

# ThinkAgile MX Certified Node

## Making Windows Server software defined solutions easy



### Accelerate Your Business

With the explosion of data storage needs, Hyperconverged Infrastructure (HCI) and Software Defined Storage (SDS) have seen tremendous growth. Microsoft provides Storage Spaces Direct (S2D), a feature of Windows Server - Data Center Edition, to provide both HCI and SDS capabilities through Azure Stack HCI and Windows Server Software Defined (WSSD) solutions.

The Microsoft WSSD program provides a certification path for Storage Spaces Direct solutions. Lenovo ThinkAgile MX Certified Nodes combine the Storage Spaces Direct technology included in Microsoft Windows Server 2016/2019 Datacenter with industry-leading Lenovo servers to deliver HCI building blocks that build your infrastructure solutions.

ThinkAgile MX Certified nodes are built with certified hardware components, including software life cycle management via ThinkAgile advantage support, that allow businesses to deploy solutions quickly and easily.

### Key Benefits

#### Simplicity

Lenovo XClarity extension integrates with Windows Admin Center from Microsoft, providing a unified single-pane-of-glass simple experience across infrastructure, virtual machines, software, and hardware.

### Flexibility

ThinkAgile MX Nodes offer a wide range of processor, memory, and storage options to provide the maximum flexibility for customizing your infrastructure.

### Faster time to value

In traditional IT, a solution is designed, tested, implemented, and maintained requiring significant time and energy. With HCI, this burden has been transferred to the solution provider. Microsoft created S2D to solve the storage challenge and Azure Stack HCI solutions to ensure robust and viable platforms.

Lenovo has designed, tested, and validated ThinkAgile MX Series to quickly and easily provide the 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.

### Higher Performance Storage

Hyperconverged storage achieves phenomenal performance by using multiple tiers of storage. Specifically a "cache" tier is used, created with high-speed solid state drives (SSDs) and NVMe for accelerated storage access.

With Microsoft Azure Stack HCI solutions, further acceleration is achieved by using Remote Direct Memory Access (RDMA). RDMA nearly doubles the I/O capabilities of the environment, providing incredible performance.

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## World-Class Networking

To handle your high-speed communications demands, each node is configured with either a dual-port 10 / 25GbE Mellanox ConnectX-4 Adapter, or a dual-port 10 / 25GbE Cavium FastLinQ adapter. These adapters are designed to address your virtualized infrastructure challenges.

They utilize native hardware support for RDMA over either RoCE or iWARP, Ethernet stateless offload engines, overlay networks, and GPUDirect Technology to maximize performance. Lenovo recommends 25GbE particularly for larger hard drives, provided by the cloud-optimized ThinkSystem NE2572 RackSwitch. This enterprise-class Layer 2 and Layer 3 full-featured switch delivers line-rate, high-bandwidth switching, filtering, and traffic queuing without delaying data.

Large data center-grade buffers help keep traffic moving, while the hot-swap redundant power supplies and fans (along with numerous high-availability features) help provide resiliency for business-sensitive traffic. External connectivity is provided by six ports at up to 100GbE.

The Lenovo Cloud Network Operating System (CNOS) for the NE2572 RackSwitch has been updated with RadiusAccounting/MSCHAPv2 and public key infrastructure (PKI) support with enhancements to user transaction logging and IP ACL over L3 VLAN interfaces for Microsoft Azure Stack integration.

## Reliability: Powered by Lenovo Servers

The ThinkSystem SR650 2U server node is the perfect hardware platform for this solution. Equipped with two powerful Intel® Xeon® Scalable family processors, it provides extreme reliability, huge internal storage and memory capacity, and a large number of I/O slots, making it an ideal foundation for this solution.

The SR650 configurations used in this solution are storage dense, with a high-performance 4-SSD/NVMe cache tier and a 10-HDD capacity tier, along with two mirrored boot drives.

Also, ThinkAgile MX now provides an All-Flash offering, with a high-performance 4-NVMe cache tier and 20-SSD capacity tier. You can start with as few as two nodes, and grow to 16 nodes.

The SR650 provides the performance, availability, capacity, and quality your data center demands for a cloud environment. Lenovo ThinkSystem servers consistently score #1 for reliability\* and #1 for customer satisfaction† in independent customer surveys.

## Transformative ThinkAgile Support

In those countries where it is supported, ThinkAgile MX includes a comprehensive portfolio of software and services that supports the full life cycle of your infrastructure. At every stage — from planning to deploying, supporting, optimizing, and end of life — Lenovo provides the expertise and services you need to get the most from your technology investment.

Lenovo will help you perform a presale total cost of ownership (TCO) study to decide which configuration is right for you. Configuration Services will discover your hosts and storage resources.

Lenovo also will provide knowledge-transfer training to your IT personnel. After deployment, Predictive Analytics software will identify on a continuing basis, and usually resolve, storage-related (and many infrastructure-related) issues, often before administrators are aware of them.

Lenovo provides single-point-of-contact support for all the hardware and software used in the solution, including Microsoft Azure Stack HCI Solutions, Storage Spaces Direct, and the Mellanox or Cavium adapters. Periodic health checks enable you to maintain an optimized solution.

At end of life, Lenovo offers data recovery services. And these are just a few of the many benefits Lenovo's software, services, and support provide with your solution. The ThinkAgile MX Certified Node allows you to budget more accurately for IT expenses, better deliver on service-level agreement commitments, and ultimately generate greater end-user satisfaction.



## Excellent Value

ThinkAgile MX Certified nodes include the Windows Server Datacenter 2016/2019 software. This single license enables all the software-defined storage, software-defined networking features included in Windows Server 2016/2019, and unlimited guest licenses. Also, Windows Admin Center, the browser-based management software, is included for free, making the ThinkAgile MX Certified node an excellent value for building your hyperconverged infrastructure.

## 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.

## ThinkAgile MX Certified Node

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

## Specifications

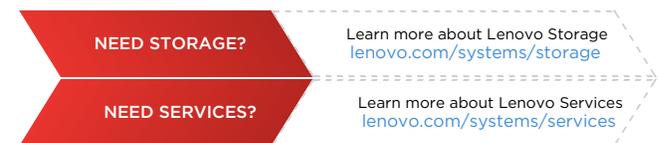
Model Name	ThinkAgile MX Certified Node - SR650
Form Factor	2U
Segment	Hyperconverged Infrastructure - Microsoft Azure Stack HCI solutions for Storage Spaces Direct
Processor	2x second-generation Intel® Xeon® Scalable family processors, 8-28 cores
Memory (TruDDR4)	Up to 1.5TB in 24x slots
Network	Mellanox (RoCE) or Cavium (iWARP) 10/25GbE adapters, 25GbE recommended
Drive Bays	14x 3.5", 24x 2.5"
Storage Options - Capacity Tier	4-10x HDDs: 4TB, 6TB, 8TB, 10TB, 12TB 4-20x SSDs: 3.84TB
Cache Tier	2-4x SSDs or hot-pluggable NVMe: 800GB or 1.6TB SSDs, 1.6TB, 3.2TB or 6.4TB NVMe
Systems Management	Optional hardware management via Lenovo XClarity and resource management through Microsoft Windows Admin Center
License Options	Included in Microsoft Windows Server 2016 and 2019 - Datacenter version
Support	Lenovo ThinkAgile Advantage, where available. Standard hardware support elsewhere

## About Lenovo

Lenovo (HKSE: 992) (ADR: LNVGY) is a US\$45 billion Fortune 500 company and a global technology leader in driving Intelligent Transformation. Lenovo's data center solutions (ThinkSystem, ThinkAgile) are creating the capacity and computing power that are changing business and society.

## For More Information

To learn more about ThinkAgile MX Certified Nodes, contact your Lenovo representative or Business Partner, or visit [lenovo.com/thinkagile](http://lenovo.com/thinkagile). For detailed specs, consult the ThinkAgile MX Certified Node [product guide](#).



\* [ITIC 2018 Global Reliability Report](#). † [TBR x86-based Servers Report 2018](#).

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