

AZURE STACK HCI: BRANCH OFFICE AND EDGE

Leverage your Azure Stack HCI investment to run key virtual applications and workloads in a highly available, resilient fashion on hardware designed for branch office and edge scenarios with industry-leading support for 2-node configurations including: [Nested resiliency](#), [USB thumb drive cluster witness](#), and browser-based administration via [Windows Admin Center](#). Below, you will find a how-to guide for Azure Stack HCI branch office and edge configurations that include:

- Plan and deploy DataON hardware and OS/tools to support Azure Stack HCI branch office and edge scenarios.
- Step by step documentation to enable Branch office and edge support including IoT and cloud-driven Container management.

DataON Integrated Systems for Azure Stack HCI

DataON Integrated Systems for Azure Stack HCI are designed for remote office/branch offices, edge, and IoT deployments. These deployments can present a challenge for IT departments because of constrained budgets, space and power footprints, and limited IT resources.

Integrated Systems provide a fully integrated appliance-like hybrid cloud experience, delivering the fastest time-to-value through the convenience of pre-installed software, integrated drivers, and firmware updates. Simple to deploy and procure, they're ideal for customers who require turnkey solutions with little deployment effort from IT staff.

DataON Integrated Systems can be optimized for high performance with all-NVMe storage or balanced capacity and storage with flexible hybrid NVMe cache and SSD/HDD storage. With Azure Stack HCI, customers can get great resiliency with nested two-way mirroring.

DataON is an exclusive Microsoft partner, with over 100 Integrated Systems and validated nodes in the Microsoft Azure Stack HCI Catalog, as well as over 1000 HCI clusters and 150PB of storage deployed. DataON is a Microsoft Gold Partner, Microsoft Cloud Service Provider (CSP), and an Intel Strategic OEM Partner.

DataON MUST and MUST Pro for Windows Admin Center

DataON MUST and MUST Pro are included with DataON Integrated Systems. DataON MUST provides real-time monitoring & alerts for Azure Stack HCI. It features a centralized dashboard, historic data reporting, enhanced disk mapping, email alerts, and call home services. MUST Pro integrates with Microsoft's cluster aware updating (CAU) functionality to simplify deployment and updates to Azure Stack HCI, with minimal disruptions to your infrastructure. It checks and ensures that servers have the same OS version, drivers, firmware, BIOS, and BMC. It also checks the drivers and firmware for network cards, host bus adapters, and SSD and HDD drives. With a single click, your entire cluster can be updated, helping to you secure against the latest server exploits.

How to deploy branch office and edge on Azure Stack HCI

1/ Hardware and OS configuration for branch office and edge environments

DataON AZS-6112 Integrated Systems for Azure Stack HCI are optimized for size & performance, with 3rd Generation Intel® Xeon® Scalable processors and all-NVMe flash storage.

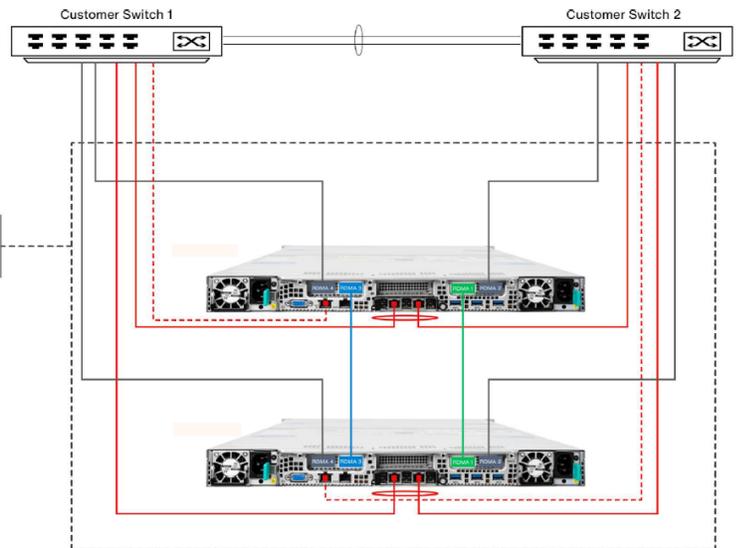
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DataON AZS-6112	DataON AZS-6212	DataON AZS-6224	DataON AZS-108	DataON AZS-212	DataON AZS-216
Optimized for size & performance	Optimized for IOPS & capacity	Optimized for IOPS & performance	Optimized for size & performance	Optimized for IOPS & capacity	Optimized for IOPS & performance
2 to 16 Nodes			2 to 16 Nodes		
All-NVMe flash storage	Hybrid storage	All-NVMe flash storage	All-NVMe flash storage	Hybrid storage	All-NVMe flash storage
1U / 1-Node Rack 12x 2.5" Bays	2U / 1-Node Rack 2x 2.5"/3.5" NVMe + 10x 3.5" SAS/SATA	2U / 1-Node Rack 24x 2.5" Bays	1U / 1-Node Rack 8x 2.5" Bays	2U / 1-Node Rack 12x 3.5" Bays	2U / 1-Node Rack 16x 2.5" Bays
3rd Generation Intel® Xeon® Scalable processors			2nd Generation Intel® Xeon® Scalable processors		
Up to 12TB DDR4			128GB to 1.5TB DDR4		
Intel® NVMe SSDs			Intel® NVMe SSDs		
25GbE RDMA networking			25GbE RDMA networking		

2/ Network and Switch Connectivity

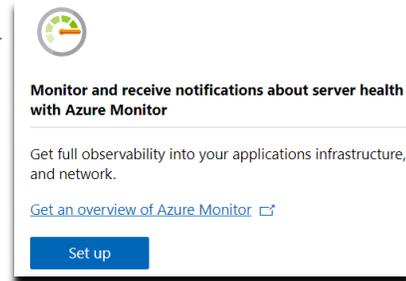
Cluster Quorum
It is highly recommended for 2-node clusters to use a witness to prevent split-brain scenarios.
<https://docs.microsoft.com/en-us/azure-stack/hci/concepts/quorum>



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3/ **Step by Step** guide to [deploy Azure Stack HCI](#). Also install [Windows Admin Center \(WAC\)](#) for managing Azure Stack HCI.

From Windows Admin Center (WAC), set up **Azure Monitor** to gain insight into your application, network, and server health of your Azure Stack HCI branch office and edge deployment.



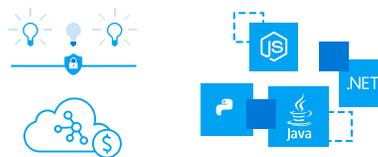
Additionally, you can set up additional  Azure hybrid services such as Backup, File Sync, Site Recovery, Point-to-Site VPN, Update Management, and Security Center in WAC.

4/ Enable branch office and edge Modern Application support

Once your Azure Stack HCI branch office and edge setup is complete, follow the steps below to enable your environment to support modern Container-based application development and IoT data processing by deploying a VM running Azure IoT Edge.

What is [Azure IoT Edge](#)?

- *Open source software from Microsoft*
- *Runs on Windows or Linux*
- *Built to run “on the edge” for near-real time responses*
- *Secured by software and hardware mechanisms*
- *Available AI Toolkit*
<https://github.com/Azure/ai-toolkit-iot-edge>
- *Open programmability: Java, .Net Core 2.0, Node.js, C and Python support*
- *Offline and intermittent connectivity support*
- *Natively managed from Azure IoT Hub*



...combines AI, cloud and edge computing to containerize cloud workloads—such as Azure Cognitive Services, Machine Learning, Stream Analytics, and Functions—and run them locally on devices from a Raspberry Pi to an industrial gateway or converged edge server and manages edge applications / devices with Azure IoT Hub.

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How do I deploy Azure IoT Edge on Azure Stack HCI?

1. [Create a VM on your Azure Stack HCI using Windows Admin Center](#)
(For supported OS versions, VM types, processor architectures and system requirements, click [here](#))
2. If you do not already have an Azure account, get your free account [here](#)
3. [Create an Azure IoT Hub](#) in the Azure Portal
4. [Register an IoT Edge device](#) in the Azure Portal
(The IoT Edge "device" is the Windows or Linux VM running on your Azure Stack HCI installation)
5. [Install and start the IoT Edge runtime](#) on the VM you created in step 1
(You will need the device string created in step 4 above to connect the runtime to your Azure IoT Hub)
6. [Deploy a module to IoT Edge](#)
(Pre-built modules can be sourced and deployed from the [IoT Edge Modules section of the Azure Marketplace](#))

NOTE: In addition to gathering and processing IoT data from IoT sensors, Azure IoT Edge can also be utilized to deploy Containers with general purpose usage capabilities. Adding Azure IoT Edge to your Azure Stack HCI branch office and edge deployments modernizes your environment to support [CI/CD pipeline](#) application deployment framework. Your DevOps personnel can deploy and iterate on Containerized applications that IT builds and supports via traditional VM management processes and tools.

Summary

With completion of the Azure Stack HCI branch office and edge deployment and the installation and configuration of Azure IoT Edge, you now have a platform capable of running complex, highly available workloads in VMs and Containers for branch office and edge deployments.

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