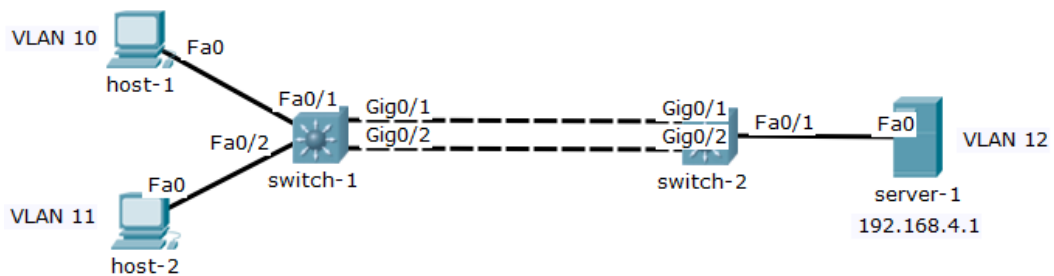# Layer 3 Port Channel

Lab Summary

Configure a Layer 3 port channel between Multilayer switch-1 and switch-2 with LACP negotiation. Assign the bundle to port channel 2 and verify.

Figure 1 Lab Topology

Lab Configuration

Start Packet Tracer File: **Layer 3 Port Channel**

Switch-1

Click on the *switch-1* icon and select the *CLI* folder. Hit the <enter> key for user mode prompt (>).

Step 1: Enter global configuration mode.

> switch-1> **enable**
> Password: **cisconet**
> switch-1# **configure terminal**

Step 2: Add GigabitEthernet0/1 to EtherChannel with LACP active mode and assign channel group 2.

> switch-1(config)# **interface gigabitethernet0/1**
> switch-1(config-if)# **no switchport**
> switch-1(config-if)# **channel-group 2 mode active**
> switch-1(config-if)# **no shutdown**
> switch-1(config-if)# **exit**

Step 3: Add GigabitEthernet0/2 to EtherChannel with LACP active mode and assign channel group 2.

```
switch-1(config)# interface gigabitethernet0/2
switch-1(config-if)# no switchport
switch-1(config-if)# channel-group 2 mode active
switch-1(config-if)# no shutdown
switch-1(config-if)# exit
```

Step 4: Configure interface port channel 2 (Po2) with IP address 192.168.3.1/24 and assign to channel-group 2.

```
switch-1(config)# interface port-channel 2
switch-1(config-if)# ip address 192.168.3.1 255.255.255.0
switch-1(config-if)# no shutdown
switch-1(config-if)# end
switch-1# copy running-config startup-config
```

Switch-2:

Click on the *switch-2* icon and select the *CLI* folder. Hit the <enter> key for user mode prompt (>).

Step 5: Enter global configuration mode.

```
switch-2> enable
Password: cisconet
switch-2# configure terminal
```

Step 6: Add GigabitEthernet0/1 to EtherChannel with LACP active mode and assign channel group 2.

```
switch-2(config)# interface gigabitethernet0/1
switch-2(config-if)# no switchport
switch-2(config-if)# channel-group 2 mode active
switch-2(config-if)# no shutdown
switch-2(config-if)# exit
```

Step 7: Add GigabitEthernet0/2 to EtherChannel with LACP desirable mode and assign channel group 2.

```
switch-2(config)# interface gigabitethernet0/2
switch-2(config-if)# no switchport
switch-2(config-if)# channel-group 2 mode active
switch-2(config-if)# no shutdown
switch-2(config-if)# exit
```

Step 8: Configure interface port channel 2 (Po2) with IP address 192.168.3.2/24 and assign to channel-group 2.

switch-2(config)# **interface port-channel 2**
switch-2(config-if)# **ip address 192.168.3.2 255.255.255.0**
switch-2(config-if)# **no shutdown**
switch-2(config-if)# **end**
switch-2# **copy running-config startup-config**

Step 9: <u>Verify Lab</u>

Verify EtherChannel configuration, operational status and neighbor connectivity.

switch-1# **show running-config**

switch-1# **show etherchannel port-channel**

Channel-group listing:

Group: 2

Port-channels in the group:

Port-channel: **Po2** (Primary Aggregator)

Age of the Port-channel = 00d:00h:09m:30s
Logical slot/port = 2/2   **Number of ports = 2**
GC = 0x00000000   HotStandBy port = null
Port state = **Port-channel**
Protocol = **LACP**
Port Security = Disabled

Ports in the Port-channel:

Index	Load	Port	EC state	No of bits
0	00	Gig0/1	Active	0
0	00	Gig0/2	Active	0

Time since last port bundled: 00d:00h:01m:29s Gig0/2

switch-1# **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
----------+-----------------+-------------+---------------------
  2   **Po2** (SU)   **LACP**   **Gi0/1 (P) Gi0/2 (P)**

Verify there is network connectivity between hosts and server-1.

host-1: c:\>**ping 192.168.4.1**

host-2: c:\>**ping 192.168.4.1**

<u>Lab Notes</u>

Multilayer switches are required to create Layer 3 port channel interfaces. They are routed interfaces with an IP address assigned. The channel group number is used to bundle the switch interfaces to the port channel interface.