



# Port Channel and Virtual Port Channel Configuration

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## Port Channel or Virtual Port Channel Configuration

You can configure a port channel or virtual port channel or a port channel policy using the Cisco APIC GUI, NX-OS style CLI, or REST API.

## Configure a Port Channel or Virtual Port Channel Using the GUI

Use the Cisco APIC GUI to configure a port channel or virtual port channel.

### Procedure

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- |               |   |
|---------------|---|
| <b>Step 1</b> | Log in to the Cisco APIC.   |
| <b>Step 2</b> | Choose <b>Fabric &gt; External Access Policies</b> .  |
| <b>Step 3</b> | Expand the <b>Interface</b> and <b>Leaf Interfaces</b> folders.   |
| <b>Step 4</b> | Right-click the <b>Profiles</b> folder and choose <b>Create Leaf Interface Profile</b> .  |
| <b>Step 5</b> | In the <b>Create Leaf Interface Policy</b> dialog box, enter a name for the policy in the <b>Name</b> field.  |
| <b>Step 6</b> | In the <b>Interface Selectors</b> area, click + to add an access port selector.   |
| <b>Step 7</b> | In the <b>Create Access Port Selector</b> dialog box, complete the following steps: <ul style="list-style-type: none"><li>a) In the <b>Name</b> field, enter a name for the access port.</li><li>b) In the <b>Interface IDs</b> field, enter the interface IDs where the host is located.</li></ul> |

- c) From the **Interface Policy Group** drop-down list, choose **Create PC Interface Policy Group** or **Create VPC Interface Policy Group**.

**Step 8** In the **Create PC Interface Policy Group** dialog box or the **Create VPC Interface Policy Group** dialog box, complete the following steps:

- a) In the **Name** field, enter a name for the port channel.
- b) From the **Port Channel Policy** drop-down list, choose **Create Port Channel Policy**.

**Step 9** In the **Create Port Channel Policy** dialog box, complete the following actions:

- a) In the **Name** field, enter a name for the policy.
- b) In the **Mode** field, choose one of the following options appropriate to your setup:

- **Static Channel - Mode On**
- **LACP Active**
- **LACP Passive**
- **MAC Pinning**
- **MAC Pinning-Physical-NIC-load**

**Note** LACP Passive mode is not supported for directly connected hosts. Ports using LACP Passive mode do not initiate an LACP handshake. We recommend that you always use LACP Active instead of LACP Passive. LACP Passive can be used only with Cisco ACI Virtual Edge/TOR policy groups when there is an intermediate Layer 2 device and the Layer 2 device ports are using LACP Active mode.

**Note** MAC Pinning-Physical-NIC-load mode is not supported for Cisco ACI Virtual Edge.

- c) Click **Submit**.

**Step 10** In the **Create PC Interface Policy Group** or **Create VPC Interface Policy Group** dialog box, from the **Attached Entity Profile** drop-down list, choose or create an attached entity profile, and then click **Submit**.

**Step 11** In the **Create Access Port Selector** dialog box, click **OK**.

**Step 12** In the **Create Leaf Interface Policy** dialog box, click **Submit**.

## Configure Port Channel Mode Using the NX-OS Style CLI

### Procedure

Configure port channel mode.

#### Example:

```
apicl# conf t
apicl(config)# vmware-domain mininet
apicl(config-vmware)# configure-ave
apicl(config-vmware-ave)# channel-mode ?
active          Set channeling mode to ACTIVE
mac-pinning     Set channeling mode to MAC-PINNING
on              Set channeling mode to ON (static)
```

```
passive          Set channeling mode to PASSIVE
apic1(config-vmware-ave)# channel-mode <mode>
```

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## Configure a Port Channel Using the NX-OS Style CLI

### Procedure

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Create a port channel.

#### Example:

```
apic1# config
apic1(config)# template port-channel cli-pc1
apic1(config-if)# channel-mode active
apic1(config-if)# vlan-domain member cli-vdom1

apic1(config-if)# show running-config
# Command: show running-config interface port-channel cli-pc1
# Time: Thu Oct  1 10:38:30 2015
  interface port-channel cli-pc1
    vlan-domain member cli-vdom1
    channel-mode active
  exit
```

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## VPC Configuration Using the NX-OS Style CLI

Configuring a Virtual Port Channel (VPC) using the NX-OS style CLI consists of two tasks. Your first configure a VPC domain and then configure the VPC on the switch interfaces.

### Configure a VPC Domain Using the NX-OS Style CLI

#### Procedure

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Configure a VPC domain.

#### Example:

```
apic1# config
apic1(config)# vpc domain explicit 10 leaf 101 102

apic1(config-vpc)# show running-config
# Command: show running-config vpc domain explicit 10 leaf 101 102
# Time: Thu Oct  1 10:39:26 2015
  vpc domain explicit 10 leaf 101 102
  exit
```

---

## Configure a VPC on Switch Interfaces Using NX-OS Style CLI

### Procedure

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Configure a VPC on switch interfaces

#### Example:

```
apic1# config
apic1(config)# leaf 101 - 102
apic1(config-leaf)# interface ethernet 1/3
apic1(config-leaf-if)# channel-group cli-pc1 vpc

apic1(config-leaf-if)# show running-config
# Command: show running-config leaf 101 - 102 interface ethernet 1/3
# Time: Thu Oct 1 10:41:15 2015
leaf 101
  interface ethernet 1/3
    channel-group cli-pc1 vpc
  exit
exit
leaf 102
  interface ethernet 1/3
    channel-group cli-pc1 vpc
  exit
exit
```

---

## Configure a Port Channel Policy

You can configure one of several types of port channel policies on the Cisco ACI Virtual Edge:

- Link Aggregation Control Policy (LACP) in active mode
- Link Aggregation Control Policy (LACP) in passive mode
- Static mode
- MAC Pinning

You can configure port channel policies through the Cisco APIC GUI or the REST API. However, you can configure port channel mode using the NX-OS Style CLI.

## Configure an LACP Port Channel Policy Using the REST API

### Procedure

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**Step 1** Create a node profile that specifies the leaf IDs that the access port profiles are associated with.

#### Example:

```
<infraInfra dn="uni/infra">
  <infraNodeP name="bLeaf">
    <infraLeafS name="leafs" type="range">
      <infraNodeBlk name="nblk" from_="17" to_="17">
      </infraNodeBlk>
    </infraLeafS>
    <infraRsAccPortP tDn="uni/infra/accportprof-shipping1"/>
    <infraRsAccPortP tDn="uni/infra/accportprof-shipping2"/>
  </infraNodeP>
```

**Step 2** Create an access port profile that specifies the port included in the access bundle group.

**Example:**

```
<infraAccPortP name="shipping1">
  <infraHPortS name="pselc" type="range">
    <infraPortBlk name="blk" fromCard="1" toCard="1" fromPort="19" toPort="20"/>
    <infraRsAccBaseGrp tDn="uni/infra/funcprof/accbundle-accountingLag1" />
  </infraHPortS>
</infraAccPortP>
```

**Step 3** Create an access port profile that specifies a second port included in the access bundle group.

**Example:**

```
<infraAccPortP name="shipping2">
  <infraHPortS name="pselc" type="range">
    <infraPortBlk name="blk" fromCard="1" toCard="1" fromPort="21" toPort="22"/>
    <infraRsAccBaseGrp tDn="uni/infra/funcprof/accbundle-accountingLag2" />
  </infraHPortS>
</infraAccPortP>
```

**Step 4** Create an access bundle group that points to the port channel interface policy.

**Example:**

```
<infraFuncP>
  <infraAccBndlGrp name="accountingLag1" lagT='link'>
    <infraRsLacpPol tnLacpLagPolName='accountingLacp1' />
    <infraRsAttEntP tDn="uni/infra/attentp-default"/>
  </infraAccBndlGrp>
  <infraAccBndlGrp name="accountingLag2" lagT='link'>
    <infraRsLacpPol tnLacpLagPolName='accountingLacp2' />
    <infraRsAttEntP tDn="uni/infra/attentp-default"/>
  </infraAccBndlGrp>
</infraFuncP>
```

**Step 5** Create a port channel interface policy.

**Example:**

```
</infraFuncP>
<lacpLagPol name='accountingLacp1' ctrl='15' descr='accounting' maxLinks='14' minLinks='1'
mode='active' />
<lacpLagPol name='accountingLacp2' ctrl='15' descr='accounting' maxLinks='14' minLinks='1'
mode='active' />
```

You can set the mode to 'passive' instead of 'active'.

**Step 6** Associate the VMM domain to the attachable entity profile.

**Example:**

```
<infraAttEntityP name="default"> <infraRsDomP tDn="uni/vmmp-VMware/dom-mininet"/>
</infraAttEntityP>
```

```
</infraInfra>
```

## Configure a MAC Pinning Port Channel Policy Using the REST API

### Procedure

- Step 1** Create a node profile that specifies the leaf IDs that the access port profiles are associated with.

**Example:**

```
<infraInfra dn="uni/infra">
  <infraNodeP name="bLeaf">
    <infraLeafS name="leafs" type="range">
      <infraNodeBlk name="nblk" from_"17" to_"17">
        </infraNodeBlk>
      </infraLeafS>
    <infraRsAccPortP tDn="uni/infra/accportprof-shipping1"/>
    <infraRsAccPortP tDn="uni/infra/accportprof-shipping2"/>
  </infraNodeP>
```

- Step 2** Create an access port profile that specifies the port included in the access bundle group.

**Example:**

```
<infraAccPortP name="shipping1">
  <infraHPortS name="pselc" type="range">
    <infraPortBlk name="blk" fromCard="1" toCard="1" fromPort="19" toPort="20"/>
    <infraRsAccBaseGrp tDn="uni/infra/funcprof/accbundle-accountingLag1" />
  </infraHPortS>
</infraAccPortP>
```

- Step 3** Create an access port profile that specifies a second port included in the access bundle group.

**Example:**

```
<infraAccPortP name="shipping2">
  <infraHPortS name="pselc" type="range">
    <infraPortBlk name="blk" fromCard="1" toCard="1" fromPort="21" toPort="22"/>
    <infraRsAccBaseGrp tDn="uni/infra/funcprof/accbundle-accountingLag2" />
  </infraHPortS>
</infraAccPortP>
```

- Step 4** Create an access bundle group that points to the port channel interface policy.

**Example:**

```
<infraFuncP>
  <infraAccBndlGrp name="accountingLag1" lagT='link'>
    <infraRsLacpPol tnLacpLagPolName='accountingLacp1'/>
    <infraRsAttEntP tDn="uni/infra/attentp-default"/>
  </infraAccBndlGrp>
  <infraAccBndlGrp name="accountingLag2" lagT='link'>
    <infraRsLacpPol tnLacpLagPolName='accountingLacp2'/>
    <infraRsAttEntP tDn="uni/infra/attentp-default"/>
  </infraAccBndlGrp>
</infraFuncP>
```

- Step 5** Create a port channel interface policy.

**Example:**

```
<lacpLagPol name='accountingLacp1' ctrl='15' descr='accounting' maxLinks='14' minLinks='1'
  mode='mac-pin' />
<lacpLagPol name='accountingLacp2' ctrl='15' descr='accounting' maxLinks='14' minLinks='1'
  mode='mac-pin' />
```

**Step 6** Associate the VMM domain to the attachable entity profile.

**Example:**

```
<infraAttEntityP name="default"> <infraRsDomP tDn="uni/vmmp-VMware/dom-mininet"/>
</infraAttEntityP>

</infraInfra>
```

## Configure a Static Port Channel Policy Using the REST API

### Procedure

**Step 1** Create a node profile that specifies the leaf IDs that the access port profiles are associated with.

**Example:**

```
<infraInfra dn="uni/infra">
  <infraNodeP name="bLeaf">
    <infraLeafS name="leafs" type="range">
      <infraNodeBlk name="nblk" from_="17" to_="17">
        </infraNodeBlk>
      </infraLeafS>
      <infraRsAccPortP tDn="uni/infra/accportprof-shipping1"/>
      <infraRsAccPortP tDn="uni/infra/accportprof-shipping2"/>
    </infraNodeP>
```

**Step 2** Create an access port profile that specifies the port included in the access bundle group.

**Example:**

```
<infraAccPortP name="shipping1">
  <infraHPortS name="pselc" type="range">
    <infraPortBlk name="blk" fromCard="1" toCard="1" fromPort="19" toPort="20"/>
    <infraRsAccBaseGrp tDn="uni/infra/funcprof/accbundle-accountingLag1" />
  </infraHPortS>
</infraAccPortP>
```

**Step 3** Create an access port profile that specifies a second port included in the access bundle group.

**Example:**

```
<infraAccPortP name="shipping2">
  <infraHPortS name="pselc" type="range">
    <infraPortBlk name="blk" fromCard="1" toCard="1" fromPort="21" toPort="22"/>
    <infraRsAccBaseGrp tDn="uni/infra/funcprof/accbundle-accountingLag2" />
  </infraHPortS>
</infraAccPortP>
```

**Step 4** Create an access bundle group that points to the port channel interface policy.

**Example:**

```

<infraFuncP>
  <infraAccBndlGrp name="accountingLag1" lagT='link'>
    <infraRsLacpPol tnLacpLagPolName='accountingLacp1' />
    <infraRsAttEntP tDn="uni/infra/attentp-default" />
  </infraAccBndlGrp>
  <infraAccBndlGrp name="accountingLag2" lagT='link'>
    <infraRsLacpPol tnLacpLagPolName='accountingLacp2' />
    <infraRsAttEntP tDn="uni/infra/attentp-default" />
  </infraAccBndlGrp>
</infraFuncP>

```

### Step 5 Create a port channel interface policy.

#### Example:

```

<lacpLagPol name='accountingLacp1' ctrl='15' descr='accounting' maxLinks='14' minLinks='1'
mode='off' />
<lacpLagPol name='accountingLacp2' ctrl='15' descr='accounting' maxLinks='14' minLinks='1'
mode='off' />

```

### Step 6 Associate the VMM domain to the attachable entity profile.

#### Example:

```

<infraAttEntityP name="default"> <infraRsDomP tDn="uni/vmmp-VMware/dom-mininet" />
</infraAttEntityP>

</infraInfra>

```

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