



CHAPTER 8

Configuring Virtual Ethernet Interfaces

This chapter describes how to configure virtual Ethernet (vEthernet or vEth) interfaces using Cisco Data Center Network Manager (DCNM).

This chapter includes the following sections:

- [Information About vEthernet Interfaces, page 8-343](#)
- [Licensing Requirements for vEthernet Interfaces, page 8-344](#)
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Information About vEthernet Interfaces

Virtual Ethernet (vEthernet or vEth) interfaces are logical interfaces. Each vEthernet interface corresponds to a switch interface that is connected to a virtual port. The interface types are as follows:

- Virtual Machine (VM) (interfaces connected to VM NICs)
- Service console
- VM-Fabric Extender (FEX)
- FEX-Adapter
- vmkernel

vEthernet interfaces are created on the Cisco NX-OS to represent virtual ports in use on the distributed virtual switch.

**Note**

System-message logging levels for the Virtual Ethernet interfaces feature must meet or exceed Cisco DCNM requirements. During device discovery, Cisco DCNM detects inadequate logging levels and raises them to the minimum requirements. Cisco Nexus 7000 Series Switches that run Cisco NX-OS Release 4.0 are an exception. For Cisco NX-OS Release 4.0, prior to device discovery, use the command-line interface to configure logging levels to meet or exceed Cisco DCNM requirements. For more information, see the *Fundamentals Configuration Guide, Cisco DCNM for LAN, Release 5.x*.


Licensing Requirements for vEthernet Interfaces

The following table shows the licensing requirements for this feature:

Product	License Requirement
Cisco DCNM	vEthernet interfaces require no license. Any feature not included in a license package is bundled with the Cisco DCNM and is provided at no charge to you. For information about obtaining and installing a Cisco DCNM LAN Enterprise license, see the <i>Fundamentals Configuration Guide, Cisco DCNM for LAN, Release 5.x</i> .
Cisco NX-OS	vEthernet interfaces require no license. Any feature not included in a license package is bundled with the Cisco NX-OS system images and is provided at no extra charge to you. For an explanation of the Cisco NX-OS licensing scheme for your platform, see the licensing guide for your platform.
VM-FEX	The VM-FEX feature requires a license. You must obtain a license and add to the devices that you want to manage from Cisco DCNM. If you do not add a required license, VM-FEX under the Virtual Ethernet displays “This feature is not available in the Cisco Data Center Network Manager currently installed.” For an explanation of the Cisco NX-OS licensing scheme for your platform, see the licensing guide for your platform.
Adapter-FEX	The Adapter-FEX feature requires a license. You must obtain a license and add to the devices that you want to manage from Cisco DCNM. If you do not add a required license, Adapter-FEX under the Virtual Ethernet displays “This feature is not available in the Cisco Data Center Network Manager currently installed.” For an explanation of the Cisco NX-OS licensing scheme for your platform, see the licensing guide for your platform.

Platform Support

The following platform supports this feature. For platform-specific information, including guidelines and limitations, system defaults, and configuration limits, see the corresponding documentation.

Platform	Documentation
Cisco Nexus 1000V Series Switches	Cisco Nexus 1000V Series Switch Documentation
Cisco Nexus 5500 Series Switches Release 5.1(3)N2(1) and later releases.	Cisco Nexus 5000 Series Switches Documentation
 <p>Note</p> <p>Cisco DCNM supports Release 5.2(1)N1(1) and later releases.</p>	

Default Settings

The following table lists the default settings for device access and trunk port mode parameters.

Parameters	Default
Switchport mode	Access
Allowed VLANs	1 to 4094
Access VLAN ID	VLAN1
Native VLAN ID	VLAN1
Native VLAN ID tagging	Disabled
Administrative state	Shut

Configuring vEthernet Interfaces Cisco Nexus 1000V Series Switches

You can configure vEthernet interfaces in Cisco DCNM.

This section includes the following topics:

- [Configuring Global Settings for vEthernet Interfaces, page 8-346](#)
- [Configuring a Description for a vEthernet Interface, page 8-346](#)
- [Configuring the VMware DVPort ID on a vEthernet Interface, page 8-347](#)
- [Configuring Static Pinning on a vEthernet Interface, page 8-348](#)
- [Configuring a vEthernet Access Interface, page 8-349](#)
- [Configuring a vEthernet Trunk Interface, page 8-351](#)
- [Configuring a Private VLAN on a vEthernet Interface, page 8-352](#)
- [Configuring an IPv4 ACL on a vEthernet Interface, page 8-355](#)
- [Configuring a MAC ACL on a vEthernet Interface, page 8-356](#)

- [Configuring SPAN on a vEthernet Interface](#), page 8-356
- [Enabling or Disabling a vEthernet Interface](#), page 8-357
- [Displaying vEthernet Interface Summary Information](#), page 8-359
- [Displaying the vEthernet Interface Port Status](#), page 8-360
- [Displaying vEthernet Interface Statistics](#), page 8-360
- [Displaying Virtual Ethernet Module Statistics](#), page 8-361

Configuring Global Settings for vEthernet Interfaces

You can configure a device to automatically configure vEthernet interfaces, delete inactive vEthernet interfaces, and detach duplicate vEthernet interface activations.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.
Devices that support this feature appear in the Summary pane.
- Step 2** From the Summary pane, choose the desired device.
- Step 3** In the Details pane, click the **Device Details** tab.
- Step 4** (Optional) To configure a device to automatically configure vEthernet interfaces, click the **Enable default policy setting for handling auto config of vEth interfaces** check box.
- Step 5** (Optional) To configure a device to automatically delete inactive vEthernet interfaces, click the **Enable default policy setting for handling auto deletion of inactive vEth interfaces** check box.
- Step 6** (Optional) To configure a device to automatically detach duplicate vEthernet interface activations, click the **Enable default policy setting for handling detach of inactive vEth interfaces** check box.
- Step 7** From the menu bar, choose **File > Deploy** to apply your changes to the device.
-

Configuring a Description for a vEthernet Interface

You can configure a description for a vEthernet interface. If you do not add a description to the vEthernet interface, one of the following descriptions is added at attach time. If you add a description and then remove it, one of the following descriptions is added to the interface:

- For a VM—*VM-Name, Network Adapter number*
- For a VMK—*VMware VMkernel, vmk number*
- For a VSWIF—*VMware Service Console, vswif number*

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.

Devices that support this feature appear in the Summary pane.

- Step 2** From the Summary pane, expand the desired device.
Folders that contains the vEthernet interfaces appear.
By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.
Folders named Unknown contain vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces).
- Step 3** Expand the desired folder.
- Step 4** Choose the desired interface.
- Step 5** In the Details pane, click the **Port Details** tab.
- Step 6** Expand the **Basic Settings** content.
- Step 7** In the Description field, enter a description for the interface.
- Step 8** From the menu bar, choose **File > Deploy** to apply your changes to the device.
-

RELATED TOPICS

- [Enabling or Disabling a vEthernet Interface, page 8-357](#)

Configuring the VMware DVPort ID on a vEthernet Interface

You can configure the VMware DVPort ID on vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces). These interfaces are grouped in the Unknown folder.

BEFORE YOU BEGIN

If you do not want a default description to be assigned, configure the vEthernet interface with a description. For more information, see the [“Configuring a Description for a vEthernet Interface”](#) section on page 8-346.

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.
Devices that support this feature appear in the Summary pane.
- Step 2** From the Summary pane, expand the desired device.
Folders that contains the vEthernet interfaces appear.
By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.
- Step 3** Expand the Unknown folder.
- Step 4** Choose the desired interface.
- Step 5** In the Details pane, click the **Port Details** tab.

- Step 6** Expand the **Basic Settings** content.
- Step 7** In the VMware DVPort ID field, enter an ID number from 1 to 4294967294.
- Step 8** From the menu bar, choose **File > Deploy** to apply your changes to the device.
-

RELATED TOPICS

- [Configuring a Description for a vEthernet Interface, page 8-346](#)
- [Enabling or Disabling a vEthernet Interface, page 8-357](#)

Configuring Static Pinning on a vEthernet Interface

You can configure static pinning on a vEthernet interface.

BEFORE YOU BEGIN

If you do not want a default description to be assigned, configure the vEthernet interface with a description. For more information, see the “[Configuring a Description for a vEthernet Interface](#)” section on page 8-346.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.
- Devices that support this feature appear in the Summary pane.
- Step 2** From the Summary pane, expand the desired device.
- Folders that contains the vEthernet interfaces appear.
- By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.
- Folders named Unknown contain vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces).
- Step 3** Expand the desired folder.
- Step 4** Choose the desired interface.
- Step 5** In the Details pane, click the **Port Details** tab.
- Step 6** Expand the **Basic Settings** content.
- Step 7** In the Pinning ID field, enter an ID number from 1 to 31.
- Step 8** From the menu bar, choose **File > Deploy** to apply your changes to the device.
-

RELATED TOPICS

- [Configuring a Description for a vEthernet Interface, page 8-346](#)
- [Enabling or Disabling a vEthernet Interface, page 8-357](#)

Configuring a vEthernet Access Interface

You can configure a vEthernet interface for use as an access interface.

BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

- You are logged into the CLI in EXEC mode.
- If you do not add a description to the vEthernet interface, then one of the following descriptions is added at attach time. If you add a description and then remove it using the **no description** command, then one of the following descriptions is added to the interface:
 - For a VM—*VM-Name, Network Adapter number*
 - For a VMK—*VMware VMkernel, vmk number*
 - For a VSWIF—*VMware Service Console, vswif number*

If you do not want a default description to be assigned, configure the vEthernet interface with a description. For more information, see the [“Configuring a Description for a vEthernet Interface” section on page 8-346](#).

An access port transmits packets on only one, untagged VLAN. You specify which VLAN that the interface carries traffic on that VLAN becomes the access VLAN. If you do not specify a VLAN for an access port, that interface carries traffic only on the default VLAN. The default VLAN is VLAN1.

SUMMARY STEPS

1. **config t**
2. **interface vethernet** *interface-number*
3. **description** *string*
4. **switchport access vlan** *vlan-id*
5. **switchport mode access**
6. **show interface** *interface-number*
7. **copy running-config startup-config**

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.
- Devices that support this feature appear in the Summary pane.
- Step 2** From the Summary pane, expand the desired device.
- Folders that contains the vEthernet interfaces appear.
- By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.
- Folders named Unknown contain vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces).
- Step 3** Expand the desired folder.

- Step 4** Choose the desired interface.
- Step 5** In the Details pane, click the **Port Details** tab.
- Step 6** Expand the **Port Mode Settings** content.
- Step 7** In the Mode drop-down list, choose **Access**.
- Step 8** In the Access VLAN drop-down list, do one of the following:
- Choose an existing VLAN and click **OK**.
 - In the Assign a new VLAN ID field, enter a new VLAN ID, and if desired, check **Create in the device**. Click **OK**.
- Step 9** From the menu bar, choose **File > Deploy** to apply your changes to the device.

RELATED TOPICS

- [Configuring a Description for a vEthernet Interface, page 8-346](#)
- [Configuring a vEthernet Trunk Interface, page 8-351](#)
- [Configuring a Private VLAN on a vEthernet Interface, page 8-352](#)
- [Enabling or Disabling a vEthernet Interface, page 8-357](#)

	Command	Purpose
Step 1	<code>config t</code> Example: n1000v# config t n1000v(config)#	Places you into global configuration mode.
Step 2	<code>interface vethernet interface-number</code> Example: n1000v(config)# interface vethernet 100 n1000v(config-if)#	Places you into interface configuration mode for the specified vEthernet interface. For <i>interface-number</i> , the range is from 1 to 1048575.
Step 3	<code>description string</code> Example: n1000v(config-if)# description accessvlan	Adds a description to the interface in the running configuration. For <i>string</i> , the description can be up to 80 alphanumeric characters. Note You do not need to use quotations around descriptions that include spaces.
Step 4	<code>switchport access vlan vlanid</code> Example: n1000v(config-if)# switchport access vlan 5	Configures the vEthernet interface as an access interface and specifies the VLAN ID in the running configuration. For <i>vlanid</i> , the range is from 1 to 4094.
Step 5	<code>switchport mode access</code> Example: n1000v(config-if)# switchport mode access n1000v(config-if)#	Configures the vEthernet interface for use as an access interface in the running configuration.

	Command	Purpose
Step 6	<pre>show interface interface-number</pre> <p>Example: n1000v(config-if)# show interface vethernet1</p>	(Optional) Displays the interface status and information. For <i>interface-number</i> , the range is from 1 to 1048575.
Step 7	<pre>copy running-config startup-config</pre> <p>Example: n1000v(config)# copy running-config startup-config</p>	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

Configuring a vEthernet Trunk Interface

You can configure a vEthernet interface for use as a trunk interface.

BEFORE YOU BEGIN

If you do not want a default description to be assigned, configure the vEthernet interface with a description. For more information, see the “[Configuring a Description for a vEthernet Interface](#)” section on page 8-346.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.
- Devices that support this feature appear in the Summary pane.
- Step 2** From the Summary pane, expand the desired device.
- Folders that contains the vEthernet interfaces appear.
- By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.
- Folders named Unknown contain vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces).
- Step 3** Expand the desired folder.
- Step 4** Choose the desired interface.
- Step 5** In the Details pane, click the **Port Details** tab.
- Step 6** Expand the **Port Mode Settings** content.
- Step 7** In the Mode drop-down list, choose **Trunk**.
- Step 8** In the Allowed VLAN drop-down list, choose one of the following:
- **(1-3967, 4048-4093)**—Specifies VLANs 1 to 3967 and 4048 to 4093 as the allowed VLANs.
 - **None**—Specifies that no VLANs are allowed.
 - **Specific**—Allows you to choose one or more VLANs from the list of available VLANs.
- Step 9** In the Native VLAN drop-down list, do one of the following:
- Choose an existing VLAN and click **OK**.

- In the Assign a new VLAN ID field, enter a new VLAN ID, and if desired, check **Create in the device**. Click **OK**.

Step 10 From the menu bar, choose **File > Deploy** to apply your changes to the device.

RELATED TOPICS

- [Configuring a Description for a vEthernet Interface, page 8-346](#)
- [Configuring a vEthernet Access Interface, page 8-349](#)
- [Configuring a Private VLAN on a vEthernet Interface, page 8-352](#)
- [Enabling or Disabling a vEthernet Interface, page 8-357](#)

Configuring a Private VLAN on a vEthernet Interface

You can configure a private VLAN (PVLAN) on a vEthernet interface.

BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

- You are logged into the CLI in EXEC mode.

If you do not want a default description to be assigned, configure the vEthernet interface with a description. For more information, see the [“Configuring a Description for a vEthernet Interface”](#) section on page 8-346.

SUMMARY STEPS

1. **config t**
2. **interface vethernet** *interface-number*
3. **description** *string*
4. **switchport access vlan** *vlan-id*
5. **switchport mode private-vlan host**
6. **switchport private-vlan host-association** *primary-vlan-id*
7. **show interface**
8. **copy running-config startup-config**

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.

Devices that support this feature appear in the Summary pane.

Step 2 From the Summary pane, expand the desired device.

Folders that contains the vEthernet interfaces appear.

By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.

Folders named Unknown contain vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces).

- Step 3** Expand the desired folder.
- Step 4** Choose the desired interface.
- Step 5** In the Details pane, click the **Port Details** tab.
- Step 6** Expand the **Port Mode Settings** content.
- Step 7** In the Mode drop-down list, do one of the following:
- To create a private VLAN host, choose **PVLAN Host**, and in the Secondary VLAN drop-down list, choose a secondary VLAN.
 - To create a private VLAN in promiscuous mode, choose **PVLAN Promiscuous**, and in the Secondary VLANs drop-down list, choose one or more secondary VLANs.
- The primary VLAN is attached to the secondary VLAN, and it will automatically be entered in the primary VLAN field.
- Step 8** From the menu bar, choose **File > Deploy** to apply your changes to the device.

RELATED TOPICS

- [Configuring a Description for a vEthernet Interface, page 8-346](#)
- [Configuring a vEthernet Access Interface, page 8-349](#)
- [Configuring a vEthernet Trunk Interface, page 8-351](#)
- [Enabling or Disabling a vEthernet Interface, page 8-357](#)

	Command	Purpose
Step 1	config t Example: n1000v# config t n1000v(config)#	Places you into global configuration mode.
Step 2	interface vethernet <i>interface-number</i> Example: n1000v(config)# interface vethernet 1 n1000v(config-if)#	Places you into interface configuration mode for the specified vEthernet interface. For <i>interface-number</i> , the range is from 1 to 1048575.
Step 3	description <i>string</i> Example: n1000v(config-if)# description isp_pvlan1	Adds a description to the interface in the running configuration. For <i>string</i> , the description can be up to 80 alphanumeric characters. Note You do not need to use quotations around descriptions that include spaces.

	Command	Purpose
Step 4	switchport access vlan <i>vlan-id</i> Example: n1000v(config-if)# switchport access vlan 5	Configures the vEthernet interface as an access interface and specifies the VLAN ID in the running configuration. For <i>vlan-id</i> , the range is from 1 to 4094.
Step 5	switchport mode private-vlan host Example: n1000v(config-if)# switchport mode private-vlan host	Configures the vEthernet interface for a PVLAN host in the running configuration.
Step 6	switchport private-vlan host-association <i>primary-vlanid</i> Example: n1000v(config-if)# switchport private-vlan host-association 5	Configures the vEthernet interface for a host association with a specific primary VLAN ID in the running configuration. For <i>primary-vlanid</i> , the range is from 1 to 4094.
Step 7	show interface Example: n1000v# show interface	(Optional) Displays the interface status and information.
Step 8	copy running-config startup-config Example: n1000v(config)# copy running-config startup-config	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

EXAMPLES

The following example shows how to configure a vEthernet interface to use in a private vlan:

```
n1000v# config t
n1000v(config)# interface vethernet 1
n1000v(config-if)# description isp_pvlan1
n1000v(config-if)# switchport access vlan 5
n1000v(config-if)# switchport mode private-vlan host
n1000v(config-if)# switchport private-vlan host-association 5
n1000v(config-if)# show interface vethernet 1
Vethernet1 is up
  Port description is gentoo, Network Adapter 1
  Hardware is Virtual, address is 0050.5687.3bac
  Owner is VM "gentoo", adapter is Network Adapter 1
  Active on module 4
  VMware DVS port 1
  Port-Profile is vm
  Port mode is access
  5 minute input rate 1 bytes/second, 0 packets/second
  5 minute output rate 94 bytes/second, 1 packets/second
  Rx
  655 Input Packets 594 Unicast Packets
  0 Multicast Packets 61 Broadcast Packets
  114988 Bytes
  Tx
  98875 Output Packets 1759 Unicast Packets
  80410 Multicast Packets 16706 Broadcast Packets 0 Flood Packets
  6368452 Bytes
  0 Input Packet Drops 0 Output Packet Drops
```

Configuring an IPv4 ACL on a vEthernet Interface

You can configure an IPv4 access control list (ACL) on a vEthernet interface.

BEFORE YOU BEGIN

If you do not want a default description to be assigned, configure the vEthernet interface with a description. For more information, see the [“Configuring a Description for a vEthernet Interface”](#) section on page 8-346.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.
- Devices that support this feature appear in the Summary pane.
- Step 2** From the Summary pane, expand the desired device.
- Folders that contains the vEthernet interfaces appear.
- By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.
- Folders named Unknown contain vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces).
- Step 3** Expand the desired folder.
- Step 4** Choose the desired interface.
- Step 5** In the Details pane, click the **Port Details** tab.
- Step 6** Expand the **Advanced Settings** content.
- Step 7** In the IPv4 ACL field, choose an ACL for incoming traffic and an ACL for outgoing traffic.
- Step 8** From the menu bar, choose **File > Deploy** to apply your changes to the device.
-

RELATED TOPICS

- [Configuring a Description for a vEthernet Interface, page 8-346](#)
- [Configuring a MAC ACL on a vEthernet Interface, page 8-356](#)
- [Configuring SPAN on a vEthernet Interface, page 8-356](#)
- [Enabling or Disabling a vEthernet Interface, page 8-357](#)

RELATED TOPICS

- [Configuring a Description for a vEthernet Interface, page 8-346](#)
- [Configuring a MAC ACL on a vEthernet Interface, page 8-356](#)
- [Configuring SPAN on a vEthernet Interface, page 8-356](#)
- [Enabling or Disabling a vEthernet Interface, page 8-357](#)

Configuring a MAC ACL on a vEthernet Interface

You can configure a MAC ACL on a vEthernet interface.

BEFORE YOU BEGIN

If you do not want a default description to be assigned, configure the vEthernet interface with a description. For more information, see the “[Configuring a Description for a vEthernet Interface](#)” section on page 8-346.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.
Devices that support this feature appear in the Summary pane.
 - Step 2** From the Summary pane, expand the desired device.
Folders that contains the vEthernet interfaces appear.
By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.
Folders named Unknown contain vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces).
 - Step 3** Expand the desired folder.
 - Step 4** Choose the desired interface.
 - Step 5** In the Details pane, click the **Port Details** tab.
 - Step 6** Expand the **Advanced Settings** content.
 - Step 7** In the MAC ACL field, choose an ACL for incoming traffic and an ACL for outgoing traffic.
 - Step 8** From the menu bar, choose **File > Deploy** to apply your changes to the device.
-

RELATED TOPICS

- [Configuring a Description for a vEthernet Interface, page 8-346](#)
- [Configuring an IPv4 ACL on a vEthernet Interface, page 8-355](#)
- [Configuring SPAN on a vEthernet Interface, page 8-356](#)
- [Enabling or Disabling a vEthernet Interface, page 8-357](#)

Configuring SPAN on a vEthernet Interface

You can configure SPAN on a vEthernet interface that is participating (associated with a network interface card). For nonparticipating interfaces, you cannot configure SPAN.

BEFORE YOU BEGIN

If you do not want a default description to be assigned, configure the vEthernet interface with a description. For more information, see the “[Configuring a Description for a vEthernet Interface](#)” section on page 8-346.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.
- Devices that support this feature appear in the Summary pane.
- Step 2** From the Summary pane, expand the desired device.
- Folders that contains the vEthernet interfaces appear.
- By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.
- Folders named Unknown contain vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces).
- Step 3** Expand the desired folder.
- Step 4** Choose the desired interface.
- Step 5** In the Details pane, click the **Port Details** tab.
- Step 6** Expand the **Advanced Settings** content.
- Step 7** In the SPAN field, choose the source or destination as the SPAN interface.
- Step 8** From the menu bar, choose **File > Deploy** to apply your changes to the device.
-

RELATED TOPICS

- [Configuring a Description for a vEthernet Interface, page 8-346](#)
- [Configuring an IPv4 ACL on a vEthernet Interface, page 8-355](#)
- [Configuring a MAC ACL on a vEthernet Interface, page 8-356](#)
- [Enabling or Disabling a vEthernet Interface, page 8-357](#)

Enabling or Disabling a vEthernet Interface

You can enable or disable a vEthernet interface.

SUMMARY STEPS

1. `config t`
2. `interface vethernet interface-number`
3. `[no] shutdown`
4. `show interface`

5. copy running-config startup-config

BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

- You are logged into the CLI in EXEC mode.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.
- Devices that support this feature appear in the Summary pane.
- Step 2** From the Summary pane, expand the desired device.
- Folders that contains the vEthernet interfaces appear.
- By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.
- Folders named Unknown contain vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces).
- Step 3** Expand the desired folder.
- Step 4** Choose the desired interface.
- Step 5** Do one of the following:
- To enable the interface, choose **Actions > Admin Up**.
 - To disable the interface, choose **Actions > Admin Down**.
- Step 6** From the menu bar, choose **File > Deploy** to apply your changes to the device.
-

RELATED TOPICS

- [Displaying vEthernet Interface Summary Information, page 8-359](#)
- [Displaying the vEthernet Interface Port Status, page 8-360](#)
- [Displaying vEthernet Interface Statistics, page 8-360](#)

	Command	Purpose
Step 1	<code>config t</code> Example: n1000v# config t n1000v(config)#	Places you into global configuration mode.
Step 2	<code>interface vethernet interface-number</code> Example: n1000v(config)# interface vethernet 100 n1000v(config-if)#	Places you into interface configuration mode for the specified vEthernet interface. For <i>interface-number</i> , the range is from 1 to 1048575.

	Command	Purpose
Step 3	<p>[no] shutdown</p> <p>Example: n1000v(config-if)# no shutdown n1000v(config-if)#</p>	<p>Enables or disables the vEthernet interface in the running configuration:</p> <ul style="list-style-type: none"> • shutdown—Disables the vEthernet interface. • no shutdown—Enables the vEthernet interface.
Step 4	<p>show interface</p> <p>Example: n1000v# show interface</p>	<p>(Optional) Displays the interface status and information.</p>
Step 5	<p>copy running-config startup-config</p> <p>Example: n1000v(config)# copy running-config startup-config</p>	<p>(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.</p>

EXAMPLES

The following example shows how to enable a vEthernet interface:

```
n1000v# config t
n1000v(config)# interface vethernet 100
n1000v(config)# no shutdown
n1000v(config-if)# show interface veth100 status
```

```
-----
Port          Name          Status  Vlan    Duplex  Speed  Type
-----
Veth100      --                up      1       auto    auto   auto
n1000v(config-if)#
```

Displaying vEthernet Interface Summary Information

You can display summary information about the vEthernet interface, such as its name, description, port profile, mode, administrative and operational status, VM name, and VM adapter.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.

Devices that support this feature appear in the Summary pane.

Step 2 From the Summary pane, expand the desired device.

Folders that contains the vEthernet interfaces appear.

By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.

Folders named Unknown contain vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces).

Step 3 Expand the desired folder.

RELATED TOPICS

- [Displaying the vEthernet Interface Port Status, page 8-360](#)
- [Displaying vEthernet Interface Statistics, page 8-360](#)
- [Displaying Virtual Ethernet Module Statistics, page 8-361](#)

Displaying the vEthernet Interface Port Status

You can display port status information about a vEthernet interface.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > N1K-Virtualization**.

Devices that support this feature appear in the Summary pane.

Step 2 From the Summary pane, expand the desired device.

Folders that contains the vEthernet interfaces appear.

By default, vEthernet interfaces are grouped according to the Virtual Ethernet Module (VEM) to which they belong. You can also group them according to the Virtual Machine (VM) to which they have been associated by clicking **VEM-VM-VETH** in the upper right corner of the Summary pane.

Folders named Unknown contain vEthernet interfaces that have not been associated with a network interface card (also called nonparticipating interfaces).

Step 3 Expand the desired folder.

Step 4 Choose the desired interface.

Step 5 From the Details pane, click the **Port Status** tab.

The port status information appears.

RELATED TOPICS

- [Displaying vEthernet Interface Summary Information, page 8-359](#)
- [Displaying vEthernet Interface Statistics, page 8-360](#)
- [Displaying Virtual Ethernet Module Statistics, page 8-361](#)

Displaying vEthernet Interface Statistics

The following window appears in the Statistics tab:

- **Traffic Statistics Chart**—Displays statistics on the total number of packets received and transmitted, the number of multicast and broadcast packets received and transmitted, the number of octets/bytes received and transmitted, and the number of inbound packets that were dropped.

For more information on collecting statistics for this feature, see the *Fundamentals Configuration Guide, Cisco DCNM for LAN, Release 5.x*.

Displaying Virtual Ethernet Module Statistics

The following window appears in the Statistics tab:

- Uplink Traffic Statistics Chart—Displays statistics on the total number of packets received and transmitted, the number of multicast, broadcast, and unicast packets received and transmitted, and the number of octets/bytes received and transmitted.
- Vcs Traffic Statistics Chart—Displays statistics about the Virtual Machine.

For more information on collecting statistics for this feature, see the *Fundamentals Configuration Guide, Cisco DCNM for LAN, Release 5.x*.

Field Descriptions for vEthernet Interfaces on Cisco Nexus 1000V Series Switches

This section includes the following field descriptions for the vEthernet interface feature:

- [Virtual Ethernet: Device Details, page 8-361](#)
- [Virtual Ethernet: Device Status, page 8-362](#)
- [Virtual Ethernet: Port Details: Basic Settings Section, page 8-362](#)
- [Virtual Ethernet: Port Details: Port Mode Settings Section, page 8-362](#)
- [Virtual Ethernet: Port Details: Advanced Settings Section, page 8-363](#)
- [Virtual Ethernet: Port Status: Port Status Section, page 8-364](#)

Virtual Ethernet: Device Details

Table 8-1 **Virtual Ethernet: Device Details**

Field	Description
Auto Setup	Specifies for the device to automatically configure vEthernet interfaces.
Auto Delete	Specifies for the device to automatically delete inactive vEthernet interfaces.
Force Detach	Specifies for the device to automatically detach duplicate vEthernet interface activations.

Virtual Ethernet: Device Status

Table 8-2 Virtual Ethernet: Device Status

Field	Description
Port Mode	<i>Display only.</i> Port mode (Access, Trunk, PVLAN Host, PVLAN Promiscuous).
Total	<i>Display only.</i> Total number of interfaces of the corresponding port mode.
Active	<i>Display only.</i> Number of active interfaces of the corresponding port mode.
Admin Down	<i>Display only.</i> Number of interfaces that are administratively down of the corresponding port mode.
Operationally Down	<i>Display only.</i> Number of interfaces that are operationally down of the corresponding port mode.

Virtual Ethernet: Port Details: Basic Settings Section

Table 8-3 Virtual Ethernet: Port Details: Basic Settings Section

Field	Description
Name	<i>Display only.</i> Name of the interface.
Admin Status	State (Up or Down) of the interface.
Pinning ID	ID number of the subgroup to which the interface is attached (pinned).
Description	Word or phrase that describes the interface.
Port Profile	Name of the port profile to which the interface belongs.
VMWare DVPort ID	ID number of the VMware DVPort.

Virtual Ethernet: Port Details: Port Mode Settings Section

Table 8-4 Virtual Ethernet: Port Details: Port Mode Settings Section

Field	Description
Mode	Port mode assigned to the interface. Valid choices are Access, Trunk, PVLAN Host, and PVLAN Promiscuous.
Access	
Access VLAN	ID number of the VLAN to be used for access ports. The default is VLAN 1.
Trunk	
Encapsulation	<i>Display only.</i> Tagging method (IEEE 802.1Q) used to identify the VLAN to which a frame and packet belong.

Table 8-4 Virtual Ethernet: Port Details: Port Mode Settings Section

Field	Description
Allowed VLAN	ID number of the VLANs allowed to transmit data on interfaces that belong to this port profile. The range is 1 to 4094, and the default is 1. VLANs 3968 to 4047 and 4094 are allocated for internal device use and do not carry data traffic.
Native VLAN	ID number of the native VLAN to be used for trunk ports. The default is VLAN 1.

Virtual Ethernet: Port Details: Advanced Settings Section

Table 8-5 Virtual Ethernet: Port Details: Advanced Settings Section

Field	Description
IPv4 ACL	
Incoming Ipv4 Traffic	IPv4 ACL that filters ingress traffic on the interface. By default, this list is blank.
Outgoing Ipv4 Traffic	IPv4 ACL that filters egress traffic on the interface. By default, this list is blank.
MAC ACL	
Incoming Traffic	MAC ACL that filters ingress traffic on the interface. By default, this list is blank.
Outgoing Traffic	MAC ACL that filters egress traffic on the interface. By default, this list is blank.
SPAN	
Use Interface as SPAN	Source or destination for this interface.
Session ID	SPAN session ID where the interface is applied.
Type	<i>Display only.</i> Session type.
Direction: Ingress	Monitor ingress packets.
Direction: Egress	Monitor egress packets.

Virtual Ethernet: Port Status: Port Status Section

Table 8-6 Virtual Ethernet: Port Status: Port Status Section

Field	Description
Operational Status	<i>Display only.</i> Operational status of the interface. The default is down. Valid values are as follows: <ul style="list-style-type: none"> • Up • Down
Status Description	<i>Display only.</i> Description of the operational status.

VM-FEX

Beginning with Cisco DCNM Release 6.1(1), Cisco DCNM supports Cisco Virtual Machine Fabric Extender (VM-FEX). VM-FEX extends the fabric from the Cisco Nexus N5500 series platform switch chassis such as Cisco Nexus 5548UP, Cisco Nexus 5596UP to the Virtual Machine (VM).

VM-FEX extends the Cisco fabric extender technology to the VM with the following capabilities:

- Each VM includes a dedicated interface on the parent switch.
- All the VM traffic is sent directly to the dedicated interface on the switch.
- The software-based switch in the hypervisor is eliminated.

VM-FEX is supported on the Red Hat kernel-based Virtual Machine (KVM) and VMware ESX hypervisors with the Cisco UCS P81E Virtual Interface Card (vIC), which is a dual-port 10-Gigabit Ethernet PCIe adapter that supports static or dynamic virtualized interfaces including up to 128 virtual network interface cards (vNICs).



Note

VM-FEX support is available with the Cisco Nexus 5500 Series switches that are installed with Release 5.2(1)N1(1) and with the Cisco Nexus 2200 Fabric Extenders that are connected to a Cisco Nexus 5500 Series parent switch. For more information on how to use VM-FEX, see the *Cisco Nexus 5000 Series Switch NX-OS Operations Guide*.

Each VM is associated with a network adapter vNIC, which in turn, is associated with a virtual Ethernet (vEthernet) port on the parent switch. This dedicated virtual interface can be managed, monitored, and SPANned same as a physical interface.

VMs can migrate from one physical server to another. The virtual interface that migrates along with a VM and virtual network link is called a floating vEthernet interface.

The benefits of the Cisco VM-FEX technology are as follows:

- Reduces the number of network management points that enable both the physical and virtual network traffic to be treated in a consistent policy-driven manner
- Offloads the VM switching from the host central processing unit (CPU) to parent switch application-specific integrated circuits (ASICs) that enhances the performance of applications.

This section includes the following topics:

- [Accessing the VM-FEX Interfaces, page 8-365](#)
- [Enabling VM-FEX on a Device, page 8-365](#)

- [Disabling VM-FEX on a Device, page 8-366](#)
- [Displaying Global Settings for VM-FEX, page 8-366](#)
- [Displaying the VM-FEX Interface Summary Information, page 8-367](#)
- [Configuring an IPv6 ACL on the Cisco Nexus 5500 Switches, page 8-367](#)

Accessing the VM-FEX Interfaces

You can access and manage the VM-FEX virtual Ethernet interfaces from Cisco DCNM Client.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > VM-FEX**.



Note

- If you do not add the required license to the devices, the Port Security page appears displaying “This feature is not available on the Cisco Data Center Network Management version currently installed.”
 - If you add the VM-FEX license but do not assign the license to the devices that you want to manage through Cisco DCNM, the VM-FEX page displays “No devices have been selected for licensing.”
-

Devices that support this feature appear in the Summary pane.

Step 2 Expand the desired device.

The list of virtual interfaces appear.

Step 3 (Optional) In the VM Name field, enter the name of a device and click the magnifier to search the virtual interface.

Step 4 (Optional) Click **VETH** to switch to the VETH view.

Step 5 (Optional) Click the icon to export the data to a Microsoft Excel spreadsheet.

Enabling VM-FEX on a Device

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > VM-FEX**.

Devices that support this feature appear in the Summary pane.



Note

- You must assign appropriate license to the devices that you want to manage through Cisco DCNM.
 - You must enable the virtualization feature-set on the device before you enable VM-FEX on it.
-

Step 2 Choose the desired device, right-click and select **Enable VM-FEX** or press **Ctrl-Shift-E**.

VM-FEX brings up the associated features: virtualization also known as Adapter-FEX enables the creation of fixed vEthernet interfaces dynamically, FEXes, and virtual port channels (vPCs).

- Step 3** (Optional) Choose the desired device, right-click and select **Enable >Auto Setup**.
- Step 4** (Optional) Choose the desired device, right-click and select **Enable >Auto Delete**.
- Step 5** (Optional) Right-click and select **Collapse All** to deselect the device.

Disabling VM-FEX on a Device

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > VM-FEX**.
Devices that support this feature appear in the Summary pane.

- Step 2** Select the desired device, right-click, and choose **Disable VM-FEX** or press **Ctrl-Shift-D**.



Note You must remove all floating vEthernet interfaces before disabling the VM-FEX feature.

When you disable the VM-FEX feature on a device, the associated features of VM-FEX, such as Adapter-FEX, FEXes, and vPCs are not disabled.

- Step 3** (Optional) Choose the desired device, right-click and select **Disable > Auto Setup**.
- Step 4** (Optional) Choose the desired device, right-click and select **Disable > Auto Delete**.
- Step 5** (Optional) Choose the device, right-click and select **Collapse All** to deselect the device.

Displaying Global Settings for VM-FEX

You can view the global settings of the automatic configuration and automatic deletion for floating vEthernet interfaces of a Cisco NX-OS device.

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > VM-FEX**.

- Step 2** Select a desired device.

The Virtual Ethernet Global Settings page appears.

By default, the following information appears:

- Default policy setting for handling automatic configuration of floating virtual Ethernet interfaces.
- Default policy setting for handling auto deletion of inactive floating virtual Ethernet interfaces.

Displaying the VM-FEX Interface Summary Information

You can view the existing static and dynamically generated floating and nonparticipating Ethernet interfaces and their related details of a device in the summary table. The summary table displays the name, description, port profile, mode, admin status, operational status, status description, server (virtualized), VM name, and VM adapter.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > VM-FEX**.
Devices that support this feature appear in the Summary pane.



Note All the fields that appear in this page are read-only.

- Step 2** Click the + icon to expand and display the virtual interfaces.
- Step 3** **(Optional)** Click the + icon to export the summary table content to a Microsoft Excel spreadsheet. Cisco DCNM supports two types of hierarchal views: VETH and VM-VETH.
- **VETH View**—Lists all the floating and nonparticipating Ethernet interfaces in the linear format without grouping them.
 - **VM-VETH View**— Lists all the floating Ethernet interfaces grouped under the connected VM and non-participating Ethernet interfaces under the Unknown (nonparticipating) group.

By default, Cisco DCNM displays the VM-VETH view.

Configuring an IPv6 ACL on the Cisco Nexus 5500 Switches

You can configure an IPv6 access control list (ACL) on a vEthernet interface.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Security > Access Control > IPv6 ACL**.
Devices that support this feature appear in the Summary pane.
- Step 2** Right-click on the expand the desired device and select **New IPv6 ACL** or press **Ctrl-N**.
The ACL Details window appears.
- Step 3** Enter a name for the ACL in the **Name** field.
The ACL name appears under the selected device.
- Step 4** (Optional) Click in the **Statistics** check box.
- Step 5** Click **File > Deploy** or press **Ctrl-S**.
- Step 6** (Optional) Choose the ACL, right-click and select **New > IPv6 Access Rule** or press **Ctrl-Shift-I**.
The Details pane appears.
- Step 7** From the Source field, choose **Any, Host, or Network**.

If you choose Host, you must configure the IPv6 Address of the host.

If you choose Network, you must configure the IPv6 Prefix Length.

Step 8 From the Destination field, choose **Any**, **Host**, or **Network**.

If you choose Host, you must configure the IPv6 Address of the host.

If you choose Network, you must configure the IPv6 Prefix Length.

Step 9 In the Protocol and Others, Protocol: IPv6, choose an IPv6 protocol from the drop-down list.

Step 10 Choose the time range from the Time-range drop-down list.

Step 11 (Optional) Click the Log this entry check box.

Step 12 Choose a value for the packet length from the drop-down list.

Step 13 Enter a value in the Flow label field.

Step 14 In the Advanced configuration area, choose a DSCP from the drop-down list.

Step 15 Click File > Deploy or press Ctrl-S.

Field Descriptions for VM-FEX

This section includes the following field descriptions for the VM-FEX feature:

- [VM-FEX: vEthernet Details: Basic Settings, page 8-369](#)
- [VM-FEX: Port Details: Port Mode Settings, page 8-372](#)
- [VM-FEX: Port Details: Advanced Settings, page 8-372](#)
- [VM-FEX: Interface: Port Status, page 8-372](#)
- [VM-FEX: Events, page 8-373](#)

VM-FEX: Device Status

Table 8-7 VM-FEX Device Status

Field	Description
Port Mode	Displays the port mode.
Total	Displays the total number of ports.
Active	Displays the active ports.
Admin Down	Displays the admin down ports.
Operationally Down	Displays the operationally down ports.

VM-FEX: vEthernet Details: Basic Settings

Verifying the vEthernet Interface Configuration

Table 8-8 VM-FEX: vEthernet Details: Basic Settings

Field	Description
DVPort ID	ID number of the VMware DVPort.
VIF_Index	Virtual interface index.
DVSwitchUUID	VMware Distributed Virtual Switch UUID.
VNTag	Virtual Network Tag (both the device and adapter forwarding path is set for the VNTag).
Active/Standby mode	Each vEthernet mode.

To display the vEthernet interface configuration, perform the following tasks:

Command	Purpose
show interface vethernet <i>interface-number</i> [brief counters detailed [all] errors] description mac-address status down err-disabled inactive module num up] switchport]	Displays the vEthernet interface configuration.
show interface [vethernet <i>interface-number</i>]	Displays the complete interface configuration.
show interface [vethernet <i>interface-number</i>] brief	Displays abbreviated interface configuration.
show interface [vethernet <i>interface-number</i>] counters	Displays the interface incoming and outgoing counters.
show interface [vethernet <i>interface-number</i>] counters detailed [all]	Displays detailed information for all counters. Note If 'all' is not specified then only non-zero counters are shown.
show interface [vethernet <i>interface-number</i>] counters errors	Displays the interface error counters .
show interface [vethernet <i>interface-number</i>] description	Displays the interface description.
show interface [vethernet <i>interface-number</i>] mac-address	Displays the interface MAC address. Note For vEth interfaces this shows the MAC address of the connected device.
show interface [vethernet <i>interface-number</i>] status down err-disabled inactive module num up]	Displays interface line status.
show interface [vethernet <i>interface-number</i>] switchport	Displays interface switchport information.
show interface virtual [vm [<i>vm_name</i>] vmk vswif] [module mod_no]	Displays virtual interfaces only.
show interface virtual port-mapping [vm [<i>name</i>] vmk vswif description] [<i>module num</i>]	Displays mappings between veth and VMware DVPort.

The following example shows how to display vEthernet 1:

```
n1000v# show interface veth1
Vethernet1 is up
  Port description is gentool, Network Adapter 1
  Hardware is Virtual, address is 0050.56bd.42f6
  Owner is VM "gentool", adapter is Network Adapter 1
  Active on module 33
  VMware DVS port 100
  Port-Profile is vlan48
  Port mode is access
  Rx
  491242 Input Packets 491180 Unicast Packets
  7 Multicast Packets 55 Broadcast Packets
  29488527 Bytes
  Tx
  504958 Output Packets 491181 Unicast Packets
  1 Multicast Packets 13776 Broadcast Packets 941 Flood Packets
  714925076 Bytes
  11 Input Packet Drops 0 Output Packet Drops
n1000v#
```

The following example shows how to display information for all vEthernet interfaces:

```
n1000v# show interface virtual
```

Port	Adapter	Owner	Mod	Host
Veth1		Vm1-kl61	2	
Veth2		VM1-kl65	5	
Veth3		VM2-kl61	2	
Veth1	Net Adapter 1	austen-gentool	33	austen-strider.austen.
Veth2	Net Adapter 2	austen-gentool	33	austen-strider.austen.

```
n1000v#
```

The following example shows how to display the descriptions for all vEthernet interfaces:

```
n1000v# show interface virtual description
```

Interface	Description
Veth1	gentool, Network Adapter 1
Veth2	gentool, Network Adapter 2
Veth3	VMware VMkernel, vmk1
Veth4	VMware Service Console, vswif1

The following example shows how to display the counters for all vEthernet interfaces:

```
n1000v# show interface counters
```

Port	InOctets	InUcastPkts	InMcastPkts	InBcastPkts
mgmt0	42754	--	0	--
Eth2/2	41423421	112708	125997	180167
Eth5/2	39686276	119152	93284	180100
Eth5/6	4216279	9530	31268	40
Veth1	0	0	0	0
Veth2	0	0	0	0
Veth3	0	0	0	0
Veth4	0	0	0	0
Veth5	0	0	0	0

```
Veth6          0          0          0          0
Veth7          0          0          0          0
Veth100        0          0          0          0
```

```
-----
Port           OutOctets  OutUcastPkts  OutMcastPkts  OutBcastPkts
-----
mgmt0          3358        --            --            --
Eth2/2         23964739   116150        516           52768
Eth5/2         26419473   111598        571           52420
Eth5/6         1042930    9548          536           14
Veth1          393589     0             6150          0
Veth2          393600     0             6150          0
Veth3          393600     0             6150          0
Veth4          0           0             0             0
Veth5          0           0             0             0
Veth6          0           0             0             0
Veth7          0           0             0             0
Veth100        0           0             0             0
```

```
n1000v#
```

The following example shows how to display the virtual port mapping for all vEthernet interfaces:

```
n1000v# show interface virtual port-mapping
```

```
-----
Port           Hypervisor Port  Status  Reason
-----
Veth1          DVPort100        up      none
Veth2          DVPort160        up      none
```

The following example shows how to display the running configuration information for all vEthernet interfaces:

```
n1000v# show running-config interface veth1
version 4.0(4)SV1(1)

interface Vethernet1
  inherit port-profile vlan48
  description gentool, Network Adapter 1
```

Configuration Examples for vEthernet Interfaces

The following example shows how to configure a vEthernet access interface and assign the access VLAN for that interface:

```
n1000v# configure terminal
n1000v(config)# interface vethernet 2/30
n1000v(config-if)# switchport
n1000v(config-if)# switchport mode access
n1000v(config-if)# switchport access vlan 5
n1000v(config-if)#
```

The following example shows how to configure a Layer 2 trunk interface, assign the native VLAN and the allowed VLANs, and configure the device to tag the native VLAN traffic on the trunk interface:

```
n1000v# configure terminal
n1000v(config)# interface vethernet 2/35
n1000v(config-if)# switchport
```

```

n1000v(config-if)# switchport mode trunk
n1000v(config-if)# switchport trunk native vlan 10
n1000v(config-if)# switchport trunk allowed vlan 5, 10
n1000v(config-if)# exit
n1000v(config)#

```

VM-FEX: Port Details: Port Mode Settings

Table 8-9 VM-FEX: Port Details: Port Mode Settings

Field	Description
Mode	Specifies mode.
Access	Specifies the access VLAN number.

VM-FEX: Port Details: Advanced Settings

Table 8-10 VM-FEX: Port Details: Advanced Settings

Field	Description
IPv4 ACL	Specifies the IPv4 access control list.
Incoming Traffic	Specifies the incoming traffic.
IPv6 ACL	Specifies the IPv6 access control list.
MAC ACL	Specifies the MAC access control list.
Use interface as SPAN	Specifies SPAN.
Source	Specifies the source.
Destination	Specifies the destination.
Session ID	Displays the session ID.
Type	Displays local or global.
Direction	Displays egress or ingress.

VM-FEX: Interface: Port Status

Table 8-11 VM-FEX: Interface: Port Status

Field	Description
Operational Status	Displays the operational status.
Status Description	Displays the status description.
Status	Displays the status.

VM-FEX: Events

The association details of VLAN, ACL, and SPAN are also displayed in the details page.

Table 8-12 VM-FEX Events

Field	Description
Source	Displays the source.
Feature	Displays the feature.
Local Time	Displays the local time.
Switch Time	Displays the time on the switch.
Severity	Displays the severity.
Message	Displays the message.
Annotation	Displays the annotation.

You can display the statistics of each vEthernet interface by clicking the **Statistics** tab.

Cisco DCNM automatically detects the creation and deletion and any status change of a Ethernet interface on the device by using the syslogs and helps you to administer the devices through the **Events** tab in the details page.

Adapter-FEX

Beginning with Cisco DCNM Release 6.2(1), Cisco DCNM supports the Cisco NX-OS Adapter-FEX feature. Adapter-FEX provides the benefits of the Cisco Fabric Extender Link (FEXLink) architecture with that of a server I/O virtualization to create multiple virtual interfaces over a single Ethernet interface that allows the deployment of a dual-port NIC on the server.

FEXLink allows you to configure more than two virtual interfaces that the server considers as a regular Ethernet interface. The Cisco FEXLink enables the virtualization of host and server interfaces over a few fabric uplinks that connect to the parent device—the Cisco Nexus 5000 Series device with or without a Cisco Nexus 2000 Series Fabric Extender.

The benefits of Cisco Adapter-FEX are as follows:

- Reduces power consumption and cooling cost and the number of network ports required in the data center
- Provides flexible architecture
- Provides higher scalability with multiple logical interfaces
- Provides a single point of management
- Enables policy enforcement

Adapter-FEX are local logical ports (they are also called fixed vEthernet interfaces on the parent switch). Adapter-FEX uses the innovative server connectivity (I/O connectivity) technology that enables on-demand creation of virtual NICs (vNICs) or virtual host bus adapters (vHBAs) on a single NIC. With Adapter-FEX, a single physical adapter port is presented as multiple logical adapter ports to the server OS and a network as multiple physical adapter ports.

Each vNIC and vHBA created on the adapter automatically corresponds to a vEthernet port on the parent switch to which the Adapter-FEX is connected.

Adapter-FEX supports the following platforms:

- FEX-enabled adapters on a server that connects to a switch that supports virtualization of interfaces.
- The Cisco Nexus 5500 Series switch and the Cisco Nexus 2200 FEX connected to Cisco Nexus 5500 Series switches.
- FEX-capable adapters, which includes the Cisco UCS P81E VIC adapter for the UCS C-series platform, the Cisco UCS M81KR VIC for the Cisco UCS B-Series Blade Servers, and third-party adapters, such as the Broadcom BCM57712 CNA, that uses the VNTag technology.

**Note**

DCNM supports Adapter-FEX for the Cisco Nexus 5500 Series switches for Release 5.2(1)N1(1) and later releases. For more information on how to use Adapter-FEX, see the *Cisco Nexus 5000 Series Switch NX-OS Operations Guide*.

This section includes the following topics:

- [Accessing the Adapter-FEX Interfaces, page 8-374](#)
- [Disabling Adapter-FEX on a Device, page 8-375](#)
- [Displaying Global Settings for VM-FEX, page 8-375](#)
- [Displaying the VM-FEX Interface Summary Information, page 8-376](#)
- [Configuring the Traffic Statistics Charts, page 8-376](#)

Accessing the Adapter-FEX Interfaces

You can access and managing the Adapter-FEX virtual Ethernet interfaces from Cisco DCNM Client.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > Adapter-FEX**.

**Note**

- If you do not add the required license to the devices, the Port Security page appears displaying “This feature is not available on the Cisco Data Center Network Management version currently installed.”
- If you add the Adapter-FEX license but do not assign the license to the devices that you want to manage through Cisco DCNM, the Adapter-FEX page displays “No devices have been selected for licensing.”

Devices that support this feature appear in the Summary pane.

Step 2 Expand the desired device.

The list of virtual interfaces appear.

Step 3 (Optional) Click the **arrow** icon to export the visible summary table contents to a Microsoft Excel spreadsheet.

Enabling the Adapter-FEX on a Device

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > Adapter-FEX**. Devices that support this feature appear in the Summary pane.

**Note**

- You must assign the appropriate license to the devices that you want to manage through Cisco DCNM.
- You must enable the virtualization feature-set on the device before you enable Adapter-FEX on it.

-
- Step 2** Choose the desired device, right-click the desired switch and select **Enable Adapter-FEX** or press **Ctrl-Shift-E**.

VM-FEX brings up the associated features. Adapter-FEX enables the creation of fixed vEthernet interfaces dynamically, FEX, and vPC.

- Step 3** (Optional) Choose the device, right-click and select **Enable Auto Create** or press **Ctrl-Shift-N**.

- Step 4** (Optional) Choose the device, right-click and select **Collapse All** or press **Ctrl-Shift-C**.
-

Disabling Adapter-FEX on a Device

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > Adapter-FEX**. Devices that support this feature appear in the Summary pane.

**Note**

You must remove all existing vEthernets interfaces, VNTags, and the VETH type port profiles before you disable Adapter-FEX.

-
- Step 2** Choose the desired device, right-click and select **Disable Adapter-FEX** or press **Ctrl-Shift-E**.

When you disable VM-FEX on a device, the associated features of VM-FEX, such as Adapter-FEX, FEXes, and vPCs are not disabled.

- Step 3** (Optional) Choose the device, right-click and select **Disable > Auto Create** or press **Ctrl-Shift-X**.

- Step 4** (Optional) Choose the device, right-click and select **Collapse All** to deselect the device.
-

Displaying Global Settings for VM-FEX

You can view the global settings of enabling or disabling the support for the automatic and dynamic creation of fixed vEthernet interfaces on a Cisco NX-OS device.


DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > Adapter-FEX**.
Devices that support this feature appear in the Summary pane.
- Step 2** Choose the device.
The default virtual Ethernet policy settings appears as follows:
“Default policy setting to enable and disable auto creation of fixed vEthernet interfaces”
- Step 3** (Optional) Click the **arrow** icon to export the visible summary table contents to a Microsoft Excel spreadsheet.
-

Displaying the VM-FEX Interface Summary Information

You can view the existing static and dynamically generated floating and nonparticipating vEthernet interfaces and their related details of a device in the summary table. The summary table displays the name, description, channel, port profile mode, admin status, operational status, status description, and server.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > Adapter FEX**.
-  **Note** All the fields that appear in this page are read-only.
-
- Devices that support this feature appear in the Summary pane.
- Step 2** (Optional) Click the **arrow** icon to export the visible summary table contents to a Microsoft Excel spreadsheet.
- Step 3** (Optional) Click the **+** icon to expand and display the virtual interfaces.
- Step 4** (Optional) Choose the desired virtual interface and right-click and select **Monitor**.
- Step 5** (Optional) Choose the device, right-click and select **Collapse All** to deselect the device.

Configuring the Traffic Statistics Charts

You can configure a traffic statistics chart for a vEthernet interface by using Cisco DCNM.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Interfaces > Logical > Virtual Ethernet > Adapter-FEX**.
- Step 2** (Optional) Click the **+** icon to expand and display the virtual interfaces.
- Step 3** Choose the desired device and click the **Statistics** tab.

- Step 4** From the toolbar, choose **New Chart> Traffic Statistics Charts**.
The vEthernet Traffic Statistics window appears.
- Step 5** From the drop-down list, choose the frequency.
- Step 6** Enter the end date and time by clicking on the down arrow.
- Step 7** Choose parameters by clicking on the corresponding check-boxes.
- Step 8** Click the **Start** icon to begin monitoring the traffic.
- Step 9** Click **Show Overview Chart** to display the chart.
The chart window appears.
- Step 10** (Optional) Click the **Stop** icon to stop monitoring traffic.

Field Descriptions for Adapter-FEX

This section includes the following field descriptions for the Adapter-FEX feature:

- [Adapter-FEX: Device Status, page 8-377](#)
- [Adapter-FEX: Interface: Events, page 8-378](#)
- [Adapter-FEX: Port Details: Basic Settings, page 8-378](#)
- [Adapter-FEX: Port Details: Port Mode Settings, page 8-378](#)
- [Adapter-FEX: Port Details: Advanced Settings, page 8-379](#)
- [Adapter-FEX: Interface: Port Status, page 8-379](#)

Adapter-FEX: Device Status

Table 8-13 *Adapter-FEX: Device Status*

Field	Description
Port Mode	Displays the port mode.
Total	Displays the total number of ports.
Active	Displays the active ports.
Admin Down	Displays the admin down ports.
Operationally Down	Displays the operationally down ports.

Adapter-FEX: Interface: Events

Table 8-14 *Adapter-FEX: Interface: Events*

Field	Description
Source	Displays the source.
Feature	Displays the feature.
Local Time	Displays the local time.
Switch Time	Displays the time on the switch.
Severity	Displays the severity.
Message	Displays the message.
Annotation	Displays the annotation.

Adapter-FEX: Port Details: Basic Settings

Table 8-15 *Adapter-FEX: Port Details: Basic Settings*

Field	Description
Name	Specifies the name.
Description	Specifies the description.
Bound Interface	Specifies the bound interface
Port Profile	Specifies the port profile.
VIF-Index	Specifies the VIF-Index.
VnTag	Specifies the VNTag.
Admin Status	Displays the admin status.
Channel	Specifies the channel.
Active/Standby Mode	Specifies active or standby mode.

Adapter-FEX: Port Details: Port Mode Settings

Table 8-16 *Adapter-FEX: Port Details: Port Mode Settings*

Field	Description
Mode	Specifies mode.
Access	Specifies access VLAN number.

Adapter-FEX: Port Details: Advanced Settings

Table 8-17 Adapter-FEX: Port Details: Advanced Settings

Field	Description
IPv4 ACL	Specifies the IPv4 access control list.
Incoming Traffic	Specifies the incoming traffic.
Outgoing Traffic	Specifies the outgoing traffic.
IPv6 ACL	Specifies the IPv6 access control list.
MAC ACL	Specifies the MAC access control list.
SPAN	Specifies SPAN.
Session ID	Displays the session ID.
Type	Displays local or global.
Direction	Displays egress or ingress.

Adapter-FEX: Interface: Port Status

Table 8-18 Adapter-FEX: Interface: Port Status

Field	Description
Operational Status	Displays the operational status.
Status Description	Displays the status description.
Status	Displays the status.

Additional References

For additional information related to implementing access and trunk port modes, see the following sections:

- [Related Documents, page 8-380](#)
- [Standards, page 8-380](#)

Related Documents

Related Topic	Document Title
Port Profiles	<i>Cisco Nexus 1000V Port Profile Configuration Guide, Release 4.0(4)SV1(2)</i>
VLANs and private VLANs	<i>Cisco Nexus 1000V Layer 2 Switching Configuration Guide, Release 4.0(4)SV1(2)</i>
System management	<i>Cisco Nexus 1000V System Management Configuration Guide, Release 4.0(4)SV1(2)</i>
Release Notes	<i>Cisco Nexus 1000V Release Notes, Release 4.0(4)SV1(2)</i>

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—

Feature History for vEthernet Interfaces

This section provides the feature history for vEthernet interface parameters.

Feature Name	Releases	Feature Information
vEthernet interface parameters	4.0	This feature was introduced.
Adapter-FEX vEthernet interfaces	6.1	This feature was introduced.
Nexus 1000V vEthernet interfaces	5.0	This feature was introduced.
VM-FEX vEthernet interfaces	6.1	This feature was introduced.