenovo ThinkSystem SR950 New Options and Features - December 2017
- ThinkSystem SR950 Performance Leadership
- Lenovo Servers for Mission Critical Workloads
- Microsoft and Lenovo ThinkSystem SR950 – A Perfect Match
- Accelerate Your 4- and 8-Socket Server Refresh Cycle
- SAP Business Process Applications and Lenovo ThinkSystem SR950 – A Perfect Match
- ThinkSystem SR950 New Options - March 2018
- SAP HANA and Lenovo ThinkSystem SR950 – A Perfect Match
- ThinkSystem SR950 Performance Leadership Continues
- New Solution for SAP HANA - Lenovo ThinkAgile HX
- The Advantages of Keeping Mission Critical Workloads On-Premises vs Going to the Cloud
- SQL Server Migration and Lenovo ThinkSystem SR950

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:

- 4-Socket Rack Servers
- 8-Socket Rack Servers
- Large Memory Capacity Servers
- ThinkSystem SR850 Server
- ThinkSystem SR950 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.

This document, LP0737, was created or updated on August 16, 2017.

Send us your comments in one of the following ways:

- Use the online Contact us review form found at:
  https://lenovopress.lenovo.com/LP0737
- Send your comments in an e-mail to:
  comments@lenovopress.com

This document is available online at https://lenovopress.lenovo.com/LP0737.

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®
ThinkAgile®
ThinkSystem®
XClarity®

The following terms are trademarks of other companies:

Intel® is a trademark of Intel Corporation or its subsidiaries.

Microsoft® and SQL Server® are trademarks of Microsoft Corporation in the United States, other countries, or both.

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