



Configuring Virtual Ethernet Interfaces

This chapter contains the following sections:

- [Information About vEthernet Interfaces, page 1](#)
- [Guidelines and Limitations, page 2](#)
- [Default Settings, page 2](#)
- [Configuring vEthernet Interfaces, page 2](#)
- [Verifying the vEthernet Interface Configuration, page 7](#)
- [Monitoring the vEthernet Interface Configuration, page 9](#)
- [Configuration Examples for vEthernet Interfaces, page 10](#)
- [Feature History for vEthernet Interfaces, page 10](#)

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:

- VM (interfaces connected to VM NICs)
- Service console
- vmkernel

vEthernet interfaces are created on the Cisco Nexus 1000V to represent virtual ports in use on the distributed virtual switch.

vEthernet interfaces are mapped to connected ports by MAC address as well as DVPort number. When a server administrator changes the port profile assignment on a vNIC or hypervisor port, the same vEthernet interface is reused.

When bringing up a vEthernet interface where a change in the port profile assignment is detected, the Virtual Supervisor Module (VSM) automatically purges any manual configuration present on the interface. You can use the following command to prevent purging of the manual configuration:

no svcs veth auto-config-purge

Guidelines and Limitations

vEthernet interface configuration has the following configuration guideline and limitation:
MTU cannot be configured on a vEthernet interface.

Default Settings

Table 1: Default Settings for vEthernet Interface

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
Automatic deletion of vEthernet interfaces	Enabled
Automatic purge of manual configuration on vEthernet interfaces	Enabled
Automatic creation of vEthernet interfaces	Enabled

Configuring vEthernet Interfaces

Configuring Global vEthernet Properties

You can enable or disable the following automatic controls for vEthernet interfaces:

- Deleting unused vEthernet interfaces
- Purging of manual vEthernet configurations
- Creating vEthernet interfaces

Before You Begin

Log in to the CLI in EXEC mode.

Procedure

	Command or Action	Purpose
Step 1	switch# configure terminal	Enters global configuration mode.
Step 2	switch(config)# [no] svs veth auto-delete	(Optional) Enables the VSM to automatically delete DVPorts no longer used by a vNIC or hypervisor port. The default setting is enabled. The no form of this command prevents the VSM from deleting unused DVPorts.
Step 3	switch(config)# [no] svs veth auto-config-purge	(Optional) Enables the VSM to remove all manual configuration on a vEthernet interface when the system administrator changes a port profile on the interface. The default setting is enabled. The no form of this command prevents the manual configuration from being deleted in this situation. Note Port profiles with ephemeral bindings are purged regardless of this setting.
Step 4	switch(config)# [no] svs veth auto-setup	(Optional) Enables the VSM to automatically create a vEthernet interface when a new port is activated on a host. The no form of this command disables the automatic creation of vEthernet interfaces in this situation. Note You can use no form of the command to temporary block automatic creation of vEthernet interfaces.
Step 5	switch(config)# show running-config all grep "svs-veth"	(Optional) Displays the default global vEthernet settings that are in effect on the VSM for verification. If a setting is disabled, it does not display in the show command output.
Step 6	switch(config)# copy running-config startup-config	(Optional) Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration.

This example shows how to configure global vEthernet properties:

```
switch# configure terminal
switch(config)# svs veth auto-delete
switch(config)# svs veth auto-config-purge
switch(config)# svs veth auto-setup
switch(config)# show running-config all | grep "svs veth"
svs veth auto-setup
svs veth auto-delete
svs veth auto-config-purge
switch(config-if)#
```

Configuring a vEthernet Access Interface

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

Before You Begin

- Log in to the CLI in EXEC mode.
- Know that 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 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*

Procedure

	Command or Action	Purpose
Step 1	switch# configure terminal	Enters global configuration mode.
Step 2	switch(config)# interface vethernet <i>interface-number</i>	(Optional) Enters the interface configuration mode for the specified vEthernet interface (from 1 to 1048575).
Step 3	switch(config-if)# description <i>string</i>	(Optional) Adds a description of up to 80 alphanumeric characters to the interface in the running configuration. Note If you do not add a description, the default description is added. Note You do not need to use quotations around descriptions that include spaces.
Step 4	switch(config-if)# switchport access vlan <i>vlanid</i>	Configures the vEthernet interface as an access interface and specifies the VLAN ID (1 to 4094) in the running configuration.
Step 5	switch(config-if)# switchport mode access	Configures the vEthernet interface for use as an access interface in the running configuration.
Step 6	switch(config-if)# show interface vethernet <i>interface-number</i>	(Optional) Displays the specified interface for verification.
Step 7	switch(config-if)# copy running-config startup-config	(Optional) Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration.

This example shows how to configure a vEthernet access interface:

```
switch# configure terminal
switch(config)# interface vethernet 100
switch(config-if)# description accessvlan
switch(config-if)# switchport access vlan 5
switch(config-if)# switchport mode access
switch(config-if)# show interface vethernet1
switch(config-if)#
```

Configuring a Private VLAN on a vEthernet Interface

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

Before You Begin

Log in to the CLI in EXEC mode.

Procedure

	Command or Action	Purpose
Step 1	switch# configure terminal	Enters global configuration mode.
Step 2	switch(config)# interface vethernet <i>interface-number</i>	Enters the interface configuration mode for the specified vEthernet interface (from 1 to 1048575).
Step 3	switch(config-if)# description <i>string</i>	(Optional) Adds a description of up to 80 alphanumeric characters to the interface in the running configuration. Note If you do not add a description, the default description is added. Note You do not need to use quotations around descriptions that include spaces.
Step 4	switch(config-if)# switchport access vlan <i>vlanid</i>	Configures the vEthernet interface as an access interface and specifies the VLAN ID (1 to 4094) in the running configuration.
Step 5	switch(config-if)# switchport mode private-vlan host	Configures the vEthernet interface for a PVLAN host in the running configuration.
Step 6	switch(config-if)# switchport private-vlan host-association <i>primary-vlanid</i>	Configures the vEthernet interface for a host association with a specific primary VLAN ID (from 1 to 4094) in the running configuration.
Step 7	switch(config-if)# show interface	(Optional) Displays the interface status and information.
Step 8	switch(config-if)# copy running-config startup-config	(Optional) Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration.

This example shows how to configure a vEthernet interface to use in a PVLAN:

```
switch# configure terminal
switch(config)# interface vethernet 1
switch(config-if)# switchport access vlan 5
switch(config-if)# switchport mode private-vlan host
switch(config-if)# switchport private-vlan host-association 5
switch(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
switch(config-if)#
```

Enabling or Disabling a vEthernet Interface

You can enable or disable a vEthernet interface.

Before You Begin

Log in to the CLI in EXEC mode.

Procedure

	Command or Action	Purpose
Step 1	switch# configure terminal	Enters global configuration mode.
Step 2	switch(config)# interface vethernet <i>interface-number</i>	Enters the interface configuration mode for the specified vEthernet interface (from 1 to 1048575).
Step 3	switch(config-if)# [no] shutdown	Enables or disables the vEthernet interface in the running configuration: <ul style="list-style-type: none"> • shutdown: Disables the vEthernet interface. • no shutdown: Enables the vEthernet interface.
Step 4	switch(config-if)# show interface	(Optional) Displays the interface status and information.

	Command or Action	Purpose
Step 5	switch(config-if)# copy running-config startup-config	(Optional) Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration.

This example shows how to enable a vEthernet interface:

```
switch# configure terminal
switch(config)# interface vethernet 100
switch(config-if)# no shutdown
switch(config-if)# show interface veth100 status
-----
Port                Name                Status  Vlan    Duplex  Speed  Type
-----
Veth100             --                  up      1       1       auto   auto   --
switch(config-if)#
```

Verifying the vEthernet Interface Configuration

Use one of the following commands to verify the configuration:

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 the abbreviated interface configuration.
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 command shows the MAC address of the connected device.
show interface [vethernet <i>interface-number</i>] status [down err-disabled inactive module num up]	Displays the 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.

Command	Purpose
show interface virtual port-mapping [vm [name] vmk vswif description] [module_num]	Displays mappings between the virtual Ethernet and VMware DVPort.

Example: show interface vethernet

This example shows how to display vEthernet 1:

```
switch# 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
switch#
```

Example: show interface virtual

This example shows how to display information for all vEthernet interfaces:

```
switch# 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.
switch#
```

Example: show interface virtual description

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

```
switch# 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
switch#
```

Example: show interface virtual port-mapping

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

```
switch# show interface virtual port-mapping
-----
Port    Hypervisor Port    Binding Type    Status    Reason
```



```
-----
Veth1   DVPort5747      static      up          none
Veth2   DVPort3361      static      up          none
switch#
```

Example: show running-config interface veth1

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

```
switch# show running-config interface veth1
version 4.2(1)SV1(4)

interface Vethernet1
  inherit port-profile vln48
  description gentool, Network Adapter 1
  vmware dvport 2968 dvswitch uuid "d4 02 20 50 16 4b 36 97-46 09 dc d8 5b c6 1e c1"
  vmware vm mac 0050.56A0.0000

switch#
```

Monitoring the vEthernet Interface Configuration

Use one of the following commands to monitor the vEthernet interface configuration:

Command	Purpose
show interface [vethernet interface-number] counters	Displays the interface incoming and outgoing counters.
show interface [vethernet interface-number] counters detailed [all]	Displays detailed information for all counters. Note If all is not specified, only nonzero counters are shown.
show interface [vethernet interface-number] counters errors	Displays the interface error counters.

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

```
switch# show interface counters
-----
Port                               InOctets                               InUcastPkts
-----
mgmt0                               224396010                               562676
Eth8/2                               1106222375                              703688
Veth1                                2700                                      0
control0                             155152164                              501981

-----
Port                               InMcastPkts                             InBcastPkts
-----
mgmt0                               148552                                   656058
Eth8/2                               15051                                    2093981
Veth1                                0                                         45
control0                             999                                       119539

-----
Port                               OutOctets                                OutUcastPkts
-----
mgmt0                               14803330                                56509
Eth8/2                               164990676                                514040
Veth1                                820595312                                17385
control0                             251243                                   0
```

Port	OutMcastPkts	OutBcastPkts
mgmt0	1001	1001
Eth8/2	11451	70
Veth1	108	1383772
control0	1001	0

Configuration Examples for vEthernet Interfaces

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

```
switch# configure terminal
switch(config)# interface vethernet 100
switch(config-if)# switchport
switch(config-if)# switchport mode access
switch(config-if)# switchport access vlan 5
switch(config-if)#
```

This 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:

```
switch# configure terminal
switch(config)# interface vethernet 1
switch(config-if)# switchport
switch(config-if)# switchport mode trunk
switch(config-if)# switchport trunk native vlan 10
switch(config-if)# switchport trunk allowed vlan 5, 10
switch(config-if)#
```

Feature History for vEthernet Interfaces

Feature Name	Releases	Feature Information
Global vEthernet interface controls	4.2(1)SV1(4)	You can enable or disable the following automatic vEthernet interface controls: <ul style="list-style-type: none"> Deleting unused vEthernet interfaces Purging of manual vEthernet configurations Creating vEthernet interfaces
vEthernet interface parameters	4.0(4)SV1(1)	This feature was introduced