



## Configuring the Network Uplinks

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This chapter describes how to configure the uplink type and includes the following sections:

- [Information About Network Uplink Configurations, page 3-1](#)
- [Guidelines and Limitations, page 3-4](#)
- [Configuring Network Uplink Types, page 3-5](#)
- [Assigning a Native VLAN to a Port Channel, page 3-15](#)
- [Shutting Down Ports or Port Channel Interfaces, page 3-16](#)
- [Verifying the Uplink Configuration, page 3-18](#)
- [Recommendations for Configuring Uplinks for Passthrough Interfaces, page 3-21](#)
- [Additional References, page 3-23](#)
- [Feature History for Uplink, page 3-24](#)

### Information About Network Uplink Configurations

The Cisco Nexus Cloud Services Platform product family supports two types of network uplink configurations to connect to the network:

- [Flexible Network Uplink Configuration, page 3-1](#)
- [Static Network Uplink Configuration, page 3-4](#)

### Flexible Network Uplink Configuration

The flexible network configuration offers complete flexibility to connect Cisco Nexus Cloud Services Platform to the network. This configuration type enables appropriate traffic segregation policies like VSB traffic segregation.

This configuration consists of the following features:

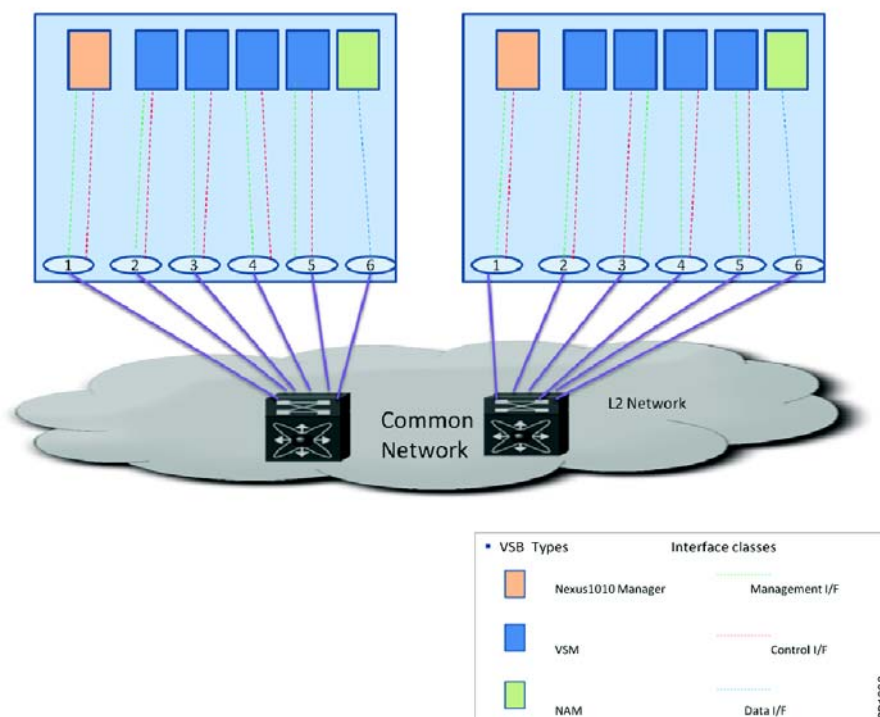
- Complete flexibility in terms of port configuration and usage
- Flexible building of ports into a port channel.
- Flexible assignment of a port or port channel to a VSB interface.
- Easy uplink configuration.
- Ability to achieve maximum uplink.

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The default flexible network uplink configuration (see [Figure 3-1](#)) includes the following features:

- Every physical port individually forms an uplink.
- Each uplink can be configured independently.
- Each uplink can achieve a maximum uplink of 6 Gbps.
- No default redundancy for uplinks.
- You cannot bundle physical ports in a port channel.
- VSB traffic is segregated by default.
- You can manually configure a VSB interface to share a port.

**Figure 3-1** Default Flexible Network Uplink Configuration



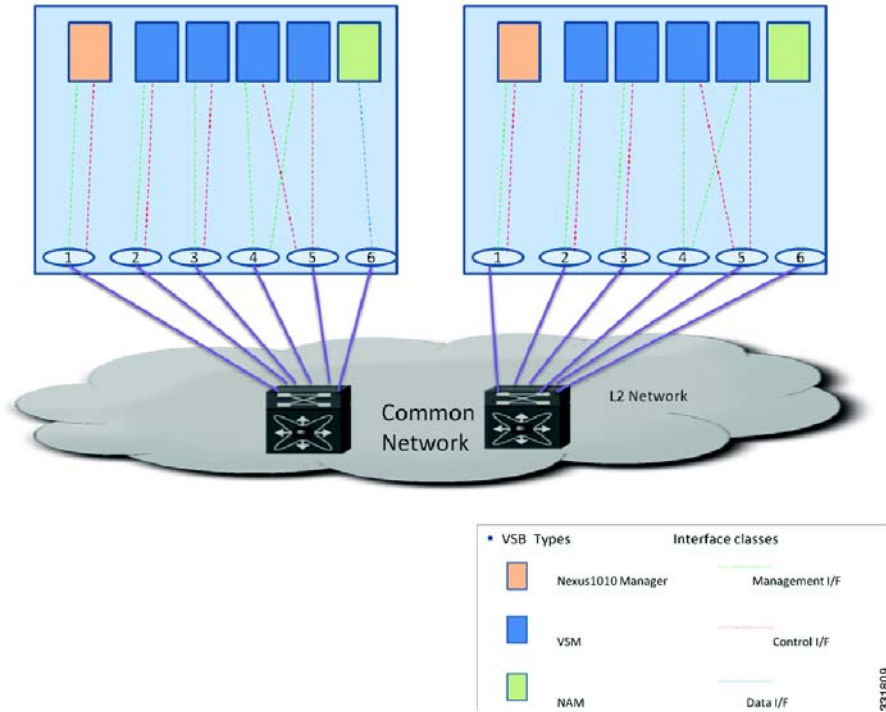
If you choose flexible configuration during the installation of the Cisco Nexus Cloud Services Platform, the default configuration is used to connect to the network. See the *Cisco Nexus Cloud Services Platform Software Installation and Upgrade Guide, Release 4.2(1)SP1(6.1)*, for more information.

You can then make changes to the default flexible network uplink configuration to suit your needs:

- For example, you can add ports to a port channel. See [Figure 3-3](#) and the See [Configuring Port Channels, page 3-11](#) for more information.
- For example, you can assign uplinks to a VSB interface. See [Figure 3-2](#) and the [Assigning Uplinks to a VSB Interface, page 3-13](#) for more information.

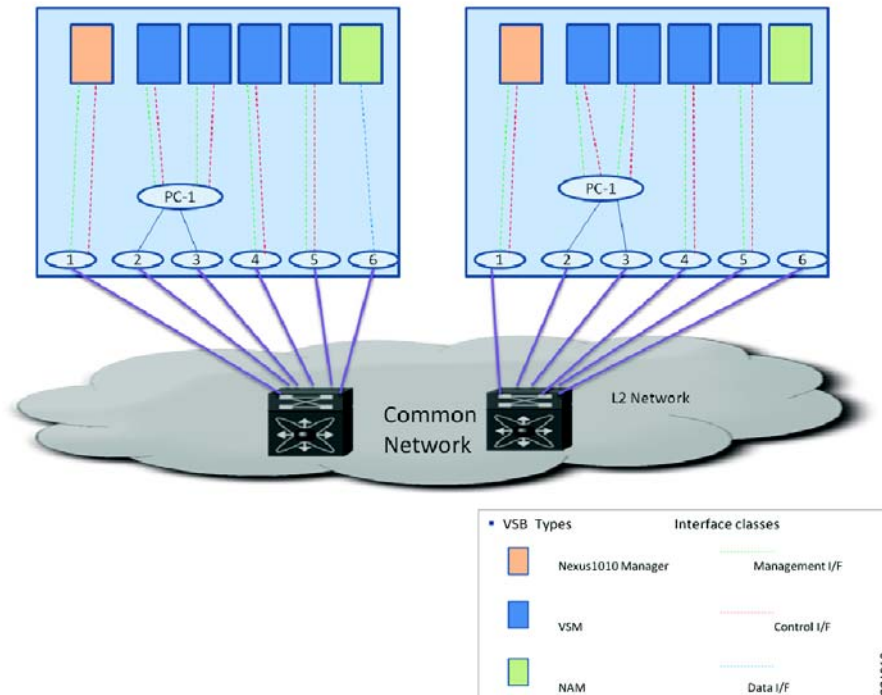
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**Figure 3-2** Assigning uplinks to flexible network configuration



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**Figure 3-3 Adding port channels to flexible network configuration**



## Static Network Uplink Configuration

In a static network configuration, the Cisco Nexus Cloud Services Platform product family is connected to the network using the following four fixed network uplink configurations:

- In configuration 1, control traffic, management traffic and data traffic share a single uplink.
- In configuration 2, control traffic and management traffic share an uplink and data traffic is a separate uplink.
- In configuration 3, control traffic and data traffic share an uplink and management traffic is a separate uplink.
- In configuration 4, control traffic, management traffic and data traffic are all on separate unlinks.

For more information about uplink configurations, see the Uplinks section.

## Guidelines and Limitations

The Cisco Nexus Cloud Services Platform has the following configuration guidelines and limitations:

- A change to the uplink type does not take effect until you reload the software.
- Changing the uplink type is disruptive and leads to a service disruption.
- You can change the uplink type only once before issuing a reboot.
- Use [Table 3-1](#) when modifying the network uplink type.

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**Table 3-1 Uplink Usage**

Uplink Type	Usage
1	When only the Cisco Nexus 1000V VSM is installed.
2	When only NAM is installed.
3	When the management and data traffic upstream must be separated.
4	When the management and data traffic upstream must be separated and control and data traffic must also be separated.
5	Flexible network uplink

## Configuring Network Uplink Types

This section includes the following topics:

- [Modifying the Uplink Type, page 3-5](#)
- [Migrating from a Static Network Uplink to a Flexible Network Uplink, page 3-6](#)
- [Migrating from a Flexible Network Uplink to a Static Network Uplink, page 3-9](#)
- [Configuring Port Channels, page 3-11](#)
- [Deleting Port Channels, page 3-12](#)
- [Assigning Uplinks to a VSB Interface, page 3-13](#)

## Modifying the Uplink Type

You can modify the uplink type on an operational Cisco Nexus Cloud Services Platform.

### BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

- Log in to the CLI in EXEC mode.
- You must reload the Cisco Nexus Cloud Services Platform pair in order to activate the changes made in this procedure. This procedure includes a step for reloading.



**Caution** To prevent loss of connectivity, you must reconfigure the uplink switches to correspond with the change made in this procedure.

### SUMMARY STEPS

1. **configure terminal**
2. **network uplink type *number***
3. (Optional) show **network-uplink type**
4. **copy running-config startup-config**
5. **reload**

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## DETAILED STEPS

	Command	Purpose
Step 1	<b>configure terminal</b>  <b>Example:</b> switch# configure terminal switch(config)#	Places you in the CLI Global Configuration mode.
Step 2	<b>network uplink type <i>number</i></b>  <b>Example:</b> switch(config)# network uplink type 2 switch(config)#	Changes the uplink type for the Cisco Nexus Cloud Services Platform. The <i>number</i> argument range is from 1 to 4.
Step 3	<b>show network-uplink type</b>  <b>Example:</b> switch(config)# show network uplink type Administrative topology id: 2 Operational topology id: 1 switch(config)#	Displays the uplink configuration for verification.
Step 4	<b>copy running-config startup-config</b>  <b>Example:</b> switch(config)# copy running-config startup-config	Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.
Step 5	<b>reload</b>  <b>Example:</b> switch(config)# <b>reload</b>  This command will reboot the system. (y/n)? [n] y 2009 Oct 30 21:51:34 s1 %\$ VDC-1 %\$ %PLATFORM-2-PFM_SYSTEM_RESET: Manual system restart from Command Line Interface  switch(config)#	

## Migrating from a Static Network Uplink to a Flexible Network Uplink

You can migrate from a static network uplink type to a flexible network uplink type.

### BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

- Log in to the CLI in EXEC mode.
- After you change the uplink type from static to flexible, you can configure the port channel and assign uplink assignment to a VSB manually.
- You must reload the Cisco Nexus Cloud Services Platform pair in order to activate the changes made in this procedure.
- Changing the uplink type from static to flexible is disruptive and leads to a service disruption. After you change the uplink type from static to flexible, you must save the configuration and reload for the new configuration to take effect.

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- When you change the uplink type from static to flexible, the configuration for all the port channels, native VLANs, and port states is retained in the flexible network type.

### SUMMARY STEPS

1. **configure terminal**
2. **network uplink type** *number*
3. **network uplink type** *keyword*
4. (Optional) **svs-domain**
5. (Optional) **control uplink** *interface name*
6. (Optional) **management uplink** *interface name*
7. copy running-config startup-config
8. **reload**
9. **show network-uplink type**

### DETAILED STEPS

	Command	Purpose
Step 1	<b>configure terminal</b>  <b>Example:</b> switch# config terminal switch(config)#	Enters Global Configuration mode.
Step 2	<b>network uplink type</b> <i>number</i> <b>Example:</b> switch(config)# network uplink type 5 switch(config)#	Changes the uplink type for the Cisco Nexus Cloud Services Platform.

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	Command	Purpose
Step 3	<p><b>network uplink type</b> <i>keyword</i></p> <p><b>Example:</b>  <pre>switch(config)# network uplink type flexible switch(config)#</pre>           The command will change network-uplink type and network-uplink type cannot be changed again before reload. Change to [1-4] network-uplink type will lead to loss of native vlan config on all ports. Do you really want to proceed(yes/no)? [no] yes            Note: Save the configuration and reload to bring the system with new network_uplink</p> <p><b>Example:</b>  <pre>switch(config)#)# network-uplink type flexible force</pre>           Note: The command will change network-uplink type and network-uplink type cannot be changed again before reload. Change to [1-4] network-uplink type will lead to loss of native vlan config on all ports.            Note: Save the configuration and reload to bring the system with new network_uplink</p>	<p>Changes the uplink type for the Cisco Nexus Cloud Services Platform from static to flexible.</p> <p><b>Note</b> You can change the network type only once. In order to change the network type again, you must reload and then change the network type.</p> <p>You can use the <b>force</b> option to skip the confirmation step.</p>
Step 4	<p><b>svs-domain</b></p> <p><b>Example:</b>  <pre>switch(config)# svs-domain switch(config-svs-domain)#</pre></p>	<p>(Optional) Configures an SVS domain and enters SVS domain configuration mode.</p>
Step 5	<p><b>control uplink</b> <i>interface name</i></p> <p><b>Example:</b>  <pre>switch(config-svs-domain)# control uplink GigabitEthernet1 switch(config-svs-domain)#</pre></p>	<p>(Optional) Changes the default control traffic interface name.</p> <p>Interface names can be Gigabit Ethernet or Portchannel.</p>
Step 6	<p><b>management uplink</b> <i>interface name</i></p> <p><b>Example</b>  <pre>switch(config-svs-domain)# management uplink GigabitEthernet2</pre></p>	<p>(Optional) Changes the default management traffic interface name.</p> <p>Interface names can be Gigabit Ethernet or Portchannel.</p>
Step 7	<p><b>copy running-config startup-config</b></p> <p><b>Example:</b>  <pre>switch(config)# copy running-config startup-config</pre></p>	<p>Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.</p>



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	Command	Purpose
Step 8	<b>reload</b>  <b>Example:</b> <pre>switch(config-svs-domain)# reload</pre> <p>This command will reboot the system.  (y/n)? [n] y  2011 Oct 27 10:26:30 switch  %PLATFORM-2-PFM_SYSTEM_RESET: Manual  system restart from Command Line  Interface</p>	
Step 9	<b>show network-uplink type</b>  <b>Example:</b> <pre>switch(config)# show network uplink type</pre> Administrative topology id: flexible Operational topology id: flexible	Displays the uplink configuration for verification.

## Migrating from a Flexible Network Uplink to a Static Network Uplink

You can migrate from a flexible network uplink to a static network uplink.

### BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

- Log in to the CLI in EXEC mode.
- This procedure is disruptive because both the active and standby Cisco Nexus Cloud Services Platforms should be reloaded together.
- You must reload the Cisco Nexus Cloud Services Platform pair to activate the changes made in this procedure. This procedure includes a step for reloading.



**Caution** To prevent a connectivity loss, you must reconfigure the uplink switches to correspond with the change made in this procedure.

- [Table 3-2](#) lists supported uplink types and the ports that carry each type of VLAN traffic.

**Table 3-2 Uplink Types and VLAN Ports**

Uplink Type	Management VLAN	Control VLAN	Data VLAN
1	Ports 1 and 2 (HA)	Ports 1 and 2 (HA)	Ports 1 and 2(HA)
2	Ports 1 and 2 (HA)	Ports 1 and 2 (HA)	Ports 3–6 (LACP)
3	Ports 1 and 2 (HA)	Ports 3-6 (LACP)	Ports 3–6 (LACP)

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**Table 3-2 Uplink Types and VLAN Ports (continued)**

Uplink Type	Management VLAN	Control VLAN	Data VLAN
4	Ports 1 and 2 (HA)	Ports 3-4(HA)	Ports 5–6 (HA)
Flexible	There is no traffic segregation based on traffic class.		

For a description of each uplink, see the Uplinks section.

- When you migrate from a flexible network uplink type to a static network uplink type, the configuration for all the port channels, native VLANs, and port states is lost.
- You must ensure that the uplink connectivity is the same for that static network uplink type.
- If the system is not configured for a required uplink type, shut down the system from ILO after you save the configuration for both active and standby and then reload.

## SUMMARY STEPS

1. **configure terminal**
2. **network uplink type *number***
3. (Optional) **show network-uplink type**
4. **copy running-config startup-config**
5. **reload**

## DETAILED STEPS

	Command	Purpose
Step 1	<b>configure terminal</b>  <b>Example:</b> switch# <b>config terminal</b> switch(config)#	Enters the global configuration mode.
Step 2	<b>network uplink type <i>number</i></b>  <b>Example:</b> switch(config)# <b>network uplink type 2</b> switch(config)#	Changes the uplink type for the Cisco Nexus Cloud Services Platform. The <i>number</i> argument range is from 1 to 4.
Step 3	<b>show network-uplink type</b>  <b>Example:</b> switch(config)# <b>show network uplink type</b> Administrative topology id: 2 Operational topology id: 1 switch(config)#	Displays the uplink configuration for verification.

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	Command	Purpose
Step 4	<b>copy running-config startup-config</b>  <b>Example:</b> <pre>switch(config)# copy running-config startup-config</pre>	Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.
Step 5	<b>reload</b>  <b>Example:</b> <pre>switch(config)# reload</pre> <p>This command will reboot the system. (y/n)? [n] y  2009 Oct 30 21:51:34 s1 %\$ VDC-1 %\$ %PLATFORM-2-PFM_SYSTEM_RESET: Manual system restart from Command Line Interface</p> <pre>switch(config)#</pre>	

## Configuring Port Channels

You can configure the port channels in the Cisco Nexus Cloud Services Platform. You can configure the port channels only in the flexible network uplink type configuration.

### BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

- Log in to the CLI in EXEC mode.
- You must group the ports together in either HA or LACP mode.
- You must ensure that the ports are not used by any other port channel or by any VSB interface. To delete a port see [Deleting Port Channels, page 3-12](#).
- An Ethernet interface with conflicting native VLAN cannot be part of an existing port channel.

### SUMMARY STEPS

1. **configure terminal**
2. **[no] interface *name***
3. **interface ethernet *name***
4. **channel-group *id* mode {ha | active}**
5. (Optional) **show network port-channel summary**

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## DETAILED STEPS

	Command	Purpose
Step 1	<b>configure terminal</b>  <b>Example:</b> switch# <b>configure terminal</b> switch(config)#	Enters the global configuration mode.
Step 2	<b>[no] interface name</b>  <b>Example:</b> switch(config)# <b>[no] interface PortChannel1</b> switch(config-if)#	Places you into configuration mode for the port channel or creates a port channel ID if the port channel does not exist. The port channel range is from 1 to 6.
Step 3	<b>interface ethernet name</b>  <b>Example:</b> switch(config)# <b>interface GigabitEthernet4</b> switch(config-if)#	Places you into configuration mode for the named Ethernet interface.  The interface names can be Gigabit Ethernet only.
Step 4	<b>channel-group id mode {ha   active}</b>  <b>Example:</b> switch(config-if)# <b>channel-group 1 mode active</b> switch(config-if)#	Assigns an ethernet interface to a port channel.  The mode can be either HA or Active.
Step 5	<b>show network port-channel summary</b>  <b>Example:</b> switch(config)# show network port-channel summary  ----- Group Port-Channel Adm-State Type Member-Ports ----- 1 PortChannel1 up ha Gi1 Gi2 -----	

## Deleting Port Channels

You can delete port channels. You must delete ports from the port channel and then delete the port channel.

### BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

- Log in to the CLI in EXEC mode.
- Shut down the VSBs using the port or the port channel that contains the port.

### SUMMARY STEPS

1. **configure terminal**
2. **interface ethernet name**
3. **no channel-group**

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## DETAILED STEPS

	Command	Purpose
Step 1	<b>configure terminal</b>  <b>Example:</b> <pre>switch# configure terminal switch(config)#</pre>	Enters the global configuration mode.
Step 2	<b>interface ethernet name</b>  <b>Example:</b> <pre>switch(config)# interface GigabitEthernet4 switch(config-if)#</pre>	Places you into the configuration mode for the named interface.  The interface names can be Gigabit Ethernet only.
Step 3	<b>no channel-group</b>  <b>Example:</b> <pre>switch(config-if)# no channel-group switch(config-if)#</pre>	Deletes the port channel.

## Assigning Uplinks to a VSB Interface

You can assign uplinks to a VSB interface. You can assign uplinks to a VSB interface only in the flexible network uplink type configuration.

### BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

- You are logged in to the CLI in EXEC mode.
- By default, uplinks are assigned to the first available free port or port channel.
- If both free ports and port channels are available, free ports get preference over port channels.
- If no free ports are available, you must assign the uplink manually.
- A VSB can have different uplinks for every port or port channel.

### SUMMARY STEPS

1. **configure terminal**
2. **virtual-service-blade name**
3. **interface name**
4. **[no] interface name uplink name**
5. (Optional) **show network {[uplink] | summary}**

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## DETAILED STEPS

	Command	Purpose
Step 1	configure terminal  <b>Example:</b> switch# configure terminal switch(config)#	Enters the global configuration mode.
Step 2	<b>virtual-service-blade</b> <i>name</i>  <b>Example:</b> switch(config)# <b>virtual-service-blade</b> <b>vsm-5</b> switch(config-vs-b-config)#	Places you into the configuration mode for the named virtual service blade.
Step 3	<b>interface</b> <i>name</i>  <b>Example:</b> switch(config-vs-b-config)# interface control vlan 347	Places you into the configuration mode for the named interface.
Step 4	<b>[no] interface</b> <i>name</i> <b>uplink</b> <i>name</i>  <b>Example:</b> switch(config-vs-b-config)# interface control uplink PortChannel2	Assigns a VSB Ethernet interface to an uplink.
Step 5	<b>show network summary</b>	(Optional) Displays VSB Ethernet interfaces assigned to an uplink.

**-Example:**

```
switch(config)#show network summary
```

```
-----
```

Port	State		Uplink-Interface		Speed	RefCnt	MTU	Nat-Vlan		
	Oper	Admin	Oper	Admin					Oper	Admin
Gi1	up	up			1000	0	9000			
Gi2	up	up			1000	0	9000			
Gi3	up	up			1000	3	9000			
Gi4	down	up			1000	0	9000			
Gi5	down	up			1000	0	9000			
Gi6	down	up			1000	0	9000			
Po1	up	up			1000	13	9000			
VsbEth6/1	up	up	Gi3	Gi3	1000		9000			
VsbEth6/2	up	up	Gi3	Gi3	1000		9000			
VsbEth6/3	up	up	Gi3	Gi3	1000		9000			
control0	up	up	Po1	Po1	1000		9000			
mgmt0	up	up	Po1	Po1	1000		9000			

```
-----
```

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## Assigning a Native VLAN to a Port Channel

You can configure a native VLAN that corresponds to an Ethernet interface. This procedure is applicable to both static and flexible network uplink types. Native VLAN changes can take effect immediately except for cases that involve Cisco Nexus Cloud Services Platform VLANs and interfaces.

### BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

- Log in to the CLI in EXEC mode.
- You cannot assign a native VLAN to an Ethernet interface that is a part of a port channel.
- You can add an Ethernet interface to a port channel only if the Ethernet interface and the port channel have the same native VLAN configuration.
- After you configure the native VLANs in the Cisco Nexus Cloud Services Platform, you must also configure all the upstream switches with the same native VLAN.
- When you modify the control or management native VLAN uplink configuration, you must first save the configuration and then shut down Cisco Nexus Cloud Services Platform from ILO. Now you can change the native VLAN configuration on the uplink switch and then restart the Cisco Nexus Cloud Services Platform.
- When you change the network uplink configuration from flexible to static, all the ports and port channels will lose their native VLAN configuration.
- When you delete an Ethernet interface from a port channel, it retains the native VLAN configuration.

### SUMMARY STEPS

1. **configure terminal**
2. **interface *name***
3. **native vlan *id***
4. (Optional) **show network summary**

### DETAILED STEPS

	Command	Purpose
Step 1	<b>configure terminal</b>  <b>Example:</b> switch# configure terminal switch(config)#	Enters global configuration mode.
Step 2	<b>interface <i>name</i></b>  <b>Example:</b> switch(config)# interface GigabitEthernet1 switch(config-if)#	Places you into the configuration mode for the named interface.  The interface names can be Gigabit Ethernet or Portchannel.

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	Command	Purpose
Step 3	<b>native vlan <i>id</i></b>  <b>Example:</b> switch(config-if)# <b>native vlan 346</b> switch(config-if)#	Modifies the native VLAN ID.
Step 4	<b>show network summary</b>  <b>Example:</b> switch# show network summary  <pre> -----           Port      State      Uplink-Interface  Speed  RefCnt    MTU   Nat-Vlan           Oper  Admin      Oper  Admin -----           Gi1      up        up           Gi2      up        up           Gi3      up        up           Gi4      down      up           Gi5      down      up           Gi6      down      up           Po1      up        up           VsbEth6/1  up        up      Gi3    Gi3    1000  9000           VsbEth6/2  up        up      Gi3    Gi3    1000  9000           VsbEth6/3  up        up      Gi3    Gi3    1000  9000           control0  up        up      Po1    Po1    1000  9000           mgmt0     up        up      Po1    Po1    1000  9000           </pre>	

## Shutting Down Ports or Port Channel Interfaces

Use this procedure to shut down ports or port channels to shut traffic for certain VSBs.

### BEFORE YOU BEGIN

Before beginning this procedure, you must know or do the following:

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

### SUMMARY STEPS

- configure terminal**
- interface *name***
- [no] shutdown [ primary | secondary]**
- show network summary**
- (Optional) **show network port-channel summary**



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## DETAILED STEPS

	Command	Purpose
Step 1	<b>configure terminal</b>  <b>Example:</b> switch# <b>config terminal</b> switch(config)#	Places you in the CLI Global Configuration mode.
Step 2	<b>interface</b> <i>name</i>  <b>Example:</b> switch(config)# <b>interface</b> <b>GigabitEthernet1</b> switch(config-if)	Enters interface configuration mode for the specified interface.
Step 3	<b>[no] shutdown [ primary   secondary]</b>  <b>Example:</b> switch(config-if) <b>shutdown</b>	Shuts down the port or port channel interface.  If a redundant pair of Cisco Nexus Cloud Services Platforms, you must specify whether to shut down the primary or secondary.
Step 4	<b>show network summary</b>  <b>Example:</b> switch# show network summary  <pre> -----       Port      State      Uplink-Interface  Speed  RefCnt   MTU   Nat-Vlan               Oper  Admin          Oper  Admin -----           Gi1      up      up           Gi2      up      up           Gi3      up      up           Gi4      down    up           Gi5      down    up           Gi6      down    up           Po1      up      up VsbEth6/1      up      up      Gi3   Gi3 VsbEth6/2      up      up      Gi3   Gi3 VsbEth6/3      up      up      Gi3   Gi3   control0      up      up      Po1   Po1     mgmt0      up      up      Po1   Po1 ----- </pre>	
Step 5	(Optional) <b>show network port-channel summary</b>	Displays the network port channel summary.

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## Verifying the Uplink Configuration

To verify the uplink configuration, use the following commands:

Command	Purpose
<b>show network-uplink type</b>	Displays information about the network uplinks, such as addresses, duplex settings, and traffic. See <a href="#">Example 3-1 on page 3-18</a> .
<b>show network</b>	Displays information about the network. See <a href="#">Example 3-2 on page 3-18</a> .
<b>show network cdp neighbors</b>	Display uplink connectivity for the active or standby Cisco Nexus Cloud Services Platform. See <a href="#">Example 3-3 on page 3-19</a> .
<b>show network counters</b>	Displays statistical information about the network. See <a href="#">Example 3-4 on page 3-19</a> .
<b>show network summary</b>	Displays summary information about the network. See <a href="#">Example 3-5 on page 3-20</a> .
<b>show network port-channel summary</b>	Displays summary information port channels in the network. See <a href="#">Example 3-6 on page 3-20</a> .
<b>show network uplink</b>	Displays information about network uplinks. See <a href="#">Example 3-7 on page 3-20</a> .

### **Example 3-1 Network Uplink Type**

```
switch# show network uplink type
Administrative topology id: 2
Operational topology id: 1
switch#
```

### **Example 3-2 Network**

This example shows how to display information about the network:

```
switch# show network
GigabitEthernet5 is down (not connected)
  Hardware: Ethernet, address: 0010.18a5.c524 (bia 0010.18a5.c524)
  MTU 9000 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  full-duplex, 1000 Mb/s
  Auto-Negotiation is turned on
    0 packets input, 0 bytes
    0 multicast frames, 0 compressed
    0 input errors, 0 frame, 0 overrun, 0 fifo
    0 packets output, 0 bytes
    0 underrun, 0 output errors, 0 collisions
    0 fifo, 0 carrier errors
```

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```
GigabitEthernet6 is down (Administratively down)
  Hardware: Ethernet, address: 0010.18a5.c526 (bia 0010.18a5.c526)
  MTU 9000 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  full-duplex, 1000 Mb/s
  Auto-Negotiation is turned on
    0 packets input, 0 bytes
    0 multicast frames, 0 compressed
    0 input errors, 0 frame, 0 overrun, 0 fifo
    0 packets output, 0 bytes
    0 underrun, 0 output errors, 0 collisions
    0 fifo, 0 carrier errors
```

### Example 3-3 Network Cdp Neighbors

```
switch# show network cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater,
                  V - VoIP-Phone, D - Remotely-Managed-Device,
                  s - Supports-STP-Dispute
```

Device-ID	Local Intrfce	Hldtme	Capability	Platform	Port ID
sfish-cat3k-K5-stack2 GigabitEthernet1/0/45	GigabitEthernet1	173	S I	cisco WS-C375	
sfish-cat3k-K5-stack1 GigabitEthernet1/0/45	GigabitEthernet2	133	S I	cisco WS-C375	
sfish-cat3k-K5-stack2 GigabitEthernet1/0/46	GigabitEthernet3	173	S I	cisco WS-C375	
sfish-cat3k-K5-stack1 GigabitEthernet1/0/46	GigabitEthernet4	133	S I	cisco WS-C375	

### Example 3-4 Network Counters

```
switch# show network counters
```

Port	InOctets	InUcastPkts	InMcastPkts
GigabitEthernet1	146344975	1163124	105444
GigabitEthernet2	128022491	1110953	280235
GigabitEthernet3	28839731	209796	11722
GigabitEthernet4	107951630	907268	269112
GigabitEthernet5	0	0	0
GigabitEthernet6	0	0	0
PortChannel1	274367466	2274077	385679
VsbEthernet1/1	17208966	81687	0
VsbEthernet1/2	230213	2011	0
VsbEthernet1/3	0	0	0

Port	OutOctets	OutUcastPkts	OutMcastPkts
GigabitEthernet1	73351536	339419	105444
GigabitEthernet2	34200	200	280235
GigabitEthernet3	48242	405	11722
GigabitEthernet4	35492	206	269112
GigabitEthernet5	0	0	0
GigabitEthernet6	0	0	0
PortChannel1	73385736	339619	385679

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```
VsbEthernet1/1      36137879      158796      0
VsbEthernet1/2      35632175      415746      0
VsbEthernet1/3      41904366      148529      0
```

### Example 3-5 Network Summary

```
switch# show network summary
```

```
-----
Port      State      Uplink-Interface  Speed  RefCnt  MTU  Nat-Vlan
  Oper    Admin      Oper    Admin
-----
Gi1       up         up
Gi2       up         up
Gi3       up         up
Gi4       down        up
Gi5       down        up
Gi6       down        up
Po1       up         up
VsbEth6/1 up         up      Gi3    Gi3    1000  9000
VsbEth6/2 up         up      Gi3    Gi3    1000  9000
VsbEth6/3 up         up      Gi3    Gi3    1000  9000
control0  up         up      Po1    Po1    1000  9000
mgmt0     up         up      Po1    Po1    1000  9000
-----
```

### Example 3-6 Network Port Channel Summary

```
switch#show network port-channel summary
```

```
-----
Group  Port-Channel  Adm-State  Type          Member-Ports
-----
1      PortChannel1  up         ha             Gi1 Gi2
-----
```

### Example 3-7 Network Uplinks

```
switch# show network
```

```
GigabitEthernet5 is down (not connected)
Hardware: Ethernet, address: 0010.18a5.c524 (bia 0010.18a5.c524)
MTU 9000 bytes, BW 1000000 Kbit, DLY 10 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA
full-duplex, 1000 Mb/s
Auto-Negotiation is turned on
  0 packets input, 0 bytes
  0 multicast frames, 0 compressed
  0 input errors, 0 frame, 0 overrun, 0 fifo
  0 packets output, 0 bytes
  0 underrun, 0 output errors, 0 collisions
  0 fifo, 0 carrier errors

GigabitEthernet6 is down (Administratively down)
Hardware: Ethernet, address: 0010.18a5.c526 (bia 0010.18a5.c526)
MTU 9000 bytes, BW 1000000 Kbit, DLY 10 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA
full-duplex, 1000 Mb/s
Auto-Negotiation is turned on
  0 packets input, 0 bytes
  0 multicast frames, 0 compressed
  0 input errors, 0 frame, 0 overrun, 0 fifo
  0 packets output, 0 bytes
  0 underrun, 0 output errors, 0 collisions
```

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```
0 fifo, 0 carrier errors
```

## Recommendations for Configuring Uplinks for Passthrough Interfaces

After you create a Cisco Nexus VXLAN Gateway VSB, you can configure it to function as a passthrough interface. The passthrough feature enables the VSB to assign a virtual interface to a dedicated uplink. This uplink can be a Gigabit Ethernet port on the Cisco Nexus Cloud Services Platform or a port channel. For more information about setting up a passthrough interface, see the [Setting up a Passthrough Interface](#) section.



### Note

---

The passthrough feature is supported only in a flexible topology. You must migrate from a static to flexible topology before you configure your VXLAN Gateway VSBs in the passthrough mode.

---

These recommendations enable you to free up the ports to configure the VXLAN Gateway VSBs as passthrough interfaces. These recommendations are based on the topology types that you may be migrating from. You can use the common procedures in the following sections to free up the ports:

- To migrate from a static to flexible topology, use the instructions in [Migrating from a Static Network Uplink to a Flexible Network Uplink](#), page 3-6.
- To create a port channel, use the instructions in [Configuring Port Channels](#), page 3-11.
- To configure network uplink types, use the instructions in [Configuring Network Uplink Types](#), page 3-5.
- To assign uplinks to a VSB interface, use the instructions in [Assigning Uplinks to a VSB Interface](#), page 3-13.
- To set up a VSB interface in passthrough mode, use the instructions in the [Setting up a Passthrough Interface](#) section.

## Topology Type 1

In topology type 1, the management, control, and data traffic share the same uplink. To free up the ports in topology 1, do the following:

1. Migrate to Topology 5 by using the instructions in [Migrating from a Static Network Uplink to a Flexible Network Uplink](#), page 3-6.
2. Configure the HA port channel using the first two physical ports.
3. Configure the existing VSBs to use this high-availability (HA) port channel for the management, control and data traffic.
4. Use the remaining four ports to configure the new VSBs in the passthrough mode. To configure your VSBs in passthrough mode, see the [Setting up a Passthrough Interface](#) section.

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## Topology Type 2

In topology type 2, the management and control traffic share an uplink and the data link traffic is separated. To free up the ports on this topology, do the following:

1. Migrate to Topology 5 by using the instructions in [Migrating from a Static Network Uplink to a Flexible Network Uplink, page 3-6](#).
2. If you want to separate the traffic on data, and the management and control links on your existing VSBs, do the following:
  - a. Configure the HA port channels using the first two physical ports.
  - b. Configure the existing VSBs to use this HA port channel for the management and control and data traffic.
  - c. If your existing VSBs require interface redundancy on the data traffic, do the following:
    - Create a port channel using the physical ports 3 and 4.
    - Configure the existing VSBs to use this port channel for the data traffic.
    - Use the remaining two physical ports to configure the new VSBs in the passthrough mode.
  - d. If your existing VSBs do not require interface redundancy on the data traffic:
    - Make the third physical port a shared interface for all of the existing VSB's data traffic.
    - Use the remaining three physical ports to configure the new VSBs in the passthrough mode.
3. If you do not want to separate data traffic from the management and control traffic, see [Topology Type 1, page 3-21](#).

## Topology Type 3

Topology type 3 uses two uplinks where the control and data traffic share an uplink and the management traffic is separated. To free up the ports on this topology do the following:

1. Migrate to Topology 5 by using the instructions in [Migrating from a Static Network Uplink to a Flexible Network Uplink, page 3-6](#).
2. If you want to separate management traffic from the control and data traffic, do the following:
  - a. Create a port channel using the physical ports 1 and 2.
  - b. Configure existing VSBs to use this port channel for their management traffic.
  - c. Create a port channel using physical ports 3 and 4.
  - d. Configure existing VSBs to use the port channel for their control and data traffic.
  - e. Use the remaining two physical ports to configure the new VSBs in passthrough mode.
3. If you do not want to separate management traffic from the control and data traffic, see [Topology Type 1, page 3-21](#).

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## Topology Type 4

In this topology, the management, control and data traffic are all on separate uplinks. To free up the ports on this topology, do the following:

1. Migrate to Topology 5 by using the instructions in [Migrating from a Static Network Uplink to a Flexible Network Uplink, page 3-6](#).
2. If you want interface redundancy for the management, control and data traffic and also want to separate the traffic for all the links, do the following:
  - a. Create a port channel using physical ports 1 and port 2.
  - b. Configure the existing VSBs to use this port channel for the management traffic.
  - c. Create a second port channel using physical ports 3 and 4.
  - d. Configure the existing VSB to use this port channel for the control traffic.
  - e. Create a third port channel using physical ports 5 and 6.
  - f. Configure the existing VSBs to use this port for the data traffic. Now, there is no physical port available for passthrough interfaces.
3. If you want to separate the management, control and data traffic but do not need HA, do the following:
  - a. Configure the existing VSBs to use the first interface for the management traffic.
  - b. Configure the existing VSBs to use the second interface for the control traffic.
  - c. Configure the existing VSBs to use the third interface for the data traffic.
  - d. Use physical ports 3,4, and 5 for configuring VSBs in the passthrough mode.
4. If you want to separate the management, control and data, and HA for only management traffic, do the following:
  - a. Create a port channel using physical ports 1 and 2.
  - b. Configure the VSBs to use the port channel for management traffic.
  - c. Configure the VSBs to use the third port for control traffic.
  - d. Configure the VSBs to use the fourth port for data traffic.
  - e. Use the physical ports 5 and 6 for configuring the VSBs in the passthrough mode.
5. If you want to separate data from management and control traffic, see the [Topology Type 2, page 3-22](#).
6. If you want to separate the management traffic from the data and control traffic, see the [Topology Type 3, page 3-22](#).

## Additional References

For additional information related to implementing system-level HA features, see the following sections:

- [Related Documents, page 3-24](#)
- [Feature History for Uplink, page 3-24](#)

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## Related Documents

Related Topic	Document Title
Software setup configuration	<i>Cisco Nexus Cloud Services Platform Software Installation and Upgrade Guide, Release 4.2(1)SP1(6.1)</i>
Virtual service blade configuration	Configuring Virtual Service Blades section
Connecting uplinks to the network	<i>Cisco Nexus Cloud Services Platform Hardware Installation Guide</i>
Cisco Nexus Cloud Services Platform commands	<i>Cisco Nexus Cloud Services Platform Command Reference, Release 4.2(1)SP1(6.1)</i>

## Feature History for Uplink

This section provides the uplink feature release history.

Feature Name	Releases	Feature Information
Recommendations for freeing ports for setting up new VSBs as passthrough interfaces	4.2(1)SP1(6.1)	These recommendations were introduced.
Flexible Network Uplink	4.0(4)SP1(4)	This feature was introduced.
Uplink	4.0(4)SP1(1)	This feature was introduced.