Nexus 1000V Switch for Microsoft Hyper-V Configuration

This section describes how to configure the Nexus 1000V Switch for Microsoft Hyper-V in a VMDC solution.

- VSM CLI Configuration
- SCVMM Configuration

Figure 3-1 compares the SCVMM and Nexus 1000V Switch for Microsoft Hyper-V terminology that will be referenced in each section.

The reader should be familiar with these terms to better understand the role of each object as it pertains to the entire configuration and how each relates to SCVMM and the Nexus 1000V Switch for Microsoft Hyper-V.

Figure 3-1  SCVMM and Nexus 1000V Switch for Microsoft Hyper-V Terminology

<table>
<thead>
<tr>
<th>SCVMM Terminology</th>
<th>Cisco Nexus 1000V Terminology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logical Networks</td>
<td>Logical Networks</td>
</tr>
<tr>
<td>Network Sites</td>
<td>Network Segment Pools</td>
</tr>
<tr>
<td>VM Network Definitions</td>
<td>Network Segments</td>
</tr>
<tr>
<td>IP-Pools</td>
<td>IP-Pools &amp; IP-Pool Templates</td>
</tr>
<tr>
<td>Port-Classifications</td>
<td>Port-profiles</td>
</tr>
</tbody>
</table>

Network and Tenants Under Test

Three private tenants and one public tenant logical networks were created.

Six network segment pools were created, three public (T1, T2, T3) and three private (PT1, PT2, PT3). The three public network segment pools were configured as members of the public tenant logical network; the three private network segment pools were each configured as an individual member of a the three private tenant logical networks.
Only one **network segment** per public network segment pool was created. Two network segments per private network segment pool were created.

The **IP pool templates** and **port-profiles** are described in the IP Pool templates and Port-profiles sections later in the doc.

The configuration looks like this:

```plaintext
logical network PublicTenants
    network segment pool T1
        network segment T1-NetworkSegment101
    network segment pool T2
        network segment T2-NetworkSegment102
    network segment pool T3
        network segment T3-NetworkSegment103

logical network PrivateTenant1
    network segment pool PT1
        network segment PT1-NetworkSegment2013
        network segment PT1-NetworkSegment2014

logical network PrivateTenant3
    network segment pool PT2
        network segment PT2-NetworkSegment2023
        network segment PT2-NetworkSegment2024

logical network PrivateTenant3
    network segment pool PT3
        network segment PT3-NetworkSegment2033
        network segment PT3-NetworkSegment2034
```

Refer to *Cisco Nexus 1000V for Microsoft Hyper-V Network Segmentation Manager Configuration Guide* for more information about Microsoft networking concepts, command details, and implementation.

Refer to *Cisco Nexus 1000V for Microsoft Hyper-V Release Notes, Release 5.2(1)SM1(5.1)* for new features and caveats.

---

### Nexus 1000V Switch for Microsoft Hyper-V VSM CLI Configuration

This section describes how to configure the Nexus 1000V with Hyper-V using the Network Segmentation Manager (NSM) CLI on the VSM.

**Step 1**  
Create Logical Networks.

A logical network (for example, internet, intranet, DMZ) is a connectivity abstraction that models separate networks managed by an enterprise. Logical network abstraction hides VLANs and IP subnets from users (VM network administrators, the tenant administrators, and the server administrators), except for the fabric administrator managing the physical fabric.

In other words, a logical network is composed of one or more network segment pools and each network segment pool is a group of VLANs, IP subnets, or VLAN/IP subnet pairs.

The following logical networks configuration shows three private tenants and one public tenant.

```plaintext
nsm logical network PublicTenants
nsm logical network PrivateTenant1
nsm logical network PrivateTenant2
```
Step 2 Create Network Segments Pools.

A network segment is associated with a unique broadcast domain and facilitates the availability of the network resources to a VM. SCVMM uses the VM networks and the VM subnets to provide the isolated virtual machine networks.

When a Nexus 1000V manages the virtual network, the VMM administrator creates the VM networks that use external isolation. To create external isolation, the network administrator creates network segments on the Nexus 1000V and provisions the isolated networks using VLANs and private VLANs.

Note

In Nexus 1000V for Microsoft Hyper-V, a VLAN is not created to define a bridge domain. Instead, a network segment is created on the VSM. Creating a network segment triggers VLAN auto-creation.

The following configuration shows network segment pools.

```
nsm network segment pool T1
nsm network segment pool T2
nsm network segment pool T3
nsm network segment pool PT1
nsm network segment pool PT2
nsm network segment pool PT3
```

Step 3 Add each Network Segment Pool to the Logical Network.

The T1, T2, and T3 segment pools are members of the same public tenant logical network. The PT1, PT2, and PT3 segment pools are members of unique logical networks.

The following configuration shows mapping for network segment pools into logical networks.

```
nsm network segment pool T1
  member-of logical network PublicTenants
nsm network segment pool T2
  member-of logical network PublicTenants
nsm network segment pool T3
  member-of logical network PublicTenants
nsm network segment pool PT1
  member-of logical network PrivateTenant1
nsm network segment pool PT2
  member-of logical network PrivateTenant2
nsm network segment pool PT3
  member-of logical network PrivateTenant3
```

Step 4 Create IP Pool Templates.

Server administrators can manage IP addresses for the virtual environment using IP pool templates. You can use the IP pool templates to assign a range of IP addresses to hosts and VMs in the Microsoft SCVMM-managed environment. When creating an IP pool template for a VM network, you can define a range of IP addresses for VMs managed by SCVMM.

The following configurations shows IP pool templates that were created.

```
nsm ip pool template PT1-VL2013-IP-Pool
  ip address 200.1.3.2 200.1.3.250
  network 200.1.3.0 255.255.255.0
  default-router 200.1.3.253
nsm ip pool template PT1-VL2014-IP-Pool
  ip address 200.1.4.2 200.1.4.250
  network 200.1.4.0 255.255.255.0
  default-router 200.1.4.253
nsm ip pool template PT2-VL2023-IP-Pool
```
Step 5  Create Network Segments.

Configure each network segment to be a member of the previously configured network segment pools. Configure each network segment as an access port with an access VLAN. Import the previously configured IP pool for each network segment. Publish each network segment.

The Step 9VM Network Creation., page 3-36 commands are added automatically and appear later in this section when configuring VM networks in SCVMM.

VM networks enable the SCVMM administrator to create an isolated virtual Layer 3 (L3) network. Each VM network can have multiple VM subnets (virtual L2 domain). Microsoft SCVMM 2012 supports VLAN-backed and network virtualization (NVGRE)-backed VM networks. The Nexus 1000V supports VLAN-backed VM networks only.

The following configuration shows network segments that were created.

```
nsm network segment T1-NetworkSegment101
  member-of network segment pool T1
  switchport access vlan 101
  ip pool import template T1-VL101-IP-Pool
  publish network segment
  switchport mode access

nsm network segment T2-NetworkSegment102
  member-of network segment pool T2
  switchport access vlan 102
  ip pool import template T2-VL102-IP-Pool
  publish network segment
  switchport mode access

nsm network segment T3-NetworkSegment103
  member-of network segment pool T3
  switchport access vlan 103
  ip pool import template T3-VL103-IP-Pool
  publish network segment
```
Step 6 Create Port profiles.

Unlike the Nexus 1000V for ESX, in which a port profile identifies both network policy and network isolation (VLAN), SCVMM networking decouples this information into a VM network and the port classification. When the Nexus 1000V is used with Hyper-V, the network administrator creates network segments to isolate networks. The SCVMM server administrator uses network segments in the resulting VM networks. The network administrator defines creates port profiles to define port policy. The server administrator uses port profiles to create a port classification.

To deploy a VM to the virtual access layer, choose the port classification, VM network, and the VM subnet. When a VM is deployed, a port profile is dynamically created on the Nexus 1000V for each unique combination of port classification, VM network, and VM subnet. All other VMs deployed with the same policy to this network reuse the dynamic port profile, which is a combination of network isolation and network policy.
The generated profile should be neither modified nor inherited in other port profiles.

When a port-attach notification is received, the port profile globally unique identifier (GUID) and network segment GUID are generated. A GUID provides a unique reference for the port profile and the network segment.

When a GUID is generated, a new port profile, combining the port profile and the VLAN, is created on the VSM. This auto-created port-profile is inherited on the interface. If more than one port uses the same combination of port profile and network segment, the port profile is shared. Port profiles are dynamically created during the interface attach process.

The following configuration shows port-profiles that were created.

```plaintext
port-profile type vethernet T1-PortProfile
    no shutdown
    state enabled
    publish port-profile
port-profile type vethernet T2-PortProfile
    no shutdown
    state enabled
    publish port-profile
port-profile type vethernet T3-PortProfile
    no shutdown
    state enabled
    publish port-profile
port-profile type vethernet PT1-PortProfile
    no shutdown
    state enabled
    publish port-profile
port-profile type vethernet PT2-PortProfile
    no shutdown
    state enabled
    publish port-profile
port-profile type vethernet PT3-PortProfile
    no shutdown
    state enabled
    publish port-profile
```

**Step 7** Create Uplink Port Profile and Network Uplink.

An uplink port profile is essentially a template that defines a list of network segment pools to be associated with any (physical) network adapters to which the uplink port profile is applied. An uplink port profile enables you to specify protocols and port policy for the uplink adapter, using an Ethernet port profile to be specified.

The following configuration shows uplink port-profiles.

```plaintext
port-profile type ethernet UplinkPortProfile
    channel-group auto mode on mac-pinning
    no shutdown
    max-ports 512
    state enabled
    nsm network uplink UCS-Uplink
    import port-profile UplinkPortProfile
    allow network segment pool T1
    allow network segment pool T2
    allow network segment pool T3
    allow network segment pool PT1
    allow network segment pool PT2
    allow network segment pool PT3
    publish network uplink
```
Chapter 3  Nexus 1000V Switch for Microsoft Hyper-V Configuration

Nexus 1000V Part 2: SCVMM Configuration

This section provides guidance on how to create the N1000V logical switch (VSM and VEMs) in Hyper-V through SCVMM.

**Step 1**  Download Cisco Nexus 1000V Package.

The Nexus 1000V for Hyper-V package (zip file) is available at the download URL location provided with the software. Complete the following steps to download the package.

Download the Cisco Nexus 1000V for Microsoft Hyper-V package for Microsoft System Center Virtual Machine Manager (SCVMM) 2012. The package contains the following files:

- Virtual Supervisor Module (VSM) ISO (n1000vh-dk9.5.2.1.SM1.5.1.iso)
- Virtual Ethernet Module (VEM) MSI package (Nexus1000V-VEM-5.2.1.SM1.5.1.msi)
- Cisco VSEM Provider MSI package (Nexus1000V-VSEMProvider-5.2.1.SM1.5.1.msi)
- Cisco SCVMM VM Template (Cisco Nexus1000V VSM Template)
- Cisco Installer App (Cisco.Nexus1000VInstaller.UI.exe)

**Step 2**  Install the Virtual Switch Extension Manager Provider.

To establish communication between SCVMM and the Nexus 1000V VSM, the Virtual Switch Extension Manager (VSEM) provider must be installed on the SCVMM server.

- a. Run the Cisco VSEM Provider MSI package (Nexus1000V-VSEMProvider-5.2.1.SM1.5.1.msi) that comes with the Nexus 1000V Package.
  
  Follow the link to where the MSI was downloaded and double-click **MSI** to run it.

- b. Follow the prompts as shown in Figure 3-2, Figure 3-3, and Figure 3-4 until the install is complete.
Figure 3-2  Run the MSI Installer
Figure 3-3  Read and Accept the License Agreement
Figure 3-4  
Select Finish when the Installer completes

Step 3  
Verify that VSEM Provider is installed properly.

Go to Settings > Configuration Providers. Confirm that Cisco Systems Nexus 1000V is listed as a Configuration Provider.
Figure 3-5  Cisco VSEM Provider installed

**Step 4**  Copy VEM MSI to SCVMM repository.

The VEM is an MSI file that must be placed in the following location on the SCVMM server: `ALLUSERSPROFILE%\Switch Extension Drivers`, for example, `C:\ProgramData\Switch Extension Drivers`. SCVMM uses the MSI file during the Add host operation to install VEM code on the host.

**Note**  Do not install VEM code on the SCVMM server; only copy the file to the specified location.

**Step 5**  Add VSEM (Connect SCVMM to VSM).

The following procedures add the VSEM that was just installed. This step is required to connect SCVMM to the VSM in Hyper-V.

In these steps, the login account and the MGMT IP address configured in the VSM are needed to establish the communication between SCVMM and the VSM. Once the VSEM is added, the configuration that was created in the CLI of the VSM can be pulled in the SCVMM.

a. Right-click **Switch Extension Manager** and select **Virtual Switch Extension Manager**.
Figure 3-6  Add VSEM

b.  Add the Connection string and select **Run As Account**.

10.0.72.101 is the IP address of the VSM created on the Nexus 1110x.

The created account uses the login credentials required to log in to VSM.
Refer to [Installing Cisco Nexus 1000v for Microsoft Hyper-V](#) for more information about creating a **Run As Account**.

c. Verify that no additional configuration, such as proxy, is required.

Open a browser and test the connection to the VSM. Browse to `http://<VSM IP Address>`.

Output similar to Figure 3-5 should be seen:
d. Select the host group to which the VSEM is available.
e. Confirm the VSEM settings and click **Finish**.

f. Verify that Virtual Switch Extension Manager is installed.
Step 6  Create Logical Switch in SCVMM.
After VSEM is added (Step 5), do the following:
1. Create a logical switch on VMM using VSEM.
2. Define extensions and port profiles for the logical switch.
3. Create classifications containing the native port profile and a port profile for each extension.
   a. Right-click Logical Switch and select Create Logical Switch.
**Figure 3-12**  Create Logical Switch

b. Read the text and click Next.
c. Name the logical switch.
   In this case, the hostname of the VSM was used. Use defaults for SR-IOV.
d. Check the previously configured VSEM (V2-HyperV-VSM-P1) and click **Next**. The VSEM has the following attributes:

- Extension type: Forwarding
- Extension Manager: Cisco Nexus 1000V Chassis

Only one virtual switch extension can be selected.
e. Select **Team** in the uplink mode field and click **Add** to add the uplink port profile.

**Note** The mode should always be **Team**, whether using a single uplink or multiple uplinks.
f. Select the uplink port profile and click **OK**.
g. Confirm the uplink port profile settings and click Next.

By default, the host group All Hosts is created in Hyper-V. The network sites PT1, PT2, PT3, T1, T2 and T3 were created during Nexus 1000V CLI configuration.
h. Specify the Port Classifications and click **Next**.

Port Classifications must be created in SCVMM and linked to port-profiles created in the VSM. The port-profiles were created previously in the “Nexus 1000V Switch for Microsoft Hyper-V VSM CLI Configuration” section on page 3-2; one port classification per port profile was created. When adding VMs to the logical switch, the port classification and VM network are selected when configuring network adapters (see VM Deployment).

Refer to **Creating Logical Switch in SCVMM** in *Installing Cisco Nexus 1000V for Microsoft Hyper-V* for additional guidance for creating port classifications.
i. In the **Summary** panel, confirm the settings and click **Finish** to create the logical switch.
j. Manually refresh the VSEM.

After the Nexus 1000V logical switch is created, manually refresh VSEM to force the updates to appear in SCVMM.

*Figure 3-21  Manual Refresh of the VSEM*

---

**Step 7** Add VEMs (Hosts) to the Nexus 1000V.

a. Right-click All Hosts and select Add Hyper-V Hosts and Clusters.
b. Select the appropriate computer location and click **Next**.

All hosts in the test bed were in a trusted Active Directory domain.

c. Click **Browse** to see a list of **Run As Accounts**.
d. Select the **Run As account** created during the Hyper-V install.

The account is different than the **Run As account** used to install VSEM. The scvmmadmin account was created in Active Directory and is a domain administrator account for the local domain.

See the “Microsoft Windows Server 2012 Installation” section on page 2-6 for more information about the scvmmadmin account.
e. Enter the hostname of each host to add as a VEM and click **Next**.

f. After hosts are discovered, select each host to add and click **Next**.
**Figure 3-27**  Add Hyper-V Hosts Select the Hosts

- Assign hosts to a host groups.
  - Leave **Reassociate this host with the VMM environment** unchecked and click **Next**.

**Figure 3-28**  Add Hyper-V Hosts Assign the Host Group

- Enable Live Migration and click **Next**.
i. Confirm the Settings and click **Finish**.

j. Verify All Hosts are seen in the **All Hosts** group.
Figure 3-31  Add Hyper-V Hosts Verify All Hosts

Step 8 Add Each Host to Logical switch.
   a. Right-click the host to be added and select Properties.

Figure 3-32  Host Properties

b. Add New Logical Switch.
In the Host Properties > Virtual Switches window, select New Virtual Switch and New Logical Switch to add the host to the Nexus 1000V.

As seen in Figure 3-33, a standard External switch was already created for management. In Hyper-V, multiple switches can exist on the host.

Figure 3-33    Host Properties New Logical Switch

c. Add physical adapters to the logical switch team.

There are two adapters, VIC Ethernet interface 3 and VIC Ethernet interface 4 that will be used on each host. Add these to the logical switch.
Add the second physical adapter 2 and hit OK.

d. Click **OK** to continue to add host to the logical switch.
Chapter 3  Nexus 1000V Switch for Microsoft Hyper-V Configuration

Nexus 1000V Part 2: SCVMM Configuration

Figure 3-36  Host Properties Continue to Add Host to Logical Switch

- Verify that the VEM is installed on the VSM.

Figure 3-37 shows the output seen on the VSM when the VEM is added to the Logical switch.

Figure 3-37  Host added as a VEM

f. After all hosts were added to the logical switch, they are seen as VEMs in the VSM. Execute `show module` on the VSM to verify these hosts are seen as VEMs.
### Figure 3-38  All Host Added as a VEM

<table>
<thead>
<tr>
<th>Mod</th>
<th>Ports Module-Type</th>
<th>Model</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Virtual Supervisor Module</td>
<td>Nexus1000V</td>
<td>active *</td>
</tr>
<tr>
<td>0</td>
<td>Virtual Supervisor Module</td>
<td>Nexus1000V</td>
<td>standby</td>
</tr>
<tr>
<td>288</td>
<td>Virtual Ethernet Module</td>
<td>NN</td>
<td>ok</td>
</tr>
<tr>
<td>288</td>
<td>Virtual Ethernet Module</td>
<td>NN</td>
<td>ok</td>
</tr>
<tr>
<td>200</td>
<td>Virtual Ethernet Module</td>
<td>NN</td>
<td>ok</td>
</tr>
</tbody>
</table>

```
g. Verify interfaces are added to Logical Switch.

Because each host has two Cisco VIC Ethernet interfaces, two Ethernet interfaces per host are seen, along the port-channel interfaces.

These are:

- Eth3/1
- Eth3/2
- Eth4/1
- Eth4/2
- Eth5/1
- Eth5/2
- Eth6/1
- Eth6/2
- Po1
- Po2
- Po3
- Po4

These interfaces and port-channels can get verified by executing `show interface brief` on the VSM:
```
### Step 9  VM Network Creation.

After the Nexus 1000V Switch for Microsoft Hyper-V Logical switch has been installed, the VM Networks can get created.

a. Verify the Logical Networks created on the N1000V are seen in Hyper-V.

### Logical Networks

![Logical Networks Diagram](image)

b. Right-click VM Network and select Create VM Network.
c. Create the VM network name and select the logical network.

d. Select the network segment.
e. Confirm the VM network settings.
f. Follow the same steps to create the remaining VM Networks.

*Figure 3-45  All VM Networks*

Figure showing all VM Networks with their respective IP addresses and subnets.

```text
nsm network segment T1-NetworkSegment101
   member-of vmnetwork T1-NetworkSegment101
   member-of network segment pool T1
   switchport access vlan 101
   ip pool import template T1-VL101-IP-Pool
   publish network segment
   switchport mode access
```

At this point, the logical switch, including VSM and VEMs, is installed. VMs can now be added to the logical switch.

**Deployment Guidelines**

1. **Manually refresh the VSEM.** Hyper-V performs a periodic refresh every 30 minutes; changes in the Nexus 1000V are not automatically updated in Hyper-V. Manually refresh the VSEM to force updates to show up in SCVMM.
Adding VMs to Nexus V Switch for Hyper-V Logical Switch

This section shows the process for adding Virtual Machines to the Nexus 1000V Switch for Microsoft Hyper-V Logical switch.
Step 1  Go to the VM Properties page.
Right-click the VM and select Properties.

Step 2  Select Hardware Configuration and select the adapter to add to the logical switch.
There are two adapters in the test VMs. One connects to the Microsoft external switch for Management and the other connects to the Nexus 1000V.

Step 3  Select the VM network.
On the network adapter properties page, click Browse to see a list of available VM networks.

Figure 3-46  Select a VM Network

Step 4  Select the classification.
After selecting the VM network, click the Classification drop-down and select the classification profile.
Step 5  After selecting the classification, click OK.

Step 6  Verify the Virtual Machine has been deployed by issuing a “show interface virtual” from the CLI of the VSM:

```
V2-HyperV-VSM-P1# show interface virtual
```

<table>
<thead>
<tr>
<th>Port</th>
<th>Adapter</th>
<th>Owner</th>
<th>Mod</th>
<th>Host</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veth1</td>
<td>Net Adapter</td>
<td>PT1-vSTC1-VL2013</td>
<td>3</td>
<td>V2-C1B3-P1</td>
</tr>
<tr>
<td>Veth2</td>
<td>Net Adapter</td>
<td>PT1-vSTC1-VL2014</td>
<td>3</td>
<td>V2-C1B3-P1</td>
</tr>
<tr>
<td>Veth3</td>
<td>Net Adapter</td>
<td>PT3-vSTC1-VL2033</td>
<td>3</td>
<td>V2-C1B3-P1</td>
</tr>
<tr>
<td>Veth4</td>
<td>Net Adapter</td>
<td>T1-vSTC1-VL101</td>
<td>3</td>
<td>V2-C1B3-P1</td>
</tr>
<tr>
<td>Veth5</td>
<td>Net Adapter</td>
<td>PT2-vSTC1-VL2023</td>
<td>4</td>
<td>V2-C1B4-P1</td>
</tr>
<tr>
<td>Veth6</td>
<td>Net Adapter</td>
<td>PT2-vSTC1-VL2024</td>
<td>4</td>
<td>V2-C1B4-P1</td>
</tr>
<tr>
<td>Veth7</td>
<td>Net Adapter</td>
<td>PT3-vSTC1-VL2034</td>
<td>4</td>
<td>V2-C1B4-P1</td>
</tr>
<tr>
<td>Veth8</td>
<td>Net Adapter</td>
<td>T2-vSTC1-VL102</td>
<td>4</td>
<td>V2-C1B4-P1</td>
</tr>
<tr>
<td>Veth9</td>
<td>Net Adapter</td>
<td>PT1-vSTC2-VL2013</td>
<td>5</td>
<td>V2-C2B1-P1</td>
</tr>
<tr>
<td>Veth10</td>
<td>Net Adapter</td>
<td>PT1-vSTC2-VL2014</td>
<td>5</td>
<td>V2-C2B1-P1</td>
</tr>
<tr>
<td>Veth11</td>
<td>Net Adapter</td>
<td>PT3-vSTC2-VL2033</td>
<td>5</td>
<td>V2-C2B1-P1</td>
</tr>
<tr>
<td>Veth12</td>
<td>Net Adapter</td>
<td>T3-vSTC1-VL103</td>
<td>5</td>
<td>V2-C2B1-P1</td>
</tr>
<tr>
<td>Veth13</td>
<td>Net Adapter</td>
<td>PT2-vSTC2-VL2023</td>
<td>6</td>
<td>V2-C2B2-P1</td>
</tr>
<tr>
<td>Veth14</td>
<td>Net Adapter</td>
<td>PT2-vSTC2-VL2024</td>
<td>6</td>
<td>V2-C2B2-P1</td>
</tr>
<tr>
<td>Veth15</td>
<td>Net Adapter</td>
<td>PT3-vSTC2-VL2034</td>
<td>6</td>
<td>V2-C2B2-P1</td>
</tr>
<tr>
<td>Veth16</td>
<td>Net Adapter</td>
<td>LM-Windows Server 2012-01</td>
<td>4</td>
<td>V2-C1B4-P1</td>
</tr>
<tr>
<td>Veth17</td>
<td>Net Adapter</td>
<td>LM-Win2008-02</td>
<td>4</td>
<td>V2-C1B4-P1</td>
</tr>
</tbody>
</table>
Deployment Guidelines

1. Select the correct interfaces when adding network adapters. In UCSM, each host has two MGMT and two DATA vNICs. From the Windows OS perspective, four VIC interfaces are presented. Ensure that the correct interfaces are selected when adding the hosts to virtual switches. Check the MAC addresses.

2. Refer to Connecting VMs to Logical Switch in Cisco Nexus 1000v for Microsoft Hyper-V Installation Guide, Release 5.2(1)SM1(5.1) for more information.