



# Configuring System Port Profiles

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## Information About System Port Profiles

System port profiles are designed to establish and protect those ports and VLANs which need to be configured before the VEM contacts the VSM.

For this reason, the following ports must use system VLANs:

- Management VLANs in the trunk port profile of the InterCloud Switch and InterCloud Extender
- Management VLAN in the access port profile of the InterCloud Switch's management interface.

## Guidelines and Limitations for System Port Profiles

- System VLANs must be used sparingly and only as described in the [Information About System Port Profiles, on page 1](#).
- You cannot delete a system VLAN when the port profile is in use.
- You can add or delete VLANs that are not system VLANs when the port profile is in use.
- System VLANs can be added to a port profile, even when the port profile is in use.
- You can only delete a system VLAN from a port profile after removing the port profile from service. This is to prevent accidentally deleting a critical VLAN, such as the management VLAN for a host, or the storage VLAN for the VSM.

- A system port profile cannot be converted to a port profile that is not a system port profile.
- The native VLAN on a system port profile can be a system VLAN but it does not have to be.
- When a system port profile is in use, you can change the native VLAN as follows:
  - From one VLAN that is not a system VLAN to another VLAN that is not a system VLAN.
  - From a VLAN that is not a system VLAN to a system VLAN
  - From one system VLAN to another system VLAN
- When a system port profile is in use, you cannot change the native VLAN from a system VLAN to a VLAN that is not a system VLAN.

## Creating a System Port Profile

Use this procedure to create a system port profile.

### Before You Begin

- You are logged in to the CLI in EXEC mode.
- You have configured the following:
  - Port admin status is active (no shutdown).
  - Port mode is access or trunk.
  - VLANs that are to be used as system VLANs already exist.
  - VLANs are configured as access VLANs or trunk-allowed VLANs.
- In an installation where multiple 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.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 2</b>	switch(config)# <b>port-profile</b> [ <b>type</b> { <b>vethernet</b> }] <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"> <li>• <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.</li> <li>• <b>type</b>—(Optional) The port profile type is vEthernet.</li> </ul>

	Command or Action	Purpose
<b>Step 3</b>	switch(config-port-prof)# <b>description</b> <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 vCenter Server.
<b>Step 4</b>	switch(config-port-prof)# <b>switchport mode trunk</b>	Designates that the interfaces are to be used as a trunking ports.  A trunk port transmits untagged packets for the native VLAN and transmits encapsulated, tagged packets for all other VLANs.
<b>Step 5</b>	switch(config-port-prof)# <b>switchport trunk allowed vlan</b> { <i>vlan-id-list</i>   <b>all</b>   <b>none</b>   [ <b>add</b>   <b>except</b>   <b>remove</b> { <i>vlan-list</i> }]}	Designates the port profile as trunking and defines VLAN access to it as follows: <ul style="list-style-type: none"> <li>• <b>allowed vlan</b>—Defines VLAN IDs that are allowed on the port.</li> <li>• <b>add</b>—Lists VLAN IDs to add to the list of those allowed on the port.</li> <li>• <b>except</b>—Lists VLAN IDs that are not allowed on the port.</li> <li>• <b>remove</b>—Lists VLAN IDs whose access is to be removed from the port.</li> <li>• <b>all</b>—Indicates that all VLAN IDs are allowed on the port, unless exceptions are also specified.</li> <li>• <b>none</b>—Indicates that no VLAN IDs are allowed on the port.</li> </ul> <p>If you do not configure allowed VLANs, then the default VLAN 1 is used as the allowed VLAN.</p>
<b>Step 6</b>	switch(config-port-prof)# <b>no shutdown</b>	Changes the port to administrative status so that system VLAN can be configured.  <b>Note</b> If you do not change the port state, then you will see the following error when you try to configure system VLAN: ERROR: Cannot set system vlans. Change port admin status to 'no shutdown' and retry.
<b>Step 7</b>	switch(config-port-prof)# <b>state enabled</b>	Enables the port profile and applies its configuration to the assigned ports.
<b>Step 8</b>	switch(config-port-prof)# <b>system vlan</b> <i>vlan-id-list</i>	Adds system VLANs to this port profile.
<b>Step 9</b>	switch(config-port-prof)# <b>publish port-profile</b> <i>&lt;name&gt;</i>	Publishes port profile to Cisco Prime Network Services Controller.

	Command or Action	Purpose
<b>Step 10</b>	switch(config-port-prof)# <b>show port-profile [brief   expand-interface   usage] [name profile-name]</b>	(Optional) Displays the configuration for verification.
<b>Step 11</b>	switch(config-port-prof)# <b>copy running-config startup-config</b>	(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 port-profile type vethernet Trunk_To_Cloud
switch(config-port-prof) # switchport mode trunk
switch(config-port-prof) # switchport trunk allowed vlan 72,2315-2350
switch(config-port-prof) # no shutdown
switch(config-port-prof) # state enabled
switch(config-port-prof) # max ports 64
switch(config-port-prof) # system vlan 72
switch(config-port-prof) # publish port-profile
switch(config-port-prof) #
```

## Modifying the System VLANs in a Trunk Mode Port Profile

You can use the following procedures to change the set of system VLANs in a trunk mode port profile without removing all system VLANs.

### Before You Begin

- You are logged in to the Cisco Nexus 1000V InterCloud VSM CLI in EXEC mode.
- You know the VLAN ID of a system VLAN in your network. It does not matter which system VLAN it is.
- You know the VLAN IDs of the system VLANs required for the port profile you are modifying.

### Procedure

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- Step 1** In the Cisco Nexus 1000V VSM in the enterprise, shut off the switch port used by the InterCloud VSM's management port.
- Step 2** Log in to the console of Cisco Nexus 1000V InterCloud VSM and convert the port profile to an access profile with a system VLAN.
- Step 3** Convert the access port profile back to a trunk profile.
- Step 4** In the Cisco Nexus 1000V VSM in the enterprise unshut the switch port used by the Cisco Nexus 1000V InterCloud VSM's management port.  
The VEMS are reconnected to the VSM.
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## Converting a Port Profile to an Access Profile with a System VLAN

You can use this procedure to change the set of system VLANs in a trunk mode port profile without removing all system VLANs.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 2</b>	switch(config)# <b>port-profile</b> [ <b>type vethernet</b> }] <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"> <li>• <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.</li> <li>• <b>type</b>—(Optional) The port profile type is vEthernet.</li> </ul>
<b>Step 3</b>	switch(config-port-prof)# <b>no system vlan</b>	Remove the system VLAN from a port profile.
<b>Step 4</b>	switch(config-port-prof)# <b>switchport mode access</b>	Sets port mode access.
<b>Step 5</b>	switch(config-port-prof)# <b>switchport access vlan</b> <i>vlan-id</i>	Set the access mode of an interface.
<b>Step 6</b>	switch(config-port-prof)# <b>no shutdown</b>	Changes the port to administrative status so that system VLAN can be configured. <p><b>Note</b> If you do not change the port state, then you will see the following error when you try to configure system VLAN:ERROR: Cannot set system vlans. Change port admin status to 'no shutdown' and retry.</p>
<b>Step 7</b>	switch(config-port-prof)# <b>system vlan</b> <i>vlan-id-list</i>	Adds system VLANs to this port profile.

The trunk port profile is converted to an access port profile with a system VLAN.

This example shows how to convert a trunk port profile to an access port profile.

```
switch# configure terminal
switch(config)# port-profile Trunk_System_Prof
switch(config-port-prof)# no system vlan
switch(config-port-prof)# switchport mode access
switch(config-port-prof)# switchport access vlan 300
switch(config-port-prof)# system vlan 300
switch(config-port-prof)#
```

## Converting an Access Port Profile to a Trunk Port Profile

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<code>switch# configure terminal</code>	Enters global configuration mode.
<b>Step 2</b>	<code>switch(config)# port-profile [type vethernet}] name</code>	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"> <li>• <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.</li> <li>• <i>type</i>—(Optional) The port profile is vEthernet.</li> </ul>
<b>Step 3</b>	<code>switch(config-port-prof)# switchport mode trunk</code>	Designates that the interfaces are to be used as a trunking ports.  A trunk port transmits untagged packets for the native VLAN and transmits encapsulated, tagged packets for all other VLANs.
<b>Step 4</b>	<code>system vlan vlan-id-list</code>	Adds system VLANs to this port profile.
<b>Step 5</b>	<code>switch(config-port-prof)# show port-profile [brief   expand-interface   usage] [name profile-name]</code>	(Optional) Displays the configuration for verification.
<b>Step 6</b>	<code>switch(config-port-prof)# copy running-config startup-config</code>	(Optional) Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration.

This example shows how to convert an access port profile to a trunk port profile.

```
switch# config terminal
switch(config)# port-profile Trunk_System_Prof
switch(config-port-prof)# switchport mode trunk
switch(config-port-prof)# system vlan 114,115
switch(config-port-prof)# show port-profile name Trunk_System_Prof
switch(config-port-prof)# copy running-config startup-config
```

## Modifying System VLANs in an Access Mode Port Profile

You can use this procedure to change the set of system VLANs in an access port profile without removing all system VLANs.

## Before You Begin

- You are logged in to the Cisco Nexus 1000V InterCloud VSM CLI in EXEC mode.
- You know the VLAN IDs of the system VLANs required for the port profile you are modifying.
- In the Cisco Nexus 1000V VSM in the enterprise, shut the switchport used by Cisco Nexus 1000V InterCloud VSM's management port.

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 2</b>	switch(config)# <b>port-profile</b> [ <b>type vethernet</b> ] <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"> <li>• <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.</li> <li>• <b>type</b>—(Optional) The port profile type is vEthernet.</li> </ul>
<b>Step 3</b>	switch(config-port-prof)# <b>system vlan</b> <i>vlan-id-list</i>	Adds system VLANs to this port profile.
<b>Step 4</b>	switch(config-port-prof)# <b>show port-profile</b> [ <b>brief</b>   <b>expand-interface</b>   <b>usage</b> ] [ <i>name profile-name</i> ]	(Optional) Displays the configuration for verification.
<b>Step 5</b>	switch(config-port-prof)# <b>copy running-config startup-config</b>	(Optional) Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration.

This example shows how to change the set of system VLANs in an access port profile without removing all system VLANs.

```
switch# configure terminal
switch(config)# port-profile Access_System_Prof
switch(config-port-prof)# system vlan 114,115
switch(config-port-prof)# show port-profile name Access_System_prof
switch(config-port-prof)# copy running-config startup-config
```

## What to Do Next

In the Cisco Nexus 1000V VSM in the enterprise unshut the switch port used by the Cisco Nexus 1000V InterCloud VSM's management port.

## Feature History for System Port Profiles

Feature Name	Release	Feature Information
System Port Profiles	Release 5.2(1)IC1(1.1)	This feature was introduced.