

Realize the Full Potential of Microsoft Azure Stack HCI With Dell Technologies

Take advantage of the expertise of the technology leader with deep expertise in HCI and purpose-built hardware for Microsoft Azure Stack HCI.



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INTRODUCTION

Organizations of all sizes are experiencing unprecedented increases in the number of workloads they manage, the complexity of those workloads, and the number of options available to host those workloads. At the same time, the increase in remote work and remote support requires the datacenter to process data across dispersed geographies. Users need access to essential data from anywhere around the world, 24/7. It's up to IT staff to make sure each task, each process function and each piece of technology runs smoothly and securely, while also managing cost.

The hybrid cloud, supported by hyperconverged infrastructure (HCI) has proved to offer the ideal balance of security, consistency, flexibility, and cost-efficiency that companies are looking for to enhance and grow their IT environments. The integrated nature of HCI solutions allows the storage systems, servers and networking switches to be managed as a single system. The benefit is a solution that's easier to use and more efficient to manage while also allowing you to start small and add resources as needed.

USING HCI LEADS TO



Increased
efficiency



Better storage
at a lower cost



Ability to
scale quickly

Growing at a Compound Annual Growth Rate (CAGR) of 26.1% the global HCI market is expected to reach \$31.36 billion by 2026¹. This healthy growth is driven by safety and governance factors such as data protection and disaster recovery needs, and cost savings in labor, power consumption and space requirements, along with the ease of operating and managing HCI systems.

A man with a beard and glasses is looking down at a laptop screen. He is wearing a blue button-down shirt. The background is a blurred indoor setting with a plant.

SECTION 1:

Why Organizations Should Deploy Hyperconverged Infrastructure (HCI)



Many organizations begin their cloud computing initiative using a hybrid solution that combines on-premises and cloud environments. Enterprise organizations as well as small to medium businesses (SMBs) need to continue operating existing on-premises applications while they leverage cloud for efficiency. While a few applications can be migrated to the public cloud, others must remain on-premises due to business and regulatory imperatives.

Hybrid cloud requires modern hardware and software in the on-premises environment. HCI solutions are an ideal choice for the modern hybrid datacenter. HCI software includes a hypervisor, software-defined storage, and management and orchestration technology. Modern infrastructure should be engineered specifically for HCI workloads, incorporating boot mechanisms, SSD performance specifications, systems management and cooling requirements.

HCI has become the standard solution for companies looking to set up hybrid cloud infrastructure or refresh on-premises servers and storage. Large stacks of storage arrays are being replaced by more streamlined HCI-based solutions to deliver better efficiency.

TOP 3 REASONS TO DEPLOY HCI



KEEPING UP WITH BUSINESS REQUIREMENTS

Digital businesses move rapidly and require IT infrastructure that can keep up by deploying quickly, expediting application performance, and demonstrating resiliency. HCI is the answer to IT teams' requirements to support new or changed workloads. With HCI, IT teams can simplify IT infrastructure, which facilitates quick response times with rapid changes to existing applications or rapid deployment of new ones. You experience significant performance gains for even the most stringent workloads. This ensures that application performance meets business demands. An HCI solution can also reduce unplanned and planned downtime significantly, since HCI requires minimal maintenance or patching. Updates are made with utmost efficiency, to ensure minimal disruption. Updates are tested and validated across the system, and sometimes combined with automation for faster results. This is even done on a cluster-by-cluster basis if needed, which saves the need to pull the entire system down.



ENHANCED SECURITY

Cybersecurity and protection of data comes right behind productivity in the priorities of IT staff. With the implementation of GDPR and CCPA, any security breach could prove costly. Weaknesses are especially difficult to manage across a siloed and disparate infrastructure. The advantage of HCI is that by fully leveraging the tight integration with hypervisors, new security layers can be integrated, which offer unmatched visibility into threats. This is undoubtedly useful when putting up defenses against new or unknown security threats. Security is inherent to hyperconverged systems, along with in-built backup and disaster recovery systems.



MORE SAVINGS

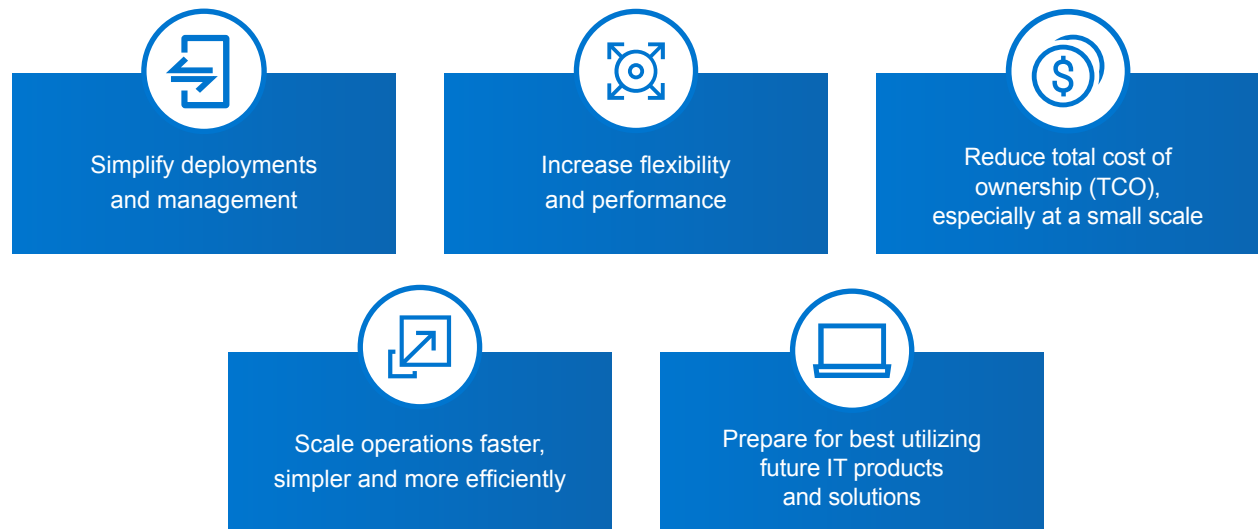
Today, every IT team has a cost reduction target. HCI helps you meet those targets with powerful capabilities:

- By consolidating functions, along with high levels of virtualization, hyperconverged infrastructure requires less physical space, reducing the need for large datacenter footprints.
- HCI simplifies many routine support and system expansion tasks, which along with automation reduces manual work and the requirement for specialists.
- HCI supports better utilization and simplifies system expansion, doing more with less. There is a marked reduction in the amount and cost of hardware required.
- Since HCI consolidates storage, compute, and networking, you need fewer maintenance contracts and vendors.
- With built-in high availability and replication, HCI reduces downtime and simplifies the recovery process.



As organizations seek greater efficiencies and increased savings, the challenge for IT decision makers (ITDMs) is to find an HCI solution that is best suited to their specific hosting needs, while providing a simple, optional pathway to cloud services. The Microsoft Azure Stack HCI solution is the ideal fit for a hybrid cloud strategy.

ADVANTAGES OF HCI



A woman with curly hair and a man are looking at a screen. The woman is in the foreground, wearing a yellow jacket over a white and blue striped shirt. The man is in the background, wearing a green shirt. They are both looking intently at a screen that is out of frame.

SECTION 2:

A Closer Look at Microsoft Azure Stack HCI



Microsoft Azure Stack HCI (AzS HCI) is part of the Azure Stack family of solutions. AzS HCI is an HCI system delivered as an Azure service. By simplifying integration with cloud-based services in Microsoft Azure, the solution provides organizations with industry-leading price and performance benchmarks in an on-premises HCI solution. Users consume Azure Stack HCI in the same way as Azure cloud instances, but the infrastructure lives on-premises. It's built as a hybrid solution from the ground up.

With AzS HCI you can deploy and run Windows and Linux virtual machines (VMs) in your datacenter or at the edge, using existing tools, processes and skill sets. You can extend your datacenter to the cloud with Azure Backup, Azure Monitor and Azure Security Center, and benefit from the latest security, performance and feature updates from Microsoft.

AzS HCI delivers an effective blend of application performance and ease of management. This makes it a great solution for remote office/edge use cases, application duties like VDI or Microsoft SQL Server, or emerging workloads like Kubernetes. It is structured to use Hyper-V based software-defined compute with software defined storage and networking. Great for running existing apps with greater efficiency, AzS HCI also lets you connect to Azure for hybrid cloud scenarios such as backup, cloud-based monitoring, etc.

AzS HCI leverages pre-validated hardware from Microsoft partners with Windows Server 2019 Datacenter components and management tools such as:

- Hyper-V
- Software Defined Networking (SDN) (optional)
- Storage Spaces Direct
- Windows Admin Center
- Azure services
- PowerShell for scripting and automation

What you get is a world-class, integrated virtualization stack built on proven technologies that have already been deployed at scale, including Hyper-V, Storage Spaces Direct, and Azure-inspired software-defined networking (SDN).



THERE ARE MANY REASONS CUSTOMERS CHOOSE AZURE STACK HCI, INCLUDING THAT IT:

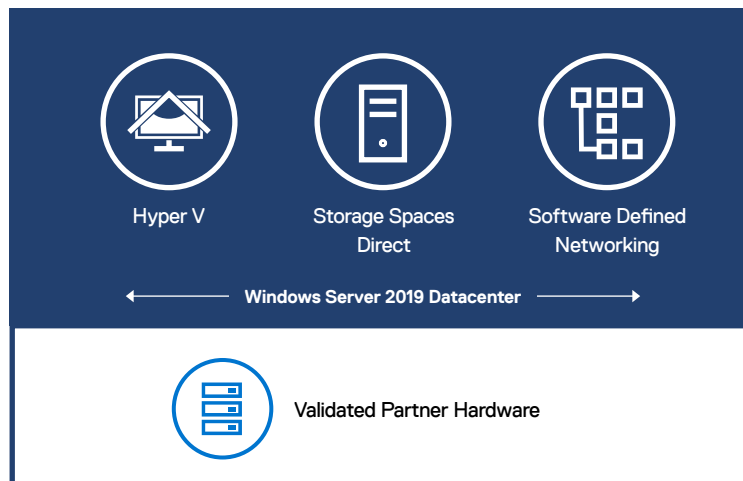
- Is familiar and easier to operate for Hyper-V and server admins.
- Works with tools such as Microsoft System Center, Active Directory, Group Policy, and PowerShell scripting.
- Works seamlessly with most third-party backup, security, and monitoring tools.
- Allows customers to choose the best vendor in their geography.
- Provides full-stack updates to keep your systems current.

AZURE STACK HCI SOLUTION

Management Tools:

Windows Admin Center PowerShell

Azure Services (optional)



AZS HCI WAS BUILT FOR HYBRID CLOUD

AzS HCI allows you to take advantage of cloud and on-premises resources, which work together to natively monitor, secure, and back up to the cloud. Since AzS HCI features the same software-defined compute, storage, and networking software as Azure Stack, you can easily integrate with Azure for hybrid capabilities. It's a simple process to extend your datacenter to the cloud and manage Azure Stack HCI hosts, virtual machines (VMs) and Azure resources side by side in the Azure portal. It's also easy to connect to Azure services such as Azure Backup, Azure Security Center and Azure Site Recovery.



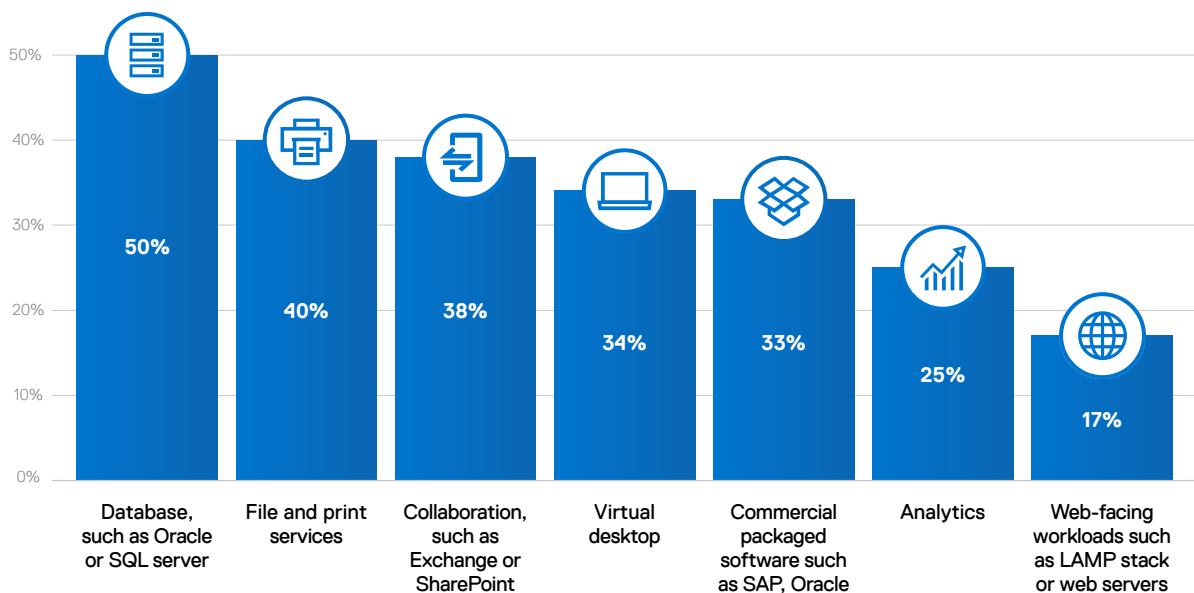
POPULAR USE CASES FOR AZURE STACK HCI

You can find hardware configurations for AzS HCI that Microsoft has certified for various needs, such as:

- ♦ **Running workloads from the branch office to the edge**
AzS HCI meets the requirements for retail stores, branch offices, field sites, and other edge sites, providing availability and resilient storage for applications at an affordable price. It's also ideal for familiar business-critical applications and newer edge workloads built on containers and Azure IoT Edge.
- ♦ **Supporting large-scale virtual desktop infrastructure (VDI) implementations**
AzS HCI clusters are used to implement remote desktop virtualization on a large scale. User desktops are delivered through a virtual desktop broker. These virtual desktops then connect back to VMs and central storage on the AzS HCI cluster.
- ♦ **Virtualizing Microsoft SQL Server**
AzS HCI enables high-performing, scalable, and manageable deployment for Microsoft SQL Server. You can now run SQL Server and its associated applications with the added resiliency of virtualization.
- ♦ **Scaling out storage**
AzS HCI offers industry-leading storage performance on validated hardware that can be optimized for density, speed, or performance-to-cost ratio, all in an affordable file server with a small hardware component. This is implemented with the help of Storage Spaces Direct which provides shared-nothing storage among nodes.



A FORRESTER SURVEY FOUND THE MOST COMMON WORKLOADS FOR HCI²



DELIVERY METHODOLOGY FOR AZURE STACK HCI

Azure Stack HCI is delivered as an Azure subscription service through Microsoft hardware partners such as Dell Technologies. In considering a cloud solution or upgrading existing cloud infrastructure with Microsoft Azure Stack HCI, it's critical to find the right hardware partner to ensure success.

Dell Technologies has the deep expertise in HCI, the Microsoft ecosystem, and the Intel Ecosystem to help companies upgrade to Azure Stack HCI. Dell EMC Integrated System for Microsoft Azure Stack HCI, with its native-built Azure nodes and tight integration with Microsoft and Intel is one of the best solutions on the market for Azure Stack HCI.



SECTION 3:

The Dell EMC Integrated System for Azure Stack HCI





Dell Technologies is a proven, mature leader in the HCI market, and is the leader in the HCI and server space³. Dell Technologies engineers are co-located at Microsoft headquarters and spend thousands of hours engineering and validating joint solutions.

Dell EMC Integrated System for Microsoft Azure Stack HCI is an optimized, tested and verified solution which empowers organizations to create a cloud consumption experience on-premises, while maintaining data security and full-stack lifecycle management.

With integrated deployment and full-stack automated end-to-end lifecycle management, this exclusive OpenManage Integration for Windows Admin Center helps reduce manual steps by 82% and reduces maintenance by 40%⁴. Dell EMC Integrated System for Microsoft Azure Stack HCI is a fully productized, validated and supported HCI solution available globally.

Put simply, this solution by Dell Technologies provides a tried and trusted hardware system to power AzS HCI. With the industry-leading PowerEdge server system as a base for this solution, the result is seamless communication between the datacenter and the Azure cloud—with less downtime.

With Dell EMC Integrated System for Microsoft Azure Stack HCI, you can modernize your infrastructure, consolidate virtualized workloads and gain cloud efficiencies on-premises.

WHAT ARE AX NODES?

Central to Dell EMC Integrated System for Microsoft Azure Stack HCI are the productized HCI solution—AX nodes. These AX nodes are validated and certified to run Azure Stack HCI with excellent results. Built on the foundation of the popular PowerEdge servers (Dell Technologies holds the No. 1 position in x86 servers from 2017 to 2019) AX nodes are designed and optimized just for Azure Stack HCI⁵.

You get the benefit of simplified lifecycle management (LCM) with the native OpenManage Integration with Microsoft Windows Admin Center (OMIMSWAC) for AX nodes. The Orchestrated LCM with native OpenManage integration reduces the time required for tested and validated upgrades and allows IT teams to focus on higher value tasks. AX-nodes offer flexibility of configurations so customers can choose the memory, storage and compute that aligns with their needs. The currently available AX nodes models are: AX-640 and AX-740xd.

CONFIGURATION DETAILS

	 AX-640	 AX-740xd
Use Cases	Performance and Destiny optimized	Performance and Storage optimized
Characteristics	<ul style="list-style-type: none">• Hybrid, All-Flash, All-NVMe***• 1U form factor• Best for workloads requiring balance of performance, cost and density	<ul style="list-style-type: none">• Hybrid, All-Flash, All-NVMe***• 2U form factor• Best for workloads requiring storage dense configurations

DELL EMC INTEGRATION FOR MICROSOFT WINDOWS ADMIN CENTER

For better cluster management, you can make use of the Dell EMC OpenManage Integration with Microsoft Windows Admin Center. Dell Technologies has integrated their LCM software with WAC for their AX nodes, which is available as a native management solution. Through this integration, you have access to a unified server and HCI cluster management solution, which greatly simplifies the administration of your HCI cluster.



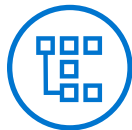
KEY FEATURES OF DELL EMC INTEGRATED SYSTEM FOR MICROSOFT AZURE STACK HCI



AX nodes from Dell Technologies enable flexible and scalable configurations across two different models for varying application performance, capacity or location needs.



Pre-configured and optimized features such as caching and storage tiering.



Hardware innovations such as RDMA networking and high-performance SSD drives.



Dell EMC Networking 10/25/100GbE switches that underpin a complete hyperconverged infrastructure solution.



Dell EMC OpenManage Integration with Microsoft Windows Admin Center (WAC) makes management, configuration and monitoring that much easier.



Dell EMC ProDeploy and Dell EMC ProSupport service deliver efficient onsite deployment and single source of technical support.

WHY DELL EMC POWEREDGE AND MICROSOFT AZURE STACK HCI?



Predictive scalability



Operational flexibility



High performance



Quick and easy management

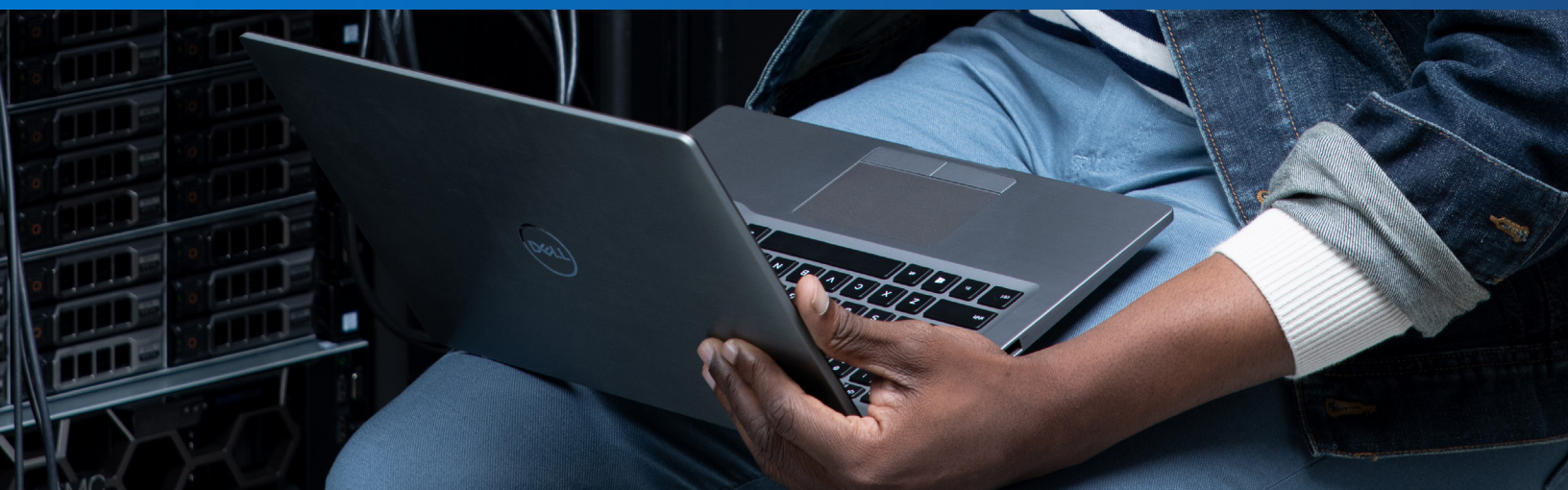


Cost efficiency



SECTION 4:

Multiple Benefits of a Tailored Solution from Dell Technologies





Dell EMC Integrated System for Microsoft Azure Stack HCI is perfectly tooled to meet the needs of IT teams today and accommodate future growth. You can use the platform for running a diverse portfolio of applications, large-scale virtual desktop implementations, Microsoft SQL Server environments, and many more.



WITH DELL EMC INTEGRATED SYSTEM FOR MICROSOFT AZURE STACK HCI, YOUR ORGANIZATION CAN

- ♦ **Scale with Configuration Options**

Dell Technologies offers multiple configuration options in hardware so you can buy exactly what you need, whether you require Enterprise volumes or smaller configurations for an SMB. You can start with just two nodes, if that's your requirement, and then add nodes as your business needs grow. All configurations are validated and guaranteed to deliver balanced performance and capacity for every possible technical use case and workload.

- ♦ **Experience Operational Efficiency**

Dell EMC OpenManage Integration with Microsoft Windows Admin Center delivers full-stack lifecycle management enabled by Cluster-Aware Updating. Updates happen through a consolidated update workflow and cause no interruption to workloads. Automated cluster creation helps accelerate the process and reduce the risk of human error in deployment. Built-in disaster recovery restores production quickly, without any manual intervention, so the system keeps running.

- ♦ **Get World Class Integrated Services and Support**

This intelligently integrated foundation from Dell Technologies delivers simple but proven enterprise-class deployment, maintenance and support. Services have been designed to be simple, flexible and worry free—from installation and configuration to single-source support. Certified deployment engineers ensure accuracy and speed, while reducing risk and downtime. One-stop cluster-level support covers the hardware, the operating system, hypervisor and Storage Spaces Direct software.

A close-up photograph of a man with a reddish-brown beard and black-rimmed glasses. He is looking down with a focused expression at a device he is holding. He is wearing a dark blue sweater over a light blue collared shirt. A blue lanyard is visible around his neck. The background is blurred, showing what appears to be an office or lab setting with shelves.

SECTION 5:

The Advantages of Dell Technologies OEM Licensing

A close-up photograph of a hand holding a dark-colored laptop. The hand is positioned on the right side of the frame, with fingers gripping the edge of the device. The background is blurred, showing various electronic components and equipment, suggesting a technical or laboratory environment.



IT professionals across the world strive to keep their infrastructures running smoothly so users can stay productive. IT staff shouldn't have to be concerned about a deployment that could strain the budget, take hours longer to deploy, and lead to support problems for multiple vendors.

Dell Technologies is the premier Windows Server 2019 OEM license provider for AzS HCI. Which means you get an all-in-one turnkey solution in which the software and hardware are bundled. Dell Technologies Windows Server 2019 OEM licensing saves you money upfront, along with dramatic savings in time, effort and total cost of ownership.

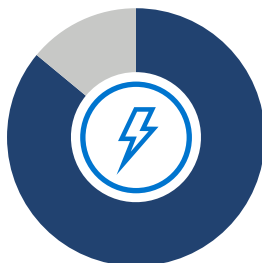
FASTER, LESS-EXPENSIVE, SIMPLER, AND WITH BETTER INTEGRATED SUPPORT⁶



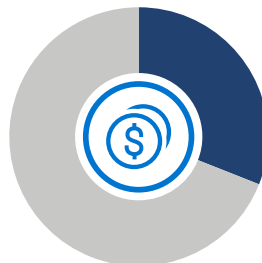
1
source for hardware
and software support



40
fewer steps to
deploy a server



86%
faster to
deploy a server

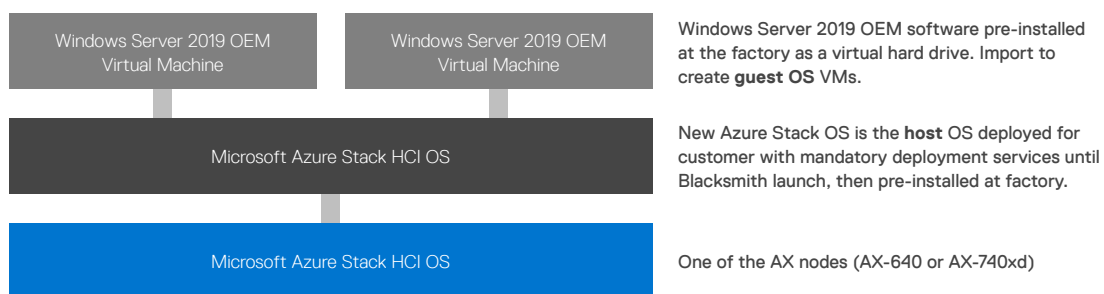


31%
Less-expensive
licensing

If you pursue a DIY option and purchase Windows Server 2019 volume licenses, you will spend more on the licenses than if they were acquired through Dell Technologies OEM licensing. You will also have to dedicate more time, resources and money for the labor costs incurred to handle license procurement and OS deployment. Your TCO would also shoot up considerably due to the higher cost and time of support.

With Dell Technologies OEM licensing, however, you would be able to rely on Dell ProSupport IT-management services, which offer a single point of support for the server hardware as well as software.

DELL EMC INTEGRATED SYSTEM FOR MICROSOFT AZURE STACK HCI



ADVANTAGES OF DELL TECHNOLOGIES OEM LICENSING





CONCLUSION

Dell Technologies has shaped the growth story of hybrid cloud and HCI, developing a variety of solutions that meet the needs of companies and IT teams of all sizes.

Whether you're modernizing your environment or deploying IT for a new project, Dell EMC Integrated System for Microsoft Azure Stack HCI is the answer to all your Hybrid Cloud, Azure Stack and HCI requirements. You get hardware perfectly aligned to AzS HCI, OEM licensing for the software and one stop support for hardware as well as software.

It's an all-in-one purposefully designed hybrid cloud solution crafted with the combined expertise of Dell Technologies and Microsoft that will save you time, effort, money and help you transform your datacenter to one which seamlessly meets the needs of today and tomorrow.

Interested in Dell EMC Integrated System for Microsoft Azure Stack HCI?

[Learn More](#)

 Dell Technologies

Sources

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² Bednarz, Ann. "What is hyperconvergence?". NetworkWorld.
<https://www.networkworld.com/article/3207567/what-is-hyperconvergence.html>

³ IDC. "Worldwide Converged Systems Market Grows 4.5% Year Over Year During the First Quarter of 2020, According to IDC". IDC.
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⁴ Internal Dell Technologies lab review of OpenManage integration with Windows Admin Center. Taken from "Dell EMC Solutions for Microsoft Azure Stack HCI: Life Cycle Management Approach Comparison Benefits of Automating the Azure Stack HCI Hardware Update Process", August 2020

⁵ PRESS RELEASE. "Dell EMC Advances World's Top Selling Server Portfolio". Dell Technologies.
<https://corporate.delltechnologies.com/en-us/newsroom/announcements/2019/04/20190402-01.htm>

⁶ Internal Dell Technologies Research. Taken from "Streamline Your Server Deployments by Choosing Dell EMC™ PowerEdge™ Servers with Preinstalled Microsoft® Software", 2020.
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