Cisco Spaces: Connector: Azure VMware

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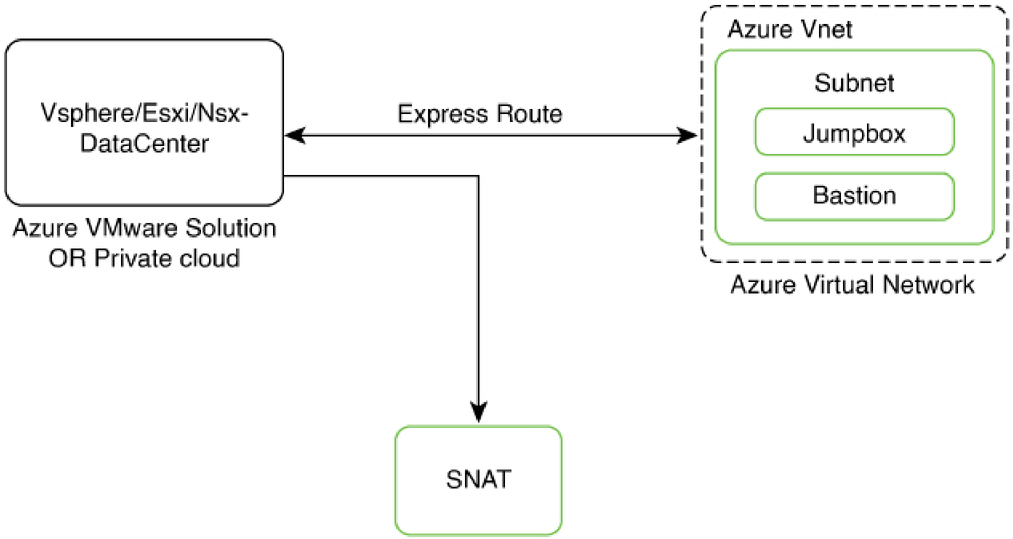
The chapter shows you how to install a connector on Azure VMware. To do this, you must understand the various components of this solution.

- The **Azure VMware Solution (AVS) or Private Cloud** is a service offered by Microsoft Azure in collaboration with VMware. It enables organizations to run and manage VMware workloads natively on Azure infrastructure. You can host services such as Cisco Spaces: Connector or wireless controllers.
- **Azure Virtual Network (VNet)** is a building block in Microsoft Azure that enables you to securely connect and isolate Azure resources. It provides a way to create private, isolated, and highly available networks in the Azure cloud. You can deploy some of these services on this VNet:
  - **Azure Bastion** is a service provided by Microsoft Azure for secure and seamless Remote Desktop Protocol (RDP) and Secure Shell (SSH) access to virtual machines (VMs) in the Azure cloud. It acts as a secure gateway, eliminating the need to expose VMs on the Private Cloud to the public internet, and reducing the attack surface. With Azure Bastion, you can connect to your VMs directly from the Azure portal using a web browser, without the need for a public IP address or a VPN connection.
  - **Jumpbox (or Jump Server):** Jumpbox, or jump server, is a security measure used in networking environments. It's a system that sits between an internal network and external networks (such as the internet) and is a single point of entry for administrators. Instead of allowing administrators to connect directly to critical systems such as connector on the Private Cloud, they connect first to the jumpbox, which acts as a gateway to access other systems. This adds an additional layer of security and control over who can access sensitive systems.
- **Source Network Address Translation (SNAT):** SNAT refers to a type of network address translation that translates the source IP address of outgoing traffic. SNAT is commonly used in scenarios where multiple private IP addresses from a local network need to access resources on the internet or another network.

Figure 1: Various Components to InstallConnector onAzure VMware



To deploy a connector on Azure VMware, you have to do the following:

1. Creating an Azure VMware solution (or Private Cloud), on page 2 and deploying the connector OVA on it.
2. Creating an Azure Virtual Network, on page 6. You can then allow administrators and users to access the connector through this VNet.

Creating an Azure VMware solution (or Private Cloud)

This chapter provides information about how to download and deploy the Cisco Spaces: Connector and obtain the URL for the connector GUI.

Before you begin

- Identify the subscription you plan to use for the Azure VMware solution.
- Identify the Size Hosts. This requires you to raise a case with Azure customer support.
- Identify the address range and subnet for the private cloud. All your VMware resources including connector are hosted in this IP range.

SUMMARY STEPS

1. Log in to portal.azure.com.
2. Create a **Resource**.
3. Choose the **Azure VMware Solution** service.
4. In the **Create a private cloud** window that appears, fill the required details.
5. Configure a segment for the private cloud.
6. Specify the DHCP range to be used for this segment.

7. Specify a DNS from the left-navigation pane or while installing the connector later.
    - You can use a public DNS while deploying the connector.
    - You can configure an internal DNS from the left-navigation pane.
8. Provide internet connectivity using SNAT. From the left-navigation pane, click **Internet Connectivity** > **Connect using SNAT**. This enables outbound internet access for this private cloud.
9. Find the credentials of this private cloud. From the private-cloud left pane, click **VMware credentials**. You can observe the credentials of various components of the private cloud. Make a note of these credentials for later use.

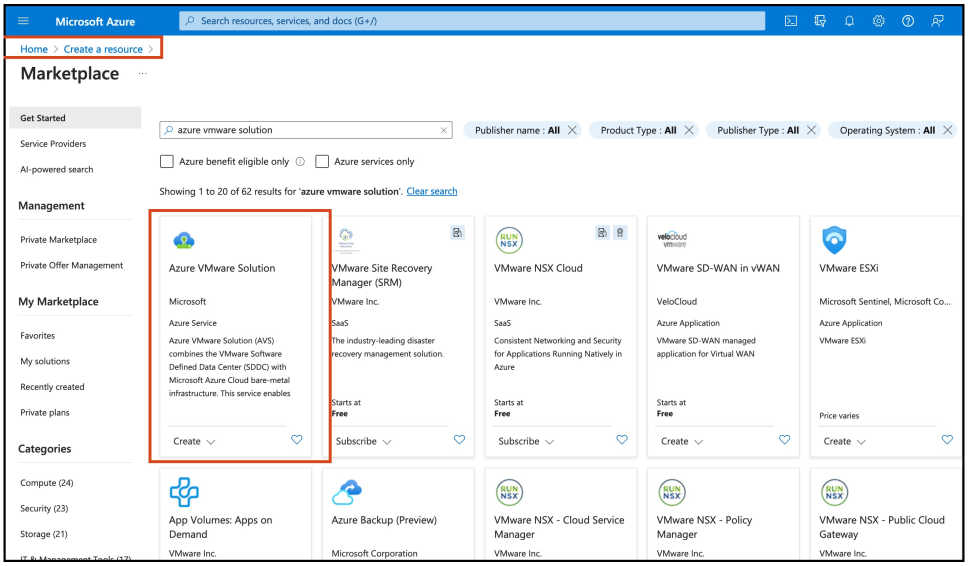
DETAILED STEPS

Step 1 Log in to portal.azure.com.

Step 2 Create a **Resource**.

From the left-navigation pane, click **Create a Resource**.

Figure 2: Create a Resource



Showing 1 to 20 of 62 results for '**azure vmware solution**'.

Azure VMware Solution
Microsoft
Azure Service
Azure VMware Solution (AVS) combines the VMware Software Defined Data Center (SDDC) with Microsoft Azure Cloud bare-metal infrastructure. This service enables

VMware Site Recovery Manager (SRM)
VMware Inc.
SaaS
The industry-leading disaster recovery management solution.
Starts at
Free

VMware NSX Cloud
VMware Inc.
SaaS
Consistent Networking and Security for Applications Running Natively in Azure
Starts at
Free

VMware SD-WAN in vWAN
VeloCloud
Azure Application
VMware SD-WAN managed application for Virtual WAN
Starts at
Free

VMware ESXi
Microsoft Sentinel, Microsoft Co...
Azure Application
VMware ESXi
Price varies

App Volumes: Apps on Demand
VMware Inc.

Azure Backup (Preview)
Microsoft Corporation

VMware NSX - Cloud Service Manager
VMware Inc.

VMware NSX - Policy Manager
VMware Inc.

VMware NSX - Public Cloud Gateway
VMware Inc.

Step 3 Choose the **Azure VMware Solution** service.

a) In the **Search services and marketplace** field, search for an **Azure VMware solution.**

b) From the displayed search results, click **Create** and choose the **Azure VMware solution.**

Step 4 In the **Create a private cloud** window that appears, fill the required details.

a) Choose a subscription.

b) Choose a resource group or create a new one.

c) Choose the location of the service.

d) Choose the size of the host.

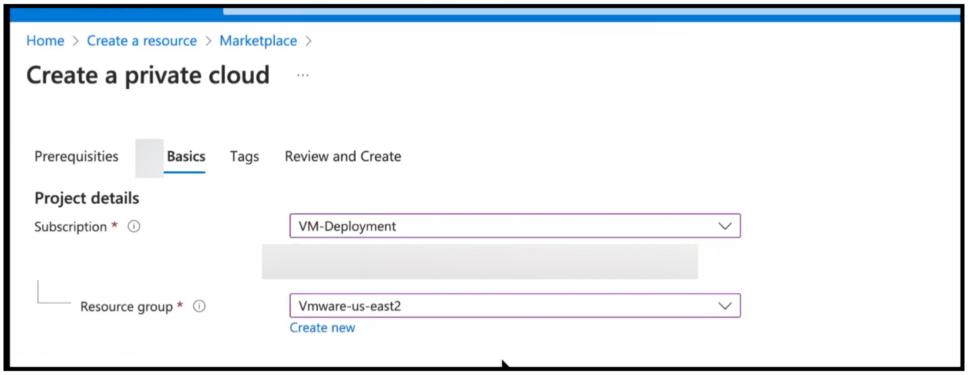
e) Choose the host location.

f) Choose the number of hosts. The minimum number of hosts is three.

g) Enter the address block. This IP address block is used to deploy various services such as connector, and these services are accessible via a browser from the Azure Virtual Network.

The Azure VMware solution (or private cloud) is created.

Figure 3: Create a private cloud



Home > Create a resource > Marketplace >

Create a private cloud ...

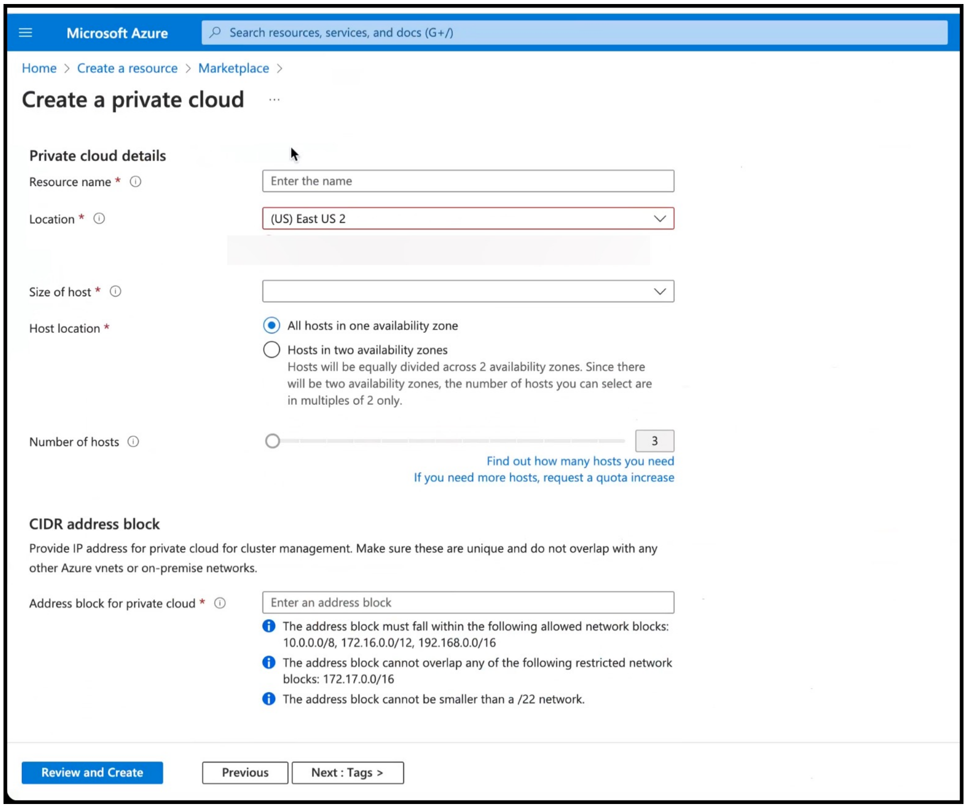
Project details

Subscription * ⓘ VM-Deployment

Resource group * ⓘ Vmware-us-east2

Create new

Figure 4: Create a private cloud



Home > Create a resource > Marketplace >

Create a private cloud ...

Private cloud details

Resource name * ⓘ Enter the name

Location * ⓘ (US) East US 2

Size of host * ⓘ

Host location *

● All hosts in one availability zone

○ Hosts in two availability zones
Hosts will be equally divided across 2 availability zones. Since there will be two availability zones, the number of hosts you can select are in multiples of 2 only.

Number of hosts ⓘ 3

Find out how many hosts you need

If you need more hosts, request a quota increase

CIDR address block

Provide IP address for private cloud for cluster management. Make sure these are unique and do not overlap with any other Azure vnets or on-premise networks.

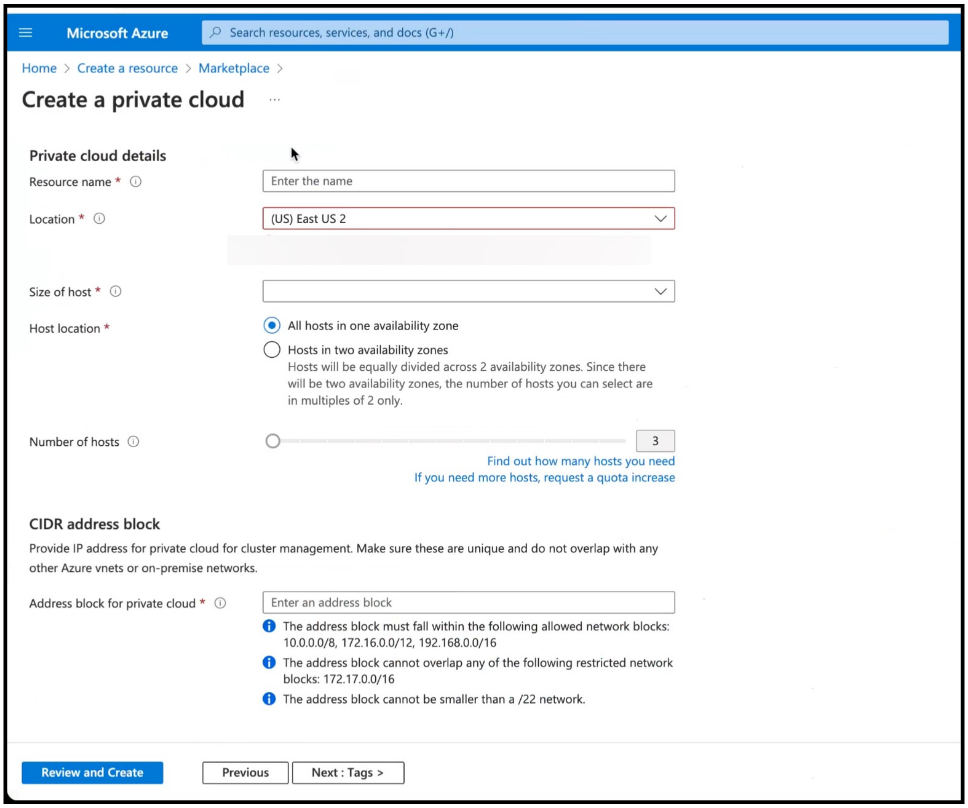
Address block for private cloud * ⓘ Enter an address block

- The address block must fall within the following allowed network blocks: 10.0.0.0/8, 172.16.0.0/12, 192.168.0.0/16
- The address block cannot overlap any of the following restricted network blocks: 172.17.0.0/16
- The address block cannot be smaller than a /22 network.

Step 5 Configure a segment for the private cloud.

a) From the private-cloud left pane, click **Segments**. You can see that a default segment has already been created and allocated with addresses from the address range specified by you earlier. You can use this existing segment or create a new one.

Figure 5: Create a Segment



Microsoft Azure
Search resources, services, and docs (G+/)
Home > Create a resource > Marketplace >

Create a private cloud

Private cloud details

Resource name * : Enter the name

Location * : (US) East US 2

Size of host * :

Host location * :
● All hosts in one availability zone
○ Hosts in two availability zones
Hosts will be equally divided across 2 availability zones. Since there will be two availability zones, the number of hosts you can select are in multiples of 2 only.

Number of hosts : 3

Find out how many hosts you need
If you need more hosts, request a quota increase

CIDR address block

Provide IP address for private cloud for cluster management. Make sure these are unique and do not overlap with any other Azure vnets or on-premise networks.

Address block for private cloud * : Enter an address block

- The address block must fall within the following allowed network blocks: 10.0.0.0/8, 172.16.0.0/12, 192.168.0.0/16
- The address block cannot overlap any of the following restricted network blocks: 172.17.0.0/16
- The address block cannot be smaller than a /22 network.

Step 6 Specify the DHCP range to be used for this segment.

a) From the private-cloud left pane, click **DHCP**.

b) Select the **DHCP type** as **SERVER**.

c) Enter the **Server Name** as the segment chosen earlier for this private cloud.

d) Enter the **Server IP address** as the segment address range selected earlier.

Step 7 Specify a DNS from the left-navigation pane or while installing the connector later.

- You can use a public DNS while deploying the connector.
- You can configure an internal DNS from the left-navigation pane.

Step 8 Provide internet connectivity using SNAT. From the left-navigation pane, click **Internet Connectivity** > **Connect using SNAT**. This enables outbound internet access for this private cloud.

Step 9 Find the credentials of this private cloud. From the private-cloud left pane, click **VMware credentials**. You can observe the credentials of various components of the private cloud. Make a note of these credentials for later use.

Figure 6: Various Components to InstallConnector onAzure VMware

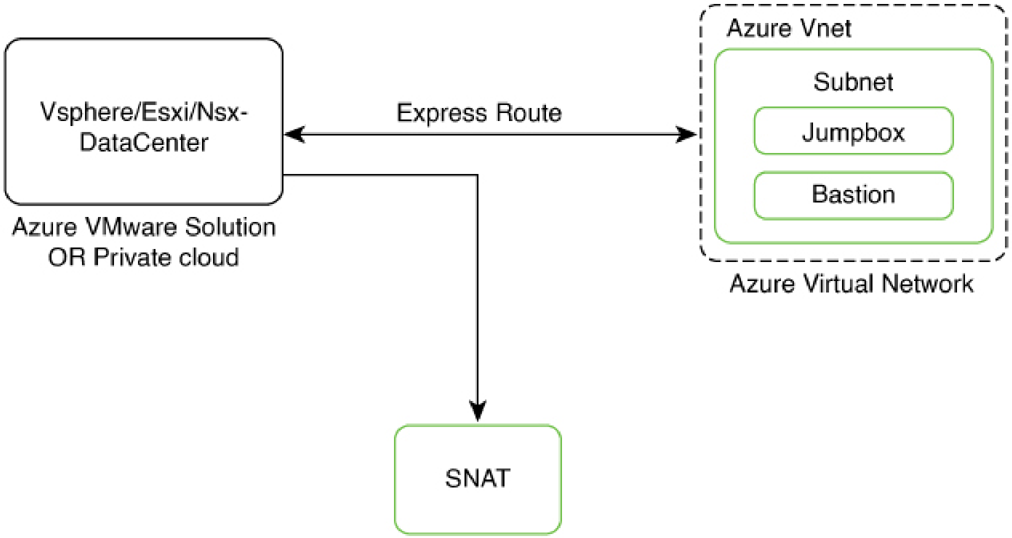
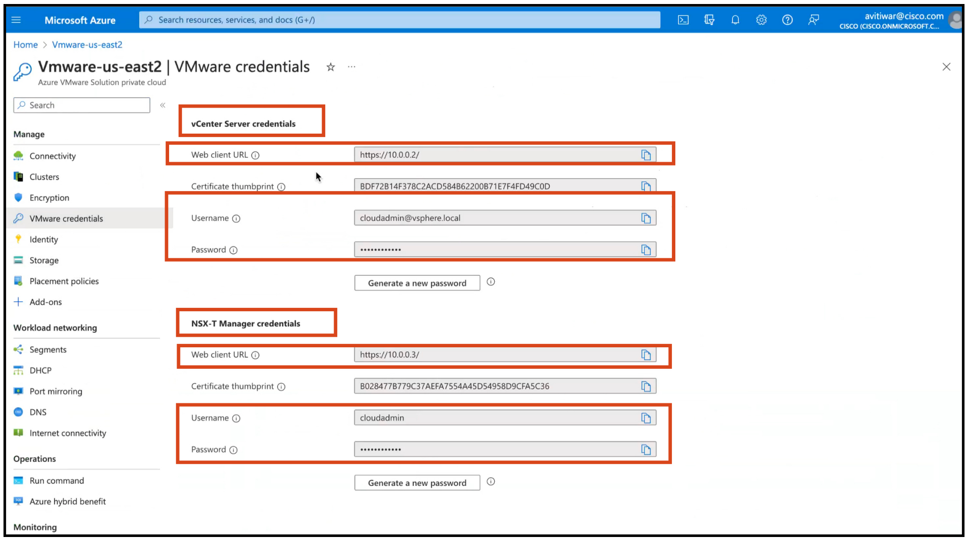


Figure 7: VMware Credentials



Vmware-us-east2 | VMware credentials

Azure VMware Solution private cloud

vCenter Server credentials

Web client URL	https://10.0.0.2/
Certificate thumbprint	BDF72B14F378C2ACD584B62200B71E7F4FD49C0D
Username	cloudadmin@vsphere.local
Password	•••••••••••••

NSX-T Manager credentials

Web client URL	https://10.0.0.3/
Certificate thumbprint	B028477B779C37AEFA7554A45D54958D9CFA5C36
Username	cloudadmin
Password	•••••••••••••

Note Note that ESXi also inherits the vSphere credentials.

Creating an Azure Virtual Network

Before you begin

Create a Azure VMware solution (or Private Cloud) and configure it with SNAT.

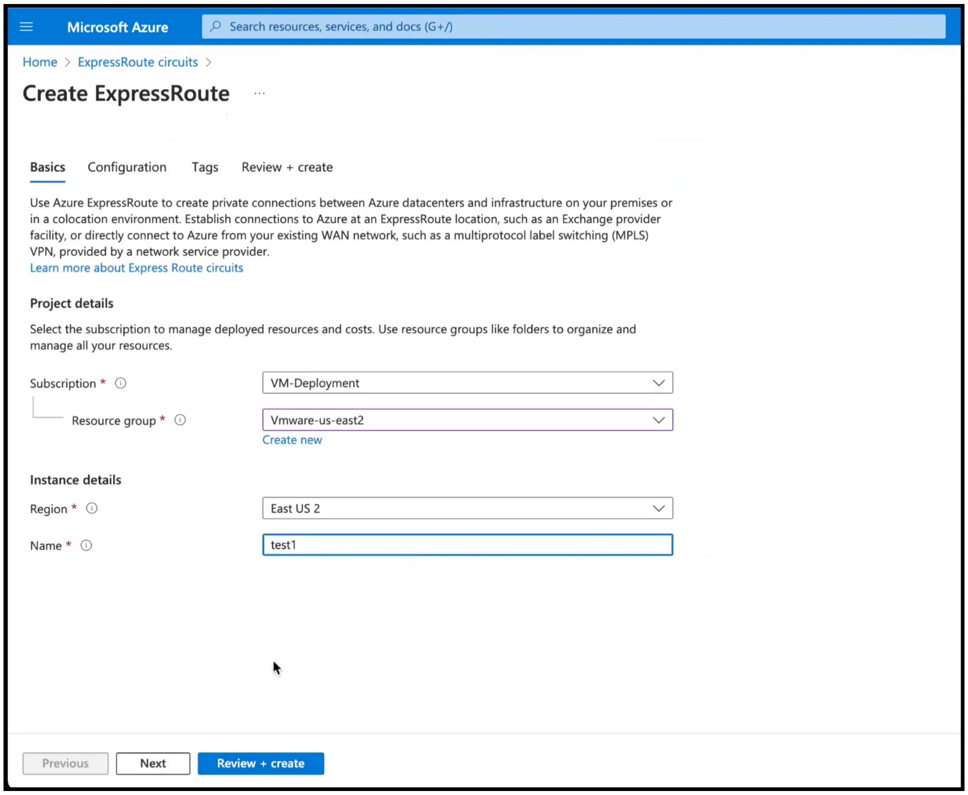
Step 1 Create an **ExpressRoute**.

a) From the Microsoft Azure Home Page, click **ExpressRoute circuits**.

b) From the **ExpressRoute circuits** page that is displayed, click **Create**.

c) From the **Create ExpressRoute** page that is displayed, enter the details of the **Basic** tab. Click **Next**.

Figure 8: Basics Tab



Microsoft Azure
Search resources, services, and docs (G+/)
Home > ExpressRoute circuits >

Create ExpressRoute

Basics
Configuration
Tags
Review + create

Use Azure ExpressRoute to create private connections between Azure datacenters and infrastructure on your premises or in a colocation environment. Establish connections to Azure at an ExpressRoute location, such as an Exchange provider facility, or directly connect to Azure from your existing WAN network, such as a multiprotocol label switching (MPLS) VPN, provided by a network service provider.
Learn more about Express Route circuits

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * : VM-Deployment

Resource group * : Vmware-us-east2

Create new

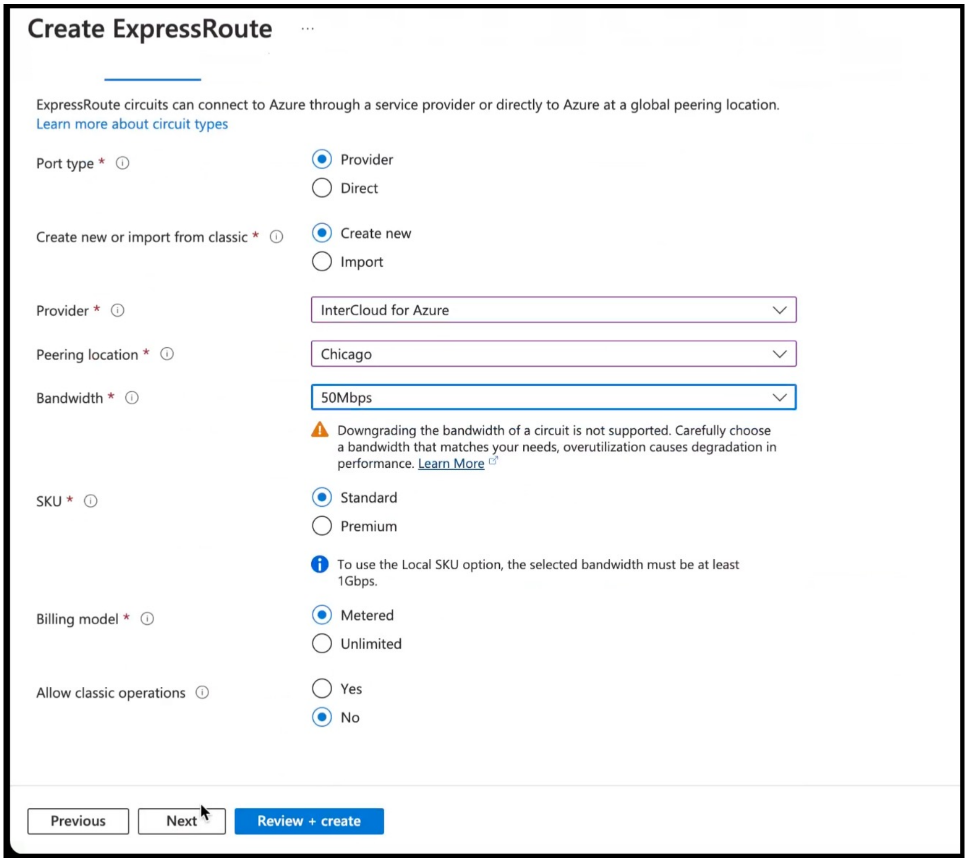
Instance details

Region * : East US 2

Name * : test1

d) Click the **Configuration** tab. Fill in details such as **Provider**.

Figure 9: Configuration Tab



Create ExpressRoute

ExpressRoute circuits can connect to Azure through a service provider or directly to Azure at a global peering location.
Learn more about circuit types

Port type * : ● Provider ○ Direct

Create new or import from classic * : ● Create new ○ Import

Provider * : InterCloud for Azure

Peering location * : Chicago

Bandwidth * : 50Mbps

Downgrading the bandwidth of a circuit is not supported. Carefully choose a bandwidth that matches your needs, overutilization causes degradation in performance. Learn More

SKU * : ● Standard ○ Premium

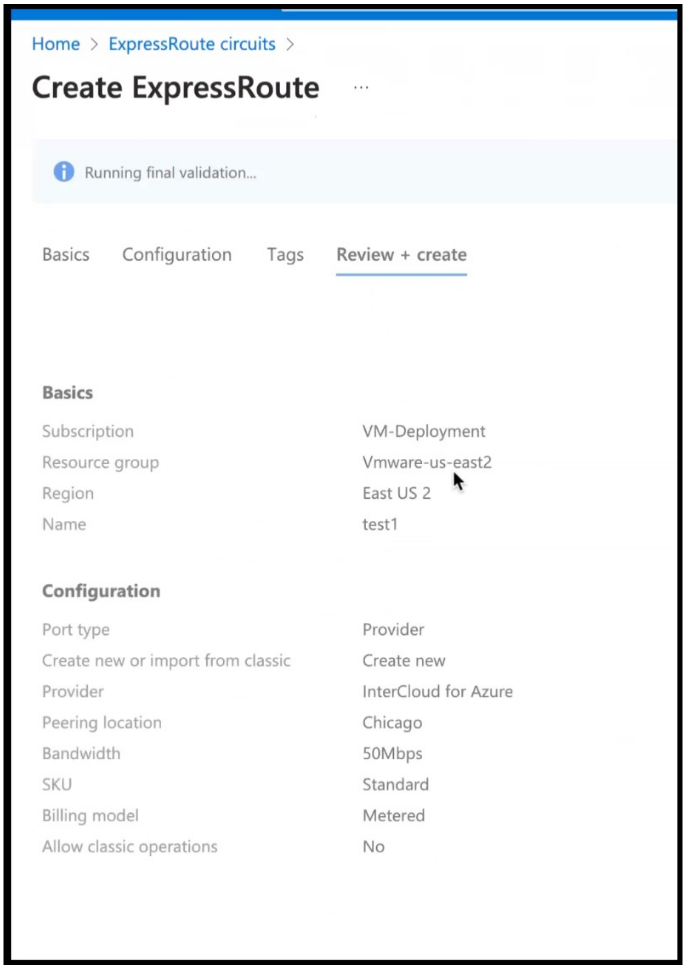
To use the Local SKU option, the selected bandwidth must be at least 1Gbps.

Billing model * : ● Metered ○ Unlimited

Allow classic operations : ○ Yes ● No

e) Click the **Review + Create** tab, and review the changes you have made. Click **Create** to create the ExpressRoute.

Figure 10: Review + Create



Create ExpressRoute

Running final validation...

Basics

Subscription	VM-Deployment
Resource group	Vmware-us-east2
Region	East US 2
Name	test1

Configuration

Port type	Provider
Create new or import from classic	Create new
Provider	InterCloud for Azure
Peering location	Chicago
Bandwidth	50Mbps
SKU	Standard
Billing model	Metered
Allow classic operations	No

Step 2 From the created **Virtual Network**, do the following.

a) Create a Gateway subnet and provide an IP address.

b) Create a Bastion and provide an IP address.

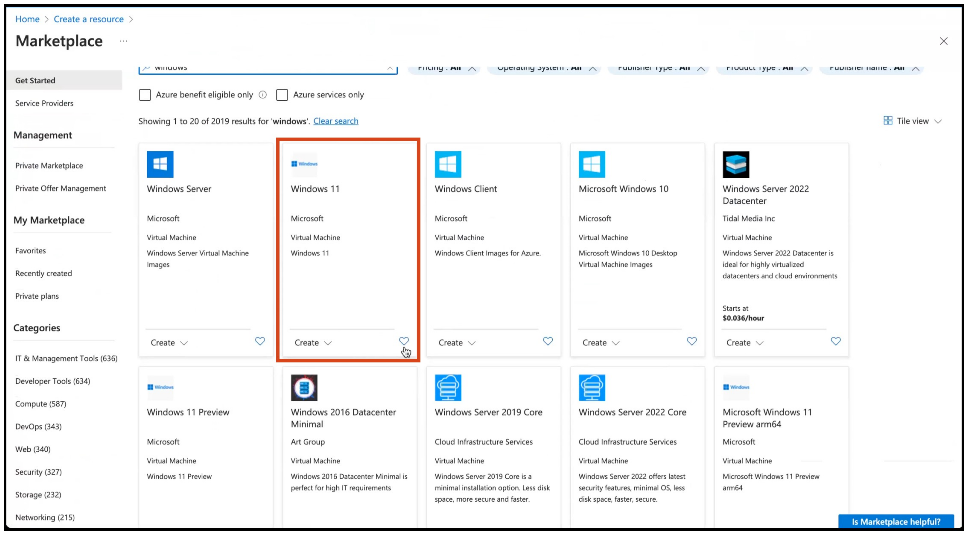
c) Create an AzureBastion subnet and provide an IP address.

Step 3 Deploy a Windows Machine as a virtual machine. You can use this as a Jumpbox to access vSphere or NSXT-Manager.

a) From the left-navigation pane, click **Create a Resource**

b) Search for an operating system of choice. For example, Windows 11, click **Create** and choose the version of choice.

Figure 11: Windows 11 virtual machine



windows

Pricing : All | Operating System : All | Publisher Type : All | Product Type : All | Publisher name : All

□ Azure benefit eligible only □ Azure services only

Showing 1 to 20 of 2019 results for '**windows**'. Clear search

Windows Server
Microsoft
Virtual Machine
Windows Server Virtual Machine Images

Windows 11
Microsoft
Virtual Machine
Windows 11

Windows Client
Microsoft
Virtual Machine
Windows Client Images for Azure.

Microsoft Windows 10
Microsoft
Virtual Machine
Microsoft Windows 10 Desktop Virtual Machine Images

Windows Server 2022 Datacenter
Tidal Media Inc
Virtual Machine
Windows Server 2022 Datacenter is ideal for highly virtualized datacenters and cloud environments
Starts at
$0.036/hour

Windows 11 Preview
Microsoft
Virtual Machine
Windows 11 Preview

Windows 2016 Datacenter Minimal
Art Group
Virtual Machine
Windows 2016 Datacenter Minimal is perfect for high IT requirements

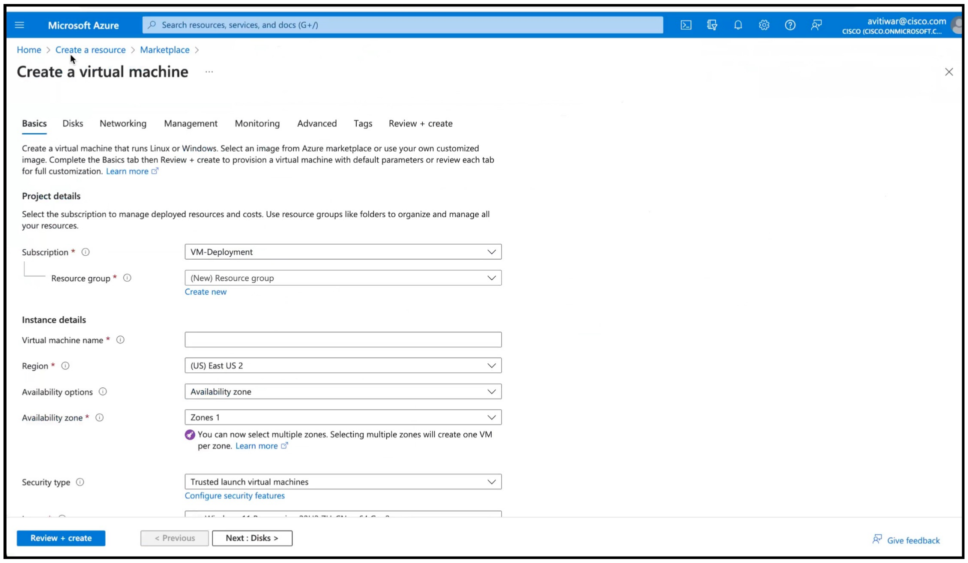
Windows Server 2019 Core
Cloud Infrastructure Services
Virtual Machine
Windows Server 2019 Core is a minimal installation option. Less disk space, more secure and faster.

Windows Server 2022 Core
Cloud Infrastructure Services
Virtual Machine
Windows Server 2022 offers latest security features, minimal OS, less disk space, faster, secure.

Microsoft Windows 11 Preview arm64
Microsoft
Virtual Machine
Microsoft Windows 11 Preview arm64

c) In the **Create a virtual machine** window, enter the relevant details

Figure 12: Create a Virtual Machine



Create a virtual machine

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. Learn more

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * : VM-Deployment

Resource group * : (New) Resource group
Create new

Instance details

Virtual machine name * :

Region * : (US) East US 2

Availability options : Availability zone

Availability zone * : Zones 1

You can now select multiple zones. Selecting multiple zones will create one VM per zone. Learn more

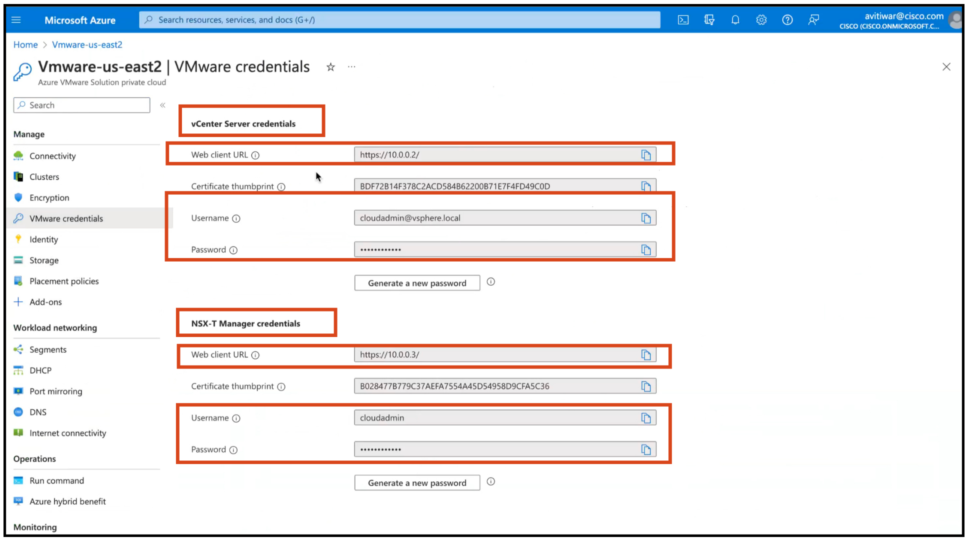
Security type : Trusted launch virtual machines
Configure security features

A jumpbox of your preferred operating system is deployed. Use this to access your services.

Step 4 You can login to the vSphere service. Use the credentials retreived when creating the private cloud, from the **VMware Credentials** > **vCenter Server credentials** section.

- Launch the Jumpbox, and use a browser to access the service.
- Since Bastion is deployed on the virtual network, you can use SSH or remote desktop protocol (RDP) to access the service.

Figure 13: VMware Credentials



Vmware-us-east2 | VMware credentials

Azure VMware Solution private cloud

vCenter Server credentials

Web client URL: https://10.0.0.2/

Certificate thumbprint: BDF72B14F378C2ACD584B62200B71E7F4FD49C0D

Username: cloudadmin@vsphere.local

Password: ••••••••••••

Generate a new password

NSX-T Manager credentials

Web client URL: https://10.0.0.3/

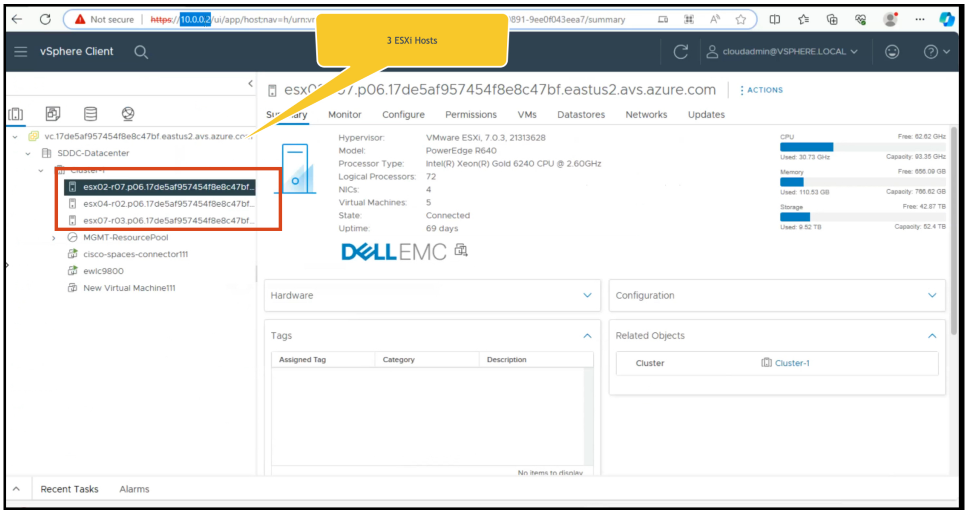
Certificate thumbprint: B028477B779C37AEFA7554A45D54958D9CFA5C36

Username: cloudadmin

Password: ••••••••••••

Generate a new password

Figure 14: VMware Credentials



esx0?-?07.p06.17de5af957454f8e8c47bf.eastus2.avs.azure.com

Hypervisor: VMware ESXi, 7.0.3, 21313628
Model: PowerEdge R640
Processor Type: Intel(R) Xeon(R) Gold 6240 CPU @ 2.60GHz
Logical Processors: 72
NICs: 4
Virtual Machines: 5
State: Connected
Uptime: 69 days

CPU — Free: 62.62 GHz; Used: 30.73 GHz; Capacity: 93.35 GHz
Memory — Free: 656.09 GB; Used: 110.53 GB; Capacity: 766.62 GB
Storage — Free: 42.87 TB; Used: 9.52 TB; Capacity: 52.4 TB

Note ESXi inherits the vSphere credentials.

You can notice that there are at least three ESXi hosts available by default.

Step 5 Deploy the OVA on one of the hosted ESXi. See Deploying the Connector 3 OVA (Single Interface)