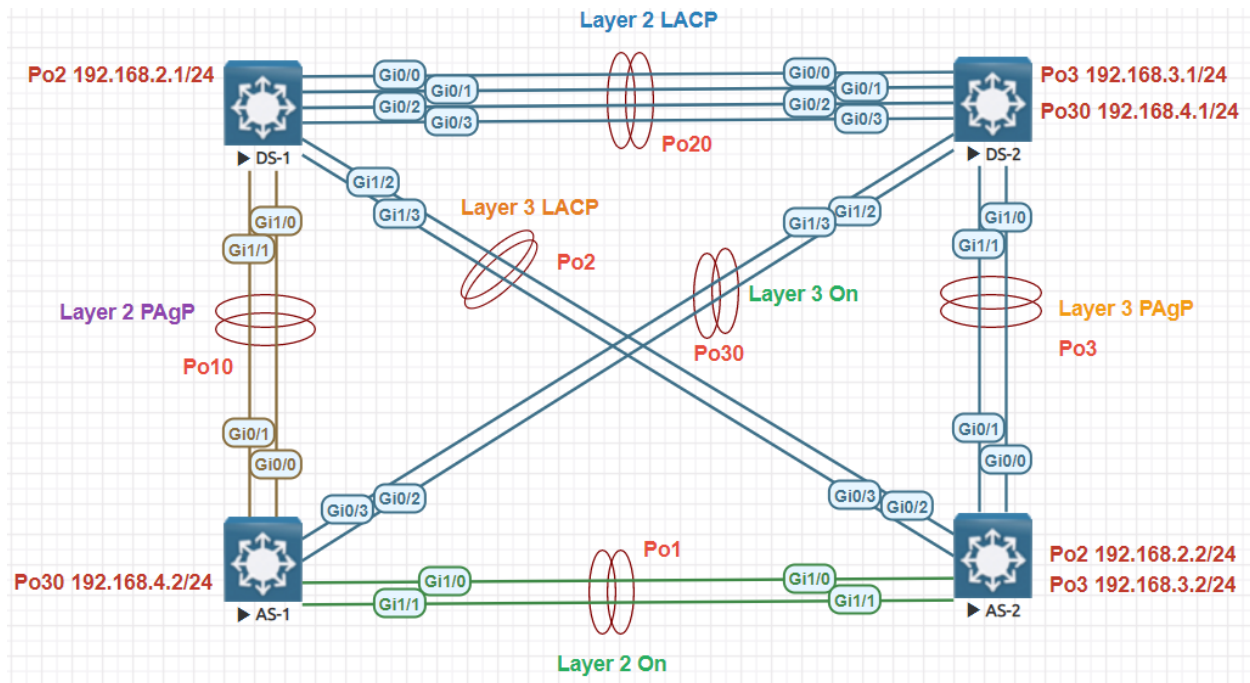


## Manual or ON Lab:



Switch Images	vios_l2-adventerprisek9-m.ssa.high_iron_20190423
Switches Participated Manual	AS-1, AS-2 and DS-2
Layer 2 Manual	AS-1 and AS-2
Layer 2 Manual AS-1 Ports	G1/0 and G1/1
Layer 2 Manual AS-2 Ports	G1/0 and G1/1
Layer 2 Manual Port Channel	Po1
Layer 2 Manual AS-1 Mode	On
Layer 2 Manual AS-2 Mode	On
Layer 3 Manual	AS-1 and DS-2
Layer 3 Manual AS-1 Ports	G0/2 and G0/3
Layer 3 Manual DS-2 Ports	G1/2 and G1/3
Layer 3 Manual Port Channel	Po30
Layer 3 Manual AS-1 Mode	On
Layer 2 Manual DS-2 Mode	On
Layer 3 Manual DS-2 IP Address	192.168.4.1
Layer 3 Manual AS-1 IP Address	192.168.4.2

### 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-1 Basic Configuration

```
Switch(config)#hostname AS-1
AS-1(config)#spanning-tree mode rapid-pvst
AS-1(config)#line con 0
AS-1(config-line)#exec-timeout 0 0
AS-1(config-line)#logging synchronous
AS-1(config-line)#exit
AS-1(config)#interface range g0/2-3, g1/2-3
AS-1(config-if-range)#shutdown
```

### 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
```

### AS-1 Layer 2 Manual Configuration

```
AS-1(config)#interface range g1/0-1
AS-1(config-if-range)#switchport trunk encapsulation dot1q
AS-1(config-if-range)#switchport mode trunk
AS-1(config-if-range)#shutdown
AS-1(config-if-range)#channel-group 1 mode on
AS-1(config-if-range)#no shutdown
```

### AS-2 Layer 2 Manual Configuration

```
AS-2(config)#interface range g1/0-1
AS-2(config-if-range)#switchport trunk encapsulation dot1q
AS-2(config-if-range)#switchport mode trunk
AS-2(config-if-range)#shutdown
AS-2(config-if-range)#channel-group 1 mode on
AS-2(config-if-range)#no shutdown
```

```
AS-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	
1	Po1(SU)	-	Gi1/0(P)	Gi1/1(P)
10	Po10(SU)	PAgP	Gi0/0(P)	Gi0/1(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: 3  
Number of aggregators: 3

Group	Port-channel	Protocol	Ports	
1	Po1(SU)	-	Gi1/0(P)	Gi1/1(P)
2	Po2(RU)	LACP	Gi0/2(P)	Gi0/3(P)
3	Po3(RU)	PAgP	Gi0/0(P)	Gi0/1(P)

AS-2#show etherchannel 1 detail

Group state = L2  
Ports: 2 Maxports = 4  
Port-channels: 1 Max Port-channels = 1  
Protocol: -  
Minimum Links: 0

Ports in the group:

Port: Gi1/0  
-----

Port state = Up Mstr In-Bndl  
Channel group = 1 Mode = On Gcchange = -  
Port-channel = Po1 GC = - Pseudo port-channel = Po1  
Port index = 0 Load = 0x00 Protocol = -

Age of the port in the current state: 0d:00h:02m:58s

Port: Gi1/1  
-----

Port state = Up Mstr In-Bndl  
Channel group = 1 Mode = On Gcchange = -  
Port-channel = Po1 GC = - Pseudo port-channel = Po1  
Port index = 0 Load = 0x00 Protocol = -

Age of the port in the current state: 0d:00h:02m:58s

Port-channels in the group:  
-----

### DS-2 Layer 3 Manual Configuration

```
DS-2(config)#interface range g1/2-3
DS-2(config-if-range)#no switchport
DS-2(config-if-range)#channel-group 30 mode on
DS-2(config-if-range)#no shutdown
DS-2(config-if-range)#exit
DS-2(config)#interface port-channel 30
DS-2(config-if)#ip address 192.168.4.1 255.255.255.0
DS-2(config-if)#no shutdown
DS-2(config-if)#exit
```

### AS-1 Layer 3 Manual Configuration

```
AS-1(config)#interface range g0/2-3
AS-1(config-if-range)#no switchport
AS-1(config-if-range)#channel-group 30 mode on
AS-1(config-if-range)#no shutdown
AS-1(config-if-range)#exit
AS-1(config)#interface port-channel 30
AS-1(config-if)#ip address 192.168.4.2 255.255.255.0
AS-1(config-if)#no shutdown
```

AS-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: 3
Number of aggregators:          3
```

Group	Port-channel	Protocol	Ports	
1	Po1(SU)	-	Gi1/0(P)	Gi1/1(P)
10	Po10(SU)	PAgP	Gi0/0(P)	Gi0/1(P)
30	Po30(RU)	-	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: 3  
Number of aggregators: 3

Group	Port-channel	Protocol	Ports
3	Po3(RU)	PAgP	Gi1/0(P) Gi1/1(P)
20	Po20(SU)	LACP	Gi0/0(P) Gi0/1(P) Gi0/2(P)
30	Po30(RU)	-	Gi0/3(P) Gi1/2(P) Gi1/3(P)

DS-2#ping 192.168.4.2

Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to 192.168.4.2, timeout is 2 seconds:  
.!!!!  
Success rate is 80 percent (4/5), round-trip min/avg/max = 7/14/21 ms  
DS-2#

AS-1#ping 192.168.4.1

Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to 192.168.4.1, timeout is 2 seconds:  
!!!!!  
Success rate is 100 percent (5/5), round-trip min/avg/max = 10/18/26 ms  
AS-1#