

The Lenovo logo is displayed in white text on a black rectangular background.

Lenovo ThinkAgile MX Cloud Deployment Guide

Initial Release: 17 September 2024

Provides steps for deploying
Azure Stack HCI clusters via
Azure Cloud

Includes details for
environment preparation

Includes details for Azure Arc
registration and configuration

Intended to be used in
conjunction with Microsoft
online documentation

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1 Introduction

Beginning with Microsoft Azure Stack HCI 23H2, the only way to deploy an HCI cluster is via the Microsoft Azure cloud portal. This document presents information regarding how to deploy Lenovo ThinkAgile MX solutions via the Azure portal.

At a high level, the general process to deploy an Azure Stack HCI cluster via the Azure portal includes the following main activities:

- Prepare Active Directory
- Configure the HCI operating system
- Register with Azure Arc and configure permissions
- Deploy via the Azure portal

Microsoft has published a comprehensive article that describes the entire process at the following URL:

<https://learn.microsoft.com/en-us/azure-stack/hci/deploy/deployment-introduction>

Note that the above article is updated regularly by Microsoft and is referenced repeatedly by this document, so it is best to have a browser open to the page while working through the steps to prepare and deploy the solution.

Since many customers are deploying single-node Azure Stack HCI clusters at the edge, the initial release of this document will focus on the single-node cluster scenario. We intend to add an example of two-node direct-connected cluster deployment soon.

2 Prerequisites and environment preparation

2.1 Prerequisites

Read and understand the Microsoft prerequisites for Azure Stack HCI cluster deployment, which are part of the article referenced above. Specifically, the prerequisites are found at the following URL:

<https://learn.microsoft.com/en-us/azure-stack/hci/deploy/deployment-prerequisites>

Read through and make sure to understand each of the requirements. Links are provided for each requirement that provide further information.

2.2 Active Directory preparation

The steps in this section are taken directly from the Microsoft article previously referenced, beginning here:

<https://learn.microsoft.com/en-us/azure-stack/hci/deploy/deployment-prep-active-directory>

Active Directory requirements include the following:

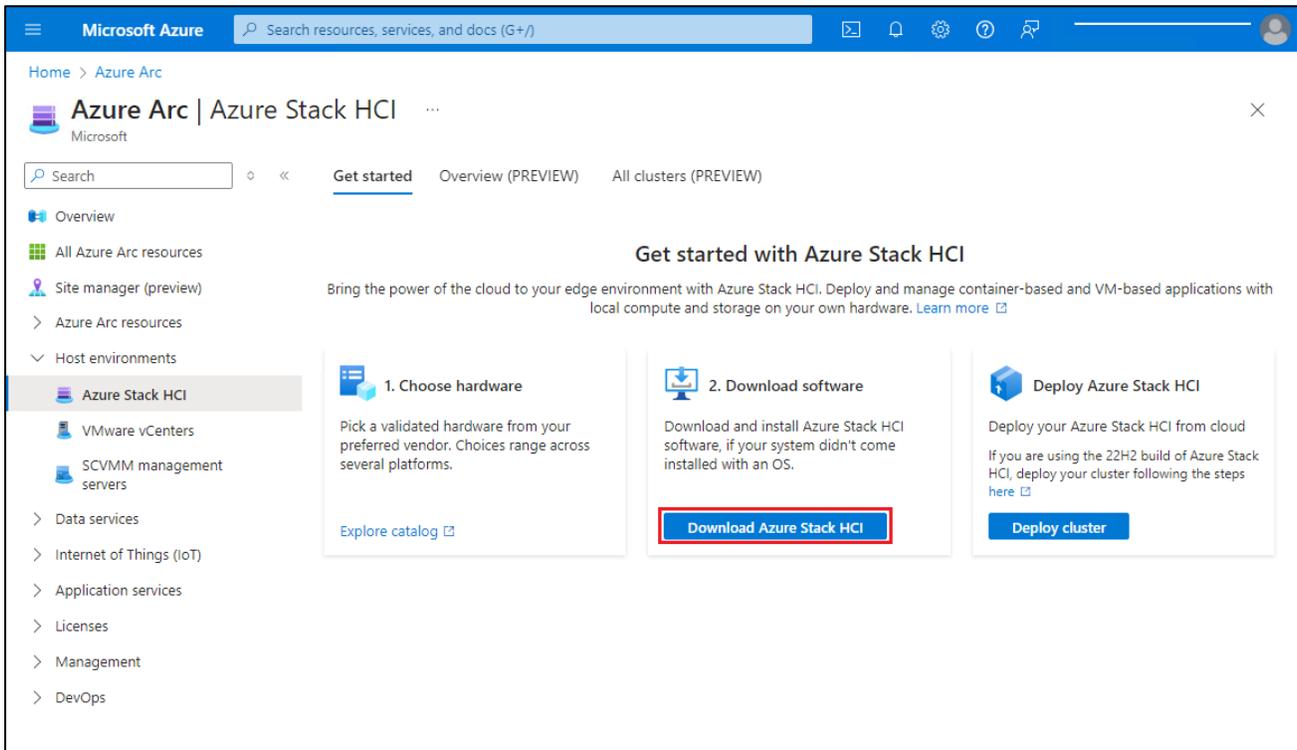
- A dedicated Organizational Unit (OU)
- Group policy inheritance that is blocked for the applicable Group Policy Object (GPO)
- A user account that has all rights to the OU in the Active Directory
- Servers to be deployed must not be joined to Active Directory before deployment

Follow the steps in the Microsoft article to prepare Active Directory. PowerShell scripts and commands are provided to simplify the process. After modifying the OU parameters in the script from the Microsoft article, the script is run. The credentials that are requested by the script are for the new user that will be created in the new OU. Running the script in our lab yields the following result:

```
PS C:\Users\Administrator> New-HciAdObjectsPreCreation -AzureStackLCMUserCredential $credential -AsHciOUName
"OU=MX455V3,DC=contoso,DC=com"
VERBOSE: Successfully verified DC=contoso,DC=com
VERBOSE: Successfully created MX455V3 organization unit within the 'DC=contoso,DC=com'
VERBOSE: Successfully created 'HCIAdmin' within the 'OU=MX455V3,DC=contoso,DC=com'
VERBOSE: Access permissions to 'OU=MX455V3,DC=contoso,DC=com' have been successfully granted to 'HCIAdmin'
VERBOSE: Gpo inheritance blocked for 'OU=MX455V3,DC=contoso,DC=com', inheritance blocked state is : True
PS C:\Users\Administrator>
```

2.3 Download and install Azure Stack HCI

All ThinkAgile MX Integrated System (IS) and Premier (PR) solutions come with HCI preloaded, so customers should not need to do this. However, the Microsoft article provides information regarding how to download the Azure Stack HCI operating system from the Azure portal in case the OS needs to be reinstalled.



Once downloaded from the Azure portal, install the OS, ensuring that it gets installed on the RAID-1 boot drive, not on one of the storage pool devices. If the OS was installed previously, make sure to delete all existing partitions from the boot drive before selecting it for the new installation.

2.3.1 Update system firmware according to Best Recipe

For Lenovo ThinkAgile MX solutions, ensure that the latest Best Recipe firmware and device driver versions are running on all nodes. For information regarding the current ThinkAgile MX Best Recipe, refer to the following URL:

<https://datacentersupport.lenovo.com/us/en/solutions/HT507406>

To simplify the process of downloading all firmware and device driver update packages for a given ThinkAgile MX Best Recipe, a single zip archive that includes all packages is available from the ThinkAgile MX Updates Repository site, which can be found at the following URL:

<https://thinkagile.lenovo.com/mx>

Lenovo offers multiple tools for updating firmware and device drivers on the nodes, including the Lenovo XClarity™ Integrator for Microsoft Windows Admin Center (LXCI for WAC), Lenovo XClarity Administrator (LXCA), Lenovo XClarity Provisioning Manager (LXPM), and Lenovo XClarity Essentials OneCLI. Since there are multiple benefits associated with using LXCI for WAC or LXCA to manage an Azure Stack HCI cluster, we recommend using one of these tools to update system firmware on the cluster nodes.

LXCI for WAC provides IT administrators with a smooth and seamless experience in managing Lenovo servers. IT administrators can manage Azure Stack HCI clusters through the LXCI snap-in integrated into WAC's cluster creation and Cluster-Aware Update (CAU) functions. Of particular interest is the ability of this tool to recognize and apply firmware and device driver updates based on the current ThinkAgile MX Best

Recipe. For more information about LXCI for WAC, see the following URL:

<https://support.lenovo.com/us/en/solutions/ht507549>

LXCA is a centralized resource management solution that is aimed at reducing complexity, speeding response, and enhancing the availability of Lenovo server systems and solutions. LXCA provides agent-free hardware management for our servers, storage, network switches, hyperconverged and ThinkAgile solutions. LXCA can be used to monitor Azure Stack HCI clusters and maintain firmware compliance with a published Best Recipe. For more information about LXCA, see the Lenovo XClarity Administrator Product Guide at the following URL:

<https://lenovopress.com/tips1200-lenovo-xclarity-administrator>

2.4 Configure operating system

The portion of the Microsoft article that discusses OS configuration begins here:

<https://learn.microsoft.com/en-us/azure-stack/hci/deploy/deployment-install-os>

After installing the OS, refer to the “Configure the operating system using SConfig” section of the article for OS configuration steps. In particular, make sure to comply with the following important guidelines. At the time of this writing, some of these are included in the Microsoft article and some are not:

- Do NOT join the system to the AD domain
- Do NOT install Windows Updates using SConfig
- Although not called out specifically in the Microsoft article, a single network interface must be configured on each server that will become a cluster node. This network interface will be used for connectivity to Azure Arc for deployment. The deployment process will configure any other network interfaces required, depending on input to the deployment wizard.
- Change the computer name to a unique value (although not specifically mentioned in the Microsoft article, screenshots show that node names have been changed):

```
Administrator: C:\Windows\system32\cmd.exe

-----
Welcome to Azure Stack HCI
-----

1) Domain/workgroup:          Workgroup: WORKGROUP
2) Computer name:             NODE1
3) Add local administrator
4) Remote management:        Enabled
5) Update setting:            Download only
6) Install updates
7) Remote desktop:            Enabled (all clients)
8) Network settings
9) Date and time
10) Telemetry setting:        Off
12) Log off user
13) Restart server
14) Shut down server
15) Exit to command line (PowerShell)

Enter number to select an option: _
```

- The cloud deployment process will complain if it sees both IPv4 and IPv6 default gateways, so it is a best practice to disable IPv6. To do this, run the following command:

```
Get-NetAdapter | ? name * | Disable-NetAdapterBinding -ComponentID ms_tcpip6
```

- Install the Hyper-V role. To do this, run the following command:

```
Enable-WindowsOptionalFeature -Online -FeatureName Microsoft-Hyper-V -All
```

2.5 Register with Azure Arc

The process to register the nodes that will become an Azure Stack HCI cluster will prepare each node to be deployed via the Azure portal. The steps in this section are run from each server that will become an Azure Stack HCI cluster node. Continue to follow the Microsoft article, starting here:

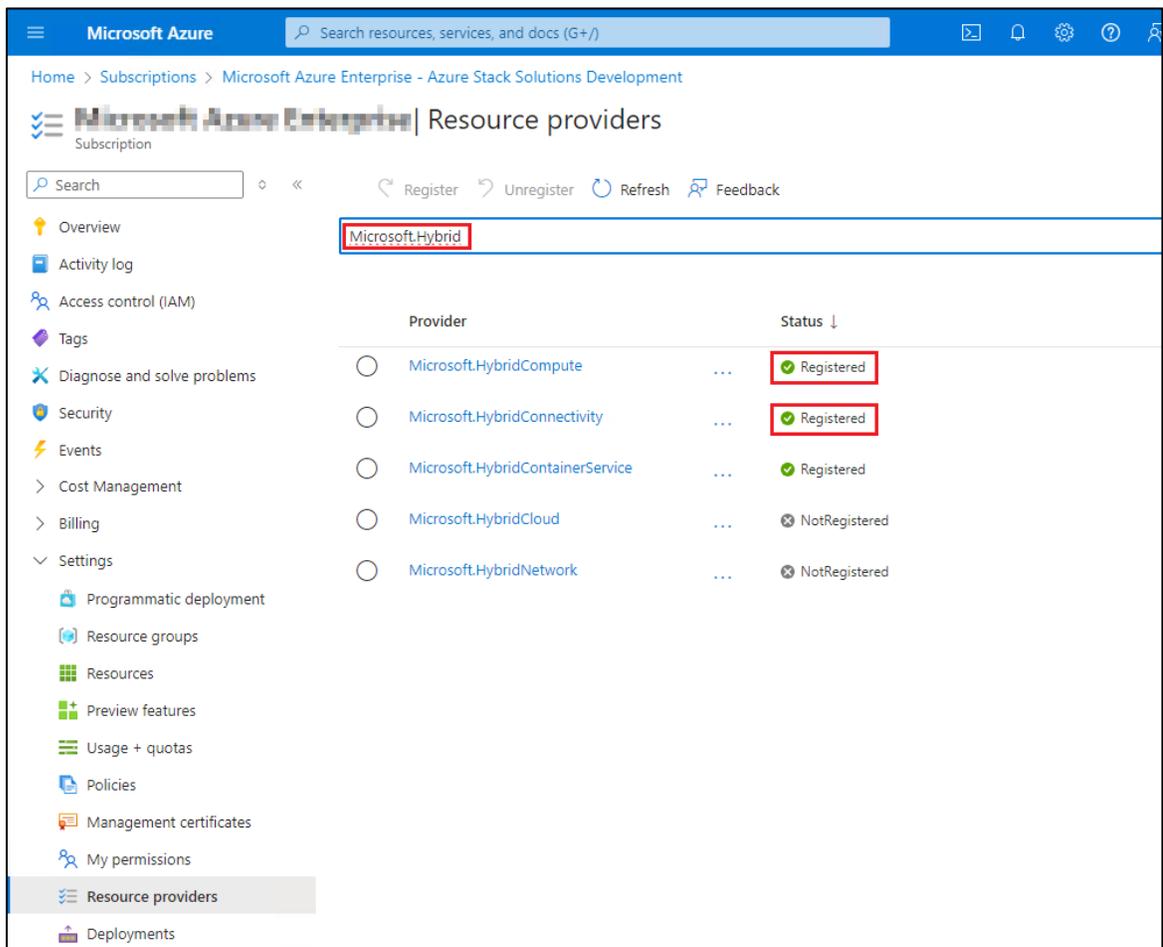
<https://learn.microsoft.com/en-us/azure-stack/hci/deploy/deployment-arc-register-server-permissions>

2.5.1 Prerequisites

This section of the article specifies the prerequisites required to perform the cloud deployment process for an Azure Stack HCI cluster. Work with your Azure administrator to ensure that all prerequisites shown in the Microsoft article are met.

The Azure subscription that will be used for cloud deployment must be registered with specific resource providers in order to perform all required tasks. To check proper registration, follow these steps:

1. From the Home page of the Azure portal, navigate to **Subscriptions** and click on the Subscription name that will be used.
2. In the left pane, open the **Settings** category and then select **Resource providers**.
3. Check the list of resource providers shown to ensure that the Status column shows “Registered” for all providers that are required. The “Filter by name...” area is helpful here to find providers quickly. The following is an example showing two of the required providers have been properly registered. Search for each of the required providers and verify that all are registered.

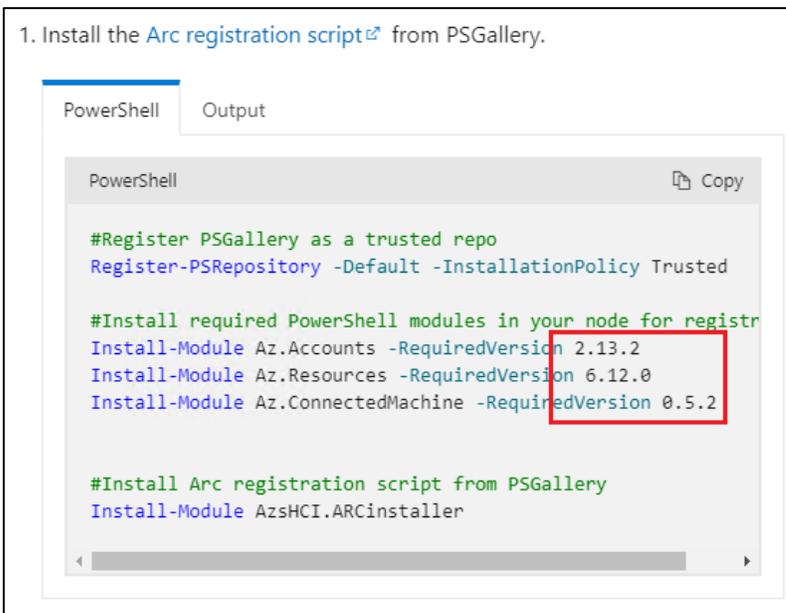


Ensure that the proper permissions are granted to the resource group that will contain the nodes. Steps to check this are provided in the Microsoft article.

With prerequisites complete, attention can now turn to registering the nodes with Azure Arc. Following the same Microsoft article, pay particular attention to the details highlighted here.

2.5.2 Install PowerShell modules

- Make sure to pay attention to the module versions in the Microsoft article. The versions being used at the time of this writing are shown in the screenshot below. These versions change from time to time and are not always the latest versions available.



- A red error message stating “Module Repository ‘PSGallery’ exists” might be displayed and is normal.

```

PS C:\Lenovo> .\Install-Registration-Modules.ps1

NuGet provider is required to continue
PowerShellGet requires NuGet provider version '2.8.5.201' or newer to interact with NuGet-based repositories. The NuGet
provider must be available in 'C:\Program Files\PackageManagement\ProviderAssemblies' or
'C:\Users\Administrator\AppData\Local\PackageManagement\ProviderAssemblies'. You can also install the NuGet provider by
running 'Install-PackageProvider -Name NuGet -MinimumVersion 2.8.5.201 -Force'. Do you want PowerShellGet to install
and import the NuGet provider now?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): y
PackageManagement\Register-PackageSource : Module Repository 'PSGallery' exists.
At C:\Program Files\WindowsPowerShell\Modules\PowerShellGet\1.0.0.1\PSModule.psm1:4211 char:17
+ ... $null = PackageManagement\Register-PackageSource @PSBoundParamete ...
+ ~~~~~
+ CategoryInfo          : ResourceExists: (Microsoft.Power...erPackageSource:RegisterPackageSource) [Register-Pack
ageSource], Exception
+ FullyQualifiedErrorId : PackageSourceExists,Microsoft.PowerShell.PackageManagement.Cmdlets.RegisterPackageSource
  
```

- You must respond with “A” when prompted, for each of the 4 Modules to be installed.
- After the script finishes, run the following command to confirm that the correct versions of the modules were installed:

Get-InstalledModule

```

PS C:\Users\Administrator> Get-InstalledModule

Version      Name                Repository          Description
-----
2.13.2      Az.Accounts         PSGallery           Microsoft Azure PowerShell - Accounts credential...
0.5.2       Az.ConnectedMachine PSGallery           Microsoft Azure PowerShell: ConnectedMachine cmd...
6.12.0      Az.Resources        PSGallery           Microsoft Azure PowerShell - Azure Resource Mana...
6.0.1       Az.Storage          C:\CloudDeploymen... Microsoft Azure PowerShell - Storage service dat...
0.2.269...  AzSHCI.ARCInstaller PSGallery           Microsoft Azure PowerShell: Azure Stack HCI regi...
1.2100...   AzStackHci.EnvironmentChecker PSGallery          Microsoft AzStackHci Readiness Checker
1.4.8.1     PackageManagement  C:\CloudDeploymen... PackageManagement (a.k.a. OneGet) is a new way t...
2.2.5       PowerShellGet       C:\CloudDeploymen... PowerShell module with commands for discovering,...

PS C:\Users\Administrator>
  
```

2.5.3 Setting parameters in registration script

Once the required PowerShell modules have been installed, the PowerShell command to register the node with Azure Arc can be run.

```
Invoke-AzStackHciArcInitialization -SubscriptionID <Subscription> -ResourceGroup  
<RG> -TenantID <Tenant> -Region <Region> -Cloud "AzureCloud" -ArmAccessToken  
<ARMtoken> -AccountID <AccountID> -Proxy <ProxyServer>
```

Several parameters must be entered into the registration command before it is run, for example <Tenant> in the command shown above. Here we present notes regarding a few of these parameters:

- ResourceGroup: Create a new Resource Group manually before running the registration script to ensure it is available and ready for use.
- DeviceCode: This value is generated during the registration process. The registration script will pause to instruct the user to sign in to Azure and enter a unique code that is displayed. This must be done on another system, since the Azure Stack HCI operating system does not support a full GUI that is required by a browser. The following screenshot is an example of the output of the registration script run in our lab. The DeviceCode value is shown in the upper right corner of the screenshot. Once you have signed in to Azure (<https://microsoft.com/devicelogin>) and entered the provided code, press Enter to allow the registration script to continue.

```

PS C:\Lenovo> .\Register-Node.ps1
WARNING: To sign in, use a web browser to open the page https://microsoft.com/devicelogin and enter the code BV9QDUZTK
to authenticate.

WARNING: You're using Az.Accounts version 2.13.2. The latest version of Az.Accounts is 3.0.0. Upgrade your Az modules
using the following commands:
  Update-Module Az.* -WhatIf      -- Simulate updating your Az modules.
  Update-Module Az.*              -- Update your Az modules.
Press Enter to continue...: _____ Script pauses here to sign in to Azure
and enter the code displayed above
Starting AzStackHci ArcIntegration Initialization
Installing and Running Azure Stack HCI Environment Checker
All the environment validation checks succeeded
Installing Hyper-V Management Tools
Starting AzStackHci ArcIntegration Initialization
Installing Azure Connected Machine Agent
Total Physical Memory:      130,835 MB
PowerShell version: 5.1.25398.469
.NET Framework version: 4.8.9032
Downloading agent package from https://download.microsoft.com/download/c/c/e/cce7456c-xxxx-xxxx-xxxx-f43f4a2f6a6f/AzureC
onectedMachineAgent.msi to C:\Users\ADMINI~1\AppData\Local\Temp\1\AzureConnectedMachineAgent.msi
Installing agent package
Installation of azcmagent completed successfully

Confidential content removed here

Connecting to Azure using ARM Access Token
Connected to Azure successfully
Microsoft.HybridCompute RP already registered, skipping registration
Microsoft.GuestConfiguration RP already registered, skipping registration
Microsoft.HybridConnectivity RP already registered, skipping registration
Microsoft.AzureStackHCI RP already registered, skipping registration
INFO    Connecting machine to Azure... This might take a few minutes.
INFO    Testing connectivity to endpoints that are needed to connect to Azure... This might take a few minutes.
 20% [ ==> ]
 30% [ ==> ]
INFO    Creating resource in Azure... Correlation ID=4b476af7-bb24-4bbe-a68a-3777a74e476e Resource ID=
/subscriptions/943dcc7-7834-4046-ae08-a9c980b88d12/resourceGroups/RG-Ti/providers/Microsoft.HybridCompute/machines/MX45
5V3-Node01
 60% [ =====> ]
 80% [ =====> ]
100% [ =====]
INFO    Connected machine to Azure
INFO    Machine overview page: https://portal.azure.com/#@e62fcd7c-a480-41cf-8ef9-
92e409a0e576/resource/subscriptions/943dcc7-7834-4046-ae08-a9c980b88d12/resourceGroups/RG-
Ti/providers/Microsoft.HybridCompute/machines/MX455V3-Node01/overview
Connected Azure ARC agent successfully
Installing AzureEdgeTelemetryAndDiagnostics Extension
Successfully triggered AzureEdgeTelemetryAndDiagnostics Extension installation
Installing DeviceManagement Extension
Successfully triggered DeviceManagementExtension installation
Installing LcmController Extension
Successfully triggered LCMController Extension installation
Installing EdgeRemoteSupport Extension
Successfully triggered EdgeRemoteSupport Extension installation
ARC Successfully enabled on the device.
ARC Extension installations Successfully triggered on the device.

Log location: C:\Users\Administrator\.AzStackHci\AzStackHciEnvironmentChecker.log
Report location: C:\Users\Administrator\.AzStackHci\AzStackHciEnvironmentReport.json
Use -Passthru parameter to return results as a PSObject.

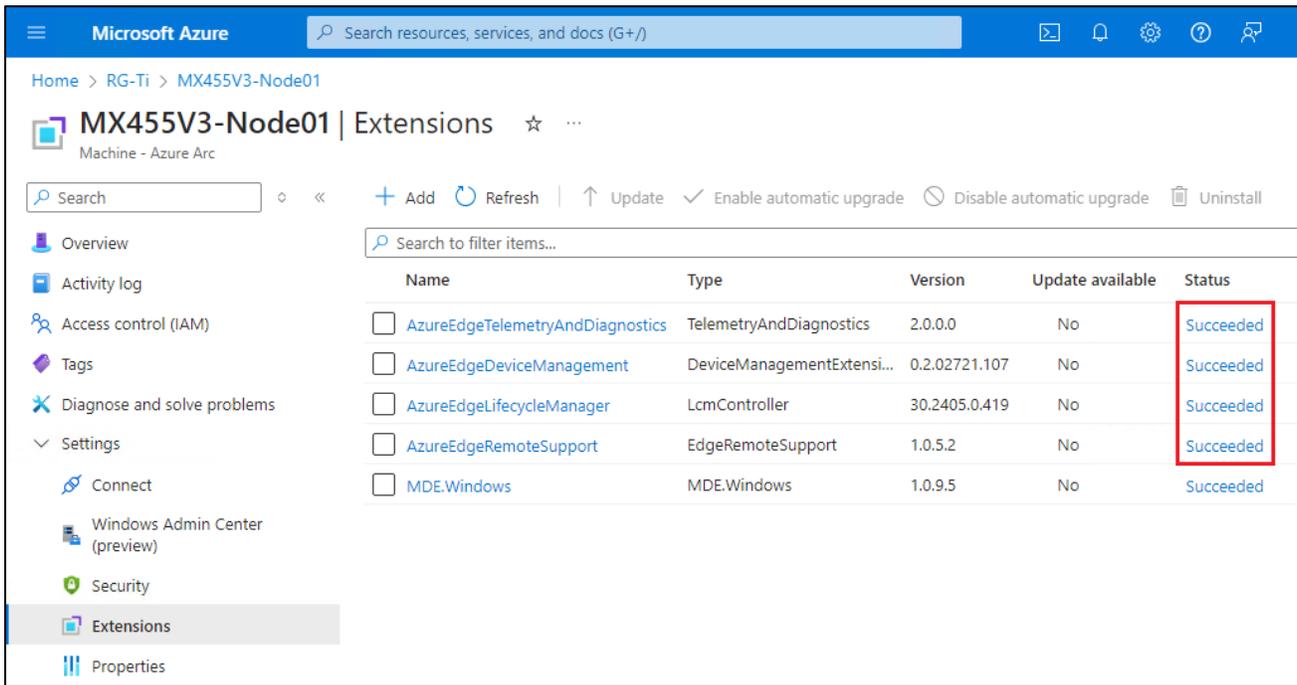
```

2.5.4 After running registration script

- You might see warning(s) about PowerShell module versions, especially the “Az.Accounts” module, that are not at the latest version. Such a warning can be seen in the screenshot above. As long as all PowerShell module versions match the Microsoft article, these warnings can be ignored.
- If registration fails, refer to the Azure Stack HCI Environment Checker log, which can be found at the following location:

C:\Users*<UserID>*\.AzStackHci\AzStackHciEnvironmentChecker.log

- Once registration is complete, confirm that the server(s) now show up in the Azure Resource Group and that all required Extensions have been fully installed. Wait at the Azure portal screen until all the Extensions show “Succeeded” for Status.



- Assign the permissions that are required for deployment according to the Microsoft article. It is important to ensure that all required permissions are set properly before attempting to deploy an Azure Stack HCI cluster.

3 Deploy Azure Stack HCI cluster

With all the preparation and Azure Arc registration complete, it is time to deploy an Azure Stack HCI cluster. You can deploy a new cluster using the Azure portal or an Azure Resource Manager (ARM) Template. This document will highlight instructions to deploy via the Azure portal. Once an understanding of the general process has been achieved, users can learn how to deploy at-scale using an ARM Template.

The steps highlighted in this document work through deployment via the Azure portal. Referring to the same Microsoft article, this process begins here:

<https://learn.microsoft.com/en-us/azure-stack/hci/deploy/deploy-via-portal>

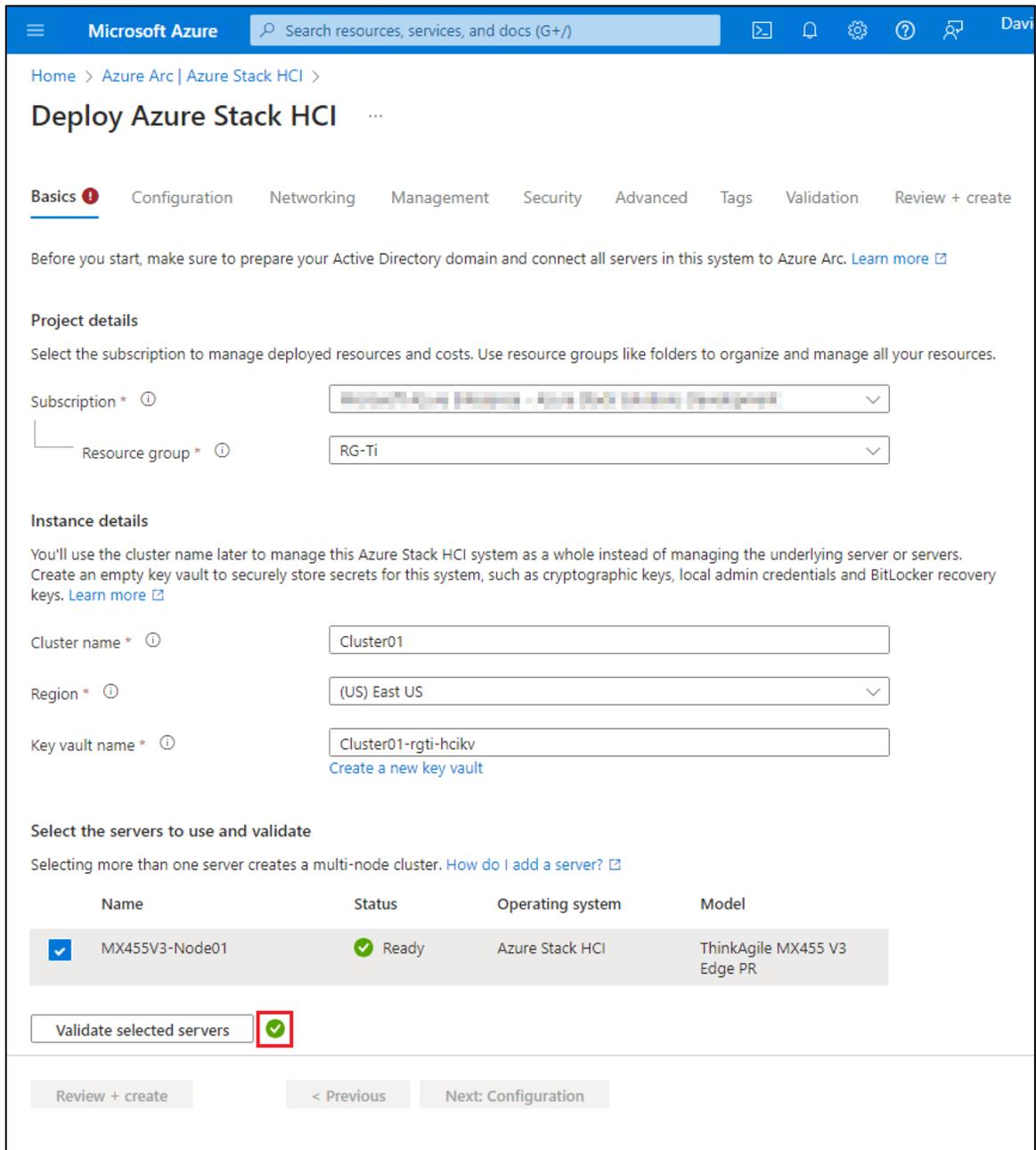
Important: For three-node clusters, the network adapters that carry storage traffic must be connected to a network switch. Deploying three-node clusters with storage network adapters that are directly connected to each server without a switch is not currently supported by Microsoft.

At this point, Active Directory should be prepared as previously described, including the creation of a dedicated OU for the Azure Stack HCI cluster. The servers that will become cluster nodes should have been renamed as desired, but not be joined to the Domain. In addition, the servers must already be registered with Azure Arc for deployment.

To deploy a new Azure Stack HCI cluster via the Azure portal, follow these steps:

1. Log in to the Azure portal and click the **Azure Arc** icon at the top of the portal window.
2. In the left navigation pane, expand “Host environments” and then click on **Azure Stack HCI**.
3. Select the **Deploy cluster** button.
4. Fill in all required information on the Basics page and then click the **Validate selected servers** button. Once validation completes and a checkmark is displayed, click the **Next: Configuration** button.

Notes: The Azure Subscription will be prepopulated, but will show the friendly name rather than the actual Subscription ID. Also, any servers that have been registered properly in the Resource Group specified should be shown near the bottom of the page. If you have registered servers in advance that will be deployed into multiple clusters, make sure to select only those that should become nodes in the single cluster that is currently being deployed.



5. On the Configuration page, select the desired option for deployment settings. For this document we choose **New configuration**. After deployment is complete, you will be able to save a Template of the deployment to use in the future. Once selected, click the **Next: Networking** button.
6. In our example, we show the simplest option, which is to deploy a single-node cluster, grouping Management and Compute traffic on the same network intent and not creating a Storage traffic intent, since there is no storage traffic in a single-node cluster. Note that this option is not currently explained in the Microsoft article, but is the preferred option for single-node clusters.
7. Enter details in the **Allocate IP addresses to the system and services** section of the page. Some of these addresses have already been configured on a single network adapter in each server in order for it to be registered with Azure Arc for deployment.

Microsoft Azure Search resources, services, and docs (G+)

Home > Azure Arc | Azure Stack HCI >

Deploy Azure Stack HCI

Basics Configuration **Networking** Management Security Advanced Tags Validation Review + create

Choose whether to use a network switch for the storage network

Storage connectivity * Single server deployment

Group network traffic types by intent

Choose traffic types to group together on a set of network adapters and which types to keep physically isolated on their own adapters.

- **Management** traffic between this system, your management PC, and Azure; also Storage Replica traffic
- **Compute** traffic to or from VMs and containers on this system
- **Storage** (SMB) traffic between servers in a multi-node cluster

Networking pattern *

Group all traffic
Management, Compute and Storage on the same network intent.

Group management and compute traffic
Management and Compute on the same intent. Storage on dedicated network intent.

Group compute and storage traffic
Management on dedicated network intent. Storage and compute on the same intent.

Group management and compute (no storage)
Management and Compute on the same network intent. Without storage intent.

Provide intent details

Specify which network adapters should carry each group of traffic types. This is called as an intent.

Compute_Management

Traffic types *

Intent name *

Network adapter 1 *

Network adapter 2 *

+ Select another adapter for this traffic [Customize network settings](#)

Allocate IP addresses to the system and services

We need a block of IP addresses on your management network to use for Azure Stack HCI and for services such as Azure Arc.

Required IP addresses * 6

Starting IP *

Ending IP *

Subnet mask *

Default gateway *

DNS server *

+ Add DNS server

[Review + create](#) < Previous **Next: Management**

8. Once all fields have been populated, click the **Next: Management** button.
9. On the Management page, enter the required data for AD Domain, OU, and credentials before clicking the **Next: Security** button.

The screenshot shows the 'Deploy Azure Stack HCI' page in the Microsoft Azure portal, specifically the 'Management' tab. The page is divided into several sections for configuration:

- Specify a custom location name:** A text input field for a custom location name.
- Specify cluster witness settings:** A section explaining that a cluster witness is a small file used for server synchronization. The 'Witness type' is set to 'No witness'.
- Specify Active Directory details:** A section for configuring an Active Directory Services domain.
 - Domain *:** Input field containing 'contoso.com'.
 - OU *:** Input field containing 'OU=MX455V3,DC=contoso,DC=com'.
 - Deployment account:**
 - Username *:** Input field containing 'HCIAdmin'.
 - Password *:** Password input field with masked characters.
 - Confirm password *:** Password input field with masked characters.
 - Local administrator:**
 - Username *:** Input field containing 'Administrator'.
 - Password *:** Password input field with masked characters.
 - Confirm password *:** Password input field with masked characters.

At the bottom of the page, there are three buttons: 'Review + create', '< Previous', and 'Next: Security'. The 'Next: Security' button is highlighted with a red box, indicating the next step in the deployment process.

10. On the Security page, it is best to leave the Security level set to **Recommend security settings** unless there is a specific reason to customize the security settings. Click the **Next: Advanced** button to proceed.
11. On the Advanced page, it is best to use the recommended option to **Create workload and required infrastructure volumes**. Additional volumes can be created later, after the cluster has been deployed. Click the **Next: Tags** button to proceed.

12. On the Tags page you can add tags to help organize the environment and make searching for specific clusters more efficient. Tags can also be used to sort out billing for different resources or resource groups. Tags are completely optional. Click the **Next: Validation** button to proceed.
13. On the Validation page, click the **Start validation** button, wait for validation to complete, and then click the **Next: Review + create** button to proceed.

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Home > Azure Arc | Azure Stack HCI >

Deploy Azure Stack HCI

Basics Configuration Networking Management Security Advanced Tags **Validation** Review + create

Resource Creation

Following Azure Stack HCI cluster resource object and it's components are created prior validation.

Step	Type	Status
Cluster resource	Resource	✓ Succeeded
Cluster permissions	Permission	✓ Succeeded
Create service principal	Resource	✓ Succeeded
Key Vault Audit Logging	Resource	✓ Succeeded
Key vault permissions	Permission	✓ Succeeded
Key vault secrets	Secrets	✓ Succeeded

Validation progress

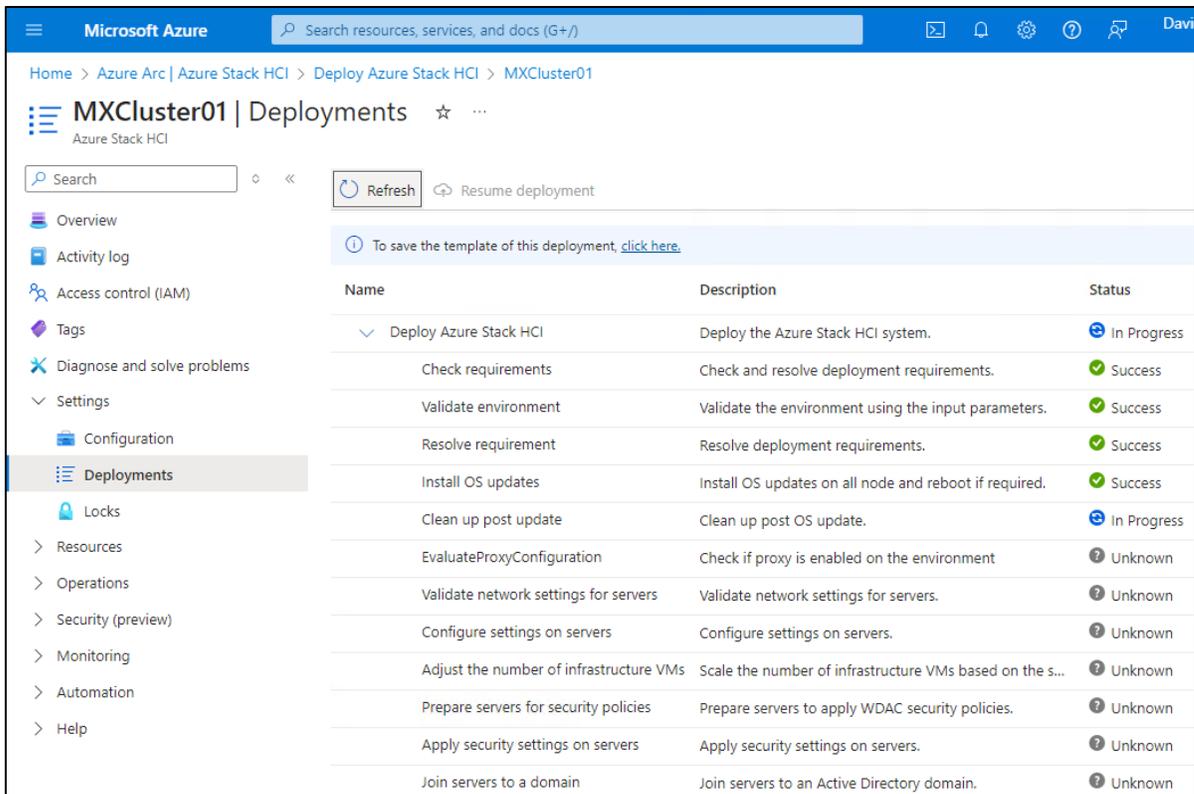
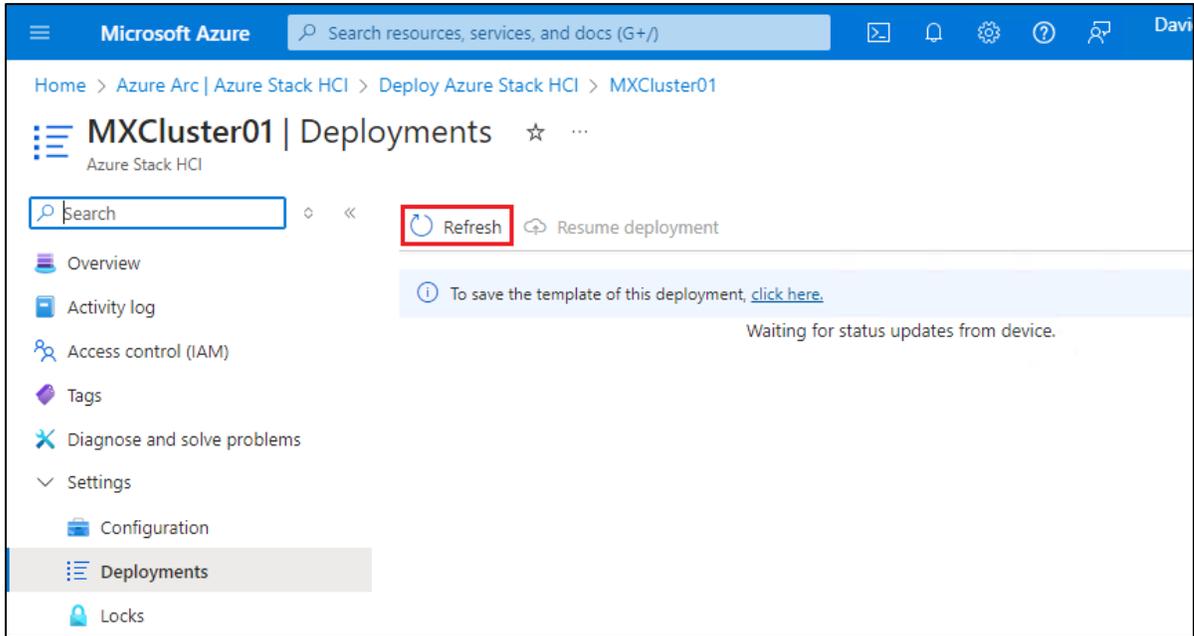
We're creating an Azure resource for this system and validating your system's readiness to deploy. This takes around 15 minutes for systems with one or two servers, longer for bigger systems.

Start validation

Task	Description	Status
Deployment settings resource	Resource	✓ Success
Azure Stack HCI Connectivity	Check external connectivity requirements	✓ Success(View details)
Azure Stack HCI External Active Directory	Check external active directory preparation	✓ Success(View details)
Azure Stack SBE Health	Check SBE health requirements	✓ Success(View details)
Azure Stack HCI Hardware	Check hardware requirements	✓ Success(View details)
Azure Stack HCI Network	Check network requirements	✓ Success(View details)
Azure Stack HCI Observability	Check Log Collection and Remote Support requirements	✓ Success(View details)
Azure Stack HCI Software	Check Operating System requirements	✓ Success(View details)
Azure Stack HCI MOC Stack	Check Moc Stack requirements	✓ Success(View details)
Azure Stack HCI Arc Integration	Evaluate interface ValidateArcIntegration	✓ Success(View details)
Azure Stack HCI Cluster Witness	Check cluster witness requirements	✓ Success(View details)

Review + create < Previous **Next: Review + create**

14. On the Review + create page, review all details to ensure they are as expected before clicking the **Create** button to begin cluster deployment.
15. Cluster deployment begins immediately. Status of the deployment can be checked by clicking the Refresh button, as shown in the following sequence of screenshots.



Microsoft Azure Search resources, services, and docs (G+)

Home > Azure Arc | Azure Stack HCI > Deploy Azure Stack HCI > MXCluster01

MXCluster01 | Deployments ☆ ...
Azure Stack HCI

Search Refresh Resume deployment

To save the template of this deployment, [click here](#).

Name	Description	Status
Deploy Azure Stack HCI	Deploy the Azure Stack HCI system.	In Progress
Check requirements	Check and resolve deployment requirements.	Success
Validate environment	Validate the environment using the input parameters.	Success
Resolve requirement	Resolve deployment requirements.	Success
Install OS updates	Install OS updates on all node and reboot if required.	Success
Clean up post update	Clean up post OS update.	Success
EvaluateProxyConfiguration	Check if proxy is enabled on the environment	Success
Validate network settings for servers	Validate network settings for servers.	Success
Configure settings on servers	Configure settings on servers.	Success
Adjust the number of infrastructure VMs	Scale the number of infrastructure VMs based on the s...	Success
Prepare servers for security policies	Prepare servers to apply WDAC security policies.	Success
Apply security settings on servers	Apply security settings on servers.	Success
Join servers to a domain	Join servers to an Active Directory domain.	Success
Install software dependencies	Install .NET 8	Success
Create the cluster	Create the failover cluster from the server(s) in the syst...	Success
Configure networking	Configure the host networking settings.	Success
Configure Cloud Management	Configure the cloud management agent.	Success
Register with Azure	Connect to Azure and turn on Arc management.	In Progress
Set up observability	Set up observability after connecting to Azure.	Unknown
Unlock virtual disks	If needed, unlock encrypted virtual disks for the system.	Unknown

16. You can save a Template of this deployment for future use by clicking the **click here** link near the top of the page. For future deployments, the Template can be selected on the Configuration page instead of **New configuration** option.

17. Once the Status column shows "Success" for the top "Deploy Azure Stack HCI" line, cluster deployment is complete.

The screenshot shows the Microsoft Azure portal interface for the resource group 'MXCluster01'. The page title is 'MXCluster01 | Deployments' under the 'Azure Stack HCI' category. A navigation sidebar on the left includes options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings (with sub-items like Windows Admin Center, Extensions, Configuration), Deployments (highlighted), Locks, and Resources. The main content area features a search bar, a refresh button, and a message: 'To save the template of this deployment, [click here](#).' Below this is a table with the following data:

Name	Description	Status
> Deploy Azure Stack HCI	Deploy the Azure Stack HCI system.	Success

4 Resources

There are several resources available online that provide helpful information about Lenovo ThinkAgile MX solutions and Microsoft Azure Stack HCI.

This document uses the following Microsoft article for cloud deployment background and requirements. This article describes environment preparation and cloud deployment of an Azure Stack HCI cluster. Deploying via Azure Arc is required for all Azure Stack HCI versions beginning with 23H2.

Microsoft Azure Stack HCI documentation

<https://learn.microsoft.com/en-us/azure-stack/hci/deploy/deployment-introduction>

For information regarding hardware options that Lenovo has certified for use in an Azure Stack HCI cluster, refer to one of the following Lenovo ThinkAgile MX Certified Configuration Guides. These guides provide information about specific adapters, GPUs, and storage devices that have been certified.

For clusters based on the Lenovo SR630 and SR650 rack servers:

Lenovo ThinkAgile MX Certified Configurations for Azure Stack HCI – V1 Servers

<https://lenovopress.com/lp0866>

For clusters based on the Lenovo SR630 V2 and SR650 V2 rack servers:

Lenovo ThinkAgile MX Certified Configurations for Azure Stack HCI – V2 Servers

<https://lenovopress.com/lp1520>

For clusters based on the Lenovo SR630 V3 and SR650 V3 rack servers:

Lenovo ThinkAgile MX Certified Configurations for Azure Stack HCI – V3 Servers

<https://lenovopress.com/lp1741>

For clusters based on Lenovo edge servers, including SE350, SE450, and SE455 V3 edge servers:

Lenovo ThinkAgile MX Certified Configurations for Azure Stack HCI – Edge Servers

<https://lenovopress.com/lp1984> (coming soon)

Change history

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