Mapping the Cisco Catalyst 8000V Network Interfaces to VM Network Interfaces

Mapping the Router Network Interfaces to vNICs

Cisco Catalyst 8000V maps the GigabitEthernet network interfaces to the logical virtual network interface card (vNIC) name assigned by the VM. The VM in turn maps the logical vNIC name to a physical MAC address.

When you boot the Cisco Catalyst 8000V instance for the first time, the router interfaces are mapped to the logical vNIC interfaces that were added when the VM was created. The following image shows the relationship between the vNICs and the Cisco Catalyst 8000V router interfaces.

After you boot the Cisco Catalyst 8000V instance, you need to display the mapping between the logical interface on the router with the vNIC and the vNIC MAC address using the **show platform software vnic-if interface-mapping** command. The output for this command depends on your Cisco IOS XE release version.

Note GigabitEthernet0 interface is no longer supported.

```
Router# show platform software vnic-if interface-mapping
-------------------------------------------------------------------------
Interface Name        Short Name      vNIC Name             Mac Addr
-------------------------------------------------------------------------
GigabitEthernet2       Gi2         eth2 (vmxnet3)          0050.5689.0034
GigabitEthernet1       Gi1         eth1 (vmxnet3)          0050.5689.000b
-------------------------------------------------------------------------
```

The vNIC name shown in the display is a logical interface that the Cisco Catalyst 8000V instance uses to map to the interface on the hypervisor. It does not always map to the corresponding NIC name added during the VM installation. For example, the logical "eth1" vNIC name in the display may not necessarily map to "NIC1" that was added in the VM installation process.

⚠️ **Caution**   It is important that you verify the interface mapping before you begin configuring the Gigabit Ethernet network interfaces onCisco Catalyst 8000V. This ensures that the network interface configuration applies to the correct physical MAC address interface on the VM host.

If you reboot the router and do not add or delete any vNICs, the interface mapping remains the same as before. If you reboot the router and delete vNICs, ensure that the configuration for the remaining interfaces remains intact. For more information, see *Adding and Deleting Network Interfaces on Cisco Catalyst 8000V*.

Adding and Deleting Network Interfaces on Cisco Catalyst 8000V

Cisco Catalyst 8000V maps the router GigabitEthernet interfaces to the logical vNIC name assigned by the VM which in turn is mapped to a MAC address on the VM host. You can add or delete vNICs on the VM to add or delete GigabitEthernet interfaces on Cisco Catalyst 8000V. You can add vNICs while the router is active.

To delete a vNIC from the VM, you must first power down the VM. If you delete any vNICs, you must reboot the router. For more information about adding and deleting vNICs, see the VMware Documentation .

📝 **Note**   Interface hot add/delete is not supported on Cisco Catalyst 8000V that operates in the Controller mode. If you need to perform interface hot add/delete, configure the reset operation in controller mode using the CLI: **request platform software sdwan config reset**.

⚠️ **Caution**   If you remove a vNIC without first updating the Cisco Catalyst 8000V network interface configuration, you risk a configuration mismatch when the router reboots. When you reboot the router and remove a vNIC, the remaining logical vNIC names could get reassigned to different MAC addresses. As a result, the GigabitEthernet network interfaces on theCisco Catalyst 8000V instances can be reassigned to different physical interfaces on the hypervisor.

Before you add or delete network interfaces, first verify the interface-to-vNIC mapping using the **show platform software vnic-if interface-mapping** command.

```
Router# show platform software vnic-if interface-mapping
-------------------------------------------------------------------
Interface Name          Driver Name          Mac Addr
-------------------------------------------------------------------
GigabitEthernet3         vmxnet3              000c.2946.3f4d
GigabitEthernet2         vmxnet3              0050.5689.0034
GigabitEthernet1         vmxnet3              0050.5689.000b
-------------------------------------------------------------------
```

After adding or deleting network interfaces on the VM, verify the new interface-to-vNIC mapping before making configuration changes to the network interfaces. The following example shows the interface mapping after a new vNIC has been added. The new vNIC maps to the GigabitEthernet4 network interface on the Cisco Catalyst 8000V instance.

```
Router# show platform software vnic-if interface-mapping
```

```
----------------------------------------------------------------------
Interface Name            Driver Name           Mac Addr
----------------------------------------------------------------------
GigabitEthernet4          vmxnet3               0010.0d40.37ff
GigabitEthernet3          vmxnet3               000c.2946.3f4d
GigabitEthernet2          vmxnet3               0050.5689.0034
GigabitEthernet1          vmxnet3               0050.5689.000b
----------------------------------------------------------------------
```

Removing a vNIC from a Running VM

To remove a vNIC from a running VM, use the `clear platform software` command (described below). Perform this command before removing a vNIC from the hypervisor configuration. This is part of a "two-step hot remove".

To see which hypervisors support a two-step hot remove, look for hypervisors with vNIC Two-Step Hot Remove Support = Yes

clear platform software vnic-if interface GigabitEthernet*interface-number*

interface-number - value from 0–32.

Example:

```
Router# clear platform software vnic-if interface GigabitEthernet4
```

Next, remove the vNIC from the hypervisor configuration.

Note You no longer need to execute the `clear platform software vnic-int interface` command before you remove the vNIC configuration from the hypervisor. This command will be deprecated in a future release.

Cisco Catalyst 8000V Network Interfaces and VM Cloning

When you first install a Cisco Catalyst 8000V instance, a database that maps the vNIC name to the MAC address is created. This database is used to maintain a persistent mapping between the router interfaces and the vNIC-to-MAC address mapping in case you add or delete vNICs. The interfaces are mapped to the stored Universal Unique Identification (UUID) maintained by VMware.

The mapping between the router network interfaces and the vNICs only applies to the current VM that the Cisco Catalyst 8000V is installed on. If the VM is cloned, the stored UUID will not match the current UUID and the interface mapping will not match the router configuration.

To prevent the interface mapping from becoming mis-matched, perform the following steps on the original VM before cloning:

Note Ensure that the original VM includes the number of configured vNICs required on the cloned VM before beginning the cloning process.

Step 1   Enter the **clear platform software vnic-if nvtable** command on the original VM.

This command clears the persistent interface database on the original VM and updates the interface mapping to the hypervisor.

Step 2   Reboot the Cisco Catalyst 8000V.

Step 3   On the cloned VM, verify the interface mapping using the **show platform software vnic-if interface-mapping** command.

Step 4   Configure the router interfaces on the cloned VM accordingly.

The router configuration on the cloned VM should match the configuration of the original VM.

Mapping the Cisco Catalyst 8000V Network Interfaces with vSwitch Interfaces

You can configure the network interfaces in ESXi in different ways to accommodate the Cisco Catalyst 8000V interfaces. You can configure the network interfaces so that each Cisco Catalyst 8000V router interface is mapped to one host Ethernet interface.

Alternatively, you can also configure the network interfaces so that multiple Cisco Catalyst 8000V interfaces share one host ESXi Ethernet interface.

The third possibility is mapping the Cisco Catalyst 8000V interfaces directly to a trunk interface on the vSwitch.