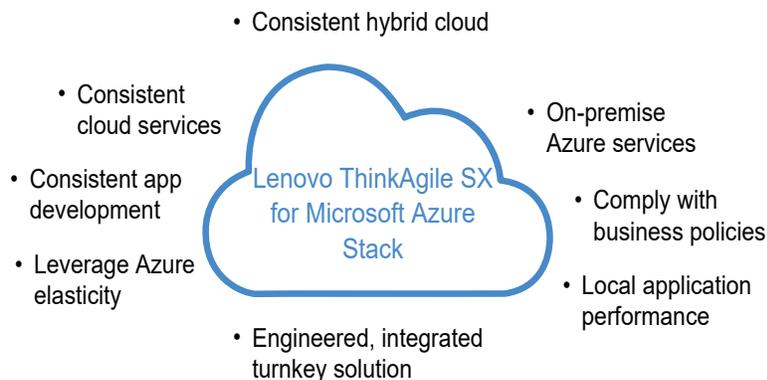


Lenovo ThinkAgile SX for Microsoft Azure Stack



Highlights

- Simplify and accelerate private or hybrid cloud deployment, so your focus is on application development and modernization
- Turnkey, integrated solution engineered with Microsoft Azure Stack software and powered by cloud-optimized Lenovo x3650 M5 servers and RackSwitch Ethernet switches
- Transformative customer experience with simplified deployment, lifecycle management, and world-class services and support

Fully Integrated Hybrid Cloud Solution

With a hyperconverged hybrid cloud solution engineered and integrated by Lenovo and Microsoft, you're free to focus on cloud services—instead of your infrastructure. *Lenovo ThinkAgile SX for Microsoft Azure Stack* is a turnkey, rack-scale solution optimized with a resilient, high-performing, and secure software-defined infrastructure.

It's the perfect platform to:

- Deliver Azure cloud services from the security of your own data center
- Enable rapid development and iteration of applications with on-premises deployment tools to help transform your organization
- Unify application development across your entire hybrid cloud environment
- Easily move applications and data across private and public clouds

ThinkAgile



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.

Overview

ThinkAgile is a preintegrated, engineered solution that comes direct from Lenovo—ready to go—with all features, support, and deployment services included. With benefits like IT agility, lower TCO, and a transformative customer experience, ThinkAgile provides the ease and speed of a public cloud with the security and control of on-premises IT.

Microsoft Azure Stack provides a subset of Azure cloud services. The Azure Stack software is deployed on powerful, ultrareliable, and innovative Lenovo x3650 M5 nodes in a hyperconverged, clustered configuration engineered for high stability, resilience, and performance. Azure Stack enables consistent cloud services across the Microsoft Azure environment.

A solution that's offline is no solution at all. Therefore, the Lenovo x3650 M5 2U server node is the perfect hardware platform for this solution. Equipped with two powerful Intel® Xeon® E5-2600 v4 series processors, its extreme reliability, huge internal storage and memory capacity, and large number of I/O slots make it an ideal foundation for this solution.

The x3650 M5 configurations used in this solution are storage-dense, with a high-performance 4-SSD caching tier and a 10-HDD data tier, along with two mirrored boot drives. You can start with as few as 4 nodes, and grow to 12.

Consistently scoring #1 for reliability* and #1 for customer satisfaction† in independent customer surveys, the x3650 M5 provides the performance, availability, capacity, and quality your data center demands for a cloud environment.

To handle your high-speed communications demands, each node is configured with a dual-port 10/25GbE Mellanox ConnectX-4 Adapter. This adapter is designed to address your virtualized infrastructure challenges. It utilizes native hardware support for RDMA over Converged Ethernet, Ethernet stateless offload engines, overlay networks, and GPUDirect Technology to maximize performance.

The internal networking for this solution is 10GbE, provided by the cloud-optimized Lenovo RackSwitch G8272. 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 other high-availability features) help provide resiliency for business-sensitive traffic. External connectivity is provided by 8 ports at up to 40GbE.

Simplify Your Hybrid Cloud

Lenovo and Microsoft worked together to engineer the solution components—the Azure Stack software and Lenovo software-defined infrastructure—to make sure they perform seamlessly. There is no need to worry about configuring and tweaking settings for virtual or physical infrastructure. Your IT can now focus more on building proficiencies in deploying and operating cloud services—such as IaaS, PaaS, and SaaS—and less on your infrastructure.

Lenovo Software and Services

All ThinkAgile solutions include a comprehensive portfolio of software and services that supports the full lifecycle of your infrastructure. At every stage—from planning to deploying, supporting, optimizing, and end-of-life—we provide the expertise and services you need to get the most from your technology investment.

We will help you perform a presale TCO study to decide which configuration is right for you. Then we will ship it as a single unit, factory installed in a rack and ready to deploy. Configuration Services will discover your hosts and storage resources. We 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 even aware of them.

We provide single-point-of-contact support for all the hardware and software used in the solution, including Microsoft's Azure Stack and the Mellanox adapters. So there will never be any

finger-pointing. Periodic health checks enable you to maintain an optimized solution. At end of life, we offer data recovery services. And these are just a few of the many benefits Lenovo's software, services, and support provided with your solution.



Cloud-optimized Lenovo x3650 M5 servers, factory-installed in a rack with Lenovo RackSwitch networking, form the foundation of the Lenovo ThinkAgile SX for Microsoft Azure Stack solution.

The *Lenovo ThinkAgile SX for Microsoft Azure Stack* solution allows you to budget more accurately for IT expenses, better deliver on service-level agreement commitments, and ultimately generate greater end-user satisfaction.



	Entry SXM4200	Enterprise Starter SXM4200	Enterprise Full SXM6200
Rack	9565-RCC (25U)	9565-RCD (42U)	9565-RCE (42U)
Compute Nodes	<ul style="list-style-type: none"> • 4-8x x3650 M5 • 2x Intel® Xeon® E5-2680, 2683 or 2690 v4 CPUs • 256GB or 512GB memory per node 	<ul style="list-style-type: none"> • 4-12x x3650 M5 • 2x Intel Xeon E5-2680, 2683 or 2690 v4 CPUs • 256GB or 512GB memory per node 	<ul style="list-style-type: none"> • 12x x3650 M5 • 2x Intel Xeon E5-2680, 2683 or 2690 v4 CPUs • 256GB or 512GB memory per node
Management Node	1x x3550 M5; 2-socket Xeon E5-2620 v4 CPUs; 64GB memory		
Hyperconverged Storage	<ul style="list-style-type: none"> • 10x 4TB Capacity Tier (40TB raw) + 4x 800GB SSD Cache Tier • Or, 10x 6TB Capacity Tier (60TB raw) + 4x 1.6GB SSD Cache Tier 		
Network	<ul style="list-style-type: none"> • 1x 1Gbps Lenovo RackSwitch G8052 (management) • 2x 10Gbps Lenovo RackSwitch G8272 (compute/storage traffic) • Mellanox ConnectX-4 Dual Port 10/25GbE Network Controller 		
Integrated Solution Software	<ul style="list-style-type: none"> • Azure Stack technologies, including Microsoft Windows Server 2016, Hyper-V, Storage Spaces Direct (S2D); Lenovo XClarity 		

* 2016-2017 Global Hardware, Server OS Reliability Report, ITIC; October 2016.

† 2H16 Corporate IT Buying Behavior and Customer Satisfaction Study, TBR; December 2016.

Why Lenovo

Lenovo is the leading provider of x86 systems for the data center. The portfolio includes rack, tower, blade, dense and converged systems, and supports enterprise class performance, reliability and security. Lenovo also offers a full range of networking, storage, software and solutions, and comprehensive services supporting business needs throughout the IT lifecycle.

For More Information

To learn more about the Lenovo ThinkAgile SX for Microsoft Azure Stack solution, contact your Lenovo representative or Business Partner or visit lenovo.com/thinkagile



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