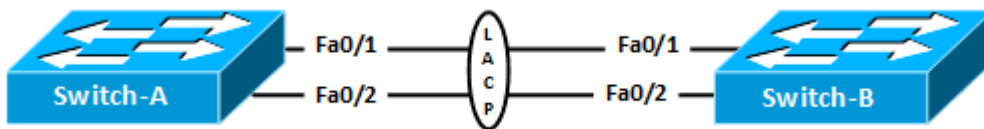


# Configure LACP EtherChannel in Cisco IOS Switch

The physical switch ports running LACP protocol can be either in **active** or **passive** mode. In **active mode**, the port actively tries to form LACP EtherChannel with remote switch port. Whereas, in **passive mode**, the port just waits for remote switch port to initiate LACP negotiation. The diagram below shows a simple scenario with two Cisco switches, Switch-A and Switch-B. The switches are connected with two switch ports Fa0/1 and Fa0/2. We can bundle these two switch ports into one logical EtherChannel using Link Aggregation Control Protocol (LACP) protocol. The links between the switches are TRUNKS so we have to **configure TRUNK** in the LACP bundled port as well.



Let's start configuring LACP in Switch-A. It is better to start the configuration after shutting down the switch ports to avoid any negotiation issues while configuring LACP.

```
Switch-A(config)#interface range fastEthernet 0/1 - 2
Switch-A(config-if-range)#channel-group 1 mode active
Switch-A(config-if-range)#channel-protocol lacp
```

The command **channel-group 1 mode active** means the physical interfaces Fa0/1 and Fa0/2 will be member of logical EtherChannel interface **Port-Channel 1** and the physical ports will actively try to negotiate with remote switch ports to form LACP EtherChannel interface. Here is same configuration for Switch-B.

```
Switch-B(config)#interface range fastEthernet 0/1 - 2
Switch-B(config-if-range)#channel-group 1 mode active
Switch-B(config-if-range)#channel-protocol lacp
```

To verify the EtherChannel, type **show etherchannel summary** as shown below.

```
Switch-A#show etherchannel summary
Flags:  D - down          P - in port-channel
        I - stand-alone  s - suspended
        H - Hot-standby (LACP only)
        R - Layer3       S - Layer2
        U - in use       f - failed to allocate aggregator
        u - unsuitable for bundling
        w - waiting to be aggregated
        d - default port
```

```
Number of channel-groups in use: 1
```

```
Number of aggregators: 1
```

Group	Port-channel	Protocol	Ports
1	Po1(SU)	LACP	Fa0/1(P) Fa0/2(P)

Above output shows, Port-Channel Po1 has been created, the protocol is LACP and ports Fa0/1 and Fa0/2 are member of the Port-Channel 1 interface. Regarding flags, **Po1(SU)** – S means it is operating at layer 2 and U means it is in use. Similarly, flags regarding ports **Fa0/1(P)** and **Fa0/2(P)** – P means these physical ports are member of port-channel 1 (Po1) interface.

You can also verify creation of Port-Channel interface by issuing, **show ip interface brief** command,

```
Switch-A#show ip interface brief | inc Po1
```

Interface	IP-Address	OK?	Method	Status	Protocol
Port-channel 1	unassigned	YES	unset	up	up

So, Port-Channel interface running LACP protocol has been created. Now, to configure the EtherChannel interface as TRUNK port type following commands as shown below,

```
Switch-A(config)#interface port-channel 1
Switch-A(config-if)#switchport trunk encapsulation dot1q
Switch-A(config-if)#switchport mode trunk
```

Repeat same commands in Switch-B as well.

```
Switch-B(config)#interface port-channel 1
Switch-B(config-if)#switchport trunk encapsulation dot1q
Switch-B(config-if)#switchport mode trunk
```

Review the EtherChannel configuration. Use **show running-config** command in user Exec mode.

```
interface FastEthernet0/1
  channel-protocol lacp
  channel-group 1 mode active
  switchport mode trunk
!
interface FastEthernet0/2
  channel-protocol lacp
  channel-group 1 mode active
  switchport mode trunk
!
interface Port-channel 1
  switchport trunk encapsulation dot1q
  switchport mode trunk
```

You can now verify the TRUNK port using **show interfaces trunk** command as shown below,

```
Switch-A#show interfaces trunk
```

Port	Mode	Encapsulation	Status	Native vlan
Fa0/1	on	802.1q	trunking	1
Fa0/2	on	802.1q	trunking	1
Po1	on	802.1q	trunking	1

Port	Vlans allowed on trunk
Fa0/1	1-1005
Fa0/2	1-1005
Po1	1-1005

Port	Vlans allowed and active in management domain
Fa0/1	1,10,20,30
Fa0/2	1,10,20,30
Po1	1,10,20,30

Port	Vlans in spanning tree forwarding state and not pruned
Fa0/1	1,10,20,30
Fa0/2	1,10,20,30
Po1	1,10,20,30

As you can see above, **Po1** is trunking with 802.1q protocol. In this way you can configure LACP EtherChannel in Cisco Switch.