



Cisco Nexus 1000V Port Profile Configuration Guide, Release 4.0(4)SV1(1)

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Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

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Cisco Nexus 1000V Quality of Service Configuration Guide, Release 4.2(1) SPI(5.1)
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Preface

This document, *Cisco Nexus 1000V Port Profile Configuration Guide, Release 4.0(4)SV1(1)*, provides procedures for configuring port profiles.

This preface includes the following topics:

- [Audience, page 1](#)
- [Document Organization, page 1](#)
- [Document Conventions, page 2](#)
- [Related Documentation, page 2](#)

Audience

To use this guide, you must be familiar with networking and Ethernet technology.

Document Organization

This document is organized into the following chapters:

Chapter and Title	Description
Chapter 1, “Overview”	Describes port profiles and their use.
Chapter 1, “Port Profile Configuration”	Describes how to configure port profiles in Nexus 1000V.

Document Conventions

Command descriptions use these conventions:

boldface font	Commands and keywords are in boldface.
<i>italic font</i>	Arguments for which you supply values are in italics.
{ }	Elements in braces are required choices.
[]	Elements in square brackets are optional.
x y z	Alternative, mutually exclusive elements are separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Screen examples use these conventions:

screen font	Terminal sessions and information the device displays are in screen font.
boldface screen font	Information you must enter is in boldface screen font.
<i>italic screen font</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 for notes and cautions:



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

Cisco Nexus 1000V includes the following documents available on Cisco.com:

General Information

Cisco Nexus 1000V Release Notes, Release 4.0(4)SV1(1)

Cisco Nexus 1000V and VMware Compatibility Information, Release 4.0(4)SV1(1)

Install and Upgrade

Cisco Nexus 1000V Software Installation Guide, Release 4.0(4)SV1(1)

Cisco Nexus 1000V Virtual Ethernet Module Software Installation Guide, Release 4.0(4)SV1(1)

Configuration Guides

Cisco Nexus 1000V License Configuration Guide, Release 4.0(4)SV1(1)

Cisco Nexus 1000V Getting Started Guide, Release 4.0(4)SV1(1)

Cisco Nexus 1000V Interface Configuration Guide, Release 4.0(4)SV1(1)

Cisco Nexus 1000V Layer 2 Switching Configuration Guide, Release 4.0(4)SV1(1)

Cisco Nexus 1000V Port Profile Configuration Guide, Release 4.0(4)SV1(1)

Cisco Nexus 1000V Quality of Service Configuration Guide, Release 4.0(4)SV1(1)

Cisco Nexus 1000V Security Configuration Guide, Release 4.0(4)SV1(1)

Cisco Nexus 1000V System Management Configuration Guide, Release 4.0(4)SV1(1)

Cisco Nexus 1000V High Availability and Redundancy Reference, Release 4.0(4)SV1(1)

Reference Guides

Cisco Nexus 1000V Command Reference, Release 4.0(4)SV1(1)

Cisco Nexus 1000V MIB Quick Reference

Troubleshooting and Alerts

Cisco Nexus 1000V Troubleshooting Guide, Release 4.0(4)SV1(1)

Cisco Nexus 1000V Password Recovery Guide

Cisco NX-OS System Messages Reference



CHAPTER 1

Overview

This chapter provides an overview of the Cisco Nexus 1000V port profiles and includes the following sections:

- [Understanding Port Profiles, page 1-1](#)
- [Port Profile States, page 1-2](#)
- [Port Profile Characteristics, page 1-2](#)
- [vPC Host Mode, page 1-5](#)

Understanding Port Profiles

In Cisco Nexus 1000V, port profiles are used to configure interfaces. A port profile can be assigned to multiple interfaces giving them all the same configuration. Changes to the port profile can be propagated automatically to the configuration of any interface assigned to it.

In the 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:

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

Port profiles that are configured as uplinks, can be assigned by the server administrator to physical ports (a vmnic or a pnic). Port profiles that are not configured as uplinks can be assigned to a VM virtual port.



Note

While manual interface configuration overrides that of the port profile, it is not recommended. 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 more information about assigning port profiles, see your VMware documentation.

To verify that the profiles are assigned as expected, use the following show commands:

show port-profile usage

show running-config interface *interface-id*

Note: The output of the command **show running-config interface** *interface-id* shows a config line such as, `inherit port-profile MyProfile`, indicating the inherited port profile.

**Note**

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

**Note**

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

Port Profile States

Port profiles are disabled by default. The following table describes port profile behavior in the two states. To enable a port profile, see the [“Enabling a Port Profile” procedure on page 1-33](#).

State	Behavior
Disabled (the default)	When disabled, a port profile behaves as follows: <ul style="list-style-type: none"> • Its configuration is not applied to assigned ports. • If exporting policies to a VMware port group, the port group is not created on the vCenter Server.
Enabled	When enabled, a port profile behaves as follows: <ul style="list-style-type: none"> • Its configuration is applied to assigned ports. • If inheriting policies from a VMware port group, the port group is created on the vCenter Server.

Port Profile Characteristics

The following characteristics can be configured for a port profile. For detailed port profile configuration procedures, see the section, [Port Profile Configuration, page 1-1](#).

Table 1-1 Port Profile Characteristics

Port Profile Characteristics
acl
capability (uplink, l3control)
channel-group
default (resets characteristic to its default)
description
inherit
interface state (shut/no shut)
name
netflow

Table 1-1 Port Profile Characteristics (continued)

Port Profile Characteristics
port security
private vlan configuration
qos policy
state (enabled or disabled)
switchport mode (access or trunk)
system vlan <i>vlan list</i>
vlan configuration
vmware max-ports
vmware port-group name

Port Profile Inheritance

One port profile can be configured to inherit the policies from another port profile. The characteristics of the parent profile become the default settings for the child. The inheriting port profile ignores any non-applicable configuration.

The following table shows port profile characteristics and whether they can be inherited.

Table 1-2 Port Profile Inheritance

Port Profile Characteristic	Can it be inherited?	
	Yes	No
acl	X	
capability (uplink, l3control)		X
channel group	X	
default (resets characteristic to its default)	X	
description		X
inherit	X	
interface state (shut/no shut)	X	
name	X	
netflow	X	
port security	X	
private vlan configuration	X	
qos policy	X	
state (enabled or disabled)		X
switchport mode (access or trunk)	X	
system vlan <i>vlan list</i>		X
vlan configuration	X	

Table 1-2 Port Profile Inheritance (continued)

Port Profile Characteristic	Can it be inherited?	
	Yes	No
acl	X	
capability (uplink, l3control)		X
channel group	X	
vmware max-ports		X
vmware port-group name		X

Using the CLI, you can configure alternate characteristics directly on the new port profile to override the inherited characteristics.

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

For more information, see the procedure, [Inheriting a Port Profile Configuration, page 1-9](#).

Information about the System Port Profile

A system port profile is designed to establish and protect vCenter Server connectivity. They can carry the following VLANs:

- System VLANs or VNICs used when bringing up the ports before communication is established between the VSM and VEM.
- The uplink that carries the control VLAN
- Management uplink(s) used for VMWare vCenter Server connectivity or SSH or Telnet connections. There can be more than one management port or VLAN, for example, one dedicated for vCenter Server connectivity, one for SSH, one for SNMP, a switch interface, and so forth.
- VMware kernel NIC for accessing VMFS storage over iSCSI or NFS.

System Port Profile Rules

System port profiles and system VLANs are subject to the following rules.

- System VLANs cannot be deleted when the profile is in use.
- Non-system VLANs in a system port profile can be freely added or deleted, even when the profile is in use, that is, one or more DVS ports are carrying that profile.
- System VLANs can always be added to a system port profile or a non-system port profile, even when the profile is in use.
- The native VLAN on a system port profile may be a system VLAN or a non-system VLAN.

Use the following steps to change the set of system VLANs on a port profile without removing all system VLANs:

1. Remove all ports carrying the profile from the DVS.
2. Set the new list of system VLANs on the profile with the “system vlan ...” command. The new list may add or delete system VLANs from the old list.
3. Add the the ports back to the DVS with the same profile.

Use the following steps to remove all system VLANs from a port:

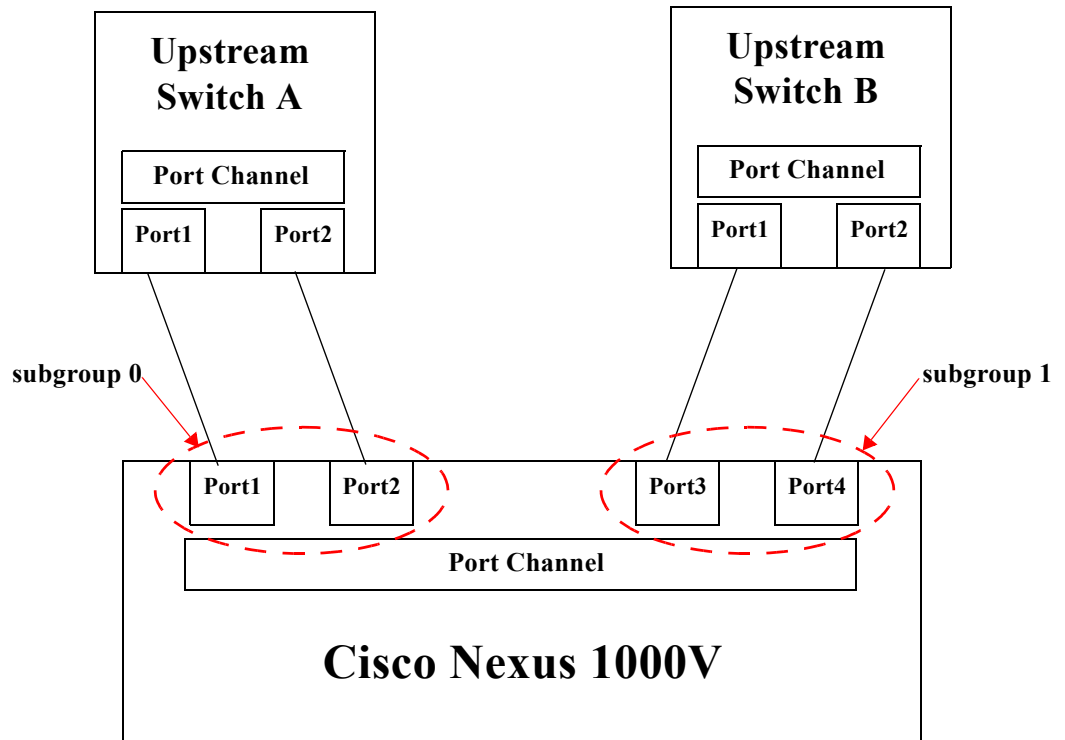
1. Remove all ports carrying the port profile from the DVS, if you plan to modify the system profile.
2. Prepare a port profile without system VLANs, either by modifying the old port profile or by creating a new one.
3. Reboot the VEM host where the port resides.
4. Apply the non-system profile to the port.

vPC Host Mode

Virtual port channel host mode (vPC-HM) allows member ports in a port channel to connect to two different upstream switches. With vPC-HM, ports are grouped into two subgroups for traffic separation. If CDP is enabled on the upstream switch, then the subgroups are automatically created using CDP information. If CDP is not enabled on the upstream switch, then you must manually create the subgroup on the interface.

As shown in [Figure 1-1](#), in vPC-HM, member ports are assigned a subgroup ID (0 or 1) for traffic separation.

Figure 1-1 Using vPC-HM to Connect a Port Channel to Two Separate Upstream Switches



To configure a port profile in vPC-HM, see the [“Configuring a Port Channel Connecting to Two Upstream Switches”](#) procedure on page 1-20.

vPC-HM can also be configured on the interface. For more information, see the *Cisco Nexus 1000V Interface Configuration Guide, Release 4.0(4)SV1(1)*.



CHAPTER 1

Port Profile Configuration

Use this chapter to configure port profiles. This chapter includes the following topics:

- [Information About Port Profiles, page 1-1](#)
- [Creating a Port Profile, page 1-1](#)
- [Updating an Existing Port Profile, page 1-4](#)
- [Removing a Port Profile, page 1-35](#)

Information About Port Profiles

Port profiles simplify interface configuration by defining policies that can be reused for multiple interfaces. For more information about port profiles, see [Chapter 1, “Overview.”](#)

Creating a Port Profile

The following flow chart shows the procedures required to create and configure a new port profile.

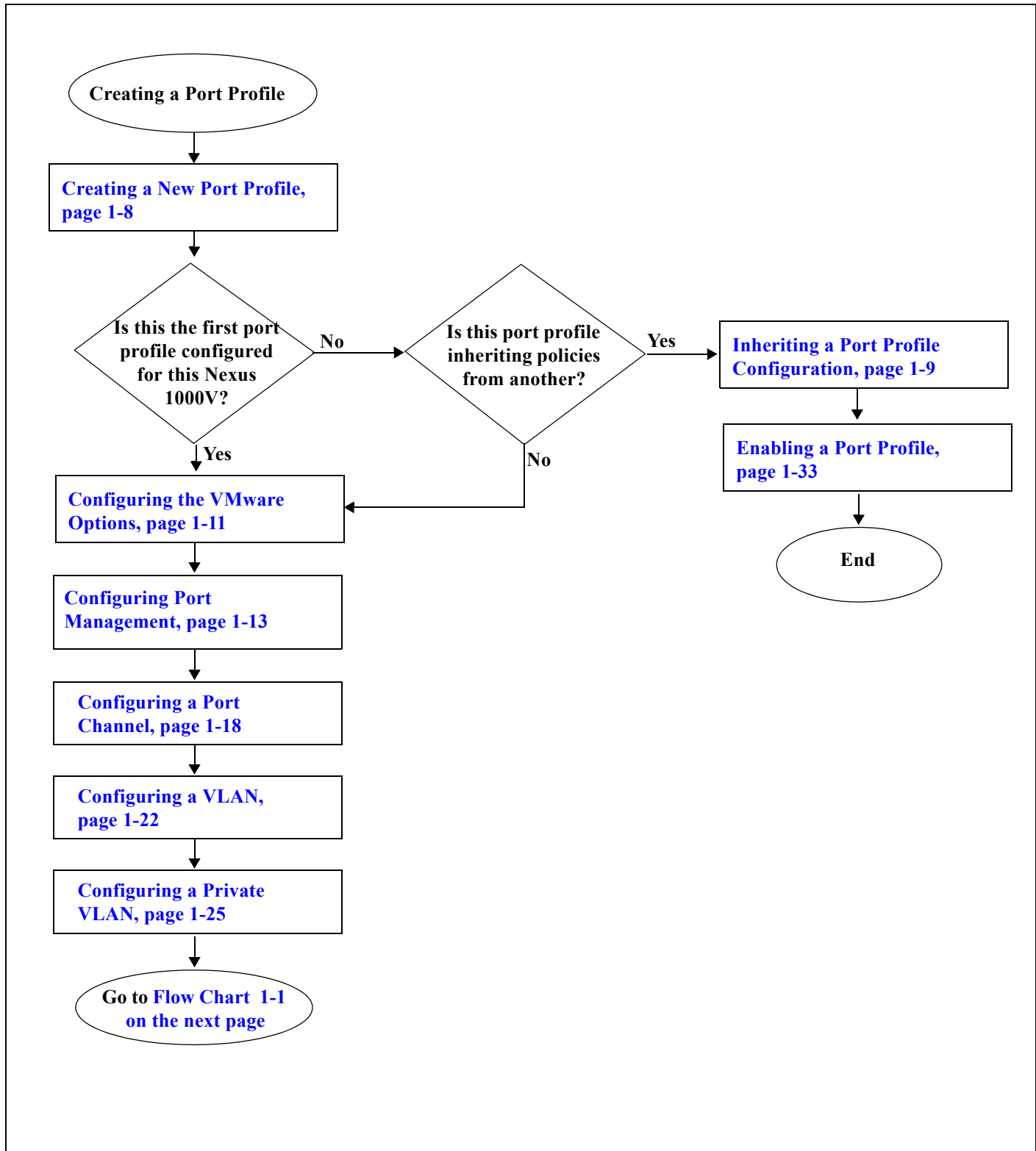
BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- You have configured the Nexus 1000V connection using the procedure in the document, *Cisco Nexus 1000V Getting Started Guide, Release 4.0(4)SV1(1)*.
- The Nexus 1000V is connected to the vCenter Server.
- You have identified the characteristics needed for this port profile.
- You know whether this port profile is inheriting policies, and if so, from which port profile.

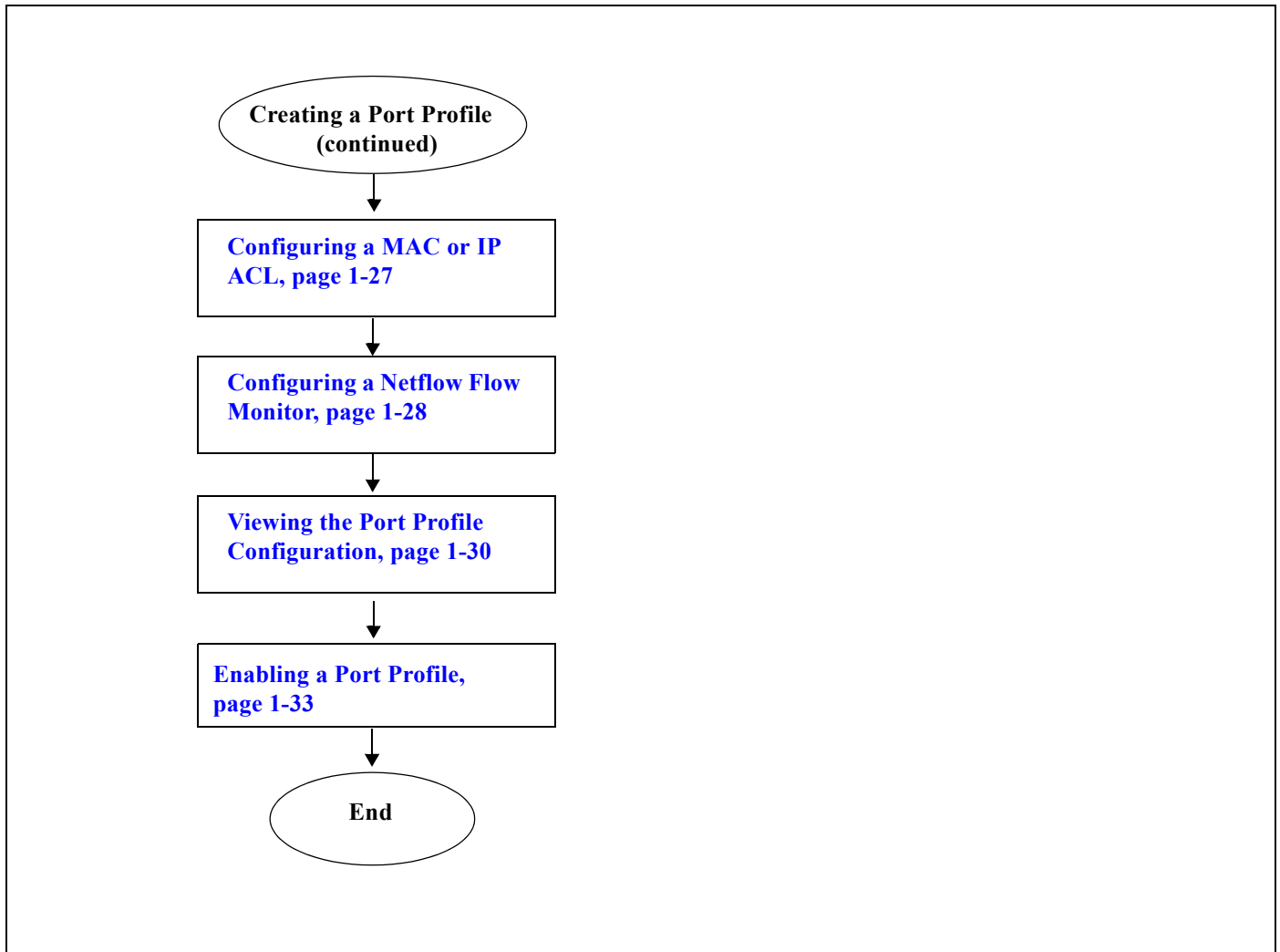


Note To find a port profile that most closely matches your current needs, use the procedure, [Viewing the Port Profile Configuration, page 1-30](#).

Figure 1-1 Flow Chart: Creating a Port Profile



Flow Chart 1-1 Creating a Port Profile



Updating an Existing Port Profile

The following flow chart shows the procedures required to update an existing port profile configuration.

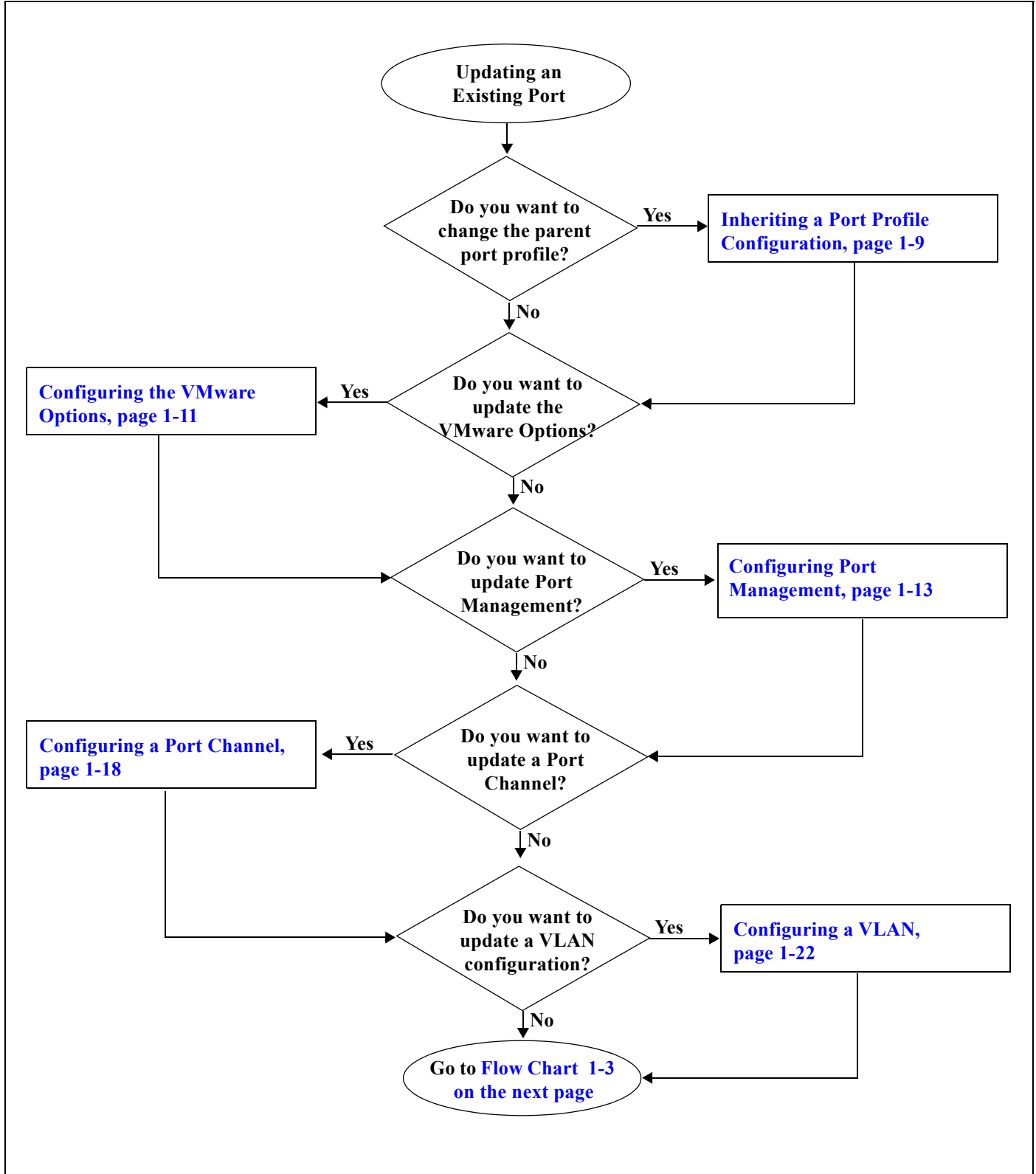
BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- The Nexus 1000V is connected to the vCenter Server.
- You have identified the characteristics needed for this port profile.
- You know whether this port profile is inheriting policies, and if so, from which port profile.

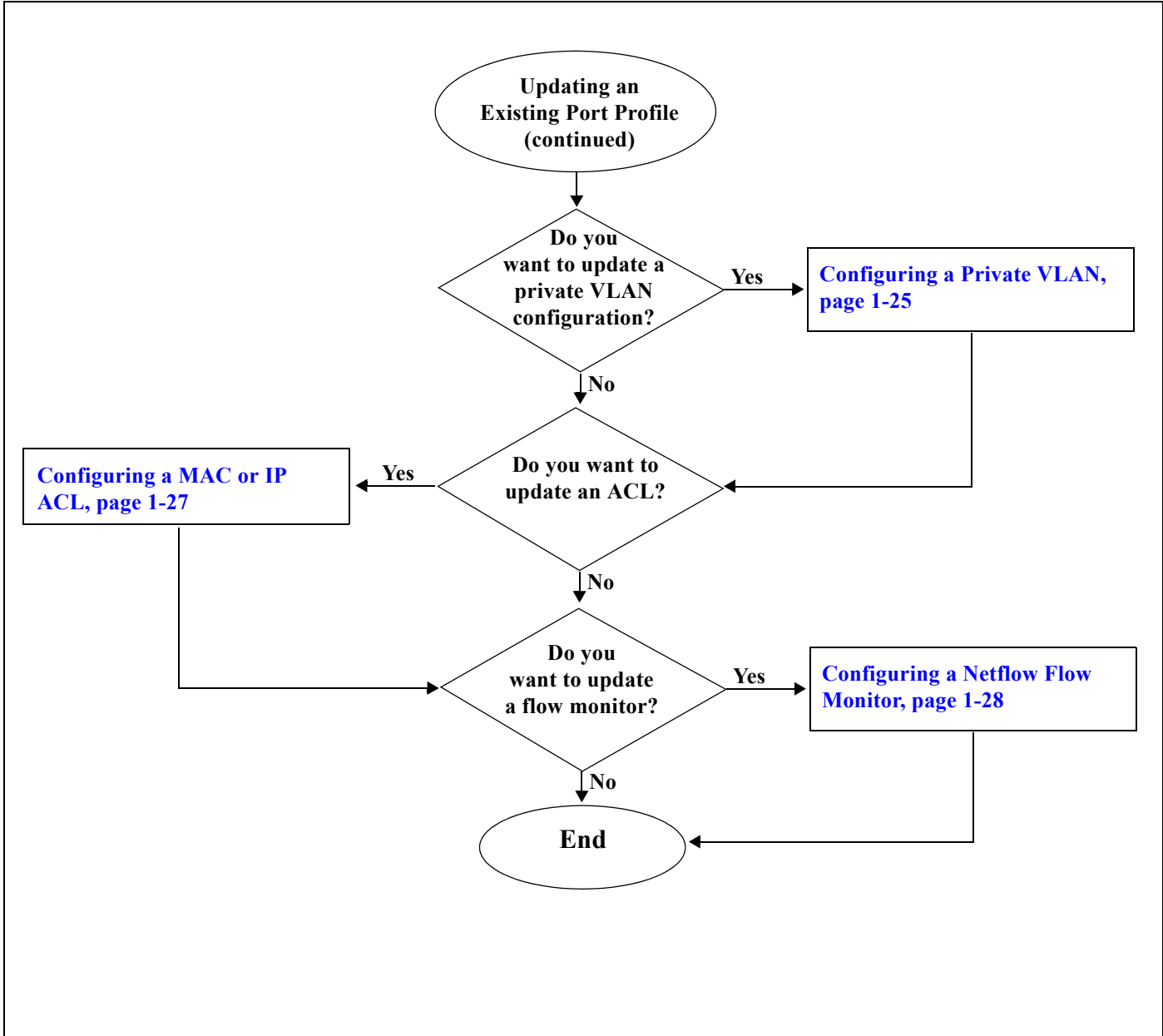


Note To identify a port profile to inherit, examine the current profiles and find a one that most closely matches your current needs, using the procedure, [Viewing the Port Profile Configuration, page 1-30](#).

Flow Chart 1-2 Updating an Existing Port Profile



Flow Chart 1-3 Updating an Existing Port Profile (continued)



Removing a Port Profile

The following flow chart shows the procedures required to remove a port profile.

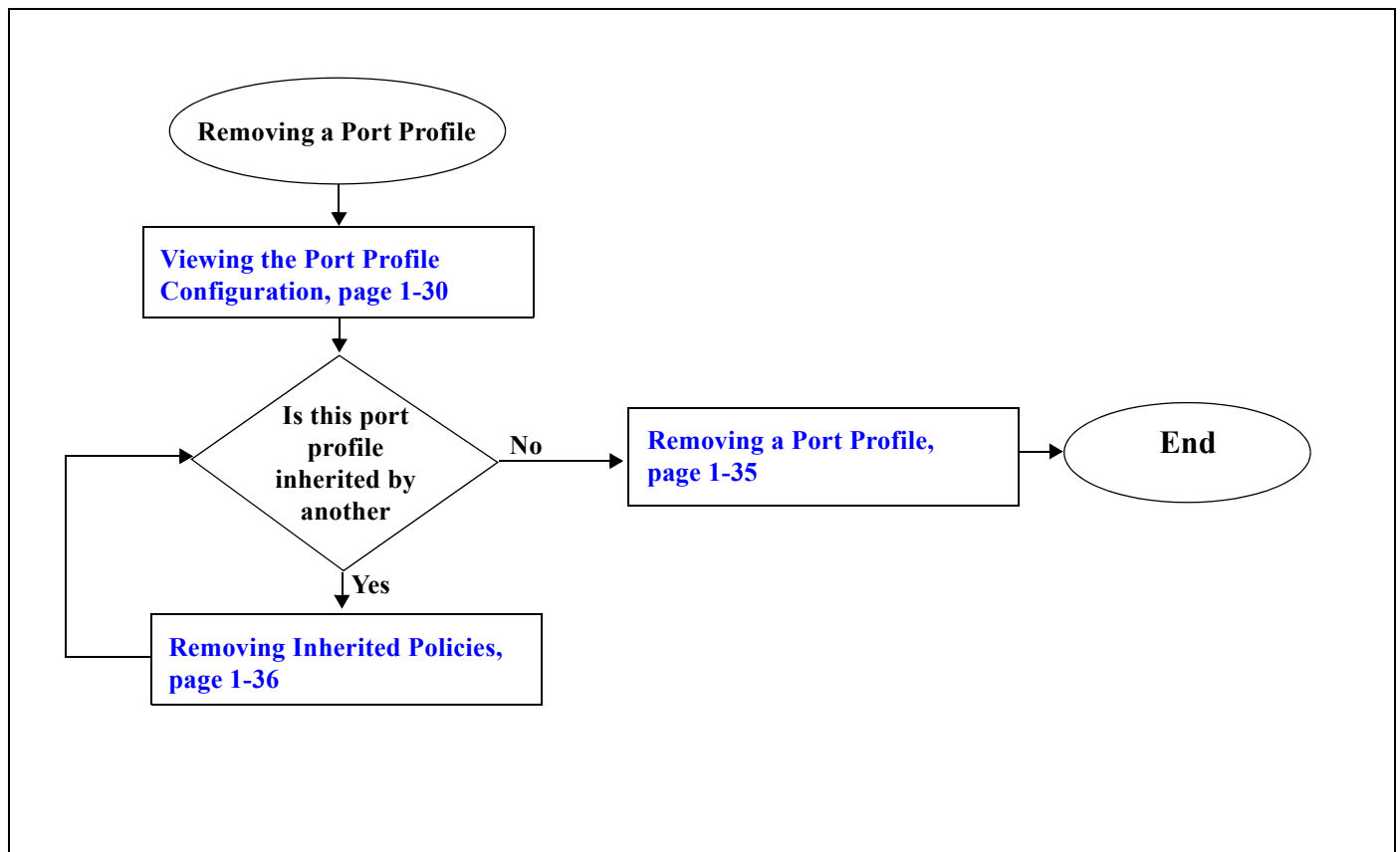
Before You Begin

- You are logged in to the CLI in configuration mode.
- You have configured the Nexus 1000V connection using the procedure in the document, *Cisco Nexus 1000V Getting Started Guide, Release 4.0(4)SV1(1)*.
- The Nexus 1000V is connected to vCenter Server/ESX.
- You know whether another port profile inherits the characteristics of this port profile.



Note To find a port profile that most closely matches your current needs, use the procedure, [Viewing the Port Profile Configuration, page 1-30](#).

Flow Chart 1-4 Removing a Port Profile



Creating a New Port Profile

Use this procedure to create a new port profile.

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- You know the name that you want to give to this port profile. A name can be up to 80 characters but each port profile must have a unique name.
- You know whether the ports are going to be uplink ports.



Note If the port profile is configured as an uplink (**capability uplink** command), then it cannot be used to configure VMware virtual ports.

- You know whether the ports need to be initialized with system settings.

SUMMARY STEPS

1. **config t**
2. **port-profile** *profilename*
3. (Optional) **description** *profiledescription*
4. (Optional) **capability** {uplink | l3control}
5. **show port-profile** [brief | expand-interface | usage] [name <*profile-name*>]
6. **copy running-config startup-config**

DETAILED STEPS

	Command	Description
Step 1	config t Example: n1000v# config t n1000v(config)#	Places you in the CLI Global Configuration mode.
Step 2	port-profile <i>profilename</i> Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)#	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 3	description <i>profiledescription</i> Example: n1000v(config-port-prof)# description allaccess4 n1000v(config-port-prof)#	Optional) Adds a description to the new port profile. This description is automatically pushed to the vCenter Server. profile description: up to 80 ASCII characters Note If the description includes spaces, it must be surrounded by quotations (“all access 4”).

	Command	Description
Step 4	capability {uplink l3control} Example: n1000v(config-port-prof)# capability uplink n1000v(config-port-prof)#	(Optional) Allows the port to be used as an uplink port. In vCenter Server, the port groups with uplink port profiles can be selected and assigned to physical ports (a vmnic or a pnic). Note If a port profile is configured as an uplink, then it cannot be used to configure VMware virtual ports.
Step 5	show port-profile name profile-name Example: n1000v(config-port-prof)# show port-profile name AccessProf	(Optional) Displays information about the port profile(s).
Step 6	copy running-config startup-config Example: n1000v(config-port-prof)# copy running-config startup-config	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

```

Example:
n1000v(config)# port-profile AccessProf
n1000v(config-port-prof)# description allaccess4
n1000v(config-port-prof)# capability uplink
n1000v(config-port-prof)# show port-profile name AccessProf
port-profile AccessProf
  description: allaccess
  status: disabled
  capability uplink: yes
  system vlans: none
  port-group:
  config attributes:
  evaluated config attributes:
  assigned interfaces:
n1000v(config-port-prof)# copy running-config startup-config

```

Inheriting a Port Profile Configuration

Use this procedure to inherit policies from an existing port profile configuration. This procedure takes the configuration of the inherited port profile and uses it as the default configuration for another profile.



Note To identify a port profile to inherit, examine the current profiles in your Nexus 1000V using the procedure, [Viewing the Port Profile Configuration, page 1-30](#), and find one with characteristics that most closely match your current needs.

Before You Begin

- You are logged in to the CLI in EXEC mode.
- You are familiar with [Table 1-2 on page 1-3](#) showing which characteristics can be inherited and which cannot.
- You know the name of the existing port profile whose policies will be inherited.

SUMMARY STEPS

1. **config t**
2. **port-profile** *profilename*
3. **inherit port-profile** *profilename*
4. (Optional) **capability** {uplink | l3control}
5. **show port-profile** [brief | expand-interface | usage] [name <*profile-name*>]
6. **copy running-config startup-config**

Detailed Steps

	Command	Description
Step 1	config t Example: n1000v# config t n1000v(config)#	Places you in CLI Global Configuration mode.
Step 2	port-profile <i>profilename</i> Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)#	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 1	inherit port-profile <i>portprofilename</i> Example: n1000v(config-port-prof)#inherit port-profile mgmtNetwork n1000v(config-port-prof)#	Adds the inherited configuration to the new port profile as a default configuration. Any inherited setting can be changed using the CLI. profile name: A name for the port profile whose policies are inherited. The name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 2	show port-profile Example: n1000v(config-port-prof)# show port-profile	(Optional) Displays information about the profile that inherits and the profile that is inherited.
Step 3	copy running-config startup-config Example: n1000v(config-port-prof)# copy running-config startup-config	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.
Step 4	You have completed this procedure. If using a flow chart, return to the one that pointed you here: <ul style="list-style-type: none"> • Figure 1-1, Flow Chart: Creating a Port Profile, on page 1-2 • Flow Chart 1-2, Updating an Existing Port Profile, on page 1-5 	

```

Example:
n1000v# config t
n1000v(config)# port-profile AccessProf
n1000v(config-port-prof)#inherit port-profile mgmtNetwork
n1000v(config-port-prof)# show port-profile
port-profile mgmtNetwork
description:

```

```

status: disabled
capability uplink: no
capability l3control: no
system vlans: none
port-group:
max-ports: 32
inherit:
config attributes:
  switchport mode trunk
  switchport trunk allowed vlan 100-110
  no shutdown
evaluated config attributes:
  switchport mode trunk
  switchport trunk allowed vlan 100-110
  no shutdown
assigned interfaces:
port-profile AccessProf
description:
status: enabled
capability uplink: yes
capability l3control: no
system vlans: none
port-group: WebProfile
max-ports: -
inherit: port-profile mgmtNetwork
config attributes:
  channel-group auto mode on
evaluated config attributes:
  switchport mode trunk
  switchport trunk allowed vlan 100-110
  channel-group auto mode on
  no shutdown
assigned interfaces

```

Configuring the VMware Options

Use this procedure to designate that this is a VMware port profile.

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- You know if you want the VMware port group to have the same name as the port profile; or if you are specifying an alternate name for the VMware port group.
- The **vmware max-ports** command is only available for non-uplink profiles.
- You know if you want to restrict the maximum number of ports that can be assigned to the port profile. If so, you know what the maximum number is.

SUMMARY STEPS

1. **config t**
2. **port-profile** *profilename*
3. **vmware port-group** [*pg_name*]
4. **vmware max-ports** *number*

5. **show port-profile** [brief | expand-interface | usage] [name <profile-name>]
6. **copy running-config startup-config**

DETAILED STEPS

	Command	Description/Result
Step 1	config t Example: n1000v# config t n1000v(config)#	Places you in the CLI Global Configuration mode.
Step 2	port-profile <i>profilename</i> Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)#	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 3	vmware port-group [<i>pg_name</i>] Example: n1000v(config-port-prof)# vmware port-group n1000v(config-port-prof)#	Designates the port-profile as a VMware port-group. The port profile is mapped to a VMware port group of the same name. When a vCenter Server connection is established, the port group created in Nexus 1000V is then distributed to the virtual switch on the vCenter Server. pg-name: Port group name. If you do not specify a pg-name, then the port group name will be the same as the port profile name. If you want to map the port profile to a different port group name, use the pg-name option followed by the alternate name.
Step 4	vmware max-ports <i>num</i> Example: n1000v(config-port-prof)# vmware max-ports 5 n1000v(config-port-prof)#	Designates the maximum number of ports that can be assigned to the non-uplink port profile. When the specified maximum number of ports is reached, no more ports can be assigned. The default is 32 ports.
Step 5	show port-profile name <i>profile-name</i> Example: n1000v(config-port-prof)# show port-profile name AccessProf	(Optional) Displays information about port profile(s).
Step 6	copy running-config startup-config Example: n1000v(config-port-prof)# copy running-config startup-config	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

```

Example:
n1000v# config t
n1000v(config)# port-profile AccessProf
n1000v(config-port-prof)# vmware port-group
n1000v(config-port-prof)# vmware max-ports 5
n1000v(config-port-prof)# show port-profile name AccessProf
port-profile AccessProf
  description: allaccess4
  status: disabled

```



```

capability uplink: yes
system vlans: none
port-group: AccessProf
config attributes:
evaluated config attributes:
assigned interfaces:
n1000v(config-port-prof)#

```

Configuring Port Management

Use this procedure to configure port management, including access or trunk mode, and the administrative state for each port in the profile.

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- You know whether you are configuring the port profile as an access port or trunk port.
 - An access port transmits packets on only one, untagged VLAN. You specify which VLAN traffic that the interface carries, which becomes the access VLAN. If you do not specify a VLAN for an access port, that interface carries traffic only on the default VLAN. The default VLAN is VLAN1.
 - A trunk port transmits untagged packets for the native VLAN; and encapsulated, tagged packets for all other VLANs.
- You know if you want to restrict the maximum number of ports that can be assigned to the port profile. If so, you know what the maximum number is.

SUMMARY STEPS

1. **config t**
2. **port-profile** *profilename*
3. **switchport mode** {*access* | *trunk*}
4. **no shutdown**
5. **show port-profile** [brief | expand-interface | usage] [name <*profile-name*>]
6. **copy running-config startup-config**

DETAILED STEPS

	Command	Description
Step 1	config t Example: n1000v# config t n1000v(config)#	Places you in the CLI Global Configuration mode.
Step 2	port-profile <i>profilename</i> Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)#	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.

	Command	Description
Step 3	<pre>switchport mode {access trunk}</pre> <p>Example: n1000v(config-port-prof)# switchport mode access n1000v(config-port-prof)# </p>	In configuration mode for the new port profile, use the switchport mode command to designate the interfaces as either switch access ports (the default) or trunks.
Step 4	<pre>no shutdown</pre> <p>Example: n1000v(config-port-prof)# no shutdown n1000v(config-port-prof)# </p>	Administratively enables all ports in the profile.
Step 5	<pre>show port-profile name profile-name</pre> <p>Example: n1000v(config-port-prof)# show port-profile name AccessProf </p>	(Optional) Displays information about port profile(s).
Step 6	<pre>copy running-config startup-config</pre> <p>Example: n1000v(config-port-prof)# copy running-config startup-config </p>	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

```

Example:
n1000v# config t
n1000v(config)# port-profile AccessProf
n1000v(config-port-prof)# switchport mode access
n1000v(config-port-prof)# no shutdown
n1000v(config-port-prof)# show port-profile name AccessProf
port-profile AccessProf
  description: allaccess4
  status: disabled
  capability uplink: yes
  system vlans: none
  port-group: AccessProf
  config attributes:
    switchport mode access
    no shutdown
  evaluated config attributes:
    switchport mode access
    no shutdown
  assigned interfaces:
n1000v(config-port-prof)#

```

Clearing a Port Management Policy from a Port Profile

Use this procedure to remove either the shutdown or switchport mode configuration from a port profile and change it to its default state. Removing the shutdown configuration changes the state of the port profile ports to shutdown. Removing the switchport mode converts the port profile ports to switch access ports.

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- After removing the configuration for an attribute, then the attribute does not appear in show command output.

SUMMARY STEPS

1. **config t**
2. **port-profile** *profilename*
3. **default** {shutdown | switchport mode}
4. **show port-profile** [brief | expand-interface | usage] [name <*profile-name*>]
5. **copy running-config startup-config**

DETAILED STEPS

	Command	Description
Step 1	config t Example: n1000v# config t n1000v(config)#	Places you in the CLI Global Configuration mode.
Step 2	port-profile <i>profilename</i> Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)#	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 3	default {shutdown switchport mode} Example: n1000v(config-port-prof)# default switchport mode n1000v(config-port-prof)#	Removes either the shutdown attribute or the switchport mode attribute configuration from the port profile. <ul style="list-style-type: none"> • shutdown: Reverts port profile ports to shutdown state • switchport mode: Reverts port profile ports to switch access ports.
Step 4	show port-profile name <i>profile-name</i> Example: n1000v(config-port-prof)# show port-profile name AccessProf	(Optional) Displays information about port profile(s). After removing an attribute's configuration, the show command output does not display the attribute.

```

Example:
n1000v# config t
n1000v(config)# port-profile AccessProf
n1000v(config-port-prof)# default shutdown
n1000v(config-port-prof)# show port-profile name AccessProf
port-profile AccessProf
  description: allaccess4
  status: disabled
  capability uplink: yes
  system vlans: none
  port-group: AccessProf
  config attributes:

```

```

evaluated config attributes:
assigned interfaces:
n1000v(config-port-prof)#

```

Configuring a System Port Profile

Use this procedure to configure a system port profile for critical ports.

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- For information about system port profiles, see [“Information about the System Port Profile” section on page 1-4](#).

SUMMARY STEPS

1. **config t**
2. **port-profile** *profilename*
3. **description** *profiledescription*
4. **system vlan** *vlan-id-list*
5. **show port-profile** [brief | expand-interface | usage] [name <*profile-name*>]
6. **copy running-config startup-config**

DETAILED STEPS

	Command	Description
Step 1	config t Example: n1000v# config t n1000v(config)#	Places you in the CLI Global Configuration mode.
Step 2	port-profile <i>profilename</i> Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)#	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 3	description <i>profiledescription</i> Example: n1000v(config-port-prof)# description "System profile for critical ports" n1000v(config-port-prof)#	Adds a description to the port profile. This description is automatically pushed to the vCenter Server. profile description: up to 80 ASCII characters Note If the description includes spaces, it must be surrounded by quotations.

	Command	Description
Step 4	system vlan <i>vlan-id-list</i> Example: n1000v(config-port-prof)# system vlan 114,115 n1000v(config-port-prof)#	Adds the system vlan to this port profile. A system vlan is used to configure and bring up physical or veth ports before the VSM has established communication with the VEM.
Step 5	show port-profile name <i>profile-name</i> Example: n1000v(config-port-prof)# show port-profile name AccessProf	(Optional) Displays information about port profile(s). After removing an attribute's configuration, the show command output does not display the attribute.

```

Example:
n1000v# show port-profile
port-profile UplinkProfile1
  description: System profile for critical ports
  status: enabled
  capability uplink: yes
  system vlans: 114,115
  port-group: up1
  config attributes:
    switchport mode trunk
    switchport trunk allowed vlan 110-119
    no shutdown
  evaluated config attributes:
    switchport mode trunk
    switchport trunk allowed vlan 110-119
    no shutdown
  assigned interfaces:
    Ethernet4/2
port-profile UplinkProfile2
  description:
  status: enabled
  capability uplink: yes
  system vlans: none
  port-group: up2
  config attributes:
    switchport mode trunk
    switchport trunk allowed vlan 117
    channel-group auto mode on
    no shutdown
  evaluated config attributes:
    switchport mode trunk
    switchport trunk allowed vlan 117
    channel-group auto mode on
    no shutdown
  assigned interfaces:
    port-channell
    Ethernet4/3

n1000v# show running-config
.
.
port-profile UplinkProfile1
  capability uplink
  vmware port-group
  switchport mode trunk
  switchport trunk allowed vlan 110-119
  no shutdown
  system vlan 114,115

```

```

state enabled
port-profile UplinkProfile2
capability uplink
vmware port-group
switchport mode trunk
switchport trunk allowed vlan 117
channel-group auto mode on
no shutdown
state enabled

```

Configuring a Port Channel

This section includes the following procedures:

- [Configuring a Port Channel Connecting to a Single Upstream Switch, page 1-18](#)
- [Configuring a Port Channel Connecting to Two Upstream Switches, page 1-20](#)

Configuring a Port Channel Connecting to a Single Upstream Switch

Use this procedure to configure a port channel in a port profile when all ports in the group are connected to the same upstream switch.

To configure a port channel in a port profile when the ports are connected to two different upstream switches, see the “[Configuring a Port Channel Connecting to Two Upstream Switches](#)” procedure on [page 1-20](#).

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- The channel group number assignment is made automatically when the port profile is assigned to the first interface.
- The channel group mode is set to on.

SUMMARY STEPS

1. **config t**
2. **port-profile** *profilename*
3. **channel-group auto mode** { on | active | passive } [**sub-group cdp**]
4. **show port-profile** [brief | expand-interface | usage] [name <*profile-name*>]
5. **copy running-config startup-config**

DETAILED STEPS

	Command	Description
Step 1	<pre>config t</pre> <p>Example: n1000v# config t n1000v(config)#</p>	Places you in the CLI Global Configuration mode.
Step 2	<pre>port-profile <i>profilename</i></pre> <p>Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)</p>	Places you into Port Profile Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 3	<pre>channel-group {auto} [mode {on active passive}] {sub-group cdp}</pre> <p>Example: n1000v(config-port-prof)# channel-group auto mode on n1000v(config-port-prof)#</p>	Defines a channel group and saves it in the running configuration. <ul style="list-style-type: none"> • auto: A unique port channel is created and automatically assigned when the port profile is assigned to the first interface. Each additional interface belonging to the same module is added to the same port-channel. In VMware environments, a different port channel is created for each module. • mode: on, active, or passive (active and passive use LACP) • sub-group cdp: Identifies this channel group as asymmetric. CDP information is used to automatically create up to two subgroups for managing the traffic flow.
Step 4	<pre>show port-profile name <i>profile-name</i></pre> <p>Example: n1000v(config-port-prof)# show port-profile name AccessProf</p>	(Optional) Displays information about port profile(s).
Step 5	<pre>copy running-config startup-config</pre> <p>Example: n1000v(config-port-prof)# copy running-config startup-config</p>	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

Example:

```
n1000v# config t
n1000v(config)# port-profile AccessProf
n1000v(config-port-prof)# channel-group auto mode on
n1000v(config-port-prof)# show port-profile name AccessProf
port-profile AccessProf
  description: allaccess4
  status: disabled
  capability uplink: yes
  port-group: AccessProf
  config attributes:
    switchport mode access
    channel-group auto mode on
```

```

evaluated config attributes:
  switchport mode access
  channel-group auto mode on
assigned interfaces:
n1000v(config-port-prof)#

```

Configuring a Port Channel Connecting to Two Upstream Switches

Use this procedure to configure the uplink port profile, to be used by the physical NICs in the VEM, in vPC-HM when the ports in the port channel connect to two different upstream switches.

To configure a port channel in a port profile when the ports are connected to a single upstream switch, see the [“Configuring a Port Channel” procedure on page 1-18](#).

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- When you create a port channel, an associated channel group is automatically created.
- The channel group mode must be set to **on**.
- You know whether CDP is configured in the upstream switches. If so, then CDP creates a subgroup for each upstream switch to manage its traffic separately.
- If you are using CDP with the default CDP timer (60 seconds), links that advertise that they are in service and then out of service in quick succession can take up to 60 seconds to be returned to service.
- If CDP is not configured in the upstream switch, then you must manually configure subgroups to manage the traffic flow on the separate switches.
- If vPC-HM is not configured when port channels connect to two different upstream switches, then the VMs behind the Cisco Nexus 1000V receive duplicate packets from the network for broadcast/unknown floods/multicast.
- vPC-HM can also be configured on the interface. For more information, see the *Cisco Nexus 1000V Interface Configuration Guide, Release 4.0(4)SV1(1)*.

SUMMARY STEPS

1. **config t**
2. **port-profile** *profilename*
3. **channel-group auto mode** { **on** | **active** | **passive** } [**sub-group cdp**]
4. **Do one of the following**
 - If CDP is not configured for the upstream switch(es), then continue with the next step.
 - If CDP is configured for the upstream switch(es), then go to Step 9.
5. **exit**
6. **interface ethernet** *range*
7. **sub-group-id** *number*
8. Repeat steps 6 and 7 for each port member connected to an upstream switch that is not configured for CDP.
9. **show port-profile** [brief | expand-interface | usage] [name <*profile-name*>]

10. copy running-config startup-config

DETAILED STEPS

	Command	Description
Step 1	<pre>config t</pre> <p>Example: <pre>n1000v# config t n1000v(config)#</pre></p>	Places you in the CLI Global Configuration mode.
Step 2	<pre>port-profile profilename</pre> <p>Example: <pre>n1000v(config)# port-profile uplinkProf n1000v(config-port-prof)#</pre></p>	<p>Places you into Configuration mode for the specified port profile.</p> <p>The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.</p>
Step 3	<pre>channel-group {auto} [mode {on active passive}] {sub-group cdp}</pre> <p>Example: <pre>n1000v(config-port-prof)# channel-group auto mode on sub-group cdp n1000v(config-port-prof)#</pre></p>	<p>Defines a channel group for the specified port profile and saves it in the running configuration.</p> <ul style="list-style-type: none"> • auto: A unique port channel is created and automatically assigned when the port profile is assigned to the first interface. Each additional interface belonging to the same module is added to the same port-channel. In VMware environments, a different port channel is created for each module. • mode: on (Active and passive modes use LACP and are not supported for vPC-HM.) • sub-group cdp: Identifies this channel group as asymmetric. CDP information is used to automatically create up to two subgroups for managing the traffic flow. If CDP is not configured in the upstream switch, then you must also configure subgroups manually.
Step 4	<p>Do one of the following:</p> <ul style="list-style-type: none"> – If CDP is not configured for both upstream switch(es), then continue with the next step. – If CDP is configured for both upstream switch(es), then go to Step 9. 	
Step 5	<pre>exit</pre> <p>Example: <pre>n1000v(config-if)# exit n1000v(config)#</pre></p>	Exits the Interface Configuration mode for the port channel and returns you to Global Configuration mode.
Step 6	<pre>interface ethernet range</pre> <p>Example: <pre>n1000v(config)# interface ethernet3/2-3 n1000v(config-if)#</pre></p>	Places you into Interface Configuration mode for the specified interface range.

	Command	Description
Step 7	<code>sub-group id number</code> Example: n1000v(config-if)# <code>sub-group-id 0</code> n1000v(config-if)#	Configures the specified port channel members as vPC-HM so that the specified subgroup can manage traffic for one of the two upstream switches. Allowable subgroup numbers = 0 or 1
Step 8	Repeat Step 6 and Step 7 for each port member connected to an upstream switch that is not configured for CDP.	
Step 9	<code>show port-profile name profile-name</code> Example: n1000v(config-port-prof)# <code>show port-profile name AccessProf</code>	(Optional) Displays information about port profile(s).
Step 10	<code>copy running-config startup-config</code> Example: n1000v(config-port-prof)# <code>copy running-config startup-config</code>	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

```

Example:
n1000v# conf t
n1000v(config)# port-profile uplinkProf
n1000v(config-port-prof)# channel-group auto mode on sub-group cdp
doc-n1000v(config-port-prof)# show port-profile name uplinkProf
port-profile uplinkProf
  description:
  status: disabled
  capability uplink: no
  capability l3control: no
  system vlans: none
  port-group:
  max-ports: 32
  inherit:
  config attributes:
    channel-group auto mode on sub-group cdp
  evaluated config attributes:
    channel-group auto mode on sub-group cdp
  assigned interfaces:
n1000v(config-port-prof)# copy running-config startup-config

```

The following is an example of a port profile configuration where the ports connect to two different upstream switches. This port profile can be used with all ports configured in the channel.

```

n1000v# conf t
n1000v(config)# port-profile up-system
n1000v(config-port-prof)# capability uplink
n1000v(config-port-prof)# vmware port-group
n1000v(config-port-prof)# switchport mode trunk
n1000v(config-port-prof)# switchport trunk allowed vlan 232,270-279
n1000v(config-port-prof)# channel-group auto mode on sub-group cdp
n1000v(config-port-prof)# no shutdown
n1000v(config-port-prof)# system vlan 232,270-271
n1000v(config-port-prof)# state enabled

```

Configuring a VLAN

Use this procedure to configure a VLAN for the port profile.

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- You know whether the port profile is needed for trunks or access ports.
- You know the needed VLAN configuration for this port profile.
- The VLAN must already be created on the switch before you can configure it.
- You know the VLAN ID for the VLAN you are configuring.
- VLAN1 is the default VLAN. You cannot create, modify, or delete this VLAN.
- You know the supported VLAN ranges. Nexus 1000V supports up to 4094 VLANs in accordance with the IEEE 802.1Q standard. These VLANs are organized into ranges with different uses.

Table 1-1 describes the available VLAN ranges.

Table 1-1 VLAN Ranges

VLANs Numbers	Range	Usage
1	Normal	Cisco default. You can use this VLAN, but you cannot modify or delete it.
2–1005	Normal	You can create, use, modify, and delete these VLANs.
1006-4094	Extended	You can create, name, and use these VLANs. You cannot change the following parameters: <ul style="list-style-type: none"> • State is always active. • VLAN is always enabled. You cannot shut down these VLANs.
3968-4047 and 4094	Internally allocated	These 80 VLANs, plus VLAN 4094, are allocated for internal device use. You cannot create, delete, or modify any VLANs within the block reserved for internal use.

SUMMARY STEPS

1. **config t**
2. **port-profile** *profilename*
3. Do one of the following:
 - (Optional) **switchport access vlan** *vlan-id-access*
 - (Optional) **switchport trunk allowed vlan** { *allowed-vlans* | add *add-vlans* | except *except-vlans* | remove *remove-vlans* | all | none }
4. **switchport trunk native vlan** *vlan-id*
5. **show port-profile** [brief | expand-interface | usage] [name <*profile-name*>]
6. **copy running-config startup-config**

DETAILED STEPS

	Command	Description
Step 1	Do one of the following: <ul style="list-style-type: none"> If you are assigning this switchport to VLAN 1, the default, go to Step 10. No action is needed since this is the default configuration. Otherwise, continue with the next step. 	
Step 2	<code>config t</code> Example: n1000v# config t n1000v(config)#	Places you in the CLI Global Configuration mode.
Step 3	<code>port-profile profilename</code> Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)#	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 4	Do one of the following: <ul style="list-style-type: none"> To assign a specific VLAN ID number to the access port, continue with the next step. Otherwise, go to Step 7. 	
Step 5	<code>switchport access vlan vlan-id-access</code> Example: n1000v(config-port-prof)# switchport access vlan 4 n1000v(config-port-prof)#	Assigns a VLAN ID to the access port for this port profile.
Step 6	Go to Step 10 .	
Step 7	Do one of the following: <ul style="list-style-type: none"> To specify allowed VLAN IDs on the trunk port, continue with the next step. To set the trunking native characteristics when the interface is in trunking mode, go to Step 9. Otherwise, go to Step 10. 	
Step 8	<code>switchport trunk allowed vlan {allowed-vlans add add-vlans except except-vlans remove remove-vlans all none}</code> Example: n1000v(config-port-prof)# switchport trunk allowed vlan all n1000v(config-port-prof)#	To specify allowed VLANs on the trunk port, in configuration mode for the new port profile, use the switchport trunk allowed vlan command followed by an option: <ul style="list-style-type: none"> allowed VLAN IDs add VLAN IDs except VLAN IDs remove VLAN IDs all none
Step 9	<code>switchport trunk native vlan vlan-id</code> Example: n1000v(config-port-prof)# switchport trunk native vlan 3 n1000v(config-port-prof)#	Sets the trunking native characteristics when interface is in trunking mode.

	Command	Description
Step 10	<pre>show port-profile name profile-name</pre> <p>Example: n1000v(config-port-prof)# show port-profile AccessProf</p>	(Optional) Displays information about port profile(s).
Step 11	<pre>copy running-config startup-config</pre> <p>Example: n1000v(config-port-prof)# copy running-config startup-config</p>	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

```

Example:
n1000v# config t
n1000v(config)# port-profile AccessProf
n1000v(config-port-prof)# switchport trunk allowed vlan all
n1000v(config-port-prof)# switchport trunk native vlan 3
n1000v(config-port-prof)# show port-profile name AccessProf
port-profile AccessProf
  description: allaccess4
  status: disabled
  capability uplink: yes
  port-group: AccessProf
  config attributes:
    switchport mode access
    switchport trunk allowed vlan all
    channel-group auto mode on
  evaluated config attributes:
    switchport mode access
    switchport trunk allowed vlan all
    channel-group auto mode on
  assigned interfaces:
n1000v(config-port-prof)#

```

Configuring a Private VLAN

Use this procedure to configure the port profile to be used as a private VLAN.

For detailed information about private VLAN, see the document, *Cisco Nexus 1000V Layer 2 Switching Configuration Guide, Release 4.0(4)SV1(1)*.

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- You know the VLAN IDs for both the primary VLAN and the secondary VLAN in the private VLAN pair.
- You know whether this private VLAN inherits its configuration.

SUMMARY STEPS

1. `config t`
2. `port-profile profilename`
3. `switchport mode private-vlan {host | promiscuous}`

4. **switchport private-vlan host-association** *primary-vlan secondary-vlans*
5. **switchport private-vlan mapping** *primary_vlan* [add | remove] *secondary_vlans*
6. **show port-profile** [brief | expand-interface | usage] [name <*profile-name*>]
7. **copy running-config startup-config**

DETAILED STEPS

	Command	Description
Step 1	<pre>config t</pre> <p>Example: n1000v# config t n1000v(config)#</p>	Places you in the CLI Global Configuration mode.
Step 2	<pre>port-profile profilename</pre> <p>Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)#</p>	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 3	<pre>switchport mode private-vlan {host promiscuous}</pre> <p>Example: n1000v(config-port-prof)# switchport mode private-vlan promiscuous n1000v(config-port-prof)#</p>	To designate the port profile for use as a private VLAN, in configuration mode for the new port profile, use the switchport mode private-vlan command followed by the private VLAN policy (host or promiscuous). <ul style="list-style-type: none"> • promiscuous: Promiscuous ports belong to the primary VLAN and communicate with the Layer 3 gateway. Promiscuous ports can communicate with any interface in the PVLAN domain, including those associated with secondary VLANs. • host: Host ports belong to the secondary VLANs in the PVLAN pairs as one of the following: <ul style="list-style-type: none"> – community PVLAN host port – isolated PVLAN host port
Step 4	<pre>switchport private-vlan host-association primary-vlan secondary-vlans</pre> <p>Example: n1000v(config-port-prof)# switchport private-vlan host-association 3 300 301 302 n1000v(config-port-prof)#</p>	Assigns the primary and secondary PVLAN IDs to the port profile and saves this association in the running configuration. <ul style="list-style-type: none"> • primary: Each PVLAN has only one primary VLAN ID. • secondary: Each PVLAN can have multiple secondary VLAN IDs.
Step 5	<pre>switchport private-vlan mapping primary_vlan [add remove] secondary_vlans</pre> <p>Example: n1000v(config-port-prof)# switchport private-vlan mapping primary_vlan add 3 300 301 302 n1000v(config-port-prof)#</p>	Maps the PVLAN for the port profile and saves it in the running configuration.

	Command	Description
Step 6	<pre>show port-profile name profile-name</pre> <p>Example: n1000v(config-port-prof)# show port-profile name AccessProf</p>	(Optional) Displays information about port profile(s).
Step 7	<pre>copy running-config startup-config</pre> <p>Example: n1000v(config-port-prof)# copy running-config startup-config</p>	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

Configuring a MAC or IP ACL

Use this procedure to configure a MAC or an IP ACL for a port profile.

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- You know the name of the IP or MAC access control list that you want to configure for this port profile.
- You know the direction of packet flow for the access list.
- For more information about ACLs, see the *Cisco Nexus 1000V Security Configuration Guide, Release 4.0(4)SV1(1)*

SUMMARY STEPS

1. **config t**
2. **port-profile profilename**
3. **mac port access-group** {acl_name | acl_dir}
ip port access-group {acl_name | acl_dir}
4. **show port-profile** [brief | expand-interface | usage] [name <profile-name>]
5. **copy running-config startup-config**

DETAILED STEPS

	Command	Description
Step 1	<pre>config t</pre> <p>Example: n1000v# config t n1000v(config)#</p>	Places you in the CLI Global Configuration mode.
Step 2	<pre>port-profile profilename</pre> <p>Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)#</p>	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.

	Command	Description
Step 3	Do one of the following: <ul style="list-style-type: none"> • If adding a MAC ACL, continue with the next step. • If adding an IP ACL go to Step 5. 	
Step 4	<pre>mac port access-group {acl_name acl_dir}</pre> <p>Example: <pre>n1000v(config-port-prof)# mac port access-group allaccess4 out n1000v(config-port-prof)#</pre> Continue with Step 6.</p>	Adds a MAC ACL to the port profile and saves it in the running configuration. <ul style="list-style-type: none"> • acl_name: The name of the ACL that you are adding to this port profile. • acl_dir: The direction of packet flow, either inbound or outbound.
Step 5	<pre>ip port access-group {acl_name acl_dir}</pre> <p>Example: <pre>n1000v(config-port-prof)# ip flow access-group allaccess4 in n1000v(config-port-prof)#</pre> </p>	Adds the specified IP ACL to the port profile and saves it in the running configuration. <ul style="list-style-type: none"> • acl_name: The name of the ACL that you are adding to this port profile. • acl_dir: The direction of packet flow, either inbound or outbound.
Step 6	<pre>show port-profile name profile-name</pre> <p>Example: <pre>n1000v(config-port-prof)# show port-profile name AccessProf</pre> </p>	(Optional) Displays the port profile configuration.
Step 7	<pre>copy running-config startup-config</pre> <p>Example: <pre>n1000v(config-port-prof)# copy running-config startup-config</pre> </p>	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

```

Example:
n1000v# config t
n1000v(config)# port-profile AccessProf
n1000v(config-port-prof)# mac port access-group allaccess4
n1000v(config-port-prof)# show port-profile name AccessProf
port-profile AccessProf
  description: allaccess4 out
  status: disabled
  capability uplink: yes
  system vlans: none
  port-group: AccessProf
  config attributes:
    mac port access-group allaccess4 out
    ip flow monitor allaccess4 in
  evaluated config attributes:
    mac port access-group allaccess4 out
    ip flow monitor allaccess4 out
  assigned interfaces:
n1000v(config-port-prof)#

```

Configuring a Netflow Flow Monitor

Use this procedure to configure a Netflow flow monitor for the port profile.

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- For more information about netflow, see the *Cisco Nexus 1000V System Management Configuration Guide, Release 4.0(4)SV1(1)*

SUMMARY STEPS

1. **config t**
2. **port-profile** *profilename*
3. **ip flow monitor** *name* {**input** | **output**}
4. **show port-profile** [brief | expand-interface | usage] [name <*profile-name*>]
5. **copy running-config startup-config**

DETAILED STEPS

	Command	Description
Step 1	config t Example: n1000v# config t n1000v(config)#	Places you in the CLI Global Configuration mode.
Step 2	port-profile <i>profilename</i> Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)#	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 3	ip flow monitor <i>name</i> { input output }	Applies a flow monitor to the port profile. <ul style="list-style-type: none"> • name: adds the name of the flow monitor • input: applies the flow monitor to incoming traffic. • output: applies the flow monitor to outgoing traffic.
Step 4	show port-profile <i>name</i> <i>profile-name</i> Example: n1000v(config-port-prof)# show port-profile name AccessProf	(Optional) Displays information about port profile(s).
Step 5	copy running-config startup-config Example: n1000v(config-port-prof)# copy running-config startup-config	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

Example:
n1000v# **config t**
n1000v(config)# **port-profile** AccessProf
n1000v(config-port-prof)# **ip flow monitor** allaccess4 output
n1000v(config-port-prof)# **show port-profile** name AccessProf

```

port-profile AccessProf
  description: allaccess4
  status: disabled
  capability uplink: yes
  system vlans: none
  port-group: AccessProf
  config attributes:
    ip flow monitor allaccess4 output
  evaluated config attributes:
    ip flow monitor allaccess4 output
  assigned interfaces:
n1000v(config-port-prof)#

```

Viewing the Port Profile Configuration

Use this procedure to view port profile configurations.

BEFORE YOU BEGIN

- You are logged in to the CLI in any command mode.
- You have configured the port profile using the section, [Creating a New Port Profile, page 1-8](#).

DETAILED STEPS

	Command	Description
Step 1	<code>show port-profile [brief expand-interface usage] [name <profile-name>]</code>	Display port profile configuration(s).

Example 1-1 Command output for the command, show port-profile

```

n1000v# show port-profile
port-profile UplinkProfile1
  description: Profile for critical system ports
  status: enabled
  capability uplink: yes
  capability l3control: no
  system vlans: 1,110-119
  port-group: UplinkProfile1
  max-ports: -
  inherit:
  config attributes:
    switchport mode trunk
    switchport trunk allowed vlan 1,110-119
    no shutdown
  evaluated config attributes:
    switchport mode trunk
    switchport trunk allowed vlan 1,110-119
    no shutdown
  assigned interfaces:
    Ethernet4/2
port-profile UplinkProfile2
  description:
  status: enabled

```

```

capability uplink: yes
capability l3control: no
system vlans: none
port-group: UplinkProfile2
max-ports: -
inherit:
config attributes:
  switchport mode trunk
  switchport trunk allowed vlan 117
  no shutdown
evaluated config attributes:
  switchport mode trunk
  switchport trunk allowed vlan 117
  no shutdown
assigned interfaces:
  Ethernet4/3
port-profile Ubuntu-Profile
description:
status: enabled
capability uplink: no
capability l3control: no
system vlans: none
port-group: Ubuntu-Profile
max-ports: 32
inherit:
config attributes:
  switchport mode access
  switchport access vlan 118
  no shutdown
evaluated config attributes:
  switchport mode access
  switchport access vlan 118
  no shutdown
assigned interfaces:
  Vethernet1
n1000v#

```

Example 1-2 Command output for the command, show port-profile name

```

n1000v# show port-profile name Ubuntu-Profile
port-profile Ubuntu-Profile
description:
status: enabled
capability uplink: no
capability l3control: no
system vlans: none
port-group: Ubuntu-Profile
max-ports: 32
inherit:
config attributes:
  switchport mode access
  switchport access vlan 118
  no shutdown
evaluated config attributes:
  switchport mode access
  switchport access vlan 118
  no shutdown
assigned interfaces:
  Vethernet1
n1000v#

```

Example 1-3 Command output for the command, show port-profile brief

```
n1000v# show port-profile brief
```

Port Profile	Profile State	Remote Mgmt	Conf Items	Eval Items	Child Intfs	Child Profs
UplinkProfile1	enabled	vmware	3	3	1	0
UplinkProfile2	enabled	vmware	3	3	2	0
Ubuntu-Profile	enabled	vmware	3	3	1	0

```
n1000v#
```

```
n1000v# sh port-profile usage
```

Port Profile	Port	Adapter	Owner
UplinkProfile1	Eth2/2	vmnic1	mcs-srvr26
UplinkProfile2	Eth2/3	vmnic2	mcs-srvr26
	Eth2/4	vmnic3	mcs-srvr26
Ubuntu-Profile	Veth439		ubuntu-2

```
n1000v#
```

Example 1-4 Command output for the command, show port-profile expand-interface name

```
n1000v# show port-profile expand-interface name UplinkProfile1
```

```
port-profile UplinkProfile1
Ethernet2/2
  switchport mode trunk
  switchport trunk allowed vlan 110-119
  no shutdown
n1000v#
```

Example 1-5 Command output for the command, show port-profile expand-interface

```
n1000v# show port-profile expand-interface
```

```
port-profile UplinkProfile1
Ethernet2/2
  switchport mode trunk
  switchport trunk allowed vlan 110-119
  no shutdown

port-profile UplinkProfile2
Ethernet2/3
  switchport mode trunk
  switchport trunk allowed vlan 117
  no shutdown
Ethernet2/4
  switchport mode trunk
  switchport trunk allowed vlan 117
  no shutdown

port-profile Ubuntu-Profile
Vethernet439
  switchport mode access
```

```
        switchport access vlan 118
        no shutdown
n1000v#
```

Example 1-6 Command output for the port-profile portion of the command, show running-config

```
n1000v# show running-config
...
port-profile UplinkProfile1
  description "Profile for critical system ports"
  capability uplink
  vmware port-group
  switchport mode trunk
  switchport trunk allowed vlan 110-119
  no shutdown
  state enabled
port-profile UplinkProfile2
  capability uplink
  vmware port-group
  switchport mode trunk
  switchport trunk allowed vlan 117
  no shutdown
  state enabled
port-profile Ubuntu-Profile
  vmware port-group
  switchport mode access
  switchport access vlan 118
  no shutdown
  state enabled
...
```

Enabling a Port Profile

Use this procedure to enable a port profile.

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.

SUMMARY STEPS

1. **config t**
2. **port-profile** *profilename*
3. **state enabled**
4. **show port-profile** [brief | expand-interface | usage] [name <*profile-name*>]
5. **copy running-config startup-config**

DETAILED STEPS

	Command	Description
Step 1	<code>config t</code> Example: n1000v# config t n1000v(config)#	Places you in the CLI Global Configuration mode.
Step 2	<code>port-profile profilename</code> Example: n1000v(config)# port-profile AccessProf n1000v(config-port-prof)#	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 3	<code>state enabled</code> Example: n1000v(config-port-prof)# state enabled n1000v(config-port-prof)#	Enables the port profile. The port profile's configuration is applied to the assigned ports. If the port profile specifies a VMware port group, the port group will be created in the vswitch on the vCenter Server.
Step 4	<code>show port-profile name profile-name</code> Example: n1000v(config-port-prof)# show port-profile name AccessProf	(Optional) Displays information about port profile(s).
Step 5	<code>copy running-config startup-config</code> Example: n1000v(config-port-prof)# copy running-config startup-config	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

```

Example:
n1000v# config t
n1000v(config)# port-profile AccessProf
n1000v(config-port-prof)# state enabled
n1000v(config-port-prof)# show port-profile name AccessProf
port-profile AccessProf
  description: allaccess4
  status: enabled
  capability uplink: yes
  port-group: AccessProf
  config attributes:
    switchport mode access
    switchport trunk allowed vlan all
    channel-group auto mode on
  evaluated config attributes:
    switchport mode access
    switchport trunk allowed vlan all
    channel-group auto mode on
  assigned interfaces:
n1000v(config-port-prof)#

```

Removing a Port Profile

Use this procedure to remove a port profile.

BEFORE YOU BEGIN

- You are logged in to the CLI in EXEC mode.
- You have configured the port profile using the section, [Creating a New Port Profile, page 1-8](#).
- When you remove a port profile that is mapped to a VMware port group, the associated port group and settings within the vCenter Server are also removed.



Note

You cannot remove a port profile if there are active interfaces associated with it.

SUMMARY STEPS

1. **config t**
2. (Optional) **show port-profile usage name** *profile_name*
3. **no port-profile** *profile_name*
4. **show port-profile name** *profile_name*
5. **copy running-config startup-config**
 - You are not allowed to remove a port profile that is inherited by another profile until you first remove the inheritance from all affected port profiles. To cut off the inheritance, use the procedure, [Removing Inherited Policies, page 1-36](#).



Caution

This procedure fails if any port profile is inheriting characteristics from the profile you are attempting to remove.

DETAILED STEPS

	Command	Description
Step 1	<code>config t</code> Example: n1000v# <code>config t</code> n1000v(config)#	Places you in the CLI Global Configuration mode.
Step 2	<code>show port-profile usage name profile_name</code> Example: n1000v(config)# <code>show port-profile usage name AccessProf</code>	(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 3	<code>no port-profile profile_name</code> Example: n1000v(config)# <code>no port-profile AccessProf</code> n1000v(config)#	Removes the port profile configuration and operational settings.
Step 4	<code>show port-profile name profile_name</code> Example: n1000v(config)# <code>show port-profile name AccessProf</code> ERROR: port-profile AccessProf does not exist n1000v(config)#	(Optional) Verifies that the port profile does not exist.
Step 5	<code>copy running-config startup-config</code> Example: n1000v(config-port-prof)# <code>copy running-config startup-config</code>	(Optional) Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

```

Example:
n1000v# config t
n1000v(config)# show port-profile usage name AccessProf
-----
Port Profile          Port          Adapter          Owner
-----
n1000v(config)# no port-profile AccessProf
n1000v(config)# show port-profile name AccessProf
ERROR: port-profile AccessProf does not exist
n1000v(config)# copy running-config startup-config

```

Removing Inherited Policies

Use this procedure to remove the inherited policies from a port profile.

Before You Begin

- You are logged in to the CLI in configuration mode.
- You have configured the port profile using the section, [Creating a New Port Profile, page 1-8](#).
- You have configured the port profile to inherit policies using the procedure, [Inheriting a Port Profile Configuration, page 1-9](#).

SUMMARY STEPS

1. **config t**
2. (Optional) **show port-profile usage name** *profile_name*
3. **no port-profile** *profile_name*
4. **show port-profile name** *profile_name*
5. **copy running-config startup-config**

Detailed Steps

	Command	Description
Step 1	config t Example: n1000v# config t n1000v(config)#	Places you in the CLI Global Configuration mode.
Step 1	port-profile <i>portprofilename</i> Example: (config)# port-profile Access4 (config-port-prof)#	Places you into CLI Global Configuration mode for the specified port profile. The port profile name can be up to 80 characters and must be unique for each port profile on the Nexus 1000V.
Step 2	no port-profile inherit Example: (config-port-prof)# no port-profile map (config-port-prof)#	In configuration mode for the port profile, use the no port-profile inherit command to remove the inherited policies. The port profile settings are returned to the defaults, except for any settings that were explicitly configured independent of those inherited.
Step 3	You have completed this procedure.	

Feature History for Port Profiles

This section provides the Port Profiles feature history.

Feature Name	Releases	Feature Information
Port Profiles	4.0	This feature was introduced.



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