BCMSN Lab3 - Configuring L2 & L3 EtherChannel with LACP

?Lab Objectives?
1. Master the configuration methods of the Cisco-proprietary LACP link aggregation protocol.
2. Master the differences between the Layer2 LACP configuration and the Layer3 LACP configuration.
3. LACP is the public standard link aggregation protocol.
?Lab Topology?

?Lab Steps?
1.This lab uses two Cisco Catalyst 3750 Series Switches and connects the cables of the appropriate switches according to the topology.
2. It is recommended to set the interfaces Fa1/0/1 ? 22 in shutdown status in order to assure the lab of success.
3. As the working property of LACP is similar to that of PAgP, this lab only lists the configuration commands of LACP, the detailed information will be given in the lab: Configuring L2 & L3 EtherChannel with LAC
4. Configure the Layer2 LACP link aggregation on SW1 and SW2:

```
SW1(config)#interface   range fastEthernet 1/0/23 - 24
SW1(config-if-range)#channel-protocol   lacp
SW1(config-if-range)#channel-group   1 mode active
Creating a   port-channel interface Port-channel 1

SW1(config-if-range)#exit
```

```
SW2(config)#interface   range fastEthernet 1/0/23 - 24
SW2(config-if-range)#channel-protocol   lacp
SW2(config-if-range)#channel-group   1 mode passive
SW2(config-if-range)#exit
```

5. Check the summary information of LACP on SW1 or SW2:

```
SW1#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 Fa1/0/23(P) Fa1/0/24(P)
SW1#
```

6. Configure IP address of VLAN1 on SW1 and SW2 to test , and you are recommended to use the extended ping command to test the tolerance of the aggregation link.

```
SW1(config)#interface   vlan 1
SW1(config-if)#ip   address 192.168.1.1 255.255.255.0
SW1(config-if)#no shutdown
SW1(config-if)#exit
SW1(config)#
```

```
SW2(config)#interface   vlan 1
SW2(config-if)#ip   address 192.168.1.2 255.255.255.0
SW2(config-if)#no   shutdown
SW2(config-if)#exit
```

The information of the Ping command is as follows:

```
SW1#ping 192.168.1.2

Type escape sequence   to abort.
Sending 5, 100-byte   ICMP Echos to 192.168.1.2, timeout is 2 seconds:
.!!!!
Success rate is 80   percent (4/5), round-trip min/avg/max = 1/1/1   ms
SW1#
```

6. Delete the previous Layer2 LACP configurations and restart the switches
7. Configure the Layer3 LACP link aggregation on the two switches.

```
SW1(config)#interface   port-channel 1
SW1(config-if)#no   switchport
SW1(config-if)#ip   address 192.168.1.1 255.255.255.0
SW1(config-if)#no shutdown
SW1(config-if)#exit
SW1(config)#
SW1(config)#interface   range fastEthernet 1/0/23 - 24
SW1(config-if-range)#no   switchport
SW1(config-if-range)#channel-protocol   lacp
SW1(config-if-range)#channel-group   1 mode active
SW1(config-if-range)#exit
```

```
SW2(config)#interface   port-channel 1
SW2(config-if)#no   switchport
SW2(config-if)#ip   address 192.168.1.2 255.255.255.0
SW2(config-if)#no shutdown
SW2(config-if)#exit
```

```
SW2(config)#
SW2(config)#interface  range fastEthernet 1/0/23 - 24
SW2(config-if-range)#no  switchport
SW2(config-if-range)#channel-protocol  lacp
SW2(config-if-range)#
SW2(config-if-range)#channel-group  1 mode passive
SW2(config-if-range)#exit
SW2(config)#exit
```

8. Check the summary information of the aggregation link:

```
SW2#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(RU) LACP Fa1/0/23(P) Fa1/0/24(P)

SW2#
```

```
SW1#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(RU) LACP Fa1/0/23(P) Fa1/0/24(P)

SW1#

9. Use the ping command to test:

SW2#ping 192.168.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 1/1/1 ms
SW2#

10. End.
Hope to helpful for you!