



Cisco Nexus 1000V for Microsoft Hyper-V Port Profile Configuration Guide, Release 5.x

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CONTENTS

Preface

Preface v

Audience v

Document Conventions v

Related Documentation for Cisco Nexus 1000V for Microsoft Hyper-V Software vii

Documentation Feedback vii

Obtaining Documentation and Submitting a Service Request viii

CHAPTER 1

Overview 1

Information About Port Profiles 1

How Port Profiles Are Different in Microsoft Hyper-V 1

Live Policy Changes 2

Information About Port Profile Inheritance 2

Atomic Inheritance 2

Rollbacks to a Consistent Configuration 2

Interface Quarantines 2

CHAPTER 2

Creating Port Profiles 5

Information About Port Profiles 5

Information About Port Profile States 5

Guidelines and Limitations for Creating Port Profiles 6

Default Settings 6

Configuring Port Profiles 7

Creating and Enabling an Ethernet Type Port Profile 7

Creating and Enabling a vEthernet Type Port Profile 8

Removing a Port Profile 9

Standards for Creating Port Profiles 10

Feature History for Port Profiles 10

CHAPTER 3**Configuring Port Profile Inheritance 13**[Information About Port Profile Inheritance 13](#)[Guidelines and Limitations for Configuring Port Profile Inheritance 14](#)[Inheriting a Configuration from a Port Profile 14](#)[Removing Inherited Policies from a Port Profile 16](#)

CHAPTER 4**Configuring System Port Profiles 17**[Information About System Port Profiles 17](#)[Guidelines and Limitations for System Port Profiles 17](#)[Creating a System Port Profile 17](#)[Feature History for System Port Profiles 19](#)

CHAPTER 5**Verifying the Port Profile Configuration 21**[Verifying the Port Profile Configuration 21](#)[Feature History for Port Profile Verification 27](#)

CHAPTER 6**Port Profile Configuration Limits 29**[Port Profile Configuration Limits 29](#)



Preface

This preface contains the following sections:

- [Audience, page v](#)
- [Document Conventions, page v](#)
- [Related Documentation for Cisco Nexus 1000V for Microsoft Hyper-V Software, page vii](#)
- [Documentation Feedback, page vii](#)
- [Obtaining Documentation and Submitting a Service Request, page viii](#)

Audience

This publication is for network administrators who configure and maintain Cisco Nexus devices.

This guide is for network and server administrators with the following experience and knowledge:

- An understanding of virtualization
- An understanding of the corresponding hypervisor management software for your switch, such as VMware vSwitch, Microsoft System Center Virtual Machine Manager (SCVMM), or OpenStack.

Document Conventions

Command descriptions use the following conventions:

| Convention | Description |
|---------------|----------------------------------------------------------------------------------|
| bold | Bold text indicates the commands and keywords that you enter literally as shown. |
| <i>Italic</i> | Italic text indicates arguments for which the user supplies the values. |
| [x] | Square brackets enclose an optional element (keyword or argument). |

| Convention | Description |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [x y] | Square brackets enclosing keywords or arguments separated by a vertical bar indicate an optional choice. |
| {x y} | Braces enclosing keywords or arguments separated by a vertical bar indicate a required choice. |
| [x {y z}] | Nested set of square brackets or braces indicate optional or required choices within optional or required elements. Braces and a vertical bar within square brackets indicate a required choice within an optional element. |
| <i>variable</i> | Indicates a variable for which you supply values, in context where italics cannot be used. |
| string | A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks. |

Examples use the following conventions:

| Convention | Description |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <code>screen font</code> | Terminal sessions and information the switch displays are in screen font. |
| <code>boldface screen font</code> | Information you must enter is in boldface screen font. |
| <i><code>italic screen font</code></i> | Arguments for which you supply values are in italic screen font. |
| < > | Nonprinting characters, such as passwords, are in angle brackets. |
| [] | Default responses to system prompts are in square brackets. |
| !, # | An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line. |

This document uses the following conventions:



Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.



Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Related Documentation for Cisco Nexus 1000V for Microsoft Hyper-V Software

This section lists the documents used with the Cisco Nexus 1000V for Microsoft Hyper-V software:

General Information

Cisco Nexus 1000V for Microsoft Hyper-V Release Notes

Install and Upgrade

Cisco Nexus 1000V for Microsoft Hyper-V Installation and Upgrade Guide

Configuration Guides

Cisco Nexus 1000V for Microsoft Hyper-V High Availability and Redundancy Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Interface Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Layer 2 Switching Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V License Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Network Segmentation Manager Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Port Profile Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Quality of Service Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Security Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V System Management Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Verified Scalability Guide

Reference Guides

Cisco Nexus 1000V for Microsoft Hyper-V Command Reference

Troubleshooting and Alerts

Cisco Nexus 1000V for Microsoft Hyper-V Troubleshooting Guide

Documentation Feedback

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Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*, at: <http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html>.

Subscribe to *What's New in Cisco Product Documentation*, which lists all new and revised Cisco technical documentation, as an RSS feed and deliver content directly to your desktop using a reader application. The RSS feeds are a free service.



Overview

This chapter contains the following sections:

- [Information About Port Profiles, page 1](#)
- [How Port Profiles Are Different in Microsoft Hyper-V, page 1](#)
- [Live Policy Changes, page 2](#)
- [Information About Port Profile Inheritance , page 2](#)
- [Atomic Inheritance, page 2](#)
- [Rollbacks to a Consistent Configuration, page 2](#)
- [Interface Quarantines, page 2](#)

Information About Port Profiles

A port profile is a collection of interface-level configuration attributes that are combined to create a port classification on the Microsoft SCVMM server. Using port profiles allows the network administrator to configure a consistent network policy on the Virtual and Physical Ethernet interfaces across all the hosts managed by the Cisco Nexus 1000V Virtual Supervisor Module .

Port profiles are created on the VSM and are published to the Microsoft SCVMM server. A port profile that is published to the Microsoft SCVMM server should be added to a port classification before it can be used.

How Port Profiles Are Different in Microsoft Hyper-V

Port profiles in Microsoft Hyper-V do not contain the network information. A network administrator creates a port profile to enable the Microsoft SCVMM administrator to create port classification. Port Classification is a combination of one or more port profiles (one per extension). When Cisco Nexus 1000V is used as a forwarding extension, you have only profile per classification since the forwarding extension can perform both filter and monitoring functions.

A VM is deployed to the virtual access layer by choosing the port classification and the VM network/VM subnet. When the VM is deployed, a port profile is dynamically created on the Cisco Nexus 1000V for each unique combination of the port classification and the VM network/VM subnet. All other VMs deployed with

the same policy to this network reuse this dynamic port profile. This dynamic port profile is a combination of network isolation and network policy. When the number of VMs that use this dynamic profile goes to zero, the dynamic profile is deleted.

Use the show commands on the VSM to view the Ethernet and vEthernet port profiles. vEthernet port profiles are published to Microsoft SCVMM and the Ethernet port profiles are never published to Microsoft SCVMM.

Live Policy Changes

Port profiles are not static entities but dynamic policies that can change as network needs change. Changes to active port profiles are applied to each switch port that is using the profile, which simplifies the process of applying new network policies or changing an existing policy.

Information About Port Profile Inheritance

You can apply the configuration from an existing port profile as the default configuration for another port profile. This process is called inheritance. The configuration of the parent is copied to and stored in the child port profile. You can also override the inheritance by configuring the attributes explicitly in the child port profile.

You can also explicitly remove port profile inheritance, so that a port profile returns to the default settings, except where there has been a direct configuration.

Atomic Inheritance

To maintain a consistent configuration among the interfaces in a port profile, the entire port profile configuration is applied to its member interfaces (this process is sometimes referred to as inheritance). If the entire configuration is not applied to its member interfaces, the inheritance fails and the configuration is rejected.

Rollbacks to a Consistent Configuration

When you update the configuration in a port profile, its member interfaces are also updated. If the configuration fails, the port profile and its member interfaces are rolled back to the last known good configuration for the port profile.

Interface Quarantines

Port profile interfaces are sectioned off and shut down when a port profile configuration is in error. This process is called an Interface Quarantine.

When an interface is quarantined, it maintains its mapping to the port profile, but is administratively shut down until you explicitly bring it up using the no shutdown command. If the port profile configuration is still in error, then the interface is again shut.

If you create a port profile with a command error, such as a private VLAN mapping error or service policy map error, and then attempt to apply this port profile to an interface, the interface shuts down. The error is not copied to the interface and a system message is generated with details of the error. In this case, you must

correct the error in the port profile, return the interface to service, and apply the corrected port profile to the interface.



Creating Port Profiles

This chapter contains the following sections:

- [Information About Port Profiles, page 5](#)
- [Guidelines and Limitations for Creating Port Profiles, page 6](#)
- [Default Settings, page 6](#)
- [Configuring Port Profiles, page 7](#)
- [Creating and Enabling a vEthernet Type Port Profile, page 8](#)
- [Removing a Port Profile, page 9](#)
- [Standards for Creating Port Profiles, page 10](#)
- [Feature History for Port Profiles, page 10](#)

Information About Port Profiles

Information About Port Profile States

The following table describes port profile behavior.

| State | Behavior |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Disabled (the default) | <p>When disabled, a port profile behaves as follows:</p> <ul style="list-style-type: none">• Its configuration cannot be applied to assigned ports.• The port profile is not published to the Microsoft SCVMM server. |

| State | Behavior |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enabled | <p>When enabled, a port profile behaves as follows:</p> <ul style="list-style-type: none"> • Its configuration is applied to assigned ports. • The port profile is published to the Microsoft SCVMM server. |

Guidelines and Limitations for Creating Port Profiles



Note

When you define a port profile, do not configure the port mode, VLAN, or PVLAN configurations. The publish command is used to publish the user-created profiles to the Microsoft SCVMM Server. For auto-generated port profiles, see the *Cisco Nexus 1000V for Microsoft Hyper-V Network Segmentation Manager Configuration Guide*.

- Once a port profile is created as either an Ethernet or vEthernet type, you cannot change the type.
- In an installation where multiple Ethernet port profiles are active on the same VEM, it is recommended that they do not carry the same VLAN(s). The allowed VLAN list should be mutually exclusive. Overlapping VLANs can be configured but may cause duplicate packets to be received by virtual machines in the network.
- To maintain consistency between the port profile definition and what is applied to an interface, if a port profile modification is rejected by any port, the modification is rejected by the port profile too.
- MTU can only be configured for uplink Ethernet type port profiles.
- A default vEthernet port profile can also be created for Nexus 1000V deployment on the Microsoft SCVMM. This can be achieved by marking a port classification on the Logical Switch (on SCVMM) as “default”.

Default Settings

The following table lists the default settings in the port profile configuration.

| Parameter | Default |
|-----------------------------------------|--------------------|
| description | - |
| administrative state | all ports disabled |
| type | vethernet |
| publish port-profile <i>name</i> | Port profile name |

Configuring Port Profiles

Creating and Enabling an Ethernet Type Port Profile

Before You Begin

- You are logged in to the CLI in EXEC mode.
- You know whether the ports need to be initialized with system settings.
- You have identified the characteristics needed for this port profile.

Procedure

| | Command or Action | Purpose |
|---------------|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | switch# configure terminal | Enters global configuration mode. |
| Step 2 | switch(config)# port-profile [type { ethernet vethernet }] <i>name</i> | Enters port profile configuration mode for the named port profile. If the port profile does not already exist, it is created using the following characteristics: <ul style="list-style-type: none"> • name—The port profile name can be up to 80 characters and must be unique for each port profile. • type—(Optional) The port profile type can be Ethernet or vEthernet. Once configured, the type cannot be changed. The default is the vEthernet type. Defining a port profile type as Ethernet allows the port profile to be used for physical (Ethernet) ports. <p>Note If a port profile is configured as an Ethernet type, then it cannot be used to configure the virtual ports.</p> |
| Step 3 | switch(config-port-prof)# channel-group auto mode on | (Optional) Configure the ports and channels in the port profile. <p>Note The channel-group command is not supported for vEth port profiles.</p> |
| Step 4 | switch(config-port-prof)# no shutdown | Enables all ports in the port profile. |
| Step 5 | switch(config-port-prof)# state enabled | Enables the operational state of the port profile. |
| Step 6 | switch(config-port-prof)# publish port-profile | Publishes the port profile. <p>Note The publish port-profile command is not required for the Ethernet port profiles.</p> |

This example shows how to create a new port profile:

```
switch(config)# port-profile type ethernet UplinkNoPortChannel
switch(config-port-prof)# no shutdown
switch(config-port-prof)# state enabled
switch(config-port-prof)# show port-profile name UplinkNoPortChannel
port-profile UplinkNoPortChannel
type: Ethernet
description:
status: enabled
max-ports: 512
min-ports: 1
inherit:
config attributes:
no shutdown
evaluated config attributes:
no shutdown
assigned interfaces:
port-group:
system vlans: none
capability l3control: no
capability iscsi-multipath: no
capability vxlan: no
capability l3-vn-service: no
port-profile role: none
port-binding: static
switch(config-port-prof)#
```

Creating and Enabling a vEthernet Type Port Profile

Before You Begin

- You are logged in to the CLI in EXEC mode.
- You have already created the port profile using [Creating a Port Profile](#).



Note

The template profiles should not have the **switchport mode access vlan** command configured. If the command is configured, the configuration is not applied.

Procedure

| | Command or Action | Purpose |
|---------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Step 1 | switch# configure terminal | Enters global configuration mode. |
| Step 2 | switch(config)# port-profile [type { vethernet }] <i>profile-name</i> | Enters port profile configuration mode for the named vEthernet port profile. |
| Step 3 | switch(config-port-prof)# state enabled | Enables the port profile and applies its configuration to the assigned ports. |
| Step 4 | switch(config-port-prof)# publish port-profile | Publishes the port profile. This command is not required for the Ethernet port profiles. |

| | Command or Action | Purpose |
|---------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Step 5 | switch(config-port-prof)# show port-profile [brief expand-interface usage] [name profile-name] | Displays the configuration for verification. |
| Step 6 | switch(config-port-prof)# 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 port profile.

```
switch# configure terminal
switch(config)# port-profile type vethernet AccessProf
switch(config-port-prof)# state enabled
switch(config-port-prof)# no shut
switch(config-port-prof)# publish port-profile
switch(config-port-prof)# end
switch# show port-profile name Accessprof

port-profile AccessProf
type: Vethernet
description:
status: enabled
max-ports: 32
min-ports: 1
inherit:
config attributes:
no shutdown
evaluated config attributes:
no shutdown
assigned interfaces:
port-group: AccessProf
system vlans: none
capability l3control: no
capability iscsi-multipath: no
capability vxlan: no
capability l3-vn-service: no
port-profile role: none
port-binding: static

switch(config-port-prof)#
```

Removing a Port Profile

Before You Begin

- You are logged in to the CLI in EXEC mode.
- If the port profile is inherited by another port profile, you need to remove the inheritance from the other port profile before removing this port profile. If you do not remove the inheritance first, the procedure fails. See [Removing Inherited Policies from a Port Profile](#).

Procedure

| | Command or Action | Purpose |
|---------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | switch(config)# show port-profile virtual usage | (Optional) Verifies if active interfaces use this port profile. Note You cannot remove a port profile if there are active interfaces associated with it. |
| Step 2 | switch# configure terminal | Enters global configuration mode. |
| Step 3 | switch(config)# no port-profile profile_name | Removes the port profile configuration and operational settings. When a port profile is removed from the VSM, you have to refresh the extension manager from Microsoft SCVMM to remove the port profile from Microsoft SCVMM. If the extension manager from Microsoft SCVMM is not refreshed, the profile is displayed as Marked for Deletion on Microsoft SCVMM. |
| Step 4 | 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 remove a port profile:

```
switch# show port-profile virtual usage
-----
Port Profile      Port      Adapter      Owner
-----
MAC_PIN           Po2
                  Po3
                  Po5
                  Eth3/1      vmnic0        WIN-37
LACP_PIN          Po1
                  Po4
                  Po5
                  Eth4/1      vmnic0        WIN-37
switch(config)# no port-profile AccessProf
switch(config)# end
switch(config)#
```

Standards for Creating Port Profiles

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 Port Profiles

| Feature Name | Releases | Feature Information |
|------------------------|----------------|------------------------------|
| Creating port profiles | 5.2(1)SM1(5.1) | This feature was introduced. |



Configuring Port Profile Inheritance

This chapter contains the following sections:

- [Information About Port Profile Inheritance, page 13](#)
- [Guidelines and Limitations for Configuring Port Profile Inheritance, page 14](#)
- [Inheriting a Configuration from a Port Profile, page 14](#)
- [Removing Inherited Policies from a Port Profile, page 16](#)

Information About Port Profile Inheritance

You can apply the configuration from an existing port profile as the default configuration for another port profile. This is called inheritance. The configuration of the parent port profile is copied to and stored in the child port profile. You can also override the inheritance by configuring the attributes explicitly in the child port profile.

Table 1: Port Profile Inheritance Settings

| Port Profile Setting | Can it be inherited? | |
|------------------------------------------------|----------------------|----|
| | Yes | No |
| acl | X | |
| channel group | X | |
| default (resets characteristic to its default) | X | |
| description | | X |
| inherit | X | |
| interface state (shut/no shut) | X | |

| Port Profile Setting | Can it be inherited? | |
|-----------------------------|----------------------|----|
| | Yes | No |
| mtu | | X |
| name | X | |
| netflow | X | |
| pinning | X | |
| port security | X | |
| qos policy | X | |
| service-port | X | |
| state (enabled or disabled) | | X |
| publish port-profile | | X |

**Note**

The template profiles can have only 3 levels of hierarchy.

Guidelines and Limitations for Configuring Port Profile Inheritance

- You can also explicitly remove port profile inheritance, so that a port profile returns to the default settings, except where there has been a direct configuration. For more information, see [Removing Inherited Policies from a Port Profile](#).
- Once a port profile is created, you cannot change its type (Ethernet or vEthernet).

Inheriting a Configuration from a Port Profile

You can use this procedure to apply the configuration from an existing port profile as the default configuration for another port profile.

You are familiar with the port profile characteristics shown in [Table 1](#) and whether they can be inherited.

**Tip**

The port profile type cannot be inherited from another port profile.

Before You Begin

- You are logged in to the CLI in EXEC mode.
- To identify the port profile with a configuration you want to use, use the **show port profiles** command to view your existing port profiles.

Procedure

| | Command or Action | Purpose |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | switch# configure terminal | Enters global configuration mode. |
| Step 2 | switch(config)# port-profile [type { ethernet vethernet }] <i>name</i> | Enters port profile configuration mode for the named port profile. If the port profile does not already exist, it is created using the following characteristics: <ul style="list-style-type: none"> • <i>name</i>—The port profile name can be up to 80 characters and must be unique for each port profile on the Cisco Nexus 1000V. • type—(Optional) The port profile type can be Ethernet or vEthernet. Once configured, the type cannot be changed. The default is the vEthernet type. |
| Step 3 | switch(config-port-prof)# inherit port-profile <i>name</i> | Adds the inherited configuration of the named profile as a default configuration. |
| Step 4 | switch(config-port-prof)# show port-profile [brief expand-interface usage] [<i>name</i> <i>profile-name</i>] | (Optional) Displays the configuration for verification. |
| Step 5 | switch(config-port-prof)# 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 inherit the port profile configuration of another port profile:

```
switch# configure terminal
switch(config)# port-profile AllAccess2
switch(config-port-prof)# inherit port-profile AllAccess1
switch(config-port-prof)# show port-profile name AllAccess2
port-profile AllAccess2
description:
type: vethernet
status: disabled
capability l3control: no
pinning control-vlan: -
pinning packet-vlan: -
system vlans: none
port-group:
max ports: 32
inherit: port-profile AllAccess1
config attributes:
evaluated config attributes:
```

```
assigned interfaces:
switch(config-port-prof) #
```

Removing Inherited Policies from a Port Profile

If you have configured policies independently of inheritance, then they will not be removed when you remove the inheritance. Only the policies that are configured solely through the inheritance are removed.

Before You Begin

You are logged in to the CLI in configuration mode.

Procedure

| | Command or Action | Purpose |
|---------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | switch# configure terminal | Enters global configuration mode. |
| Step 2 | switch(config)# show port-profile virtual usage name <i>profile_name</i> | (Optional) Displays the policies inherited in the named port profile. |
| Step 3 | switch(config)# port-profile <i>name</i> | Enters port profile configuration mode for the dynamic port profile. |
| Step 4 | switch(config-port-prof)# no inherit port-profile <i>profile_name</i> | Removes the inherited policies from the named port-profile. The port profile settings are returned to the defaults, except for the port profile type and any settings that were explicitly configured independent of those inherited. |
| Step 5 | switch(config-port-prof)# show port-profile virtual usage | (Optional) Displays the policies inherited for verification. |
| Step 6 | switch(config-port-prof)# 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 remove inherited policies from a port profile:

```
switch# configure terminal
switch(config)# show port-profile virtual usage name AccessProf
switch(config)# port-profile Access4
switch(config-port-prof)# no inherit port-profile AccessProf
switch(config-port-prof)# show port-profile virtual usage
switch(config-port-prof)# copy running-config startup-config
```




CHAPTER

4

Configuring System Port Profiles

This chapter contains the following sections:

- [Information About System Port Profiles, page 17](#)
- [Guidelines and Limitations for System Port Profiles, page 17](#)
- [Creating a System Port Profile, page 17](#)
- [Feature History for System Port Profiles, page 19](#)

Information About System Port Profiles

System port profiles allow the Cisco Nexus 1000V VEM to place ports in Forwarding port mode even before the communication is established between Cisco Nexus 1000V VSM and VEM. To allow a port to start forwarding traffic as soon as it comes, the network segment that the port uses must also be defined as a **system network segment**.

The following ports are typically defined with the system port profile and the system network segment:

- Host Mgmt virtual ethernet port and uplink carrying management traffic.
- Storage virtual ethernet port and uplink carrying storage traffic.
- VSM virtual Ethernet ports on VEM.

For a summary of the default settings used with port profiles, see [Default Settings, on page 6](#).

Guidelines and Limitations for System Port Profiles

- For maximum system port profiles per host and logical switch, see the [Port Profile Configuration Limits, on page 29](#).

Creating a System Port Profile

A system port profile must be of the vEthernet type because it is used for physical ports.

Before You Begin

- You are logged in to the CLI in EXEC mode.
- You have configured the following:
 - Profile admin status is active (no shutdown).

Procedure

| | Command or Action | Purpose |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | switch# configure terminal | Enters global configuration mode. |
| Step 2 | switch(config)# port-profile type vethernet <i>name</i> | Enters port profile configuration mode for the named port profile. If the port profile does not already exist, it is created using the following characteristics: <ul style="list-style-type: none"> • <i>name</i>—The port profile name can be up to 80 characters and must be unique for each port profile on the Cisco Nexus 1000V. • <i>type</i>—The port profile type is vEthernet. |
| Step 3 | switch(config-port-prof)# description <i>profile-description</i> | (Optional) Adds a description of up to 80 ASCII characters in length to the port profile. This description is automatically pushed to Microsoft SCVMM server. |
| Step 4 | switch(config-port-prof)# state enabled | Enables the state. |
| Step 5 | switch(config-port-prof)# no shutdown | Applies no shutdown status. |
| Step 6 | switch(config-port-prof)# system port-profile | Configures the system port profile. |
| Step 7 | switch(config-port-prof)# publish port-profile | Publishes the port profile on the Microsoft SCVMM. |
| Step 8 | switch(config-port-prof)# show port-profile [brief expand-interface usage] [<i>name profile-name</i>] | (Optional) Displays the configuration for verification. |
| Step 9 | switch(config-port-prof)# 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 create a system port profile:

```
switch# configure terminal
switch(config)# port-profile type vethernet AccessProf
switch(config-port-prof)# no shutdown
switch(config-port-prof)# state enabled
switch(config-port-prof)# system port-profile
```

```
switch(config-port-prof)# publish port-profile
switch(config-port-prof)# end
switch#
switch# show port-profile name AccessProf

port-profile AccessProf
  type: Vethernet
  description:
  status: enabled
  max-ports: 32
  min-ports: 1
  inherit:
  config attributes:
    no shutdown
  evaluated config attributes:
    no shutdown
  assigned interfaces:
  port-group: AccessProf
  system vlans:
  capability l3control: no
  capability iscsi-multipath: no
  capability vxlan: no
  capability l3-vn-service: no
  port-profile role: none
  port-binding: static

switch(config-port-prof)#
```

Feature History for System Port Profiles

| Feature Name | Release | Feature Information |
|----------------------|----------------|-------------------------------------|
| System Port Profiles | 5.2(1)SM1(5.1) | Configure the system port profiles. |



Verifying the Port Profile Configuration

This chapter contains the following sections:

- [Verifying the Port Profile Configuration, page 21](#)
- [Feature History for Port Profile Verification, page 27](#)

Verifying the Port Profile Configuration

Use one of the following commands to verify the configuration:

- **show port-profile** [**brief** | **expand-interface** | **usage**] [**name** *profile-name*]
- **show running-config port-profile** [*profile-name*]
- **show port-profile virtual usage** [**name** *profile-name*]
- **show running-config port-profile** [*prof-name*]

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

show port profile

```
switch# show port-profile
port-profile PVLAN_MAC
type: Ethernet
description: NSM created profile. Do not delete.
status: enabled
max-ports: 512
min-ports: 1
inherit: MAC
config attributes:
switchport mode private-vlan trunk promiscuous
switchport private-vlan mapping trunk 356 357-358
switchport private-vlan trunk allowed vlan 342,3000-3500
no shutdown
evaluated config attributes:
mtu 4074
switchport mode private-vlan trunk promiscuous
switchport private-vlan mapping trunk 356 357-358
switchport private-vlan trunk allowed vlan 342,3000-3500
channel-group auto mode on mac-pinning
no shutdown
assigned interfaces:
port-channell
```

```

port-channel3
Ethernet3/1
Ethernet3/2
port-group:
system vlans: none
capability l3control: no
capability iscsi-multipath: no
capability vxlan: no
capability l3-vn-service: no
port-profile role: none
port-binding: static

port-profile check
type: Vethernet
description:
status: disabled
max-ports: 32
min-ports: 1
inherit:
config attributes:
evaluated config attributes:
assigned interfaces:
port-group: check
system vlans: none
capability l3control: no
capability iscsi-multipath: no
capability vxlan: no
capability l3-vn-service: no
port-profile role: none
port-binding: static

port-profile default
type: Vethernet
description:
status: enabled
max-ports: 32
min-ports: 1
inherit:
config attributes:
no shutdown
evaluated config attributes:
no shutdown
assigned interfaces:
Vethernet9
port-group: default
system vlans: none
capability l3control: no
capability iscsi-multipath: no
capability vxlan: no
capability l3-vn-service: no
port-profile role: none
port-binding: static

port-profile dynpp_5a2a23c6-10a0-4cdd-b459-7840e2db118d_0cf1a4ea-a6e0-4cdf-b4ec-fcfa95ced562
type: Vethernet
description: NSM created profile. Do not delete.
status: enabled
max-ports: 32
min-ports: 1
inherit: check
config attributes:
switchport mode access
switchport access vlan 342
evaluated config attributes:
switchport mode access
switchport access vlan 342
assigned interfaces:
port-group:
system vlans: none
capability l3control: no
capability iscsi-multipath: no
capability vxlan: no
capability l3-vn-service: no

```

```

port-profile role: none
port-binding: static

port-profile dynpp_ebdcbd8e-96ab-4f9a-8975-c71283d0adc7_0cf1a4ea-a6e0-4cdf-b4ec-fcfa95ced562
type: Vethernet
description: NSM created profile. Do not delete.
status: enabled
max-ports: 32
min-ports: 1
inherit: default
config attributes:
  switchport mode access
  switchport access vlan 342
evaluated config attributes:
  switchport mode access
  switchport access vlan 342
no shutdown
assigned interfaces:
Vethernet2
Vethernet3
Vethernet4
Vethernet5
Vethernet7
Vethernet8
Vethernet11
Vethernet14
port-group:
system vlans: none
capability l3control: no
capability iscsi-multipath: no
capability vxlan: no
capability l3-vn-service: no
port-profile role: none
port-binding: static
switch#

```

show port-profile name UpLinkProfile3

```

switch# show port-profile name UpLinkProfile3
port-profile UpLinkProfile3
description:
type: vethernet
status: disabled
capability l3control: no
pinning control-vlan: -
pinning packet-vlan: -
system vlans: none
port-group:
max ports: 32
inherit:
config attributes:
  channel-group auto mode on sub-group manual
evaluated config attributes:
  channel-group auto mode on sub-group manual
assigned interfaces:
switch#

```

show port-profile name PVLAN_MAC

```

switch# show port-profile name PVLAN_MAC
port-profile PVLAN_MAC
type: Ethernet
description: NSM created profile. Do not delete.
status: enabled
max-ports: 512
min-ports: 1
inherit: MAC
config attributes:
  switchport mode private-vlan trunk promiscuous
  switchport private-vlan mapping trunk 356 357-358
  switchport private-vlan trunk allowed vlan 342,3000-3500

```

```

no shutdown
evaluated config attributes:
mtu 4074
switchport mode private-vlan trunk promiscuous
switchport private-vlan mapping trunk 356 357-358
switchport private-vlan trunk allowed vlan 342,3000-3500
channel-group auto mode on mac-pinning
no shutdown
assigned interfaces:
port-channel1
port-channel3
Ethernet3/1
Ethernet3/2
port-group:
system vlans: none
capability l3control: no
capability iscsi-multipath: no
capability vxlan: no
capability l3-vn-service: no
port-profile role: none
port-binding: static
switch#

```

show port-profile brief

```
switch# show port-profile brief
```

| Port Profile | Profile Type | Profile State | Conf Items | Eval Items | Assigned Intfs | Child Profs |
|---------------------------------------------------------------------------------|--------------|---------------|------------|------------|----------------|-------------|
| DATA-Lacp | Ethernet | 1 | 3 | 4 | 10 | 0 |
| DATA-Macpin | Ethernet | 1 | 3 | 4 | 13 | 0 |
| Eth-Profile-Mgmt | Ethernet | 1 | 1 | 1 | 0 | 1 |
| Lacp-Policy | Ethernet | 1 | 2 | 2 | 0 | 4 |
| Macpin-Policy | Ethernet | 1 | 2 | 2 | 0 | 8 |
| Macpin-Policy2 | Ethernet | 1 | 2 | 2 | 0 | 0 |
| NSM_template_segmentation | Vethernet | 1 | 1 | 1 | 0 | 0 |
| NSM_template_vlan | Vethernet | 1 | 1 | 1 | 0 | 0 |
| PVLAN_Macpin | Ethernet | 1 | 4 | 5 | 15 | 0 |
| Uplink-10G-Lacp | Ethernet | 1 | 3 | 4 | 0 | 0 |
| dynpp_03ac7d00-933d-4fc6-89c6-83bdaadf4248_42cce283-638e-4b90-9762-4734bd78739c | Vethernet | 1 | 2 | 12 | 0 | 0 |
| dynpp_03ac7d00-933d-4fc6-89c6-83bdaadf4248_55e79594-417c-42b2-a574-8f28779dfbb2 | Vethernet | 1 | 2 | 12 | 0 | 0 |
| dynpp_03ac7d00-933d-4fc6-89c6-83bdaadf4248_96d80bc3-aa5b-43b8-a784-ca023f59759a | Vethernet | 1 | 2 | 12 | 8 | 0 |
| dynpp_03ac7d00-933d-4fc6-89c6-83bdaadf4248_db8f0159-5f86-4c20-a424-d777a7086801 | Vethernet | 1 | 2 | 12 | 0 | 0 |
| dynpp_4959aadf-c362-4bbf-8d80-0bbede356b9f_96d80bc3-aa5b-43b8-a784-ca023f59759a | Vethernet | 1 | 2 | 4 | 0 | 0 |
| system8 | Vethernet | 1 | 1 | 1 | 0 | 0 |
| system9 | Vethernet | 1 | 1 | 1 | 0 | 0 |
| test | Vethernet | 0 | 1 | 1 | 0 | 1 |
| uplink_network_default_policy | Ethernet | 1 | 1 | 1 | 0 | 0 |
| veth-no-policy | Vethernet | 1 | 1 | 1 | 0 | 2 |
| veth-policy | Vethernet | 1 | 3 | 3 | 0 | 4 |
| veth-policy3 | Vethernet | 1 | 3 | 3 | 0 | 1 |

| Profile Type | Assigned Intfs | Total Prfls | Sys Prfls | Parent Prfls | Child Prfls | UsedBy Prfls |
|--------------|----------------|-------------|-----------|--------------|-------------|--------------|
| Vethernet | 8 | 64 | 32 | 58 | 14 | 1 |
| Ethernet | 38 | 18 | 0 | 15 | 13 | 3 |

switch#

show port-profile virtual usage

```
switch# show port-profile virtual usage
```

| Port Profile | Port | Adapter | Owner |
|--------------|------|---------|-------|
|--------------|------|---------|-------|


```

PVLAN_Macpin
    Po2
    Po4
    Po6
    Po8
    Po9
    Eth3/1      vmnic0      NODE-135
    Eth3/2      vmnic1      NODE-135
    Eth4/1      vmnic0      NODE-137
    Eth4/2      vmnic1      NODE-137
    Eth5/2      vmnic1      NODE-139
    Eth5/3      vmnic2      NODE-139
    Eth6/1      vmnic0      NODE-141
    Eth6/2      vmnic1      NODE-141
    Eth7/1      vmnic0      NODE-UCS-158
    Eth7/2      vmnic1      NODE-UCS-158
dynpp_03ac7d00-933d-4fc6-8 Veth1      LINUX-RHEL-01
                           Veth2      LINUX-RHEL-02
                           Veth3      LINUX-RHEL-03
                           Veth4      LINUX-RHEL-04
                           Veth5      LINUX-RHEL-05
                           Veth6      LINUX-RHEL-06
                           Veth7      LINUX-RHEL-07
switch#

```

show port-profile expand-interface name PVLAN_Macpin

```

switch# show port-profile expand-interface name PVLAN_Macpin
port-profile PVLAN_Macpin
port-channel2
  switchport mode private-vlan trunk promiscuous
  switchport private-vlan mapping trunk 264 10, 20, 30, 40, 50
  switchport private-vlan trunk allowed vlan 214,224,234,244,254,260,284
  switchport private-vlan trunk allowed vlan add 294,298
  channel-group auto mode on mac-pinning
  no shutdown
port-channel4
  switchport mode private-vlan trunk promiscuous
  switchport private-vlan mapping trunk 264 10, 20, 30, 40, 50
  switchport private-vlan trunk allowed vlan 214,224,234,244,254,260,284
  switchport private-vlan trunk allowed vlan add 294,298
  channel-group auto mode on mac-pinning
  no shutdown
port-channel6
  switchport mode private-vlan trunk promiscuous
  switchport private-vlan mapping trunk 264 10, 20, 30, 40, 50
  switchport private-vlan trunk allowed vlan 214,224,234,244,254,260,284
  switchport private-vlan trunk allowed vlan add 294,298
  channel-group auto mode on mac-pinning
  no shutdown
port-channel8
  switchport mode private-vlan trunk promiscuous
  switchport private-vlan mapping trunk 264 10, 20, 30, 40, 50
switch#

```

show port-profile expand-interface

```

switch# show port-profile expand-interface
port-profile DATA-Lacp
port-channel3
  switchport mode trunk
  switchport trunk allowed vlan 150,205,207,209,211,213,215,217,219,221
  switchport trunk allowed vlan add 223,225,227,229,231,233,235,237,239
  switchport trunk allowed vlan add 241,243,245,247,249,251,253,255,257
  switchport trunk allowed vlan add 261-263,265,267,269,271,273,275,277
  switchport trunk allowed vlan add 281,283,285,287,289,291,293,295,297
  switchport trunk allowed vlan add 299
  channel-group auto mode active
  no shutdown
port-channel5
  switchport mode trunk
  switchport trunk allowed vlan 150,205,207,209,211,213,215,217,219,221

```

```

switchport trunk allowed vlan add 223,225,227,229,231,233,235,237,239
switchport trunk allowed vlan add 241,243,245,247,249,251,253,255,257
switchport trunk allowed vlan add 261-263,265,267,269,271,273,275,277
switchport trunk allowed vlan add 281,283,285,287,289,291,293,295,297
switchport trunk allowed vlan add 299
channel-group auto mode active
no shutdown
Ethernet4/3
switchport mode trunk
switchport trunk allowed vlan 150,205,207,209,211,213,215,217,219,221
switchport trunk allowed vlan add 223,225,227,229,231,233,235,237,239
switch#

```

show running-config port-profile

```

switch# show running-config port-profile
!Command: show running-config port-profile
!Time: Mon Feb 11 14:41:43 2013

version 5.2(1)SM1(5.1)
port-profile default max-ports 32
port-profile default port-binding static
port-profile type vethernet NSM_template_vlan
no shutdown
guid b3f317de-190b-4b55-966a-ba7d4b67f741
description NSM default port-profile for VLAN networks. Do not delete.
state enabled
port-profile type vethernet NSM_template_segmentation
no shutdown
guid ad853f88-11db-48ec-9ab8-f8d616e0ff04
description NSM default port-profile for VXLAN networks. Do not delete.
state enabled
port-profile type ethernet uplink_network_default_policy
no shutdown
guid 8ca21cba-a5b3-46f6-addf-c80d01c81d76
max-ports 512
description NSM created profile. Do not delete.
state enabled

port-profile type vethernet system
no shutdown
guid 44598166-009e-43b1-a7cd-472efe951d44
publish port-profile
system port-profile
state enabled
port-profile type vethernet check
guid 5a2a23c6-10a0-4cdd-b459-7840e2db118d
publish port-profile

port-profile type ethernet PVLAN_MAC
inherit port-profile MAC
switchport mode private-vlan trunk promiscuous
switchport private-vlan mapping trunk 356 357-358
switchport private-vlan trunk allowed vlan 342,3000-3500
no shutdown
guid f8b3719c-e240-4cc0-8096-804c15819c08
max-ports 512
description NSM created profile. Do not delete.
state enabled

port-profile type vethernet
dynpp 5a2a23c6-10a0-4cdd-b459-7840e2db118d_0cf1a4ea-a6e0-4cdf-b4ec-fcfa95ced562
inherit port-profile check
switchport mode access
switchport access vlan 342
guid 536bcf06-de07-4857-8f2c-41e134cab0df
description NSM created profile. Do not delete.
state enabled
switch#

```

Feature History for Port Profile Verification

| Feature Name | Releases | Feature Information |
|---------------------------|----------------|------------------------------|
| Port Profile verification | 5.2(1)SM1(5.1) | This feature was introduced. |



Port Profile Configuration Limits

This chapter contains the following sections:

- [Port Profile Configuration Limits](#), page 29

Port Profile Configuration Limits

The configuration limits are documented in *Cisco Nexus 1000V for Microsoft Hyper-V Verified Scalability Guide*. Refer to http://www.cisco.com/en/US/docs/switches/datacenter/nexus1000/hyperv/sw/5_2_1_s_m_1_5_1/verified_scalability/guide/n1khyperv_verified_scalability.html for more information.

