



Port Profiles

This chapter describes how to identify and resolve problems related to port profiles. This chapter contains the following sections:

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Information About Port Profiles

Port profiles are used to configure interfaces. A port profile can be assigned to multiple interfaces to give them the same configuration. Changes to the port profile are automatically propagated to the configuration of any interface assigned to it.

In VMware vCenter Server, a port profile is represented as a port group. The vEthernet or Ethernet interfaces are assigned in vCenter Server to a port profile for the following reasons:

- Defining a port configuration by policy.
- Applying a single policy across a large number of ports.
- Supporting both vEthernet and Ethernet ports.

vEthernet port profiles can be assigned by the server administrator to physical ports (a VMNIC or a PNIC). Port profiles not configured as vEthernet can be assigned to a VM virtual port.



Note While a manual interface configuration overrides the configuration of the port profile, we do not recommend that you do so. Manual interface configuration is only used for tasks such as to quickly test a change or allow a port to be disabled without having to change the inherited port profile.

For more information about assigning port profiles to physical or virtual ports, see your VMware documentation.

To verify that the profiles are assigned as expected to physical or virtual ports, use the following **show** commands:

- **show port-profile virtual usage**
- **show running-config interface** *interface-id*

You can also use this command to verify port profile inheritance.



Note Inherited port profiles cannot be changed or removed from an interface from the Cisco Nexus 1000V CLI. This action can only be done from vCenter Server.

Inherited port profiles are automatically configured by Cisco Nexus 1000V when the ports are attached on the hosts. This action is done by matching up the VMware port group assigned by the system administrator with the port profile that created it.

For detailed information about port profiles, see the *Cisco Nexus 1000V for VMware vSphere Port Profile Configuration Guide*.

Problems with Port Profiles

The following are symptoms, possible causes, and solutions for problems with port profiles.

Symptom	Possible Causes	Solution
<p>You do not see the port group on vCenter Server or the following message is displayed:</p> <pre>Warning: Operation succeeded locally but update failed on vCenter server. Please check if you are connected to vCenter Server.</pre>	<p>The connection to vCenter Server is down.</p>	<ol style="list-style-type: none"> 1. Verify that the connection to vCenter Server is Enabled and Connected by using the show svcs connections command. 2. Reconnect to vCenter Server. For information about the procedure for connecting to vCenter Server, see the <i>Cisco Nexus 1000V for VMware vSphere System Management Configuration Guide</i>.
	<p>The domain configuration was not successfully pushed to vCenter Server.</p>	<ol style="list-style-type: none"> 1. Verify that the domain configuration was successfully pushed to vCenter Server by using the show svcs domain command. 2. Fix any problems with the domain configuration. For information about configuring the domain, see the <i>Cisco Nexus 1000V for VMware vSphere System Management Configuration Guide</i>.
	<p>The port profile is incorrectly configured.</p>	<ol style="list-style-type: none"> 1. Verify that the vmware port-group is configured for the port profile and that the port profile is enabled by using the show port profile name name 2. Fix the port profile using the procedures in the <i>Cisco Nexus 1000V for VMware vSphere Port Profile Configuration Guide</i>.

Symptom	Possible Causes	Solution
<p>A port configuration is not applied to an interface.</p>	<p>Management connectivity between vCenter Server and the VSM has prevented the port profile assignment from being sent or received.</p>	<ol style="list-style-type: none"> 1. Display the port profile usage by interface by using the show port-profile virtual usage command. 2. Verify that the interface level configuration did not overwrite the port profile configuration by using the following commands: <ul style="list-style-type: none"> • show run • show port-profile expand-interface 3. If the show command output is incorrect, then on vCenter Server, reassign the port group to the interface.
<p>An Ethernet interface or vEthernet interface is administratively down.</p> <p>A system message similar to the following is logged:</p> <pre>%VMS-3-DVPG_NICS_MOVED: '1' nics have been moved from port-group 'Access483' to 'Unused_Or_Quarantine_Veth'.</pre>	<p>The interface is inheriting a quarantined port profile.</p> <p>A configuration was not saved prior to rebooting the VSM, the configuration was lost, and the interfaces were moved to one of the following port profiles:</p> <ul style="list-style-type: none"> • Unused_Or_Quarantine_Uplink for ethernet types • Unused_Or_Quarantine_Veth for Vethernet types 	<ol style="list-style-type: none"> 1. Verify the port profile-to-interface mapping by using the show port-profile virtual usage command. 2. Reassign the VMNIC or PNIC to a non-quarantined port group to enable the interface to be up and forward the traffic. This requires changing the port group in vCenter Server.

Symptom	Possible Causes	Solution
<p>After applying a port profile, an online interface is quarantined.</p> <p>A system message similar to the following is logged:</p> <pre>%PORT-PROFILE-2-INTERFACE_QUARANTINED: Interface Ethernet3/3 has been quarantined due to Cache Overrun</pre>	<p>The assigned port profile is incorrectly configured. The incorrect command fails when the port profile is applied to an interface.</p> <p>Although a specific command fails, the port profile-to-interface mapping is created.</p>	<ol style="list-style-type: none"> 1. Identify the command that failed by using the show accounting log grep FAILURE command. 2. Verify that the interface is quarantined by using the show port-profile sync-status command. 3. Verify the port profile-to-interface mapping by using the show port-profile virtual usage command. 4. Fix the error in the port profile using the procedures in the <i>Cisco Nexus 1000V for VMware vSphere Port Profile Configuration Guide</i>. 5. Bring the interface out of quarantine by using the no shutdown command. 6. Return shutdown control to the port profile by using the default shutdown command.
<p>After modifying a port profile, an assigned offline interface is quarantined.</p> <p>A system message similar to the following is logged:</p> <pre>%PORT-PROFILE-2-INTERFACE_QUARANTINED: Interface Ethernet4/3 has been quarantined due to Cache Overrun</pre>	<p>The interface has been removed from the DVS.</p>	<p>To bring the interface back online, see Recovering a Quarantined Offline Interface, on page 6.</p>

Symptom	Possible Causes	Solution
<p>A module and all associated interfaces are offline.</p> <p>A system message similar to the following is logged:</p> <pre>2011 Mar 2 22:28:50 switch %VEM_MGR-2-VEM_MGR_REMOVE _NO_HB: Removing VEM 3 (heartbeats lost) 2011 Mar 2 22:29:00 switch %VEM_MGR-2-MOD_OFFLINE : Module 3 is offline</pre>	<p>The interface carrying system VLANs for the module has gone down for one of the following reasons:</p> <ul style="list-style-type: none"> • System interfaces were removed from the DVS on vCenter Server. • The module was powered down. • There is a general loss of connectivity to the module. 	<p>Follow VEM troubleshooting guidelines to bring the module back online.</p> <p>To bring the interface back online, see Recovering a Quarantined Offline Interface, on page 6.</p>

Recovering a Quarantined Offline Interface

You can recover and bring online an interface that is offline and has been quarantined.

Before you begin

- Log in to the CLI in EXEC mode.

Procedure

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- Step 1** Verify that the interface has been quarantined. The interface appears in the **show** command output.
- show port-profile sync-status**
- Step 2** On vCenter Server, add or associate the PNIC to a port profile (either the original port profile or a different port profile).
- The interface comes back online.
- Step 3** Verify that the interface has come back online.
- show interface brief**
- Step 4** Verify the port profile-to-interface mapping.
- show port-profile virtual usage**
- Step 5** Verify the interface has come out of quarantine automatically. The interface should no longer appear in the **show** command output.
- show port-profile sync-status**
- Step 6** Return shutdown control to the port profile.
- default shutdown**
-

Port Profile Logs

To enable and collect detailed logs for port profiles, use the following commands:

- `debug port-profile trace`
- `debug port-profile error`
- `debug port-profile all`
- `debug msp all`

After enabling the debug log, the results of any subsequent port profile configuration are captured in the log file.

Port Profile Troubleshooting Commands

Command	Purpose	Example
<code>show port-profile</code>	Displays the state of a module.	show port-profile, on page 8
<code>show port-profile name</code> <i>name</i>	Displays the configuration for a named port profile.	show port-profile, on page 8
<code>show port-profile brief</code>	Displays a tabular view of all configured port profiles.	show port-profile, on page 8
<code>show port-profile expand-interface</code>	Displays all configured port profiles expanded to include the interfaces assigned to them.	show port-profile expand-interface, on page 9
<code>show port-profile expand-interface name</code> <i>name</i>	Displays a named port profile expanded to include the interfaces assigned to it.	show port-profile expand-interface, on page 9
<code>show running-config port-profile</code> <i>interface_number</i>	Displays the port profile configuration.	show running-config port-profile, on page 10
<code>show port-profile-role</code>	Displays the port profile role configuration, including role names, descriptions, assigned users, and assigned groups.	show port-profile-role, on page 10
<code>show port-profile-role users</code>	Displays the available users and groups.	show port-profile-role, on page 10
<code>show port-profile sync-status</code>	Displays the interfaces that are not synchronized with the port profile.	show port-profile sync-status, on page 10
<code>show port-profile virtual usage</code>	Displays the port profile usage by interface.	show port-profile virtual usage, on page 11

Command	Purpose	Example
show msp internal info	Displays the port profile mappings on vCenter Server and configured roles.	show msp internal info, on page 11
show system internal port-profile profile-fsm	Displays the port profile activity on Cisco Nexus 1000V, including transitions such as inherits and configurations. If the following message is displayed, then all inherits are processed: Curr state: [PPM_PROFILE_ST_SIDLE]	show system internal port-profile, on page 13
show system internal port-profile event-history msgs	Displays the messages logged about port profile events within Cisco Nexus 1000V.	show system internal port-profile, on page 13

Command Examples

show port-profile

```
switch# show port-profile
port-profile 1
type: Vethernet
description:
status: enabled
max-ports: 1
min-ports: 1
inherit:
config attributes:
switchport mode access
ip port access-group acl1 in
capability vxlan
no shutdown
evaluated config attributes:
switchport mode access
ip port access-group acl1 in
capability vxlan
no shutdown
assigned interfaces:
port-group: 1
system vlans: none
capability l3control: no
capability iscsi-multipath: no
capability vxlan: yes
capability l3-vservice: no
port-profile role: none
port-binding: static
switch#

switch# show port-profile name vEthProfile3
port-profile 1
type: Vethernet
description:
status: enabled
max-ports: 1
min-ports: 1
inherit:
```



```

config attributes:
switchport mode access
ip port access-group acl1 in
capability vxlan
no shutdown
evaluated config attributes:
switchport mode access
ip port access-group acl1 in
capability vxlan
no shutdown
assigned interfaces:
port-group: 1
system vlans: none
capability l3control: no
capability iscsi-multipath: no
capability vxlan: yes
capability l3-vservice: no
port-profile role: none
port-binding: static
switch#

```

```

switch# show port-profile brief
VM_PP_NIC8_VLAN_1338 Vethernet 1 3 3 374 0
VM_PP_NIC9_VLAN_1339 Vethernet 1 3 3 374 0
-----
Profile Assigned Total Sys Parent Child UsedBy
Type Intfs Prfls Prfls Prfls Prfls Prfls
-----
Vethernet 3549 1524 7 1524 0 18
Ethernet 10 11 4 11 0 8
DAO-VSM#
Vethernet 8
Ethernet 10
switch#

```

show port-profile expand-interface

```

switch# show port-profile expand-interface
port-profile 50
Vethernet6
switchport mode access
switchport access vlan 50
no shutdown
Vethernet27
switchport mode access
switchport access vlan 50
no shutdown
Vethernet30
switchport mode access
switchport access vlan 50
no shutdown
Vethernet31
switchport mode access
switchport access vlan 50
no shutdown
Vethernet32
switchport mode access
switchport access vlan 50
no shutdownport-profile AccessProf
id: 1
capability: 0x0
state: 0x0
switch#

```

show running-config port-profile

```
switch# show port-profile expand-interface name UplinkProfile1
port-profile UplinkProfile1
Ethernet2/2
    switchport mode trunk
    switchport trunk allowed vlan 110-119
    no shutdown
switch#
```

show running-config port-profile

```
switch# show running-config port-profile
port-profile type ethernet UplinkProfile1
description "Profile for critical system ports"
vmware port-group
switchport mode access
switchport access vlan 113
switchport trunk native vlan 113
channel-group auto mode on
no shutdown
port-profile type vethernet vEthProfile2
vmware port-group
vmware max-ports 5
switchport mode trunk
switchport trunk native vlan 112
channel-group auto mode on sub-group cdp
no shutdown
switch#
```

show port-profile-role

```
switch# show port-profile-role name adminUser
Name: adminUser
Description: adminOnly
Users:
hdbaar (user)
Assigned port-profiles:
allaccess2
switch#
```

```
switch# show port-profile-role users
Groups:
Administrators
TestGroupB
Users:
hdbaar
fgreen
suchen
mariofr
switch#
```

show port-profile sync-status

```
switch# show port-profile sync-status interface ethernet 3/2
Ethernet3/2
port-profile: uplink
interface status: quarantine
sync status: out of sync
cached commands:
errors:
command cache overrun
recovery steps:
bring interface online
switch#
```

show port-profile virtual usage

```
switch# show port-profile virtual usage
-----
Port Profile Port Adapter Owner
-----
nlkv-uplink0 Po1
Eth3/2 vmnic1 localhost.
Eth3/3 vmnic2 localhost.
vlan1767 Veth7 Net Adapter 1 all-tool-7
Veth8 Net Adapter 1 all-tool-8
aipcl1765 Veth4 Net Adapter 1 bl-h-s
inband/outband interface 1766 Veth6 Net Adapter 3 bl-h-s
mgmt1764 Veth5 Net Adapter 2 bl-h-s
vpc-mac-uplink Po7
Eth5/2 vmnic1 localhost.
Eth5/3 vmnic2 localhost.
ch-vpc-mac-uplink Po2
Po3
Eth4/2 vmnic1 VDANIKLNCOS
Eth4/3 vmnic2 VDANIKLNCOS
ch-aipcl1765 Veth1 Net Adapter 1 bl-h-p
ch-mgmt1764 Veth2 Net Adapter 2 bl-h-p
ch-inband/outband interface1766 Veth3 Net Adapter 3 bl-h-p
switch#
```

show msp internal info

```
switch# show msp internal info
port-profile Access484
id: 5
capability: 0x0
state: 0x1
type: 0x1
system vlan mode: -
system vlans:
port-binding: static
max ports: 256
vmware config information
pg name: Access484
dvs: (ignore)
port-profile role:
alias information:
pg id: Access484
dvs uuid:
type: 1
pg id: dvportgroup-3285
dvs uuid: 44 dc 3b 50 53 11 b7 ac-ef ed ef 46 ee df c2 d5
type: 2
pg id: dvportgroup-3292
dvs uuid: 44 dc 3b 50 53 11 b7 ac-ef ed ef 46 ee df c2 d5
type: 2
port-profile Unused_Or_Quarantine_Uplink
id: 1
capability: 0x1
state: 0x1
type: 0x1
system vlan mode: -
system vlans:
port-binding: static
max ports: 32
vmware config information
pg name: Unused_Or_Quarantine_Uplink
```

```

dvs: (ignore)
port-profile role:
alias information:
pg id: Unused_Or_Quarantine_Uplink
dvs uuid:
type: 1
pg id: dvportgroup-2444
dvs uuid: 44 dc 3b 50 53 11 b7 ac-ef ed ef 46 ee df c2 d5
type: 2
port-profile Unused_Or_Quarantine_Veth
id: 2
capability: 0x0
state: 0x1
type: 0x1
system vlan mode: -
system vlans:
port-binding: static
max ports: 32
vmware config information
pg name: Unused_Or_Quarantine_Veth
dvs: (ignore)
port-profile role:
alias information:
pg id: Unused_Or_Quarantine_Veth
dvs uuid:
type: 1
pg id: dvportgroup-2445
dvs uuid: 44 dc 3b 50 53 11 b7 ac-ef ed ef 46 ee df c2 d5
type: 2
port-profile eth-break-deinherit
id: 10
capability: 0x1
state: 0x1
type: 0x1
system vlan mode: -
system vlans:
port-binding: static
max ports: 32
vmware config information
pg name: eth-break-deinherit
dvs: (ignore)
port-profile role:
alias information:
pg id: eth-break-deinherit
dvs uuid:
type: 1
pg id: dvportgroup-3286
dvs uuid: 44 dc 3b 50 53 11 b7 ac-ef ed ef 46 ee df c2 d5
type: 2
pg id: dvportgroup-3293
dvs uuid: 44 dc 3b 50 53 11 b7 ac-ef ed ef 46 ee df c2 d5
type: 2
port-profile uplink
id: 3
capability: 0x3
state: 0x1
type: 0x1
system vlan mode: trunk
system vlans: 480-481
port-binding: static
max ports: 32
vmware config information
pg name: uplink
dvs: (ignore)

```

```

port-profile role:
alias information:
pg id: uplink
dvs uuid:
type: 1
pg id: dvportgroup-3283
dvs uuid: 44 dc 3b 50 53 11 b7 ac-ef ed ef 46 ee df c2 d5
type: 2
...

```

show system internal port-profile

```

switch# show system internal port-profile profile-fsm
>>>>FSM: <PROFILE_FSM:1> has 4 logged transitions<<<<<
1) FSM:<PROFILE_FSM:1> Transition at 856903 usecs after Tue Mar 8 19:11:47 2011
Previous state: [PPM_PROFILE_ST_SIDLE]
Triggered event: [PPM_PROFILE_EV_EIF_STATUS_CHANGE]
Next state: [PPM_PROFILE_ST_SIDLE]
2) FSM:<PROFILE_FSM:1> Transition at 858442 usecs after Tue Mar 8 19:11:47 2011
Previous state: [PPM_PROFILE_ST_SIDLE]
Triggered event: [PPM_PROFILE_EV_ELEARN]
Next state: [PPM_PROFILE_ST_SIF_CREATE]
3) FSM:<PROFILE_FSM:1> Transition at 842710 usecs after Tue Mar 8 19:12:04 2011
Previous state: [PPM_PROFILE_ST_SIF_CREATE]
Triggered event: [PPM_PROFILE_EV_EACKNOWLEDGE]
Next state: [FSM_ST_NO_CHANGE]
4) FSM:<PROFILE_FSM:1> Transition at 873872 usecs after Tue Mar 8 19:12:04 2011
Previous state: [PPM_PROFILE_ST_SIF_CREATE]
Triggered event: [PPM_PROFILE_EV_ESUCCESS]
Next state: [PPM_PROFILE_ST_SIDLE]
Curr state: [PPM_PROFILE_ST_SIDLE]
switch#

```

```

switch# show system internal port-profile event-history msgs
1) Event:E_MTS_RX, length:60, at 538337 usecs after Tue Mar 8 19:13:02 2011
[NOT] Opc:MTS_OPC_IM_IF_CREATED(62467), Id:0X0000B814, Ret:SUCCESS
Src:0x00000101/175, Dst:0x00000101/0, Flags:None
HA_SEQNO:0X00000000, RRtoken:0x00000000, Sync:UNKNOWN, Payloadsize:120
Payload:
0x0000: 00 00 00 02 00 00 00 02 00 00 00 0c 00 00 00 29
2) Event:E_MTS_RX, length:60, at 515030 usecs after Tue Mar 8 19:13:02 2011
[NOT] Opc:MTS_OPC_LC_ONLINE(1084), Id:0X0000B7E8, Ret:SUCCESS
Src:0x00000101/744, Dst:0x00000101/0, Flags:None
HA_SEQNO:0X00000000, RRtoken:0x00000000, Sync:UNKNOWN, Payloadsize:234
Payload:
0x0000: 02 00 00 03 00 00 00 00 00 00 03 02 03 02 00 00
3) Event:E_MTS_RX, length:60, at 624319 usecs after Tue Mar 8 19:12:05 2011
[NOT] Opc:MTS_OPC_PPM_INTERFACE_UPDATE(152601), Id:0X00003908, Ret:SUCCESS
Src:0x00000101/489, Dst:0x00000101/0, Flags:None
HA_SEQNO:0X00000000, RRtoken:0x00000000, Sync:UNKNOWN, Payloadsize:107
Payload:
0x0000: 00 00 00 02 00 00 00 02 00 00 00 0c 00 00 00 26
4) Event:E_MTS_RX, length:60, at 624180 usecs after Tue Mar 8 19:12:05 2011
[NOT] Opc:MTS_OPC_PPM_INTERFACE_UPDATE(152601), Id:0X00003905, Ret:SUCCESS
Src:0x00000101/489, Dst:0x00000101/0, Flags:None
HA_SEQNO:0X00000000, RRtoken:0x00000000, Sync:UNKNOWN, Payloadsize:107
Payload:
0x0000: 00 00 00 02 00 00 00 02 00 00 00 0c 00 00 00 26
5) Event:E_MTS_RX, length:60, at 624041 usecs after Tue Mar 8 19:12:05 2011
[NOT] Opc:MTS_OPC_PPM_INTERFACE_UPDATE(152601), Id:0X00003903, Ret:SUCCESS
Src:0x00000101/489, Dst:0x00000101/0, Flags:None
HA_SEQNO:0X00000000, RRtoken:0x00000000, Sync:UNKNOWN, Payloadsize:107
Payload:

```

show system internal port-profile

```
0x0000: 00 00 00 02 00 00 00 02 00 00 00 0c 00 00 00 26  
...
```