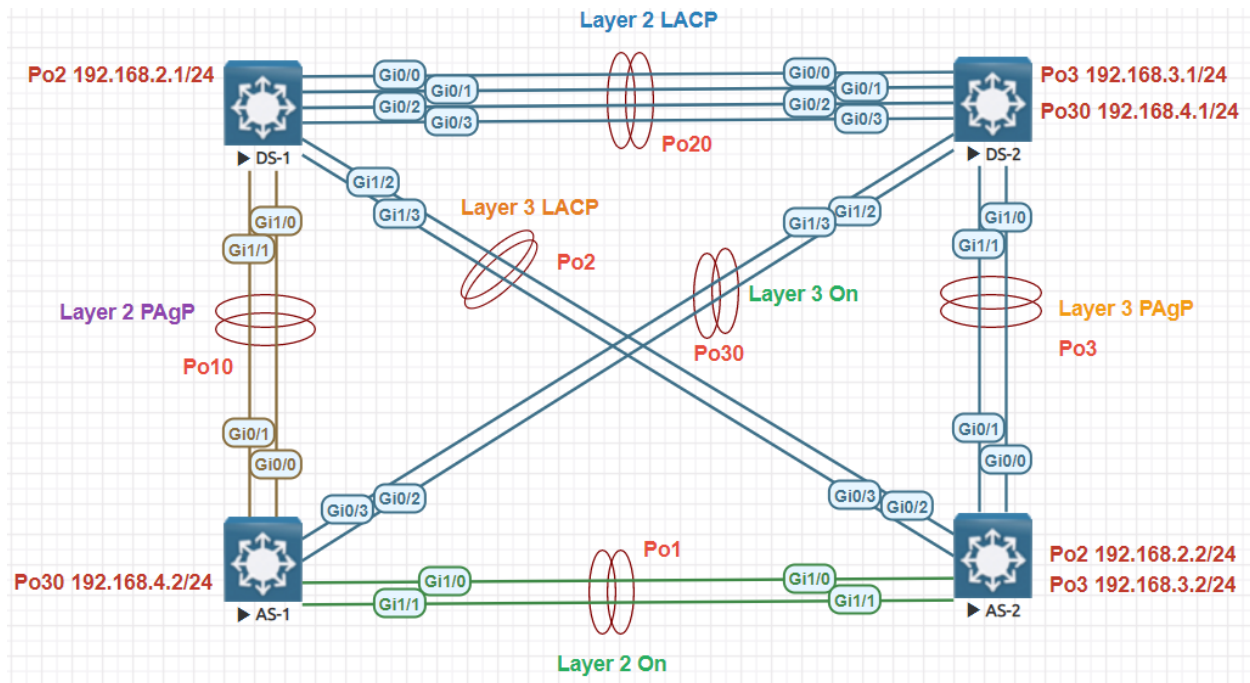


LACP Lab:



Switch Images	vios_l2-adventerprisek9-m.ssa.high_iron_20190423
Switches Participated LACP	DS-1 , DS-2 and AS-2
Layer 2 LACP	DS-1 and DS-2
Layer 3 LACP	DS-1 and AS-2
Layer 2 LACP DS-1 Ports	G0/0, G0/1, G0/2, G0/3
Layer 2 LACP DS-2 Ports	G0/0, G0/1, G0/2, G0/3
Layer 3 LACP DS-1 Ports	G1/2, G1/3
Layer 3 LACP AS-2 Ports	G0/3, G0/2
Layer 2 LACP Port Channel	Po20
Layer 3 LACP Port Channel	Po2
Layer 2 LACP DS-1 Mode	Active
Layer 2 LACP DS-2 Mode	Passive
Layer 3 LACP DS-1 Mode	Active
Layer 3 LACP AS-2 Mode	Active
Layer 3 LACP DS-1 IP Address	192.168.2.1
Layer 3 LACP AS-2 IP Address	192.168.2.2

DS-1 Basic Configuration

```
Switch(config)#hostname DS-1
DS-1(config)#spanning-tree mode rapid-pvst
DS-1(config)#line con 0
DS-1(config-line)#exec-timeout 0 0
DS-1(config-line)#logging synchronous
DS-1(config-line)#exit
DS-1(config)#interface range g2/0-3
DS-1(config-if-range)#shutdown
DS-1(config-if-range)#exit
```

DS-2 Basic Configuration

```
Switch(config)#hostname DS-2
DS-2(config)#spanning-tree mode rapid-pvst
DS-2(config)#line con 0
DS-2(config-line)#exec-timeout 0 0
DS-2(config-line)#logging synchronous
DS-2(config-line)#exit
DS-2(config)#interface range g1/2-3, g2/0-3
DS-2(config-if-range)#shutdown
DS-2(config-if-range)#exit
```

AS-2 Basic Configuration

```
Switch(config)#hostname AS-2
AS-2(config)#spanning-tree mode rapid-pvst
AS-2(config)#line con 0
AS-2(config-line)#exec-timeout 0 0
AS-2(config-line)#logging synchronous
AS-2(config-line)#exit
AS-2(config)#interface range g1/2-3
AS-2(config-if-range)#shutdown
AS-2(config-if-range)#exit
```

DS-1 Layer 2 LACP Configuration

```
DS-1(config)#interface range g0/0-3
DS-1(config-if-range)#switchport trunk encapsulation dot1q
DS-1(config-if-range)#switchport mode trunk
DS-1(config-if-range)#shutdown
DS-1(config-if-range)#channel-protocol lacp
DS-1(config-if-range)#channel-group 20 mode active
DS-1(config-if-range)#no shutdown
```

DS-2 Layer 2 LACP Configuration

```
DS-2(config)#interface range g0/0-3
DS-2(config-if-range)#switchport trunk encapsulation dot1q
DS-2(config-if-range)#switchport mode trunk
DS-2(config-if-range)#shutdown
DS-2(config-if-range)#channel-protocol lacp
DS-2(config-if-range)#channel-group 20 mode passive
DS-2(config-if-range)#no shutdown
```

```
DS-1#show etherchannel summary
```

```
Flags: D - down          P - bundled in port-channel
       I - stand-alone  s - suspended
       H - Hot-standby (LACP only)
       R - Layer3       S - Layer2
       U - in use      N - not in use, no aggregation
       f - failed to allocate aggregator

       M - not in use, minimum links not met
       m - not in use, port not aggregated due to minimum links not met
       u - unsuitable for bundling
       w - waiting to be aggregated
       d - default port

       A - formed by Auto LAG
```

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

Group	Port-channel	Protocol	Ports
20	Po20(SU)	LACP	Gi0/0(P) Gi0/1(P) Gi0/2(P) Gi0/3(P)

```
DS-2#show etherchannel summary
```

```
Flags: D - down          P - bundled in port-channel
       I - stand-alone  s - suspended
       H - Hot-standby (LACP only)
       R - Layer3       S - Layer2
       U - in use      N - not in use, no aggregation
       f - failed to allocate aggregator

       M - not in use, minimum links not met
       m - not in use, port not aggregated due to minimum links not met
       u - unsuitable for bundling
       w - waiting to be aggregated
       d - default port

       A - formed by Auto LAG
```

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

Group	Port-channel	Protocol	Ports
20	Po20(SU)	LACP	Gi0/0(P) Gi0/1(P) Gi0/2(P) Gi0/3(P)

DS-1 Layer 3 LACP Configuration

```
DS-1(config)#interface Port-channel2
DS-1(config-if)#no switchport
DS-1(config-if)#ip address 192.168.2.1 255.255.255.0
DS-1(config-if)#exit
DS-1(config)#interface range g1/2-3
DS-1(config-if-range)#no switchport
DS-1(config-if-range)#channel-protocol lacp
DS-1(config-if-range)#channel-group 2 mode active
DS-1(config-if-range)#exit
```

AS-2 Layer 3 LACP Configuration

```
AS-2(config)#interface Port-channel2
AS-2(config-if)#no switchport
AS-2(config-if)#ip address 192.168.2.2 255.255.255.0
AS-2(config-if)#exit
AS-2(config)#interface range g0/2-3
AS-2(config-if-range)#no switchport
AS-2(config-if-range)#channel-protocol lacp
AS-2(config-if-range)#channel-group 2 mode active
AS-2(config-if-range)#no shutdown
```

DS-1#show etherchannel summary

```
Flags:  D - down          P - bundled in port-channel
        I - stand-alone  s - suspended
        H - Hot-standby (LACP only)
        R - Layer3       S - Layer2
        U - in use       N - not in use, no aggregation
        f - failed to allocate aggregator

        M - not in use, minimum links not met
        m - not in use, port not aggregated due to minimum links not met
        u - unsuitable for bundling
        w - waiting to be aggregated
        d - default port

        A - formed by Auto LAG
```

```
Number of channel-groups in use: 2
Number of aggregators:          2
```

Group	Port-channel	Protocol	Ports
2	Po2(RU)	LACP	Gi1/2(P) Gi1/3(P)
20	Po20(SU)	LACP	Gi0/0(P) Gi0/1(P) Gi0/2(P) Gi0/3(P)

AS-2#show etherchannel summary

Flags: D - down P - bundled in port-channel
I - stand-alone s - suspended
H - Hot-standby (LACP only)
R - Layer3 S - Layer2
U - in use N - not in use, no aggregation
f - failed to allocate aggregator

M - not in use, minimum links not met
m - not in use, port not aggregated due to minimum links not met
u - unsuitable for bundling
w - waiting to be aggregated
d - default port

A - formed by Auto LAG

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

Group	Port-channel	Protocol	Ports
2	Po2(RU)	LACP	Gi0/2(P) Gi0/3(P)

AS-1#ping 192.168.2.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.2, timeout is 2 seconds:
!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 12/24/38 ms
AS-1#

AS-2#ping 192.168.2.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 13/38/84 ms
AS-2#