

Microsoft Azure Stack HCI Solutions on Lenovo ThinkEdge SE450 Edge Servers

Solution Brief

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 hybrid cloud 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. Microsoft Azure Stack HCI with Azure Arc on Lenovo servers is the perfect hybrid cloud solution at the edge to help our joint customers on their modernization journey.

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 ThinkEdge SE450 Azure Stack HCI validated nodes to provide quick and easy solutions you need, with the confidence required to exceed the stringent requirements of today's edge IT space. The result is that you can quickly deploy a robust, high-performance hybrid cloud solution & rapidly solve your IT challenges.



Figure 1. Lenovo ThinkEdge SE450

Reliability: Powered by Lenovo Servers

The Lenovo ThinkEdge SE450 is a single-socket server, with a 2U height and short depth case that can go almost anywhere. It can be mounted on a wall, placed on the floor like a tower server, or mounted in a rack. This rugged edge server can handle continuous operating temperatures from 5°C and 45°C; and some configurations are designed to meet NEBS Level-3 and ETSI requirements for 96 hours operating excursions from -5°C and 55°C as well as tolerance to locations with high-dust and vibration.

The ThinkEdge SE450 is based on the 3rd Gen Intel Xeon Scalable processor and is designed to virtualize traditional IT applications as well as new transformative AI systems, providing the processing power, storage, accelerator, and networking technologies required for today's edge workloads. Lenovo's innovation makes the ThinkEdge SE450 one of the most powerful, yet quiet servers on the market, allowing it to be deployed next to end users without disturbing the workplace.

Lenovo ThinkSystem servers consistently score #1 for reliability in independent customer surveys, as shown in the ITIC Reliability Study, <https://lenovopress.lenovo.com/lp1117-itic-reliability-study>

Excellent Value

Lenovo Azure Stack HCI offerings use the Microsoft Azure Stack HCI operating system on the host nodes, and optionally include Windows Server 2022 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.

Microsoft Azure Stack HCI offering on Lenovo ThinkEdge SE450

The flexible building block for your Microsoft Azure Stack HCI solution at the edge.

Table 1. Specifications

Feature	Specification
Model Name	Lenovo ThinkEdge SE450
Form Factor	2U short depth
Segment	Hyperconverged Infrastructure – Microsoft Azure Stack HCI solutions for Storage Spaces Direct at the edge
Processor	1x third generation Intel Xeon Scalable processor family, 10-36 cores
Memory	Up to 1TB in 8x 128GB TruDDR4 DIMMs
Network	Mellanox CX6 Lx (RoCE) 10/25GbE adapters
Drive Bays	<ul style="list-style-type: none"> ● Up to 4x internal SSD drive bays supporting non-hot-swap trayless NVMe or SATA SSD drives ● Up to 2x 2.5-inch hot-swap drive bays, front accessible, supporting SATA SSD drives (mutually exclusive with slots 3 and 4 in Riser 2) ● Up to 2x M.2 drives for boot functions, supporting SATA drives
Storage Options	<ul style="list-style-type: none"> ● 2.5-inch hot-swap drives: <ul style="list-style-type: none"> ○ 15.36TB using 2x 7.68TB 2.5-inch SATA SSDs ● 7mm internal (trayless) drives: <ul style="list-style-type: none"> ○ 30.72TB using 4x 7.68TB 7mm SATA SSDs ○ 15.36TB using 4x 3.84TB 7mm NVMe SSDs ● 15mm internal (trayless) drives: <ul style="list-style-type: none"> ○ 7.68TB using 2x 3.84TB 15mm NVMe SSDs
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 2022 Datacenter Edition for host and unlimited Windows Server guests ● Azure Stack HCI Operating system (consumption-based license) on host nodes and Windows Server 2022 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

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 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 and for edge scenarios. 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 and edge solutions and lower TCO for our joint customers.

For More Information

To learn more about ThinkEdge SE450 server, contact your Lenovo representative or Business Partner, or visit <https://lenovopress.lenovo.com/lp1540-thinkedge-se450-edge-server>

Microsoft Azure Stack HCI catalog:

<https://azurestackhcsolutions.azure.microsoft.com/#/catalog?Manufacturer=Lenovo>

Related product families

Product families related to this document are the following:

- [Microsoft Alliance](#)
- [ThinkEdge SE450 Edge Server](#)

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