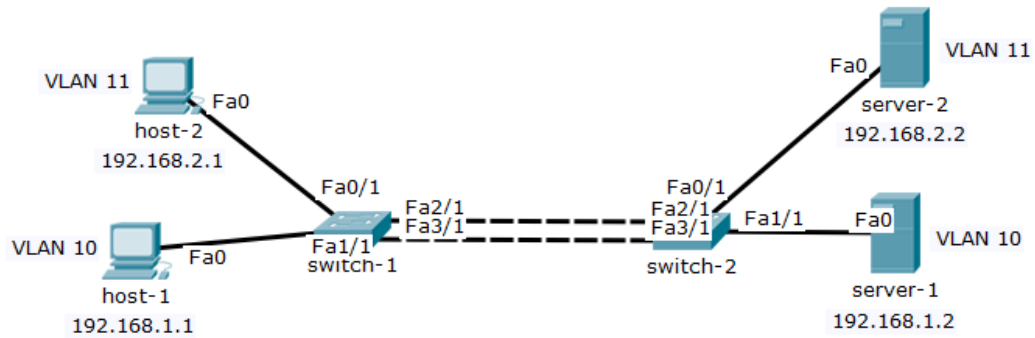
# Layer 2 EtherChannel (LACP)

## Lab Summary

Configure EtherChannel port aggregation between switch-1 and switch-2 with LACP negotiation. Assign the bundle to a port channel interface and verify the lab.

**Figure 1** Lab Topology




## Lab Configuration

Start Packet Tracer File: **LACP Layer 2 EtherChannel**

*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 FastEthernet2/1 to EtherChannel bundle with LACP active mode and assign channel group 1.

switch-1(config)# **interface fastethernet2/1**
switch-1(config-if)# **switchport mode trunk**
switch-1(config-if)# **switchport nonegotiate**
switch-1(config-if)# **switchport trunk allowed vlan 10-11**
switch-1(config-if)# **channel-group 1 mode active**
switch-1(config-if)# **no shutdown**
switch-1(config-if)# **exit**

Step 3: Add FastEthernet3/1 to EtherChannel bundle with LACP active mode and assign channel group 1.

```
switch-1(config)# interface fastethernet3/1
switch-1(config-if)# switchport mode trunk
switch-1(config-if)# switchport nonegotiate
switch-1(config-if)# switchport trunk allowed vlan 10-11
switch-1(config-if)# channel-group 1 mode active
switch-1(config-if)# no shutdown
switch-1(config-if)# exit
```

Step 4: Enable interface port channel 1 (Po1) for channel-group 1.

```
switch-1(config)# interface port-channel 1
switch-1(config-if)# switchport mode trunk
switch-1(config-if)# switchport nonegotiate
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 FastEthernet2/1 to EtherChannel bundle with LACP active mode and assign channel group 1.

```
switch-2(config)# interface fastethernet2/1
switch-2(config-if)# switchport mode trunk
switch-2(config-if)# switchport nonegotiate
switch-2(config-if)# switchport trunk allowed vlan 10-11
switch-2(config-if)# channel-group 1 mode active
switch-2(config-if)# no shutdown
switch-2(config-if)# exit
```

Step 7: Add FastEthernet3/1 to EtherChannel bundle with LACP active mode and assign channel group 1.

```
switch-2(config)# interface fastethernet3/1
switch-2(config-if)# switchport mode trunk
```

switch-2(config-if)# **switchport nonegotiate**
switch-2(config-if)# **switchport trunk allowed vlan 10-11**
switch-2(config-if)# **channel-group 1 mode active**
switch-2(config-if)# **no shutdown**
switch-2(config-if)# **exit**

Step 8: Enable interface port channel 1 (Po1) for channel-group 1.

switch-2(config)# **interface port-channel 1**
switch-2(config-if)# **switchport mode trunk**
switch-2(config-if)# **switchport nonegotiate**
switch-2(config-if)# **no shutdown**
switch-2(config-if)# **end**
switch-2# **copy running-config startup-config**

Step 9: Verify Lab

Verify EtherChannel configuration, operational status and neighbor connectivity.

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

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 |
|---|---|---|---|
| 1 | Po1(**SU**) | **LACP** | **Fa2/1**(P) **Fa3/1**(P) |

Verify there is network connectivity between hosts and servers.

host-1: c:\>**ping 192.168.1.2** (yes)

host-1: c:\>**ping 192.168.2.2** (no)

host-2: c:\>**ping 192.168.2.2** (yes)

host-2: c:\>**ping 192.168.1.2** (no)

Lab Notes

Etherchannel creates a single logical channel (bundle) comprised of Fa2/1 and Fa3/1 on both switches. The Layer 2 port channel assigns a single logical interface to that bundle. The channel group number is linked to the port channel interface number for that purpose.

**EtherChannel Protocols (LAG)**

| **LACP** | **PAgP** |
|---|---|
| open standard | Cisco proprietary |
| bundle = 8 ports + 8 standby | bundle = 8 ports |
| passive mode (default) | auto mode (default) |
| active mode | desirable mode |
| any port active = etherchannel | any port desirable = etherchannel |