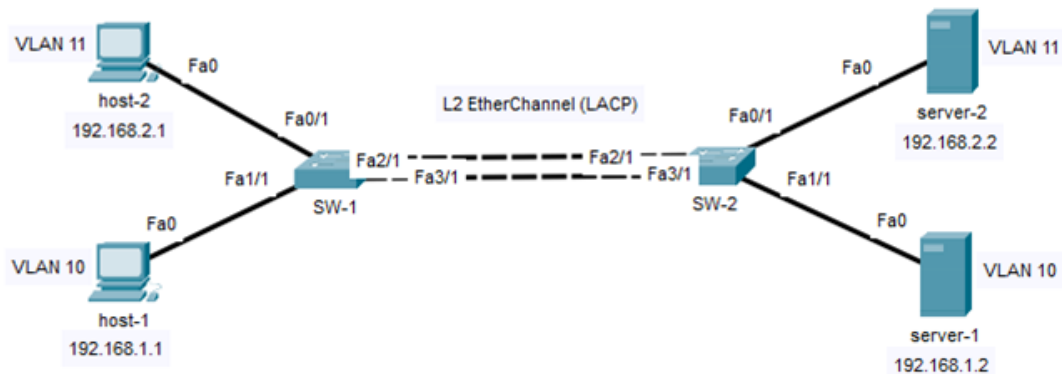


Layer 2 EtherChannel (LACP)

Lab Summary

Configure EtherChannel port aggregation between SW-1 and SW-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: **layer 2 etherchannel.pkt**

Click on **SW-1** icon and select **CLI** folder.

Step 1: Enter global configuration mode.

```
SW-1> enable
SW-1# configure terminal
```

Step 2: Add FastEthernet2/1 to EtherChannel bundle with LACP active mode and assign channel group 1.

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

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

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

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

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

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

Click on SW-2 icon and select *CLI* folder.

Step 5: Enter global configuration mode.

```
SW-2> enable  
SW-2# configure terminal
```

Step 6: Add FastEthernet2/1 to EtherChannel bundle with LACP active mode and assign channel group 1.

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

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

```
SW-2(config)# interface fastethernet3/1  
SW-2(config-if)# switchport mode trunk  
SW-2(config-if)# switchport nonegotiate  
SW-2(config-if)# switchport trunk allowed vlan 10-11  
SW-2(config-if)# channel-group 1 mode active  
SW-2(config-if)# no shutdown  
SW-2(config-if)# exit
```

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

```
SW-2(config)# interface port-channel 1  
SW-2(config-if)# switchport mode trunk
```

```
SW-2(config-if)# switchport nonegotiate
SW-2(config-if)# no shutdown
SW-2(config-if)# end
SW-2# copy running-config startup-config
```

Step 9: Verify Lab

Verify EtherChannel configuration, operational status and neighbor connectivity.

```
SW-1# show running-config
```

```
SW-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