LENOVO AZURE STACK HCI SOLUTION FAQs

SMARTER TECHNOLOGY FOR ALL
THINKAGILE MX

Smarter technology for all

Lenovo

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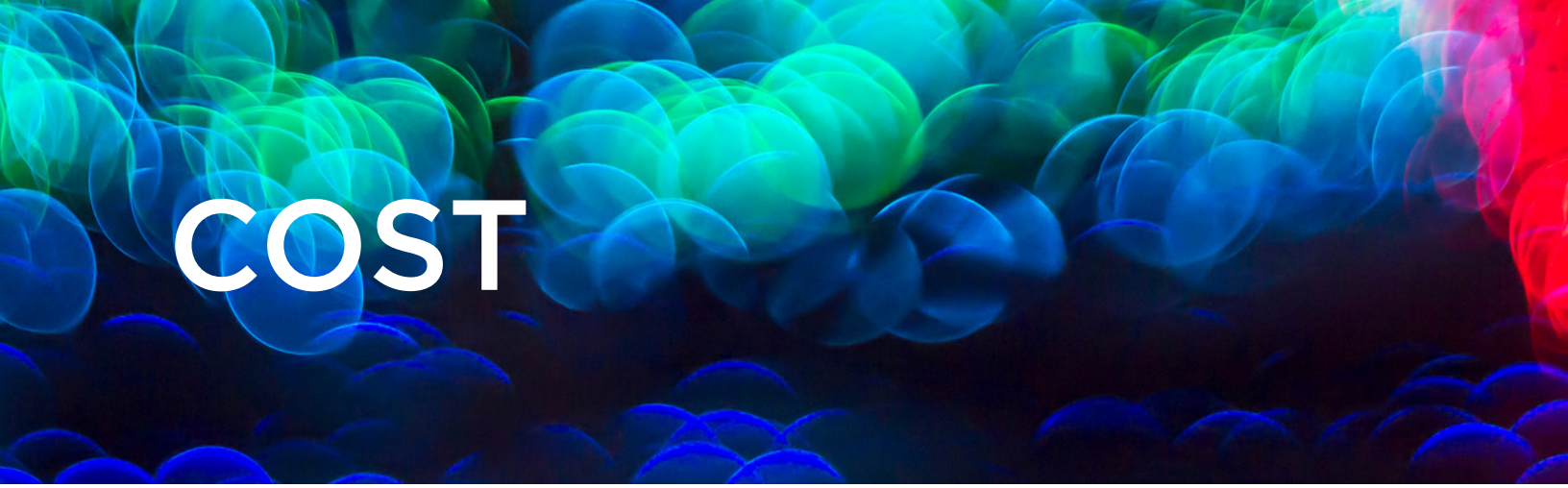


COST

What is the cost of the Azure Stack HCI license?

There is no Azure Stack HCI license. If you have Windows Server 2019 Datacenter edition, you have all the components and all the licensing you need to use Azure Stack HCI.
Windows Server 2019 Datacenter edition contains Storage Spaces Direct, software-defined networking and Hyper-V within the included feature set. Also,
Windows Server 2019 Datacenter edition includes licensing for unlimited virtual machines.

I've heard Azure Stack HCI is the most cost effective HCI solution. Is this true?

Azure Stack HCI runs on industry standard hardware and is included with
Windows Server 2019 Datacenter edition. Software-defined storage and networking and the other components of HCI are built into the OS. Unlimited VMs are included along with Windows Admin Center for Azure Stack HCI management.

What's the cost of Windows Admin Center?

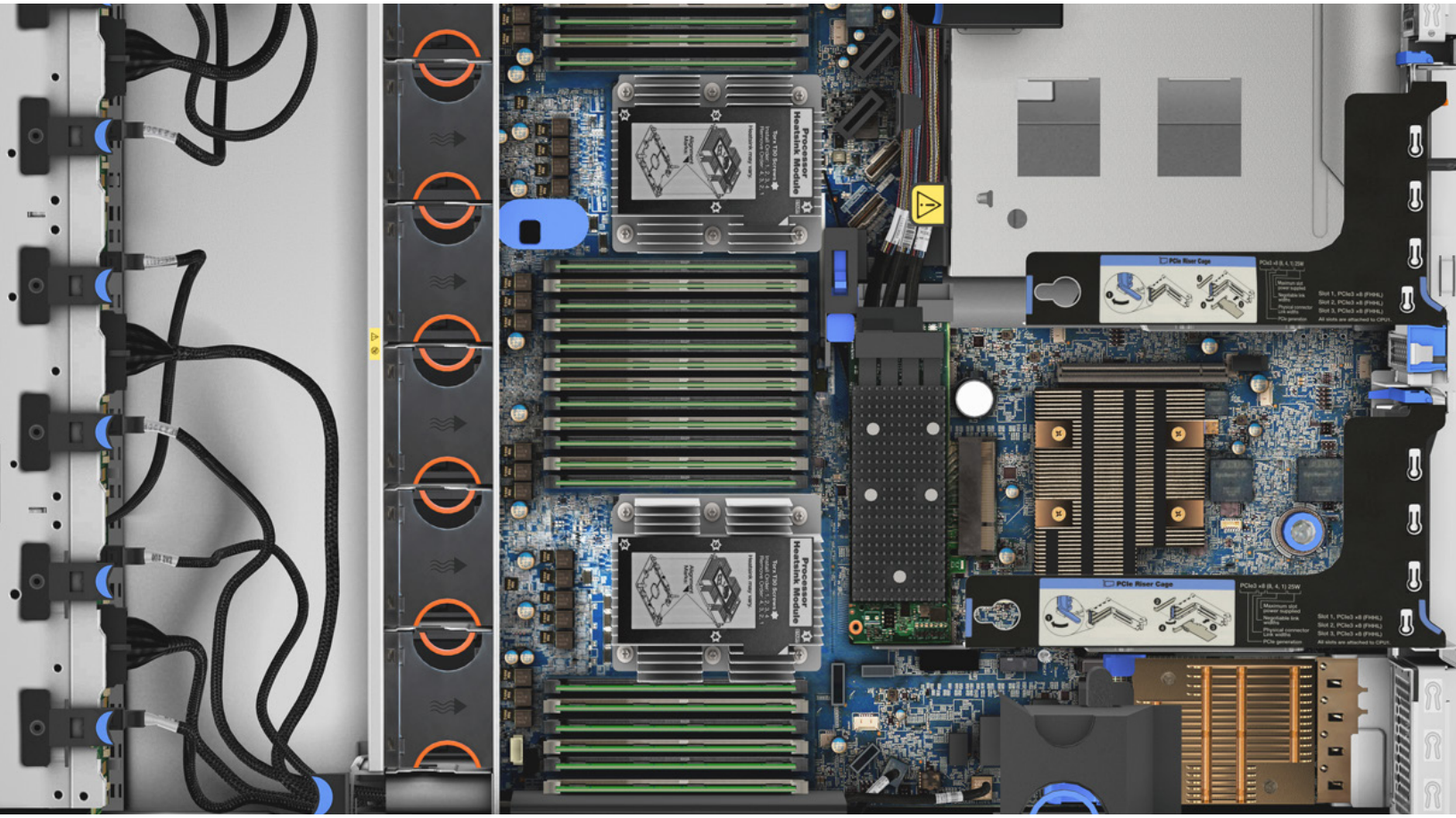
Windows Admin Center is a no-cost management tool from Microsoft. It can be downloaded directly from Microsoft here: www.microsoft.com/en-us/cloud-platform/windows-admin-center. Azure Stack HCI does not need to be running to use Windows Admin Center.
Windows Admin Center can connect to and manage your existing Window Server environments immediately.

Are Azure cloud services included with Azure Stack HCI?

Azure cloud services aren't included with Azure Stack HCI on-premises functions. You can use Azure cloud services with Azure Stack HCI, but you will incur additional costs. Using Azure cloud services allows you to outsource servers, storage and networking in a Microsoft datacenter. With datacenters all over the world, you can subscribe to services and resources, such as backup, disaster recovery, or other services available on Azure, from Microsoft for a fee.

How do I size Azure cloud services?

There's a cost calculator in the Azure portal that makes it easy to determine what you need and how much it will cost. Costs are calculated based on the amount of consumption over a certain period of time. You can visit the cost calculator here: https://azure.microsoft.com/en-us/pricing/calculator/.



PERFORMANCE

Why is Azure Stack HCI such a high performing platform?

Azure Stack HCI gives benchmark-leading performance of 13.7 million IOPS[1]. Lenovo recently achieved 902,952 Batch requests/sec running SQL Server 2019 database workloads on Azure Stack HCI[2]. Storage Spaces Direct, the storage component built into Azure Stack HCI, has a high-performance scale-out nature. Unlike other solutions, every node in the system is involved in reading and writing data. This creates a direct linear performance improvement as you scale out. The more nodes you add, the more your throughput increases.

Is Azure Stack HCI meant for specific industries?

No, Azure Stack HCI is suitable across multiple industries and scenarios. Azure Stack HCI is software-defined, highly available storage, networking and virtualization. Because it scales from two to 16 nodes, it can be built to deliver whatever capability you require, making it ideal for the applications or workloads of small to large businesses across multiple industries.

How does Azure Stack HCI perform vs. the competition?

Azure Stack HCI provides benchmark-leading performance on Lenovo hardware and recently set an HCI industry record of 13.7 million IOPS[1]. Azure Stack HCI is also simple to deploy, use and manage. All Azure Stack HCI features are included natively in Windows Server 2019 Datacenter edition. Azure Stack HCI is inherently less complicated than a system requiring additional software and hardware to manage and deploy. From a dollars spent on performance perspective Azure Stack HCI also holds a leadership position as competitive offerings require additional licensing and hardware costs to deploy, run and manage.

LICENSING

How is Azure Stack HCI licensed?

Azure Stack HCI is part of Windows Server 2019 Datacenter edition. There's no additional license. If you have Windows Server 2019 Datacenter edition and are licensed to use it, you have all the components you need to run Azure Stack HCI.

Can I purchase Windows Server 2019 Datacenter edition with a Lenovo server?

Yes. Purchasing Windows Server 2019 Datacenter edition, CALs, and even Microsoft SQL Server with your Lenovo server is one of the easiest most cost-effective ways of sourcing these products. Visit the LenovoSalesPortal.com for more info and part numbers.

What are the virtualization rights for Windows Server 2019 Datacenter edition?

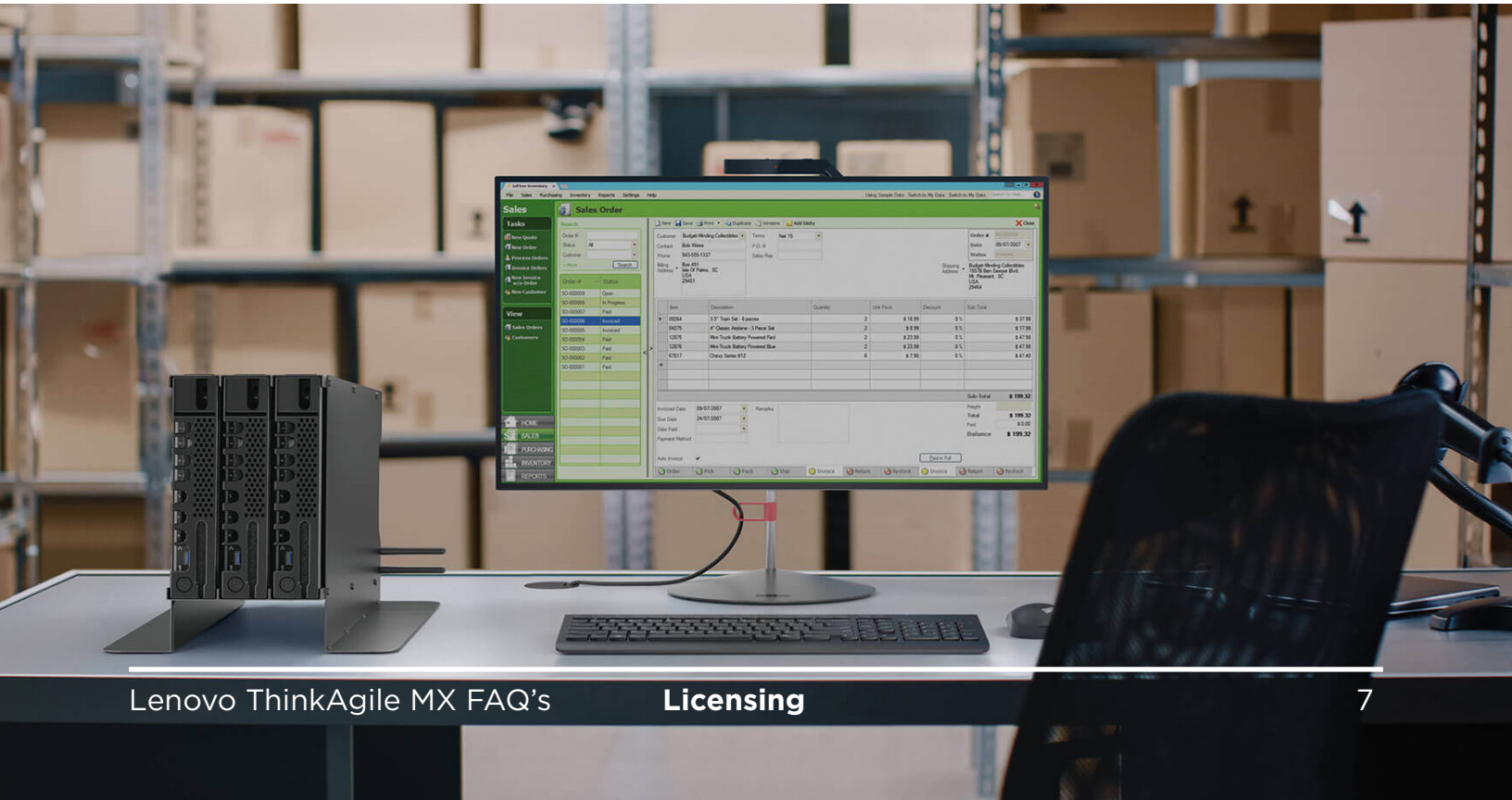
Windows Server Datacenter edition provides rights for unlimited virtual machine, OSEs and Hyper-V containers.

How does Windows Server 2019 licensing work?

Windows Server 2019 is licensed based on the number of processor cores in the physical server. All physical cores in the server must be licensed. A minimum of 8 core licenses are required for each physical processor and a minimum of 16 core licenses are required for each server. Visit the Lenovo core licensing calculator for more info and part numbers: www.lenovosalesportal.com/windows-server-2019-core-licensing-calculator.aspx.

Do I still need CALs?

Yes. Customers will need new 2019 CALs for Windows Server 2019. Visit the Lenovo core licensing calculator for more info and part numbers: www.lenovosalesportal.com/windows-server-2019-core-licensing-calculator.aspx.



TECHNICAL

What's the difference between Azure, Azure Stack Hub, Azure Stack HCI, and Azure Stack Edge?

Azure is the name for all public cloud services offered by Microsoft. Azure uses a distributed set of datacenters around the globe.

Azure Stack is a family of solutions that easily integrate with Azure. The solutions include: Azure Stack Hub, Azure Stack HCI and Azure Stack Edge.

Azure Stack Hub is a turnkey integrated system that allows you to run on-premises Azure services. Azure Stack Hub is ideal for applications that are dependent on Azure cloud services but have limited cloud access or if you're deploying Azure-consistent solutions within your own datacenter.

Azure Stack HCI is an on-premises, hyperconverged computing solution included in Windows Server 2019 Datacenter edition that runs on Lenovo ThinkAgile MX servers. You can use Azure Stack HCI alongside Azure cloud services in a flexible, hybrid cloud model based on your requirements.

Azure Stack Edge is a cloud-manged appliance solution from Microsoft designed to make your data processing system as efficient as possible. Queries and reports occur close to their data sources without the added delay of going round-trip to the Cloud. Data or query results that need further processing or storage go to the Cloud on an as-needed basis.

Will Azure Stack HCI run on my existing SAN?

Azure Stack HCI is a software-defined platform built on Windows Server 2019 Datacenter edition and runs on industry standard validated servers, like Lenovo ThinkAgile MX. It cannot run on storage area network solutions. However, because it supports all the common industry standard protocols, it's easy to exchange data and have it coexist with your existing SAN platform, regardless of your current vendor.

Can I use my existing hardware to deploy Azure Stack HCI?

Most likely, no. To correctly use Azure Stack HCI a specific combination of drivers, firmware, hard disks, RAM and network cards with specific configurations are required. Due to these precise variables, we strongly recommend using new hardware. Lenovo ThinkAgilie MX solutions guarantee that your configurations are validated according to Azure Stack HCI standards so that you get the best configuration for your performance and storage needs. There is a broad portfolio of options within ThinkAgile MX that allow you to customize Azure Stack HCI while maintaining a configuration that will ensure Microsoft validation standards are met.

Are there any tools within Azure Stack HCI to assist with migration from other platforms?

There are a number of migration tools available from third-party vendors and Microsoft announced a new tool at Ignite 2019. The new migration tool built into Windows Admin Center helps take the complexity out of many deployment tasks.

Can I use non-validated hardware solutions?

It's not recommended. Components like hard disks or network cards are very important to the stability of systems running Azure Stack HCI. If they don't have the correct settings, drivers or firmware, data loss or instability can occur. This is not unique to Microsoft Azure Stack HCI. Other vendors also have highly prescriptive and defined hardware solutions and file data packages to maintain the integrity and validity of their systems. We strongly recommend using validated hardware like ThinkAgile MX.

Why is validated hardware so important?

There is deep integration between the physical components, the firmware and drivers used to run Azure Stack HCI. Failure to use pre-tested, validated hardware can result in data loss and severe performance degradation. Using validated hardware, like Lenovo ThinkAgile MX, is highly recommended if you want to run Azure Stack HCI solutions in production.

Can I use third-party software in conjunction with this solution?

Azure Stack HCI is built on Windows Server 2019 Datacenter edition. Software certified to run on Windows Server 2019 will coexist with Azure Stack HCI in most cases, including backup products, antivirus products and other middleware solutions.

Does XClarity integrate with Azure Stack HCI?

XClarity is a hardware management and monitoring tool provided by Lenovo. XClarity can be used to monitor the health of the hardware and the hard disks within your Azure Stack HCI nodes. You can also access XClarity directly in Windows Admin Center dashboard via the Windows Admin Center Plugin.

How do we size Azure Stack HCI?

First, you'll need to determine how much storage and how many virtual machines you need. This will help you figure out how many usable cores, how much RAM, and how much capacity you need. Use this information to determine a suitable hardware configuration and the number of nodes required to deliver your solution. If you need help there are third-party tools and solution providers that can help facilitate this process. Contact your Lenovo representative to assist you.

What are recommended ratios for physical vs. virtual CPU cores?

Often people run fixed ratios, such as 1:2 or 1:3. However, fixed ratios don't account for how hard a particular application is working. For optimal efficiency, consider application CPU usage over time to help determine your application needs and then calculate the ratio to allow your CPU's to run between 80% and 90%.

How is tiering done in Storage Spaces Direct?

Azure Stack HCI tiering is transparent. It has two components: cache acceleration and performance storage. Cache acceleration allows all incoming data to move through high-performance cache, which delivers fantastic data ingest speeds. Then data is transparently moved onto lower performance storage over time. This works in parallel with mirror acceleration across volumes to improve data efficiency.

Does Storage Replica require Azure Stack HCI?

No, Storage Replica is included in Windows Server 2019. However, it doesn't have dependency on Azure Stack HCI. Storage Replica is a block level solution that works with any volume Windows Server 2019 can see. If Windows Server 2019 is running on a traditional SAN, it can do storage replication between that SAN and another SAN to the Cloud, or to a single server. This makes Storage Replica a flexible tool for simplifying data migration from existing systems to Azure Stack HCI.

For more information visit:
lenovosalesportal.com

Microsoft

(1) https://techcommunity.microsoft.com/t5/Storage-at-Microsoft/The-new-HCI-industry-record-13-7-million-IOPS-with-Windows/ba-p/428314
(2) https://lenovopress.com/sb0002.pdf