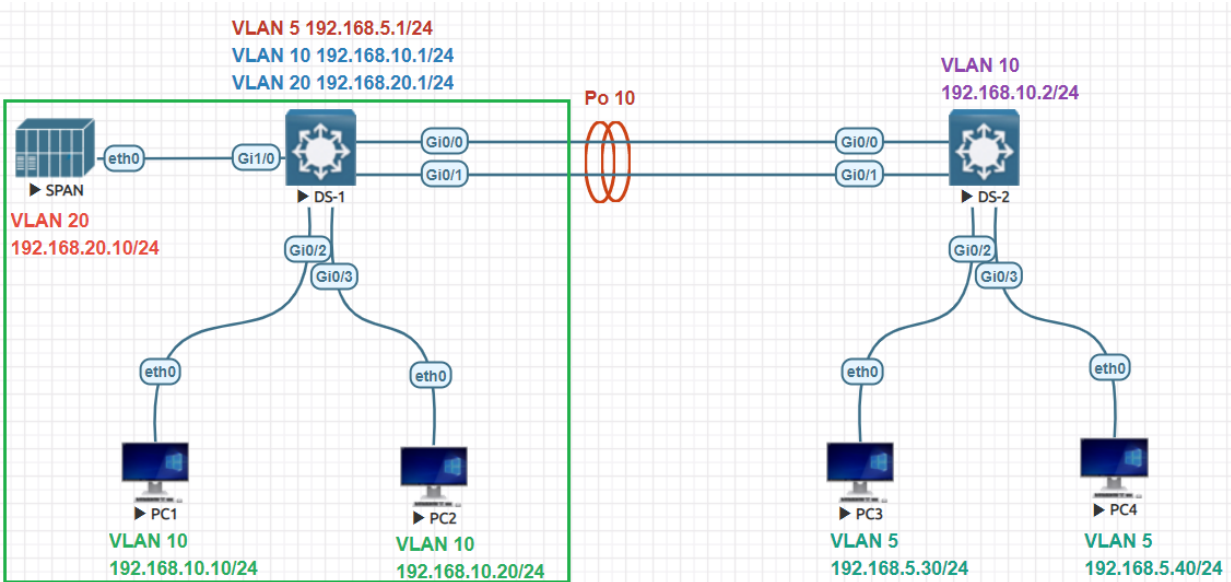


## SPAN Lab:



Switch Images	vios_l2-adventerprisek9-m.ssa.high_iron_20190423
Client PCs	Linux-Slax-9.11.0 or VPCS
SPAN	EVE-Wireshark Or Wireshark
VLANs	VLAN5, VLAN10, and VLAN20
VLAN5 PCs	PC3 and PC4
VLAN10 PCs	PC1 and PC2
VLAN20 PC	SPAN/Wireshark
VLAN5 IP Address	192.168.5.1
VLAN10 IP Address	192.168.10.1
VLAN20 IP Address	192.168.20.1
Layer 2 LACP Port Channel	Po10
Layer 2 LACP DS-1 Ports	G0/0 and G0/1
Layer 2 LACP DS-2 Ports	G0/0 and G0/1
Layer 2 LACP DS-1 Mode	Active
Layer 2 LACP DS-2 Mode	Passive
SPAN Wireshark IP Address	192.168.20.10 /24
PC1 IP Address	192.168.10.10
PC2 IP Address	192.168.10.20
PC3 IP address	192.168.5.30
PC4 IP Address	192.168.5.40
SPAN Switch	DS-1
SPAN PCs	PC1 and PC2
SPAN Devices	DS-1, PC1, PC2 and Wireshark

### DS-1 Basic Configuration

```
DS-1(config)#hostname DS-1
DS-1(config)#no ip domain lookup
DS-1(config)#ip routing
DS-1(config)#vtp mode transparent
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)#exit
DS-1(config-if-range)#interface range g1/1-3
DS-1(config-if-range)#shutdown
```

### DS-1 VLAN and SVI Configuration

```
DS-1(config)#vlan 5
DS-1(config)#interface vlan 5
DS-1(config-if)#ip address 192.168.5.1 255.255.255.0
DS-1(config-if)#no shutdown
DS-1(config)#vlan 10
DS-1(config)#interface vlan 10
DS-1(config-if)#ip address 192.168.10.1 255.255.255.0
DS-1(config-if)#no shutdown
DS-1(config)#vlan 20
DS-1(config)#interface vlan 20
DS-1(config-if)#ip address 192.168.20.1 255.255.255.0
DS-1(config-if)#no shutdown
```

### DS-1 Etherchannel Configuration

```
DS-1(config)#interface range g0/0-1
DS-1(config-if-range)#switchport trunk encapsulation dot1q
DS-1(config-if-range)#switchport mode trunk
DS-1(config-if-range)#channel-group 10 mode active
```

### DS-1 Interfaces Configuration

```
DS-1(config)#interface range g0/2-3
DS-1(config-if-range)#spanning-tree portfast
DS-1(config-if-range)#switchport mode access
DS-1(config-if-range)#switchport access vlan 10
DS-1(config-if-range)#exit
DS-1(config)#interface GigabitEthernet1/0
DS-1(config-if)#switchport mode access
DS-1(config-if)#spanning-tree portfast
DS-1(config-if)#switchport access vlan 20
```

### DS-2 Basic Configuration

```
DS-2(config)#hostname DS-2
DS-2(config)#no ip domain lookup
DS-2(config)#ip routing
DS-2(config)#vtp mode transparent
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 g1/0-3
DS-2(config-if-range)#shutdown
DS-2(config-if-range)#exit
```

### DS-2 VLAN and SVI Configuration

```
DS-2(config)#vlan 5
DS-2(config-vlan)#exit
DS-2(config)#vlan 10
DS-2(config-vlan)#exit
DS-2(config)#interface vlan 10
DS-2(config-if)#ip address 192.168.10.2 255.255.255.0
DS-2(config-if)#no shutdown
DS-2(config-if)#exit
```

### DS-2 Etherchannel Configuration

```
DS-2(config)#interface range g0/0-1
DS-2(config-if-range)#switchport trunk encapsulation dot1q
DS-2(config-if-range)#switchport mode trunk
DS-2(config-if-range)#channel-group 10 mode active
DS-2(config-if-range)#exit
```

### DS-2 Interfaces Configuration

```
DS-2(config)#interface range g0/2-3
DS-2(config-if-range)#spanning-tree portfast
DS-2(config-if-range)#switchport mode access
DS-2(config-if-range)#switchport access vlan 5
DS-2(config-if-range)#exit
```

### PC1 Configuration

```
VPCS> set pncame PC1
PC1> ip 192.168.10.10 /24 192.168.10.1
PC1> save
```

### PC2 Configuration

```
VPCS> set pncame PC2
PC2> ip 192.168.10.20/24 192.168.10.1
PC2> save
```

### PC3 Configuration

```
VPCS> set pncame PC3
PC3> ip 192.168.5.30 /24
PC3> save
```

### PC4 Configuration

```
VPCS> set pncame PC4
PC4> ip 192.168.5.40/24
PC4> save
```

### Local SPAN Configuration

```
DS-1(config)#monitor session 1 source interface Gi0/2
DS-1(config)#monitor session 1 source interface g0/3
DS-1(config)#monitor session 1 destination interface g1/0
```

```
PC1
PC1> ping 192.168.10.20

84 bytes from 192.168.10.20 icmp_seq=1 ttl=64 time=34.416 ms
84 bytes from 192.168.10.20 icmp_seq=2 ttl=64 time=15.163 ms
84 bytes from 192.168.10.20 icmp_seq=3 ttl=64 time=27.667 ms
84 bytes from 192.168.10.20 icmp_seq=4 ttl=64 time=21.400 ms
84 bytes from 192.168.10.20 icmp_seq=5 ttl=64 time=18.169 ms
```

The image shows a Wireshark capture of traffic on a SPAN interface. The capture shows a series of ICMP Echo (ping) requests and replies between 192.168.10.20 and 192.168.10.10. The traffic is highlighted with a red box. The table below summarizes the captured packets.

No.	Time	Source	Destination	Protocol	Length	Info
15	2.076989819	192.168.10.20	192.168.10.10	ICMP	98	Echo (ping) reply id=0x82c1, seq=3
16	2.077023656	192.168.10.20	192.168.10.10	ICMP	98	Echo (ping) reply id=0x82c1, seq=3
17	3.102311691	192.168.10.10	192.168.10.20	ICMP	98	Echo (ping) request id=0x83c1, seq=4
18	3.102350601	192.168.10.10	192.168.10.20	ICMP	98	Echo (ping) request id=0x83c1, seq=4
19	3.111233415	192.168.10.20	192.168.10.10	ICMP	98	Echo (ping) reply id=0x83c1, seq=4
20	3.111268957	192.168.10.20	192.168.10.10	ICMP	98	Echo (ping) reply id=0x83c1, seq=4
21	4.122212922	192.168.10.10	192.168.10.20	ICMP	98	Echo (ping) request id=0x84c1, seq=5
22	4.122235237	192.168.10.10	192.168.10.20	ICMP	98	Echo (ping) request id=0x84c1, seq=5
23	4.130816984	192.168.10.20	192.168.10.10	ICMP	98	Echo (ping) reply id=0x84c1, seq=5
24	4.130842712	192.168.10.20	192.168.10.10	ICMP	98	Echo (ping) reply id=0x84c1, seq=5

Frame 1: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on interface eth0, id 0  
Ethernet II, Src: Private\_66:68:03 (00:50:79:66:68:03), Dst: Broadcast (ff:ff:ff:ff:ff:ff)  
Address Resolution Protocol (request)

```

PC2
PC2> ping 192.168.10.10

84 bytes from 192.168.10.10 icmp_seq=1 ttl=64 time=38.188 ms
84 bytes from 192.168.10.10 icmp_seq=2 ttl=64 time=14.113 ms
84 bytes from 192.168.10.10 icmp_seq=3 ttl=64 time=10.878 ms
84 bytes from 192.168.10.10 icmp_seq=4 ttl=64 time=22.780 ms
84 bytes from 192.168.10.10 icmp_seq=5 ttl=64 time=22.982 ms

```

```

SPAN
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Apply a display filter ... <Ctrl-/>
No. Time Source Destination Protocol Length Info
39 305.168846387 192.168.10.10 192.168.10.20 ICMP 98 Echo (ping) reply id=0xb2c2, seq=3/768, ttl=64 (r
40 305.168865792 192.168.10.10 192.168.10.20 ICMP 98 Echo (ping) reply id=0xb2c2, seq=3/768, ttl=64
41 306.178885172 192.168.10.20 192.168.10.10 ICMP 98 Echo (ping) request id=0xb3c2, seq=4/1024, ttl=64 (
42 306.178913661 192.168.10.20 192.168.10.10 ICMP 98 Echo (ping) request id=0xb3c2, seq=4/1024, ttl=64 (
43 306.191792437 192.168.10.10 192.168.10.20 ICMP 98 Echo (ping) reply id=0xb3c2, seq=4/1024, ttl=64 (
44 306.191828612 192.168.10.10 192.168.10.20 ICMP 98 Echo (ping) reply id=0xb3c2, seq=4/1024, ttl=64
45 307.203235553 192.168.10.20 192.168.10.10 ICMP 98 Echo (ping) request id=0xb4c2, seq=5/1280, ttl=64 (
46 307.203278951 192.168.10.20 192.168.10.10 ICMP 98 Echo (ping) request id=0xb4c2, seq=5/1280, ttl=64 (
47 307.216462857 192.168.10.10 192.168.10.20 ICMP 98 Echo (ping) reply id=0xb4c2, seq=5/1280, ttl=64 (
48 307.216501792 192.168.10.10 192.168.10.20 ICMP 98 Echo (ping) reply id=0xb4c2, seq=5/1280, ttl=64

Frame 1: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on interface eth0, id 0
Ethernet II, Src: Private 66:68:03 (00:50:79:66:68:03), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
Address Resolution Protocol (request)

```

```

DS-1#show interfaces g1/0
GigabitEthernet1/0 is up, line protocol is down (monitoring)
Hardware is iGbE, address is 500a.0001.0004 (bia 500a.0001.0004)
MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Auto Duplex, Auto Speed, link type is auto, media type is RJ45
output flow-control is unsupported, input flow-control is unsupported
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output 00:04:16, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/0 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts (0 multicasts)
0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
0 watchdog, 0 multicast, 0 pause input
3123 packets output, 189956 bytes, 0 underruns

```