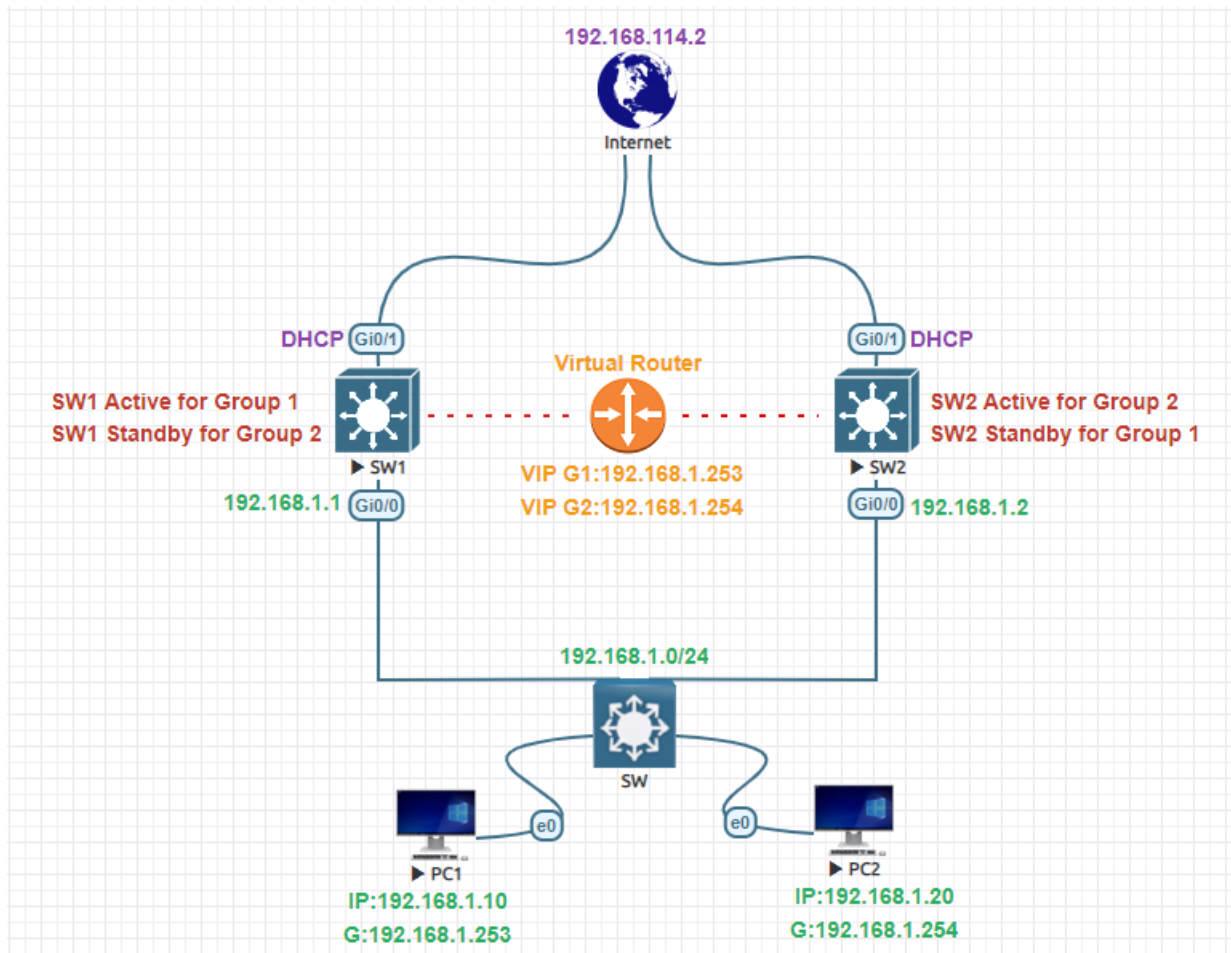


HSRP Load Sharing Lab:



Switch Images	vios_l2-adventerprisek9-m.ssa.high_iron_20190423
Cloud	Management(Cloud-0)
Clients	Linux-Slax-9.11.0 or VPCS
Switch GigabitEthernet0/1	Layer 3 Ports
Switch GigabitEthernet0/0	Layer 2 Ports
Internal Subnet	192.168.1.0/24
External Subnet	192.168.114.0/24
Virtual IP Address	192.168.1.253 and 192.168.1.254
SW1 IP Address	192.168.1.1
SW2 IP Address	192.168.1.2
External Gateway IP Address	192.168.114.2
PC1 IP Address	192.168.1.10
PC2 IP Address	192.168.1.20
PC1 Gateway	192.168.1.253
PC2 Gateway	192.168.1.254

SW1 Configuration:

```
Switch(config)#hostname SW1
SW1(config)#interface GigabitEthernet0/1
SW1(config-if)#no switchport
SW1(config-if)#ip address dhcp
SW1(config-if)#no shutdown
SW1(config-if)#exit
SW1(config)#interface Vlan1
SW1(config-if)#ip address 192.168.1.1 255.255.255.0
SW1(config-if)#no shutdown
```

SW2 Configuration:

```
Switch(config)#hostname SW2
SW2(config)#interface GigabitEthernet0/1
SW2(config-if)#no switchport
SW2(config-if)#ip address dhcp
SW2(config-if)#no shutdown
SW2(config-if)#exit
SW2(config)#interface Vlan1
SW2(config-if)#ip address 192.168.1.2 255.255.255.0
SW2(config-if)#no shutdown
```

SW1 HSRP Configuration

```
SW1(config)#interface Vlan 1
SW1(config-if)#standby 1 ip 192.168.1.253
SW1(config-if)#standby 1 priority 110
SW1(config-if)#standby 1 preempt
SW1(config-if)# standby 2 ip 192.168.1.254
SW1#show standby
SW1#show standby brief
SW1#show standby | include Priority
```

SW2 HSRP Configuration

```
SW2(config)#interface Vlan 1
SW2(config-if)#standby 1 ip 192.168.1.253
SW2(config-if)# standby 2 ip 192.168.1.254
SW2(config-if)#standby 2 priority 110
SW2(config-if)#standby 2 preempt
SW2#show standby
SW2#show standby brief
SW2#show standby neighbors
SW2#debug standby events
```

```

SW1#show standby
Vlan1 - Group 1
  State is Active
    2 state changes, last state change 00:02:06
    Virtual IP address is 192.168.1.253
    Active virtual MAC address is 0000.0c07.ac01 (MAC In Use)
      Local virtual MAC address is 0000.0c07.ac01 (v1 default)
    Hello time 3 sec, hold time 10 sec
      Next hello sent in 1.136 secs
    Preemption enabled
    Active router is local
    Standby router is 192.168.1.2, priority 100 (expires in 9.264 sec)
    Priority 110 (configured 110)
    Group name is "hsrp-Vl1-1" (default)
Vlan1 - Group 2
  State is Standby
    3 state changes, last state change 00:01:22
    Virtual IP address is 192.168.1.254
    Active virtual MAC address is 0000.0c07.ac02 (MAC Not In Use)
      Local virtual MAC address is 0000.0c07.ac02 (v1 default)
    Hello time 3 sec, hold time 10 sec
      Next hello sent in 0.256 secs
    Preemption disabled
    Active router is 192.168.1.2, priority 110 (expires in 8.704 sec)
    Standby router is local
    Priority 100 (default 100)
    Group name is "hsrp-Vl1-2" (default)

```

```

SW2#show standby
Vlan1 - Group 1
  State is Standby
    1 state change, last state change 00:03:18
    Virtual IP address is 192.168.1.253
    Active virtual MAC address is 0000.0c07.ac01 (MAC Not In Use)
      Local virtual MAC address is 0000.0c07.ac01 (v1 default)
    Hello time 3 sec, hold time 10 sec
      Next hello sent in 0.528 secs
    Preemption disabled
    Active router is 192.168.1.1, priority 110 (expires in 8.928 sec)
    Standby router is local
    Priority 100 (default 100)
    Group name is "hsrp-Vl1-1" (default)
Vlan1 - Group 2
  State is Active ←
    2 state changes, last state change 00:03:20
    Virtual IP address is 192.168.1.254
    Active virtual MAC address is 0000.0c07.ac02 (MAC In Use)
      Local virtual MAC address is 0000.0c07.ac02 (v1 default)
    Hello time 3 sec, hold time 10 sec
      Next hello sent in 1.296 secs
    Preemption enabled
    Active router is local
    Standby router is 192.168.1.1, priority 100 (expires in 9.936 sec)
    Priority 110 (configured 110)
    Group name is "hsrp-Vl1-2" (default)

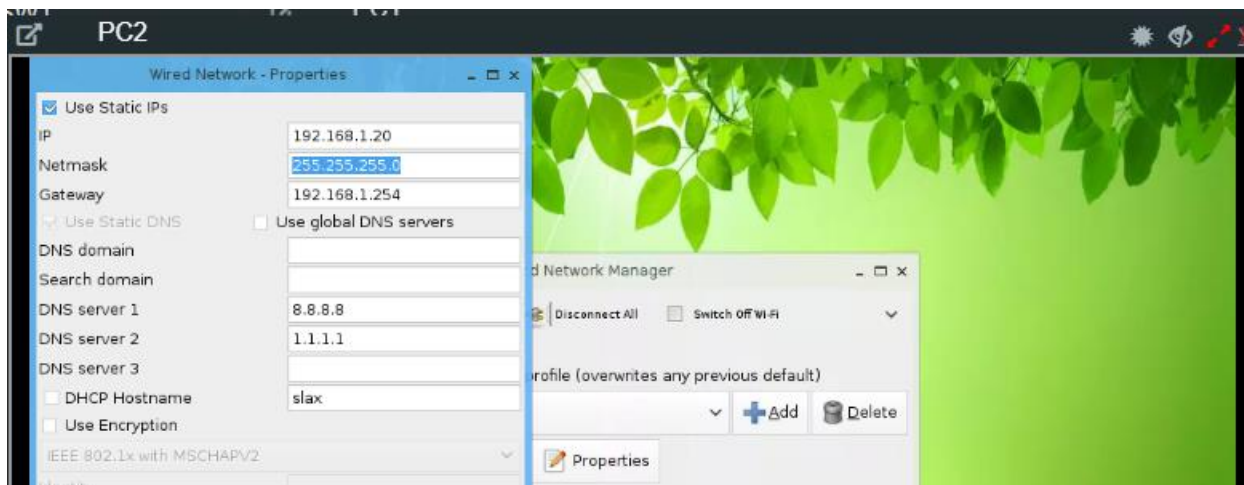
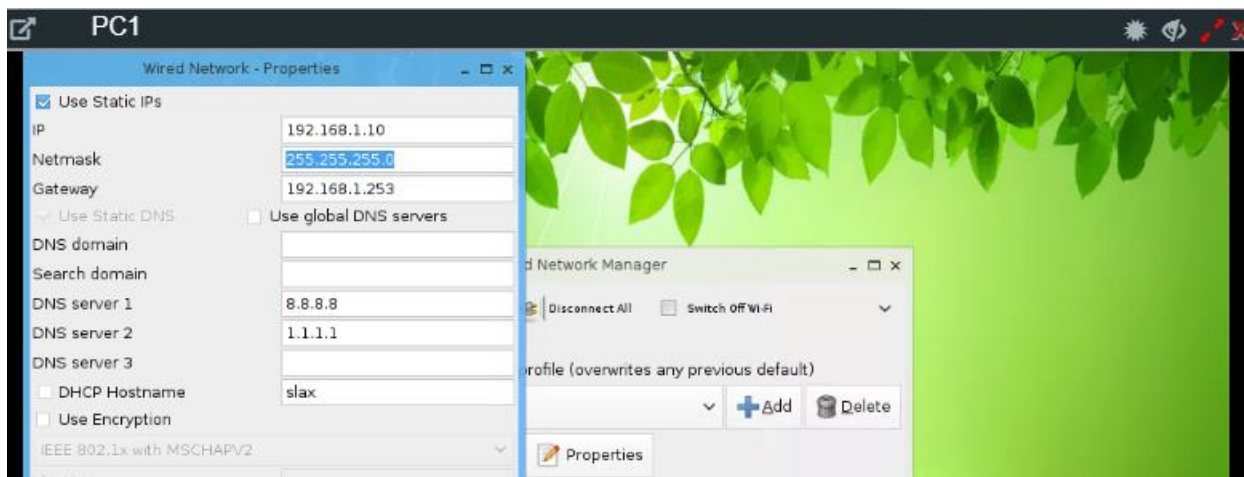
```

```
SW1#show standby brief
```

```
                P indicates configured to preempt.
                |
Interface  Grp  Pri P State  Active      Standby      Virtual IP
Vl1       1   110 P Active local      192.168.1.2  192.168.1.253
Vl1       2   100 Standby 192.168.1.2 local        192.168.1.254
SW1#
```

```
SW2#show standby brief
```

```
                P indicates configured to preempt.
                |
Interface  Grp  Pri P State  Active      Standby      Virtual IP
Vl1       1   100 Standby 192.168.1.1 local        192.168.1.253
Vl1       2   110 P Active local      192.168.1.1  192.168.1.254
SW2#
```



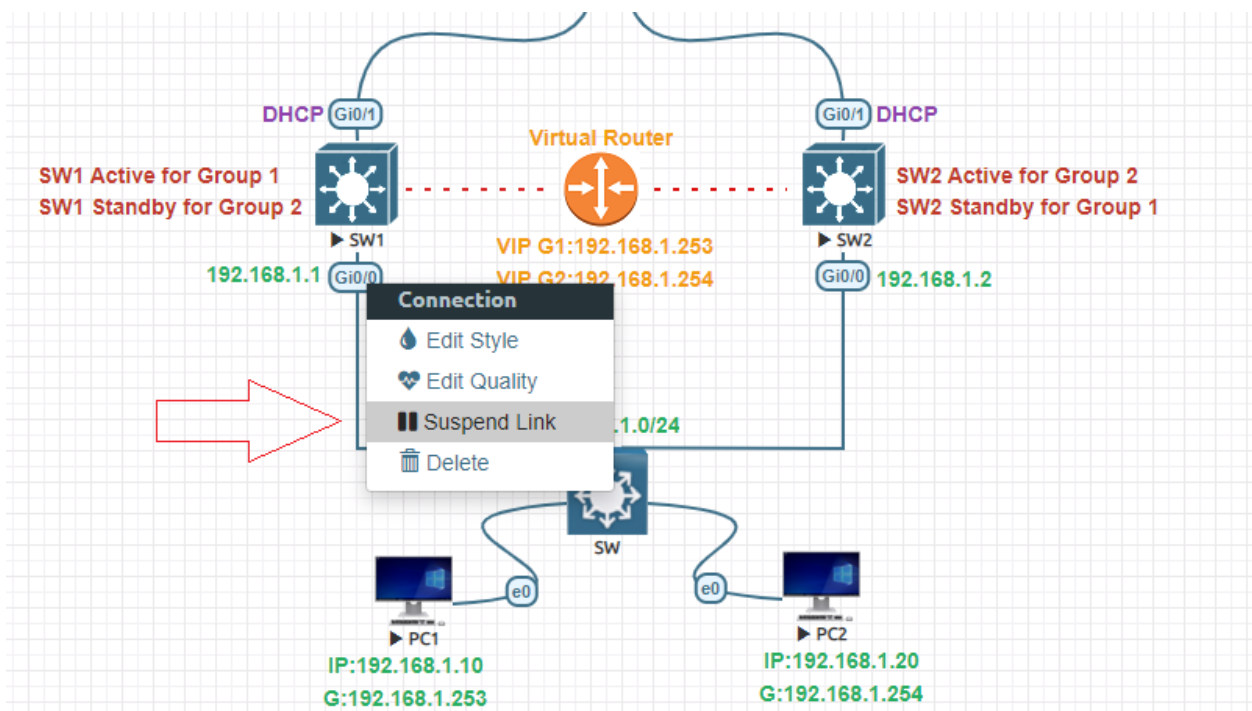
Testing and Verification:

```

PC1
xterm
root@slax:~# ping 192.168.114.2
PING 192.168.114.2 (192.168.114.2) 56(84) bytes of data.
64 bytes from 192.168.114.2: icmp_seq=1 ttl=127 time=13.8 ms
64 bytes from 192.168.114.2: icmp_seq=2 ttl=127 time=6.72 ms
^C
--- 192.168.114.2 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 6.721/10.292/13.864/3.572 ms
root@slax:~# arp
Address          Hwtype  Hwaddress      Flags Mask      Iface
192.168.1.253    ether   00:00:0c:07:ac:01 C                ens3
root@slax:~#
  
```

```

PC2
xterm
root@slax:~# ping 192.168.114.2
PING 192.168.114.2 (192.168.114.2) 56(84) bytes of data.
64 bytes from 192.168.114.2: icmp_seq=1 ttl=127 time=13.9 ms
^C
--- 192.168.114.2 ping statistics ---
2 packets transmitted, 1 received, 50% packet loss, time 1001ms
rtt min/avg/max/mdev = 13.946/13.946/13.946/0.000 ms
root@slax:~# arp
Address          Hwtype  Hwaddress      Flags Mask      Iface
192.168.1.254    ether   00:00:0c:07:ac:02 C                ens3
root@slax:~#
  
```



```

SW2#show standby brief
                P indicates configured to preempt.
                |
Interface   Grp  Pri P State Active Standby Virtual IP
Vl1         1   100 P Active local unknown 192.168.1.253
Vl1         2   110 P Active local unknown 192.168.1.254
SW2#show standb
SW2#show standby
Vlan1 - Group 1
  State is Active ←
    2 state changes, last state change 00:00:51
  Virtual IP address is 192.168.1.253
  Active virtual MAC address is 0000.0c07.ac01 (MAC In Use)
  Local virtual MAC address is 0000.0c07.ac01 (v1 default)
  Hello time 3 sec, hold time 10 sec
  Next hello sent in 0.768 secs
  Preemption disabled
  Active router is local
  Standby router is unknown
  Priority 100 (default 100)
  Group name is "hsrp-Vl1-1" (default)
Vlan1 - Group 2
  State is Active ←
    2 state changes, last state change 00:15:37
  Virtual IP address is 192.168.1.254
  Active virtual MAC address is 0000.0c07.ac02 (MAC In Use)
  Local virtual MAC address is 0000.0c07.ac02 (v1 default)
  Hello time 3 sec, hold time 10 sec
  Next hello sent in 0.880 secs
  Preemption enabled
  Active router is local

```

The screenshot shows a terminal window titled 'PC1' with the following output:

```

root@slax:~#
root@slax:~# ping 192.168.114.2
PING 192.168.114.2 (192.168.114.2) 56(84) bytes of data:
64 bytes from 192.168.114.2: icmp_seq=2 ttl=127 time=18.8 ms
64 bytes from 192.168.114.2: icmp_seq=3 ttl=127 time=10.2 ms
^C
--- 192.168.114.2 ping statistics ---
3 packets transmitted, 2 received, 33% packet loss, time 2022ms
rtt min/avg/max/mdev = 10.217/14.556/18.896/4.341 ms
root@slax:~# arp
Address          HWtype  HWaddress      Flags Mask    Iface
192.168.1.253   ether   00:00:0c:07:ac:01  C              ens3
root@slax:~# traceroute 192.168.114.2
traceroute to 192.168.114.2 (192.168.114.2), 30 hops max, 60 byte packets
 1 192.168.1.2 (192.168.1.2) 104.592 ms 139.707 ms 157.487 ms

```