

Deploy Cisco Catalyst 8000V in Microsoft Azure

This chapter provides information on deploying Cisco Catalyst 8000V in Microsoft Azure.

- Limitations, on page 1
- Customize the Microsoft Azure Portal, on page 1
- Deploy a Cisco Catalyst 8000V with a Single Interface, on page 2
- Deploy Cisco Catalyst 8000V with Multiple Interfaces, on page 4
- Access the Cisco Catalyst 8000V CLI, on page 6

Limitations

This list provides the limitations for deploying Cisco Catalyst 8000V in Microsoft Azure.

- Console access to Cisco Catalyst 8000V is not available when deployed on Microsoft Azure in NVA environment.

Customize the Microsoft Azure Portal

You can customize the Microsoft Azure portal GUI by adding frequently used objects such as virtual machines or virtual network to the left-hand side panel.

Note You only need to perform these optional steps if you are going to deploy a Cisco Catalyst 8000V instance using a single interface where you need to manually add the resources. You don't have to create these resources manually if you are deploying a Cisco Catalyst 8000V instance with 2, 4, or 8 interfaces using a solution template.

Before you begin

To customize the portal, you must have a Microsoft Azure subscription.

Procedure

Step 1 Sign in to the Microsoft Azure portal.

Step 2 Click **Browse** and select an object to be added to the left hand side panel.

Step 3 In the drop-down menu, click the star symbol for your chosen object.
The details of this object are saved for future use. Repeat steps 2 and 3 to add a series of objects to the left-hand side panel.

Deploy a Cisco Catalyst 8000V with a Single Interface

Perform the following steps to deploy a Cisco Catalyst 8000V with a single interface.

Note If you are deploying Cisco Catalyst 8000V with a 2-, 4- or 8- NICs solution template, the following steps are not required. Instead, go to the Microsoft Azure portal and determine the public IP address of the Cisco Catalyst 8000V. Then, **ssh** into the Cisco Catalyst 8000V as described in the *Access the Cisco Catalyst 8000V CLI* section.

Procedure

Step 1 Select **Virtual machines** in the left hand side panel.

Step 2 Click **Add**.

Step 3 Enter `c8000v`. A search starts, to find any Cisco Catalyst 8000V VM deployments in the Azure Marketplace.

Step 4 Choose a deployment.

Step 5 Click **Create**.

The **Basics** sub-menu is highlighted.

Step 6 **Name** - Enter the name of the virtual network.

The virtual network is a cloud-based network used by Microsoft Azure to represent the private network.

Step 7 **VM disk type** - Select a VM disk type.
The VM disk type is either SSD or HDD.

Step 8 **User name**

Username for the Cisco Catalyst 8000V virtual machine. This is the username that you will use to log into the CCisco Catalyst 8000V instance.

Step 9 **Authentication type** - Enter a Password (default) or SSH public key.

Step 10 **Subscription** - Select the name of a subscription.

A default name based on the name of the virtual machine is provided. You can change the default name.

Step 11 **Resource Group** - Create a new group by selecting **Create new** or select an existing group by selecting **Use existing**.

The **Size** sub-menu is highlighted.

Specifies the name of a new or existing resource group.

Step 12 Click **OK**.

Step 13 Click **Virtual machine size**

For further information on virtual machine size, see Sizes for Windows virtual machines in Azure.

Step 14 Click **OK**.

The **Settings** sub-menu is highlighted.

Step 15 **High Availability** - Select an existing availability set or create a new availability set.

To use High Availability, select an existing availability set or create a new availability set.

Step 16 **Storage** - Enter the storage account name.

Enter the storage account name if you are using Managed Disks to manage the storage accounts of VM disks.

Step 17 **Virtual network** - Enter the virtual network address.

Enter the address of the virtual network using Classless Inter-Domain Routing (CIDR) notation. Example: `10.4.1.0/16`

Step 18 **Subnet** - Enter the subnet IP address.

Step 19 **Public IP address** - Enter the public IP address name.

The IP address is provided by Azure.

Step 20 **Network Security groups** - Enter the name of a network security group.

Step 21 **Auto-shutdown**

To enable auto-shutdown, set Enable to **On**. To disable auto-shutdown set Enable to **Off**. For more information on auto-shutdown, search for auto-shutdown in the Microsoft Azure Documentation.

Step 22 (Optional) **Monitoring** - Select **Monitoring** to enable monitoring.

Enables Cisco Catalyst 8000V monitoring using boot diagnostics. If you enable monitoring, you must also enter the boot diagnostics account name.

Step 23 Click **OK**.

The **4 Summary** sub-menu is highlighted. The system displays the summary details of the VM that is about to be deployed.

Step 24 Click **Create**.

The VM is created and the purchase is confirmed.

Step 25 Click **Virtual machines** on the left hand panel.

Verifies the VM status. After a few minutes, the VM status changes from Creating to Running. Make a note of the Public IP address name.

What to do next

Go to the *Access the Cisco Catalyst 8000V CLI* section which explains how to **ssh** into Cisco Catalyst 8000V.

Deploy Cisco Catalyst 8000V with Multiple Interfaces

Perform the following steps to deploy Cisco Catalyst 8000V with multiple interfaces.

Procedure

Step 1 Select **Virtual machines** in the left hand side panel.

Step 2 Click **Add**.

Step 3 Enter "C8000V".

Finds the Cisco Catalyst 8000V VM deployments in the Azure Marketplace.

Step 4 Choose the deployment of your choice, with 2,4, or 8 NICs.

Step 5 Click **Create**.

Step 6 **Virtual Machine name** - Select the **Basics** sub-menu and enter a name for the virtual machine.

Name of the cloud-based network used by Microsoft Azure to represent a private network.

Step 7 **Username** - Select a user name.

The Username for the Cisco Catalyst 8000V virtual machine which you can use to log into the Cisco Catalyst 8000V instance.

Step 8 **Authentication type** - Enter a Password (default) or SSH public key.

Step 9 **Cisco IOS XE Image Version** - Select the Cisco IOS XE version.

Step 10 **Subscription** - (Optional) Change the subscription name.

A default subscription name is provided, based on the name of the virtual machine. You can change this default subscription name.

Step 11 **Resource Group** - Select either **Create new** or **Use existing**.

You can only create a Cisco Catalyst 8000V in a new Resource Group (or in a completely empty existing resource group). To remove a Resource Group, first delete the Cisco Catalyst 8000V VM and then delete the Resource Group.

Step 12 Click **OK**.

Step 13 Select the **Cisco C8000V Settings** sub-menu and then select **Number of Network Interfaces in C8000V**.

Step 14 Select the number of interfaces: 2, 4, or 8.

Step 15 **License Type** - Select either **BYOL** or **PAYG** as the license type.

Note
PAYG licensing type is not supported in SD Routing devices.

Step 16 **Managed Disk** - Select **Enabled**.

Step 17 **Storage Account** - Enter a name for the storage account.

For more information on storage accounts, see the Microsoft Azure Resources section in this guide.

Step 18 **Virtual machine size** - Select the appropriate virtual machine size.

Based on the number of interfaces that you are using, select the appropriate virtual machine size. Microsoft Azure supports different image types with different performance expectations. To view the supported instance types and the virtual machine sizes, see the following links:

- Dv2 and DSv2 series
- Fsv2 series

Step 19 **Custom Data** - Select **Yes** if you want to provide a bootstrap configuration file.

For further information about providing a bootstrap configuration file for the Cisco Catalyst 8000V instance, see *Deploying a Cisco Catalyst 8000V VM Using a Day 0 Bootstrap File* section and the *Customdata-examples* section.

Step 20 **Availability Set** - Select **Yes**.

Step 21 **Availability Set name** - Enter a name for the availability set.

Step 22 **Availability Set fault domain count** - Enter the availability set fault domain count.

Fault domains define the group of VMs that share a common power source and network switch. Availability sets arrange virtual machines across fault domains.

Step 23 **Availability Set update domain count** - Enter the availability set update domain count.

An update domain is a group of VMs and underlying physical hardware that can be rebooted at the same time.

Step 24 **Boot diagnostics** - Enter the boot diagnostics.

For more information on boot diagnostics, see the *Information About Deploying Cisco Catalyst 8000V in Microsoft Azure* section.

Step 25 **Diagnostics Storage account** - Enter the storage account name.

Step 26 **Public IP Address** - Enter the public IP address name.

For more information on the public IP address, see the *Microsoft Azure Resources* section.

Step 27 **DNS label** - (Optional) Change the name of the DNS label.

The DNS label is the name of the public IP address to be assigned to the Cisco Catalyst 8000V. A default value for the DNS label is shown in the text box, which is the VM name followed by "`-dns`".

Step 28 **Virtual network** - Choose one of the following: **Create New** or **Use existing**.

For a new virtual network, enter the name and the IP address.

Step 29 Click **Subnets** - Enter the subnet names and the IP addresses.

Step 30 Check that all the Cisco Catalyst 8000V Settings are acceptable, and then click **OK**.

The **3 Summary** sub-menu is highlighted.

Step 31 Click **OK**.

The **4 Buy** sub-menu is highlighted.

Step 32 Click **Create**

The VM is created and the purchase is confirmed.

Step 33 Click **Virtual machines** on the left hand panel.

After a few minutes, the status of the recently created VM changes from Creating to Running. Make a note of the Public IP address name.

Access the Cisco Catalyst 8000V CLI

Access the CLI of the Cisco Catalyst 8000V VM through a terminal server.

Before you begin

Before you access the CLI, perform the steps in one of the preceding deployment procedures Deploy a Cisco Catalyst 8000V With a Single Interface, or Deploy a Cisco Catalyst 8000V With Multiple Interfaces.

Procedure

Enter the **ssh** command using a command syntax from one of the two substeps below.

Enter the **ssh** command in a terminal server of your choice to access the CLI .

- If you did not previously use an SSH public key (you did not specify a username of "azureuser", you can access the Cisco Catalyst 8000V CLI using the following command: **ssh –o ServerAliveInterval=**60 *username@c8000v_ip_address*
- If you previously used an SSH public key (you did specify a user name of "azureuser"), you can access the Cisco Catalyst 8000V CLI using the following command: **ssh –i***key*-**o ServerAliveInterval=**60 azureuser*@c8000v_ip_address*

Example

In the following example, user name="azureuser", public IP address = 40.121.148.7 and password=xxx are used as parameters in the **ssh** command, before other commands such as **show ip route**. No ssh public key was previously specified.)

```
$ ssh –o ServerAliveInterval=60  azureuser@40.121.148.7
               The authenticity of host '40.121.148.7 (40.121.148.7)' can't be established.

                RSA key fingerprint is 94:79:e9:d2:2e:85:93:d6:52:41:cc:a3:d9:14:7f:5f.
                Are you sure you want to continue connecting (yes/no)? yes
               Warning: Permanently added '40.121.148.7' (RSA) to the list of known hosts.

                Password: mypassword

# show ip int br
                Interface              IP-Address      OK? Method Status
  Protocol
                GigabitEthernet1       10.4.1.4        YES DHCP   up
  up
                GigabitEthernet2  unassigned     YES unset  administratively down     down
```

```
# configure terminal
                Enter configuration commands, one per line.  End with CNTL/Z.
                # interface g2
                # ip address dh
                # ip address dhcp
                # no shutdown
                # end
                # show run interface g2
                Building configuration...
                Current configuration : 69 bytes
                !
                interface GigabitEthernet2
                ip address dhcp
                negotiation auto
                end
                # show ip interface brief
                Interface              IP-Address      OK? Method Status
Protocol
                GigabitEthernet1       10.4.0.4        YES DHCP   up                    up
                GigabitEthernet2       10.4.1.4        YES DHCP   up                    up

                # show ip route
                <output snipped for brevity>
                Gateway of last resort is 10.4.1.1 to network 0.0.0.0

                S*    0.0.0.0/0 [1/0] via 10.4.1.1
                10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
                C        10.4.1.0/24 is directly connected, GigabitEthernet1
                L        10.4.1.4/32 is directly connected, GigabitEthernet1
                C        10.4.2.0/24 is directly connected, GigabitEthernet2
                L        10.4.2.4/32 is directly connected, GigabitEthernet2
                168.63.0.0/32 is subnetted, 1 subnets
                S        168.63.129.16 [254/0] via 10.4.1.1
```