

# Microsoft Azure Stack HCI Solutions on Lenovo ThinkSystem ST250 V2

## Solution Brief

### Accelerate your Business

Deploying hyperconverged infrastructure (HCI) 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 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 features. 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 ST250 V2 Azure Stack HCI validated nodes to provide quick and easy solutions for small-to-medium businesses. The result is that you can quickly deploy a robust, high-performance hybrid cloud solution and rapidly solve your IT challenges.



Figure 1. Lenovo ThinkSystem ST250 V2

## Reliability: Powered by Lenovo Servers

The Lenovo ThinkSystem ST250 V2 is a mainstream 1-socket tower server that can also be rack mounted as a rack server. It is ideal for small-to-medium businesses, remote offices, branch offices, banking and public sector. The server supports the new Intel Xeon E-2300 Series processors, formerly codenamed "Rocket Lake".

The ThinkSystem ST250 V2 is an entry-level server with enterprise-grade management features and support for hot-swap power supplies and drives. It offers full support of Lenovo XClarity Administrator for comprehensive systems management and includes the next generation UEFI-based Lenovo XClarity Provisioning Manager for system setup and diagnosis, and the Lenovo XClarity Controller management processor for ongoing systems management and alerting. These tools make the ST250 V2 easy to deploy, integrate, service, and manage.

Lenovo ThinkSystem servers are high performance systems, with nearly 300 world record benchmarks (as of October 1, 2022), and have been ranked #1 in reliability among x86 servers for the past eight years ([ITIC](#)).

## 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, and virtual network peering allow 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 ThinkSystem ST250 V2

## Specifications

### Key Features

The ThinkSystem ST250 V2 is an office-friendly tower server that has been optimized to provide enterprise-class features to small businesses, retail, educational institutions and branch offices.

### Scalability and performance

The ST250 V2 offers the following features to boost performance, improve scalability, and reduce costs:

- Improved single-socket processor performance:
  - Intel Xeon E-2300 Series processors ("Rocket Lake-E") up to 8 cores and core speeds up to 3.7 GHz
  - Intel Pentium G6405, G6505 and G6605 processors ("Comet Lake Refresh") with 2 cores and core speeds up to 4.3 GHz
- Up to four 3200 MHz DDR4 ECC UDIMMs provide speed and capacity of up to 128 GB
- Four PCIe slots for I/O expansion, one of which has the new PCIe Gen4 interface to maximize I/O performance.
- Flexible storage configurations support either 2.5-inch or 3.5-inch hot-swap drive bays or a combination of the two (hybrid configuration). Drive bays support SAS and SATA HDDs and SSDs.
  - Up to 16x 2.5-inch hot-swap drive bays
  - Up to 8x 3.5-inch hot-swap drive bays
  - Up to 4x 3.5-inch + 8x 2.5-inch drive bays
- The server also supports simple-swap drives, include 1x NVMe drive:
  - Up to 8x 3.5-inch SATA drive bays
  - Up to 7x 3.5-inch SATA drive bays + 1x 3.5-inch NVMe drive bay
- The use of solid-state drives (SSDs) instead of, or along with, traditional hard disk drives (HDDs) can significantly improve I/O performance. An SSD can support up to 100 times more I/O operations per second (IOPS) than a typical HDD
- New high-speed RAID controllers from Lenovo and Broadcom provide 12 Gb SAS connectivity to the drive backplanes
- Offers two 5.25-inch media bays with support for optical drives or backup drives
- Supports two M.2 drives for OS boot support with RAID redundancy
- The server has two integrated Gigabit Ethernet ports
- The server offers one PCIe 4.0 slot plus three PCIe 3.0 I/O expansion slots
- Support for a NVIDIA GPU for enhanced workload performance

## 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.

## Summary Bill of Materials of Validated Configuration

Part number	Product Description	Qty
7D8FCTO1WW	Server : ThinkSystem ST250 V2 - 3yr Warranty	1
B3YZ	ThinkSystem ST250 3.5" Chassis Base	1
BFYE	Operating mode selection for: "Efficiency - Favoring Performance Mode"	1
BMT3	ThinkSystem ST250 V2 Motherboard	1
B MDF	ThinkSystem Intel Xeon E-2378G 8C 80W 2.8GHz Processor	1
BMDW	ThinkSystem 16GB TruDDR4 3200 MHz (2Rx8, 1.2V) ECC UDIMM	4
5977	Select Storage devices - no configured RAID required	1
BJHH	ThinkSystem 4350-8i SAS/SATA 12Gb HBA	1
BCTK	ThinkSystem 3.5" Multi Vendor 960GB Entry SATA 6Gb Hot Swap SSD	4
B41D	ThinkSystem ST250/ST250 V2 4x3.5" SATA/SAS Backplane	1
BS7A	Select Storage Devices - Configured M.2/7mm RAID	1
B5XJ	ThinkSystem M.2 SATA/NVMe 2-Bay Enablement Kit	1
BS7Q	On Board SATA Software RAID Mode for M.2	1
BS7C	M.2 SATA Array 1 RAID 1	1
BQ1Y	ThinkSystem M.2 5400 PRO 480GB Read Intensive SATA 6Gb NHS SSD	2
BMTA	ThinkSystem ST250 V2 550W Platinum Redundant Power Supply	1
AUPW	ThinkSystem XClarity Controller Standard to Enterprise Upgrade	1
B0MK	Enable TPM 2.0	1
B7XZ	Disable IPMI-over-LAN	1
B0ML	Feature Enable TPM on MB	1
BMTD	ThinkSystem SR250 V2/ST250 V2 M.2 Signal & Power Cable Kit	1
5641PX3	XClarity Pro, Per Endpoint w/3 Yr SW S&S	1
1340	Lenovo XClarity Pro, Per Managed Endpoint w/3 Yr SW S&S	1
	<b>Unconfigured Items</b>	
4XC7A08295	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-port PCIe Ethernet Adapter	1

Table 1. Bill of Materials

## For More Information

To learn more about ThinkSystem ST250 V2 server, contact your Lenovo representative or Business Partner, or visit <https://lenovopress.lenovo.com/lp1548-thinksystem-st250-v2>

Microsoft Azure Stack HCI catalog:

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

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## Related product families

Product families related to this document are the following:

- [Microsoft Alliance](#)
- [ThinkSystem ST250 V2 Server](#)

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