

Port Profiles

This chapter describes how to identify and resolve problems with port profiles and includes the following sections:

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- Problems with Port Profiles, page 9-2
- Port Profile Logs, page 9-5
- Port Profile Troubleshooting Commands, page 9-6

Information About Port Profiles

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

In VMware vCenter Server, a port profile is represented as a port group. The 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.

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



While a manual interface configuration overrides that of the port profile, we do not recommend that you do so. Manual interface configuration is only used, for example, to quickly test a change or allow a port

to be disabled without having to change the inherited port profile.



For VSG protected ports, some configurations related to vservice will be visible under interface level (**show running-config interface** command), even after removing the vservice configuration from port-profile or changing to non-protected port-profile; but it does not affect new port-profile related functionality. However, when any interface is being moved from VSG protected profile to a non-protected port-profile, it is recommended to move the port to VM Network port-profile. After moving the port, delete the vethernet interface using **no interface vethernet** command and then move the port to a new 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

To verify port profile inheritance, use the following command:

• show running-config interface interface-id



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



Inherited port profiles are automatically configured by the Cisco Nexus 1000VE 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 Port Profile Configuration Guide.

Problems with Port Profiles

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

Symptom	Possible Causes	Sol	lution
You do not see the port group on vCenter Server or the following	The connection to vCenter server is down.	1.	Verify that the connection to vCenter Server is Enabled and Connected.
message is displayed:			show svs connections
Warning: Operation succeeded locally but update failed on vCenter server. Please check if you are connected to vCenter Server.		2.	Reconnect to vCenter server.
			For detailed instructions, see the Connecting to vCenter Server procedure in the Cisco Nexus 1000V System Management Configuration Guide.
	The domain configuration was not successfully pushed to vCenter	1.	Verify that the domain configuration was successfully pushed to vCenter Server.
	server.		show svs domain
		2.	Fix any problems with the domain configuration.
			For information about configuring the domain, see the Cisco Nexus 1000V System Management Configuration Guide.
	The port profile is configured incorrectly.	1.	Verify that the vmware port-group is configured for the port profile and that the port profile is enabled.
			show port profile name name
		2.	Fix the port profile using the procedures in the Cisco Nexus 1000V Port Profile Configuration Guide.
A port configuration is not applied to an interface.	Management connectivity between vCenter server and the VSM has prevented the port profile assignment from being sent or received.	1.	Display the port profile usage by interface.
			show port-profile virtual usage
		2.	Verify that the interface level configuration did not overwrite the port profile configuration.
			show run
			show port-profile expand-interface
		3.	If the show command output is incorrect, on vCenter server, reassign the port group to the interface.

Symptom	Possible Causes	Solution	
An Ethernet interface or vEthernet interface is administratively down. A system message similar to the following is logged: %VMS-3-DVPG_NICS_MOVED: '1' nics have been moved from port-group 'Access483' to 'Unused_Or_Quarantine_Veth'. After applying a port profile, an online interface is quarantined. A system message similar to the following is logged: %PORT-PROFILE-2-INTERFACE_QUARAN TINED: Interface Ethernet3/3 has	The interface is inheriting a quarantined port profile. 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: • Unused_Or_Quarantine_Uplink for ethernet types • Unused_Or_Quarantine_Veth for Vethernet types The assigned port profile is incorrectly configured. The incorrect command fails when the port profile is applied to an interface. Although a specific command fails,	 Verify the port profile-to-interface mapping. show port-profile virtual usage Reassign the VMNIC or PNIC to a non-quarantined port group to enable the interface to be up and forwarding traffic. This requires changing the port group on vCenter Server. 	
been quarantined due to Cache Overrun	the port profile-to-interface mapping is created.	 show port-profile virtual usage 4. Fix the error in the port profile using the procedures in the Cisco Nexus 1000V Port Profile Configuration Guide. 5. Bring the interface out of quarantine. no shutdown The interface comes back online. 6. Return shutdown control to the port profile. default shutdown 	
After modifying a port profile, an assigned offline interface is quarantined. A system message similar to the following is logged: *PORT-PROFILE-2-INTERFACE_QUARAN TINED: Interface Ethernet4/3 has been quarantined due to Cache Overrun	The interface has been removed from the DVS.	To bring the interface back online, see the "Recovering a Quarantined Offline Interface" section on page 9-5.	
A module and all associated interfaces are offline. A system message similar to the following is logged: 2011 Mar 2 22:28:50 switch %VSE_MGR-2-VSE_MGR_REMOVE_NO_HB: Removing VSE 3 (heartbeats lost) 2011 Mar 2 22:29:00 switch %VSE_MGR-2-MOD_OFFLINE: Module 3 is offline	 The VSE or the underlying host was powered down. There is a general loss of connectivity to the module. 	Follow VSE troubleshooting guidelines to bring the module back online To bring the interface back online, see the "Recovering a Quarantined Offline Interface" section on page 9-5.	

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.

DETAILED STEPS

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

You can use the commands in this section to troubleshoot problems related to port profiles.

Command	Purpose
show port-profile	Displays the port profile configuration.
	See Example 9-1 on page 9-7.
show port-profile name name	Displays the configuration for a named port profile.
	See Example 9-2 on page 9-8.
show port-profile brief	Displays a tabular view of all configured port profiles.
	See Example 9-3 on page 9-8.
show port-profile expand-interface	Displays all configured port profiles expanded to include the interfaces assigned to them.
	See Example 9-4 on page 9-9.
show port-profile expand-interface name name	Displays a named port profile expanded to include the interfaces assigned to it.
	See Example 9-5 on page 9-9.
show port-profile-role [name port-profile-role-name]	Displays the port profile role configuration, including role names, descriptions, assigned users, and assigned groups.
	See Example 9-7 on page 9-11.
show running-config port-profile	Displays the port profile configuration.
[profile-name]	See Example 9-6 on page 9-10.
show port-profile-role	Displays the port profile role configuration.
	See Example 9-7 on page 9-11.
show port-profile-role users	Displays the available users and groups.
	See Example 9-8 on page 9-11.
show port-profile virtual usage [name	Displays the port profile usage by interface.
profile-name]	See Example 9-9 on page 9-11.
show msp internal info	Displays the port profile mappings on vCenter server and configured roles.
	See Example 9-10 on page 9-11.

Command	Purpose	
show system internal port-profile profile-fsm	Displays the port profile activity on the Cisco Nexus 1000VE, including transitions such as inherits and configurations. If the following displays, then all inherits are processed:	
	Curr state: [PPM_PROFILE_ST_SIDLE] See Example 9-11 on page 9-15.	
show system internal port-profile event-history msgs	Displays the messages logged about port profile events within the Cisco Nexus 1000VE. See Example 9-12 on page 9-16.	

For detailed information about **show** command output, see the Cisco Nexus 1000V Command Reference.

EXAMPLES

Example 9-1 show port-profile Command

```
switch# show port-profile
port-profile inside-trunk1
 type: Vethernet
 description: Port-group created for Nexus 1000V internal usage. Do not use.
status: enabled
max-ports: 32
min-ports: 1
 inherit:
 config attributes:
  switchport mode trunk
  switchport trunk allowed vlan 1-50
 no shutdown
 evaluated config attributes:
 switchport mode trunk
 switchport trunk allowed vlan 1-50
 no shutdown
 assigned interfaces:
port-group: inside-trunk1
 system vlans: none
 capability 13control: no
 capability iscsi-multipath: no
 capability vxlan: no
 capability 13-vservice: no
port-profile role: none
port-binding: static
port-profile inside-trunk2
 type: Vethernet
 description: Port-group created for Nexus 1000V internal usage. Do not use.
 status: enabled
max-ports: 32
min-ports: 1
inherit:
 config attributes:
 switchport mode trunk
 switchport trunk allowed vlan 2047-2096
 no shutdown
 evaluated config attributes:
  switchport mode trunk
  switchport trunk allowed vlan 2047-2096
```

```
no shutdown assigned interfaces: port-group: inside-trunk2 system vlans: none capability 13control: no capability iscsi-multipath: no capability vxlan: no capability 13-vservice: no port-profile role: none port-binding: static
```

Example 9-2 show port-profile name Command

```
switch# show port-profile name vlan222
port-profile vlan222
type: Vethernet
description:
status: enabled
max-ports: 32
min-ports: 1
inherit:
config attributes:
switchport mode access
switchport access vlan 222
no shutdown
evaluated config attributes:
switchport mode access
switchport access vlan 222
no shutdown
assigned interfaces:
Vethernet2
Vethernet3
port-group: vlan222
system vlans: none
capability 13control: no
capability iscsi-multipath: no
capability vxlan: no
capability 13-vservice: no
port-profile role: none
port-binding: static
switch#
```

Example 9-3 show port-profile brief Command

Vethernet 4 6 0 6 0 2
Ethernet 2 2 0 2 0 1
switch#

Example 9-4 show port-profile expand-interface Command

```
switch# show port-profile expand-interface
\verb|port-profile| inside-trunk1|
port-profile inside-trunk2
port-profile 13ctrl
port-profile outside-trunk
port-profile Unused_Or_Quarantine_Veth
port-profile uplink-pp
 Ethernet3/1
  switchport mode trunk
 switchport trunk allowed vlan 181,220-229
 no shutdown
 Ethernet4/1
  switchport mode trunk
  switchport trunk allowed vlan 181,220-229
 no shutdown
port-profile vlan222
 Vethernet2
 switchport mode access
 switchport access vlan 222
 no shutdown
 Vethernet3
  switchport mode access
  switchport access vlan 222
 no shutdown
port-profile vlan223
 Vethernet1
  switchport mode access
 switchport access vlan 223
 no shutdown
 Vethernet4
  switchport mode access
  switchport access vlan 223
 no shutdown
```

Example 9-5 show port-profile expand-interface name Command

```
switch# show port-profile expand-interface name uplink-pp
port-profile uplink-pp
Ethernet3/1
switchport mode trunk
switchport trunk allowed vlan 181,220-229
no shutdown
Ethernet4/1
switchport mode trunk
switchport trunk allowed vlan 181,220-229
no shutdown
switchport trunk allowed vlan 181,220-229
no shutdown
switch#
```

Example 9-6 show running-config port-profile Command

```
switch# show running-config port-profile
version 5.2(1)SV5(1.1)
port-profile default max-ports 32
port-profile type vethernet Unused_Or_Quarantine_Veth
  shutdown
  port-binding static auto expand
  description Port-group created for Nexus 1000V internal usage. Do not use.
  state enabled
  vmware port-group
port-profile type ethernet outside-trunk
  switchport mode trunk
  switchport trunk allowed vlan 1-3967,4048-4093
 description Port-group created for Nexus 1000V internal usage. Do not use.
 state enabled
  vmware port-group
port-profile type vethernet inside-trunk1
  switchport mode trunk
  switchport trunk allowed vlan 1-50
 no shutdown
 description Port-group created for Nexus 1000V internal usage. Do not use.
 state enabled
 vmware port-group
port-profile type vethernet inside-trunk2
  switchport mode trunk
  switchport trunk allowed vlan 2047-2096
  no shutdown
  description Port-group created for Nexus 1000V internal usage. Do not use.
 state enabled
 vmware port-group
port-profile type vethernet vlan222
 switchport mode access
  switchport access vlan 222
 no shutdown
 state enabled
  vmware port-group
port-profile type ethernet uplink-pp
  switchport mode trunk
  switchport trunk allowed vlan 181,220-229
 no shutdown
 state enabled
 vmware port-group
port-profile type vethernet 13ctrl
  switchport mode access
  switchport access vlan 181
  no shutdown
 state enabled
 vmware port-group
port-profile type vethernet vlan223
  switchport mode access
  switchport access vlan 223
 no shutdown
 state enabled
 vmware port-group
interface Vethernet1
  inherit port-profile vlan223
interface Vethernet2
  inherit port-profile vlan222
interface Vethernet3
```

```
inherit port-profile vlan222
interface Vethernet4
  inherit port-profile vlan223
interface Ethernet3/1
  inherit port-profile uplink-pp
interface Ethernet4/1
  inherit port-profile uplink-pp
```

Example 9-7 show port-profile-role Command

```
switch# show port-profile-role name adminUser
```

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

Example 9-8 show port-profile-role users Command

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

Example 9-9 show port-profile virtual usage Command

```
vlan222 Veth2 Net Adapter 2 test-vm1
Veth3 Net Adapter 2 test-vm3
uplink-pp Eth3/1 eth1 172.23.233.17
Eth4/1 eth1 172.23.181.156
vlan223 Veth1 Net Adapter 2 test-vm2
Veth4 Net Adapter 2 test-vm4
switch#
```

Example 9-10 show msp internal info Command

```
switch# show msp internal info
port-profile inside-trunk1
  id: 3
  capability: 0x0
  state: 0x1
  type: 0x1
  system vlan mode: -
  system vlans:
```

```
port-binding: static
  bind_opts: 0
 max ports: 32
 min ports: 1
 marked for del: 0
  active used ports count: 3
  intf inherit count: 0
  Port-profile alias information
   pg name: inside-trunk1
   dvs: (ignore)
   reserved ports: 32
  port-profile role:
  alias information:
   pg id: inside-trunk1
      dvs uuid:
      type: 1
   pg id: dvportgroup-1676
      dvs uuid: 50 12 e0 5d 1c 63 22 76-7b 77 69 b7 27 dc 0c 2e
   pg id: 37a5cc5a-81f2-44dc-94ee-76e9bf7e766e
      dvs uuid:
      type: 11
port-profile inside-trunk2
  id: 4
  capability: 0x0
  state: 0x1
  type: 0x1
  system vlan mode: -
  system vlans:
  port-binding: static
 bind_opts: 0
 max ports: 32
 min ports: 1
 marked for del: 0
  active used ports count: 3
  intf inherit count: 0
  Port-profile alias information
   pg name: inside-trunk2
   dvs: (ignore)
   reserved ports: 32
  port-profile role:
  alias information:
   pg id: inside-trunk2
      dvs uuid:
      type: 1
   pg id: dvportgroup-1677
      dvs uuid: 50 12 e0 5d 1c 63 22 76-7b 77 69 b7 27 dc 0c 2e
   pg id: 1d066e56-afcd-46e3-a9ad-b643842e166c
      dvs uuid:
      type: 11
port-profile 13ctrl
  id: 7
  capability: 0x0
  state: 0x1
  type: 0x1
  system vlan mode: -
  system vlans:
  port-binding: static
  bind_opts: 0
 max ports: 32
 min ports: 1
  marked for del: 0
  active used ports count: 0
```

```
intf inherit count: 0
  Port-profile alias information
    pg name: 13ctrl
    dvs: (ignore)
    reserved ports: 32
  port-profile role:
  alias information:
    pg id: 13ctrl
      dvs uuid:
      type: 1
    pg id: dvportgroup-1678
      dvs uuid: 50 12 e0 5d 1c 63 22 76-7b 77 69 b7 27 dc 0c 2e
      type: 2
    pg id: 301ffcc4-a296-411b-ad9c-b598bfdcf59c
      dvs uuid:
      type: 11
port-profile outside-trunk
  id: 2
  capability: 0x1
  state: 0x1
  type: 0x1
  system vlan mode: -
  system vlans:
  port-binding: static
  bind_opts: 0
  max ports: 512
  min ports: 1
  marked for del: 0
  active used ports count: 0
  intf inherit count: 0
  Port-profile alias information
    pg name: outside-trunk
    dvs: (ignore)
    reserved ports: 512
  port-profile role:
  alias information:
    pg id: outside-trunk
      dvs uuid:
      type: 1
    pg id: dvportgroup-1679
      dvs uuid: 50 12 e0 5d 1c 63 22 76-7b 77 69 b7 27 dc 0c 2e
      type: 2
    pg id: eb445392-b9f9-4c8b-9463-add3d1729d1d
      dvs uuid:
      type: 11
port-profile Unused_Or_Quarantine_Veth
  id: 1
  capability: 0x0
  state: 0x1
  type: 0x1
  system vlan mode: -
  system vlans:
  port-binding: static
  bind_opts: 2
  max ports: 32
  min ports: 1
  marked for del: 0
  active used ports count: 0
  intf inherit count: 0
  Port-profile alias information
    pg name: Unused_Or_Quarantine_Veth
    dvs: (ignore)
    reserved ports: 1
  port-profile role:
```

```
alias information:
    pg id: Unused_Or_Quarantine_Veth
      dvs uuid:
      type: 1
    pg id: dvportgroup-1680
      dvs uuid: 50 12 e0 5d 1c 63 22 76-7b 77 69 b7 27 dc 0c 2e
      type: 2
    pg id: 1c176aec-02d2-4377-9fae-4d278548dfe5
      dvs uuid:
      type: 11
port-profile uplink-pp
  id: 6
  capability: 0x1
  state: 0x1
  type: 0x1
  system vlan mode: -
 system vlans:
  port-binding: static
  bind_opts: 0
 max ports: 512
 min ports: 1
 marked for del: 0
  active used ports count: 0
  intf inherit count: 0
  Port-profile alias information
    pg name: uplink-pp
    dvs: (ignore)
    reserved ports: 512
  port-profile role:
  alias information:
    pg id: uplink-pp
      dvs uuid:
      type: 1
    pg id: dvportgroup-1681
      dvs uuid: 50 12 e0 5d 1c 63 22 76-7b 77 69 b7 27 dc 0c 2e
      type: 2
    pg id: d876121c-8688-4de3-bc9e-68ab7eed06ba
      dvs uuid:
      type: 11
port-profile vlan222
  id: 5
  capability: 0x0
  state: 0x1
  type: 0x1
  system vlan mode: -
  system vlans:
  port-binding: static
  bind_opts: 0
 max ports: 32
 min ports: 1
 marked for del: 0
  active used ports count: 0
  intf inherit count: 0
  Port-profile alias information
   pg name: vlan222
    dvs: (ignore)
    reserved ports: 32
  port-profile role:
  alias information:
    pg id: vlan222
      dvs uuid:
      type: 1
    pg id: dvportgroup-1682
      dvs uuid: 50 12 e0 5d 1c 63 22 76-7b 77 69 b7 27 dc 0c 2e
```

```
pg id: c5e59050-7ba8-48ab-bba5-65b32532ca5a
      dvs uuid:
      type: 11
port-profile vlan223
  id: 8
  capability: 0x0
  state: 0x1
  type: 0x1
  system vlan mode: -
  system vlans:
  port-binding: static
  bind_opts: 0
  max ports: 32
  min ports: 1
  marked for del: 0
  active used ports count: 0
  intf inherit count: 0
  Port-profile alias information
    pg name: vlan223
    dvs: (ignore)
   reserved ports: 32
  port-profile role:
  alias information:
    pg id: vlan223
      dvs uuid:
      type: 1
    pg id: dvportgroup-1683
      dvs uuid: 50 12 e0 5d 1c 63 22 76-7b 77 69 b7 27 dc 0c 2e
    pg id: 8176c0d3-f714-4f86-91bf-f8584074b44a
      dvs uuid:
      type: 11
pending binds:
  global_inherit_ifindex_count: 0
  global_inherit_info.rt_data.restored_from_pss: 0
  global_inherit_info.rt_data.inherit_in_progress: 0
  third_party_app_conf.connection_state[VMWARE_VC] =1
  third_party_app_conf.sync_state[VMWARE_VC] = 1PPM restore_complete:TRUE
  opq_data_info.ppm_sdb_restored:1
Unable to read nsmgr_restore_state
  opq_data_info.nsm_sdb_restored:0
```

Example 9-11 show system internal port-profile profile-fsm Command

```
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#
```

Example 9-12 show system internal port-profile event-history msgs Command

switch# show system internal port-profile event-history msgs

- 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:0X00000B7E8, 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 03 02 03 02 00 00

. . .