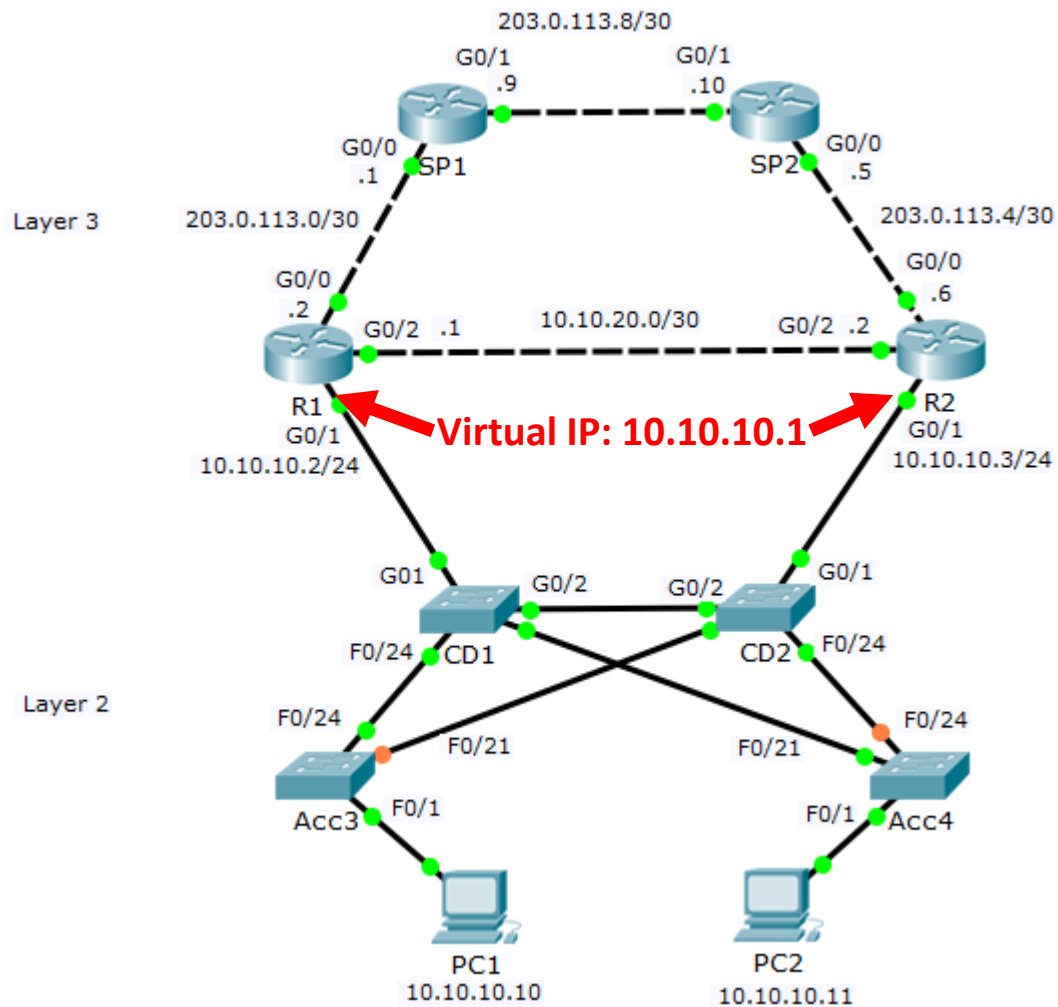# HSRP (Hot Standby Router Protocol)

- HSRP uses a Virtual IP (VIP) and MAC address to allow for automated gateway failover
- The hosts use the VIP as their default gateway address
- If the active gateway fails, the standby gateway will take over

HSRP Operations

- Both routers have a normal physical IP address and MAC address on their HSRP interface. Unique addresses are used on both routers.

- They both also have the HSRP virtual IP and MAC address configured on the interface. The same addresses are used on both routers.

- When they come online, one is elected the HSRP active router, the other is the standby

- The active router owns the virtual IP and MAC address and responds to ARP requests

- All traffic for the VIP goes through the active router

HSRP Operations

- The routers send hello messages to each over their HSRP interface

- If the standby router stops receiving hellos from the active it will transition to be the active router

- It will take ownership of the virtual IP and MAC address and respond to ARP requests

HSRP Configuration

R1(config)#interface g0/1
R1(config-if)#ip address 10.10.10.2 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#standby 1 ip 10.10.10.1

R2(config)#interface g0/1
R2(config-if)#ip address 10.10.10.3 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#standby 1 ip 10.10.10.1

Verification – show standby

```
R1#show standby
GigabitEthernet0/1 - Group 1
State is Active
6 state changes, last state change 00:01:20
Virtual IP address is 10.10.10.1
Active virtual MAC address is 0000.0C07.AC01
Local virtual MAC address is 0000.0C07.AC01 (v1 default)
Hello time 3 sec, hold time 10 sec
Next hello sent in 2.598 secs
Preemption disabled
Active router is local
Standby router is 10.10.10.3
Priority 100 (default 100)
Group name is hsrp-Gig0/1-1 (default)
```

Lab