

Lenovo Azure Stack HCI Solutions on AMD Servers



Lenovo Azure Stack HCI solutions on ThinkSystem SR665, SR655, SR645 and SR635 servers

Accelerate your Business

Deploying hyperconverged infrastructure has become the de-facto standard for organizations looking to modernize their aging infrastructure. Large storage deployments are increasingly being replaced by HCI based solutions for most general-purpose workloads. HCI has proven to deliver better efficiency and price performance in the datacenter. Additionally, customers have been choosing a hybrid approach, migrating certain workloads to the cloud, while keeping other workloads on-premises.

Azure Stack HCI is Microsoft's HCI solution for customers that wish to run workloads on-premises and extend easily to Azure for hybrid capabilities such as back-up, site recovery, storage, cloud-based monitoring and more.

Azure Stack HCI is a new HCI host operating system from Microsoft, delivered as an Azure service, providing the latest and up-to-date security, performance and feature updates. Azure Stack HCI builds on the foundation of the Microsoft Windows Server Software Defined program and provides a certification path for Storage Spaces Direct solutions.

Lenovo has designed, tested, and validated ThinkSystem Azure Stack HCI offerings to provide the quick and easy solutions you need, with the confidence required, to exceed the stringent requirements of today's IT. The result is that you can quickly deploy a robust, high-performance HCI solution and rapidly solve your IT challenges.

Reliability: Powered by Lenovo Servers

To help customers maximize their IT investments, Lenovo extends the ThinkSystem server portfolio to include the new 2-socket Lenovo ThinkSystem [SR645](#) and [SR665](#) and new Lenovo ThinkSystem 1-socket [SR635](#) and [SR655](#) servers, powered by AMD EPYC™ 7002 and 7003 Series processors. Lenovo offers the Lenovo ThinkSystem servers based on AMD EPYC 7002 and 7003 family of processors with up to 64 cores per processor and support for the new PCIe 4.0 standard for I/O. They offer the ultimate in one-socket and two-socket server performance in 1U and 2U form factors making it an ideal foundation for Azure Stack HCI solutions.

The SR655 and SR665 are 1-socket and 2-socket 2U rack servers that are very configuration-rich offerings, supporting 28 different drive bay configurations in the front, middle and rear of the server and 5 different slot configurations at the rear of the server. This level of flexibility ensures that you can configure the server exactly the way your workload requires.

The SR635 and SR645 are 1-socket and 2-socket 1U rack servers that are compact storage dense configurations, with a high-performance 4-SSD/NVMe cache tier and a 10-HDD capacity tier, along with two mirrored boot drives.

Lenovo ThinkSystem servers consistently score #1 for reliability* in independent customer surveys.

Excellent Value

Lenovo Azure Stack HCI offerings use the Microsoft Azure Stack HCI operating system on the host nodes, and optionally include Windows Server 2019 Datacenter in case you require unlimited guest OS virtual machine licenses. The Azure Stack HCI OS license provides the following benefits:

- **Storage Spaces Direct:** State of the art software-defined storage from Microsoft with multiple high-performance resiliency options, deduplication, compression and more.
- **Windows Admin Center (WAC):** A web-based management portal software is recommended for managing an Azure Stack HCI cluster. Deployment and update features in WAC make deployment extremely simple and easy to perform. Additionally, Lenovo's XClarity plugin allows you to deploy their hardware as well as

software from the same interface, enabling single pane of management. Cluster-aware updating features makes it easy to streamline software and firmware updates in a single maintenance window.

- **Hyper-V:** Hypervisor is included in the license
- **Software-Defined Networking:** Features such as virtual network encryption, firewall auditing, virtual network peering allows you to get the benefits of a more secure software defined network with Azure Stack HCI.
- **Azure Stack HCI** is hybrid by design, and you can benefit from native integration with Azure ARC and Azure Monitor and connect to Azure for a variety of Azure hybrid services seamlessly. Fleet management for hosts and VMs allows you to monitor and manage clusters at scale.

As Much Help As You Need

Lenovo and Lenovo partners have a comprehensive portfolio of professional services that support the full life cycle of your infrastructure. At every stage—from planning to deploying, supporting, optimizing, and end of life—extra help is available to accelerate meeting your business objectives.



Lenovo ThinkSystem SR665



Lenovo ThinkSystem SR655



Lenovo ThinkSystem SR635



Lenovo ThinkSystem SR645

Lenovo Azure Stack HCI offering on ThinkSystem SR665

The flexible building block for your Microsoft Azure Stack HCI solutions.

Specifications

Model Name	Lenovo ThinkSystem SR665
Form Factor	2U
Segment	Hyperconverged Infrastructure – Microsoft Azure Stack HCI solutions for Storage Spaces Direct
Processor	2x third-generation AMD EPYC 7003 family processors, 8-64 cores
Memory (TruDDR4)	Up to 2TB in 32x 64GB DIMM
Network	Mellanox CX4 Lx (RoCE) 10/25GbE adapters
Drive Bays	<p>Up to 12x 3.5-inch hot-swap drive bays:</p> <ul style="list-style-type: none">• Front bays can be 3.5-inch (8 or 12 bays)• Combinations of SAS/SATA, NVMe, or AnyBay (supporting SAS, SATA or NVMe) are available <p>The server also supports these drives for OS boot or drive storage:</p> <ul style="list-style-type: none">• Two 7mm drives at the rear of the server (in addition to any 2.5-inch or 3.5-inch drive bays)• Internal M.2 module supporting up to two M.2 drives
Storage Options	<p>Capacity tier: 4-8x HDDs: 4TB, 6TB, 8TB, 10TB, 12TB</p> <p>Cache Tier: 2-4x SSDs or hot-plug NVMe:</p> <ul style="list-style-type: none">• 800GB/1.6TB SAS SSDs,• 1.6TB/3.2TB/6.4TB NVMe <p>All NVMe: 4-12x 1.6TB/3.2TB/6.4TB NVMe</p>
Systems Management	Optional hardware management via Lenovo XClarity and resource management through Microsoft Windows Admin Center
License Options	<ul style="list-style-type: none">• Windows Server 2019 Datacenter edition for host and unlimited Windows Server guests• Azure Stack HCI Operating system (consumption-based license) on host nodes and Windows Server 2019 Standard or Datacenter edition (for optional guest VM licensing)
Warranty and Support	Lenovo 3-year, 4-year, or 5-year hardware warranty; Lenovo Premier Support where available

Lenovo Azure Stack HCI offering on ThinkSystem SR655

The flexible building block for your Microsoft Azure Stack HCI solutions.

Specifications

Model Name	Lenovo ThinkSystem SR655
Form Factor	2U
Segment	Hyperconverged Infrastructure – Microsoft Azure Stack HCI solutions for Storage Spaces Direct
Processor	1x third-generation AMD EPYC 7003 family processors, 8-64 cores
Memory (TruDDR4)	Up to 4TB in 32x 128GB DIMM
Network	Mellanox CX4 Lx (RoCE) 10/25GbE adapters
Drive Bays	<p>Up to 12x 3.5-inch hot-swap drive bays:</p> <ul style="list-style-type: none">• Front bays can be 3.5-inch (8 or 12 bays)• Combinations of SAS/SATA, NVMe, or AnyBay (supporting SAS, SATA or NVMe) are available <p>The server also supports these drives for OS boot or drive storage:</p> <ul style="list-style-type: none">• Two 7mm drives at the rear of the server (in addition to any 2.5-inch or 3.5-inch drive bays)• Internal M.2 module supporting up to two M.2 drives
Storage Options	<p>Capacity tier: 4-8x HDDs: 4TB, 6TB, 8TB, 10TB, 12TB</p> <p>Cache Tier: 2-4x SSDs or hot-plug NVMe:</p> <ul style="list-style-type: none">• 800GB/1.6TB SAS SSDs,• 1.6TB/3.2TB/6.4TB NVMe <p>All NVMe: 4-12x 1.6TB/3.2TB/6.4TB NVMe</p>
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Warranty and Support	Lenovo 3-year, 4-year, or 5-year hardware warranty; Lenovo Premier Support where available

Lenovo Azure Stack HCI offering on ThinkSystem SR645

The flexible building block for your Microsoft Azure Stack HCI solutions.

Specifications

Model Name	Lenovo ThinkSystem SR645
Form Factor	1U
Segment	Hyperconverged Infrastructure – Microsoft Azure Stack HCI solutions for Storage Spaces Direct
Processor	2x third-generation AMD EPYC 7003 family processors, 8-64 cores
Memory (TruDDR4)	Up to 4TB in 32x 128GB DIMMs
Network	Mellanox CX4 Lx (RoCE) 10/25GbE adapters
Drive Bays	<p>Up to 4x 3.5-inch or 12x 2.5-inch hot-swap drive bays:</p> <ul style="list-style-type: none">• Front bays can be one of the following:<ul style="list-style-type: none">○ 4x 3.5-inch hot-swap SAS/SATA○ 4x 3.5-inch hot-swap AnyBay○ 8x 2.5-inch hot-swap SAS/SATA○ 6x 2.5-inch hot-swap SAS/SATA + 4x 2.5-inch hot-swap AnyBay○ 10x 2.5-inch hot-swap AnyBay• Rear can be one of the following:<ul style="list-style-type: none">○ 2x 2.5-inch hot-swap SAS/SATA bays○ 2x 2.5-inch hot-swap NVMe bays○ 2x 7mm 2.5-inch hot-swap SATA bays○ 2x 7mm 2.5-inch hot-swap NVMe bays• Internal M.2 module supporting up to two M.2 drives, for OS boot and drive storage support
Storage Options	<p>Capacity tier: 4-8x HDDs: Up to 2.4TB</p> <p>Cache Tier: 2-4x SSDs or hot-plug NVMe:</p> <ul style="list-style-type: none">• 800GB/1.6TB SAS SSDs,• 1.6TB/3.2TB/6.4TB NVMe <p>All NVMe: 4-10x 1.6TB/3.2TB/6.4TB NVMe</p>
Systems Management	Optional hardware management via Lenovo XClarity and resource management through Microsoft Windows Admin Center
License Options	<ul style="list-style-type: none">• Windows Server 2019 Datacenter edition for host and unlimited Windows Server guests• Azure Stack HCI Operating system (consumption-based license) on host nodes and Windows Server 2019 Standard or Datacenter edition (for optional guest VM licensing)
Warranty and Support	Lenovo 3-year, 4-year, or 5-year hardware warranty; Lenovo Premier Support where available

Lenovo Azure Stack HCI offering on ThinkSystem SR635

The flexible building block for your Microsoft Azure Stack HCI solutions.

Specifications

Model Name	Lenovo ThinkSystem SR635
Form Factor	1U
Segment	Hyperconverged Infrastructure – Microsoft Azure Stack HCI solutions for Storage Spaces Direct
Processor	1x third-generation AMD EPYC 7003 family processors, 8-64 cores
Memory (TruDDR4)	Up to 4TB in 32x 128GB DIMMs
Network	Mellanox CX4 Lx (RoCE) 10/25GbE adapters
Drive Bays	<p>Up to 4x 3.5-inch or 12x 2.5-inch hot-swap drive bays:</p> <ul style="list-style-type: none">• Front bays can be one of the following:<ul style="list-style-type: none">○ 4x 3.5-inch hot-swap SAS/SATA○ 4x 3.5-inch hot-swap AnyBay○ 8x 2.5-inch hot-swap SAS/SATA○ 6x 2.5-inch hot-swap SAS/SATA + 4x 2.5-inch hot-swap AnyBay○ 10x 2.5-inch hot-swap AnyBay• Rear can be one of the following:<ul style="list-style-type: none">○ 2x 2.5-inch hot-swap SAS/SATA bays○ 2x 2.5-inch hot-swap NVMe bays○ 2x 7mm 2.5-inch hot-swap SATA bays○ 2x 7mm 2.5-inch hot-swap NVMe bays• Internal M.2 module supporting up to two M.2 drives, for OS boot and drive storage support
Storage Options	<p>Capacity tier: 4-8x HDDs: Up to 2.4TB</p> <p>Cache Tier: 2-4x SSDs or hot-plug NVMe:</p> <ul style="list-style-type: none">• 800GB/1.6TB SAS SSDs,• 1.6TB/3.2TB/6.4TB NVMe <p>All NVMe: 4-10x 1.6TB/3.2TB/6.4TB NVMe</p>
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Lenovo and Microsoft

With co-located engineering organizations and a history of technical collaboration, Microsoft and Lenovo consistently deliver innovative joint solutions for the data center. Lenovo's leadership in reliability, customer satisfaction, and performance, combined with Microsoft's leadership in software and cloud services, continues to deliver innovative data center solutions and lower TCO for our joint customers

For More Information

To learn more about ThinkSystem SR665 server, contact your Lenovo representative or Business Partner, or visit <https://lenovopress.com/lp1269-thinksystem-sr665-server>

To learn more about ThinkSystem SR655 server, contact your Lenovo representative or Business Partner, or visit <https://lenovopress.com/lp1161-thinksystem-sr655-server>

To learn more about ThinkSystem SR645 server, contact your Lenovo representative or Business Partner, or visit <https://lenovopress.com/lp1280-thinksystem-sr645-server>

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* ITIC Global Reliability Study, lenovopress.com/lp1117.