

# AZURE STACK HCI: BRANCH OFFICE AND EDGE

Technical Use Cases  
for Azure Stack HCI



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 includes:

- Plan and deploy Fujitsu 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

## 1. Hardware and OS configuration for Branch office and edge environments

Fujitsu recommends the following server systems as a basis for 2 node Azure Stack HCI Branch office and edge scenario

- Fujitsu Server PRIMERGY TX1330 M4 - a highly expandable mono-socket server for Small and Medium Enterprises that need application-oriented performance coupled with high storage expandability, and growth potential via a comprehensive range of options. [Learn more.](#)

	<b>Hybrid: SSD+HDD</b>		
	<b>Server</b>	PRIMERGY TX1330 M4(3.5")	
	<b>Scalability</b>	2 to 4nodes	
	<b>CPU</b>	1x Intel Xeon E-2124 or better (4-8 cores)	
	<b>Memory</b>	64GB to 128GB	
	<b>Drives</b>	<b>Cache</b>	2-6x 3.5" SSD SAS/SATA (960 GB per node or higher)
		<b>Capacity</b>	4-10x 3.5" SSD SAS/SATA (4.0TB per node or higher)
	<b>Network</b>	1x PLAN EP MCX4-LX 25Gb 2p SFP28 LP	
	<b>RDMA / TPM 2.0</b>	yes / yes	
<b>HBA</b>	Fujitsu PSAS CP400i SAS		

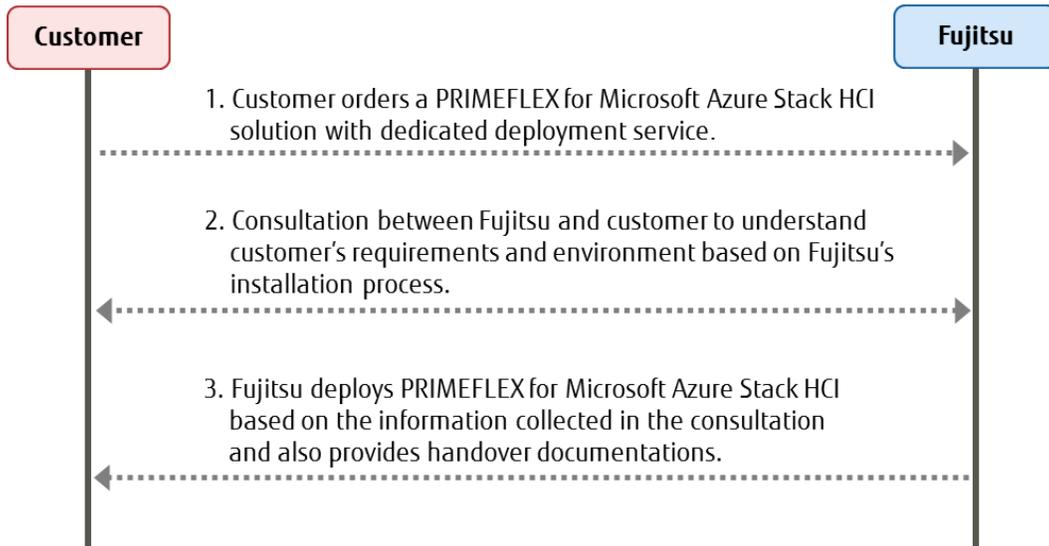
- Fujitsu Server PRIMERGY RX2540 M5 - a 2U dual-socket rack server for high usability, scalability and cost-efficiency. [Learn more.](#)

	<b>Hybrid: SSD+HDD</b>		
	<b>Server</b>	PRIMERGY RX2540 M5(2.5" or 3.5")	
	<b>Scalability</b>	2 to 16 nodes	
	<b>CPU</b>	2x Intel Xeon Silver 4208 or better (16-56 cores)	
	<b>Memory</b>	64GB to 3TB	
	<b>Drives</b>	<b>Cache</b>	2-12x 2.5" or 2-6x 3.5" SSD SAS/ SATA (800 GB per node or higher)
		<b>Capacity</b>	4-22x 2.5" or 4-10x 3.5" HDD SAS/SATA (2.4 TB per node or higher)
	<b>Network</b>	2x PLAN EP QL41xxx	
	<b>RDMA / TPM 2.0</b>	yes / yes	
<b>HBA</b>	Fujitsu PSAS CP400i SAS		

## Deployment and Support

[Fujitsu Product Support Services](#) provide installation and support services for hardware and software. With the [Fujitsu SolutionPacks](#), Fujitsu provides a special Infrastructure Support package that is designed to offer a single point of contact for all components (Fujitsu and 3rd-party) of a Fujitsu infrastructure solution.

Customers can acquire Fujitsu Product Support Services for deployment of Azure Stack HCI the following way:



The following tasks are done by Fujitsu professional engineers:

- All power and network cabling.
- Installation and update Windows Server 2019 Datacenter.
- Configuration of Windows Server 2019 features, cluster, network, and Hyper-V.

## Infrastructure Management

For an efficient management of the complete hardware infrastructure, Fujitsu recommends [Fujitsu Software Infrastructure Manager \(ISM\)](#) providing a converged management for both the physical and the virtual environment, including compute, storage and network devices. ISM provides the following key features:

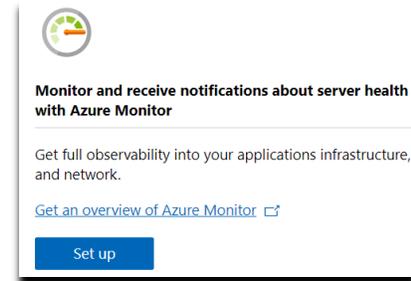
- A dashboard with a customizable layout providing you with all relevant information to make quick and proactive decisions
- Monitoring of all critical server components including CPU and memory utilization
- Alerting in case of system failures to quickly identify affected components
- Firmware updates of all hardware components in a Azure Stack HCI cluster (covers server, storage and switch devices)

## Step by Step guide to deploy Azure Stack HCI

1. Install Windows Server 2019 Datacenter (follow guidance above in network connectivity for Clustering)
2. Add Roles and Features
3. Setup Failover Clustering and enable a Cluster Witness
4. Setup Storage Spaces Direct
5. [Install Windows Admin Center \(WAC\)](#)

The step 1 to 4 above are done by Fujitsu Product Support Services.

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.

## 2. 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.**

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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