

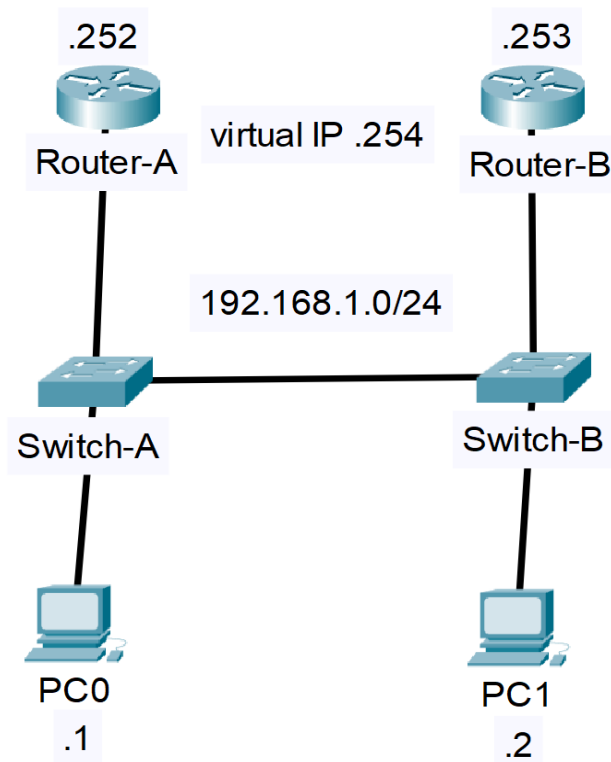
# HSRP-STP Integration

**Objective:** My objective in this at-home lab was to set up a simple network to simulate a redundant network topology. A company's greatest asset is how much uptime it can withhold while having minimal downtime. The network address I used was 192.168.1.0/24. I chose to use HSRP since I'm using Cisco equipment, and this protocol is Cisco proprietary. I assigned the last usable address of this subnet as the virtual IP gateway. As for the switches, I made Switch-A the root bridge/primary and Switch-B as secondary.

**Equipment:** (2) Cisco 2811, Cisco 2960, Cisco WS 3560, PC-A, and PC-B

## Key Steps:

- Assign 192.168.1.252/24 to router A and assign 192.168.1.253/24 to router B
- Elect Switch-A as the root bridge and Switch-B as secondary
- Configure static IP addresses on both PC's
- Create an HSRP group with the identification of #1 and assign the last usable address of the subnet as the virtual IP address
- Set a higher priority for Router-A and enable preempt



Router-A - 192.168.1.~~252~~<sup>252</sup>/24 - F 0/0

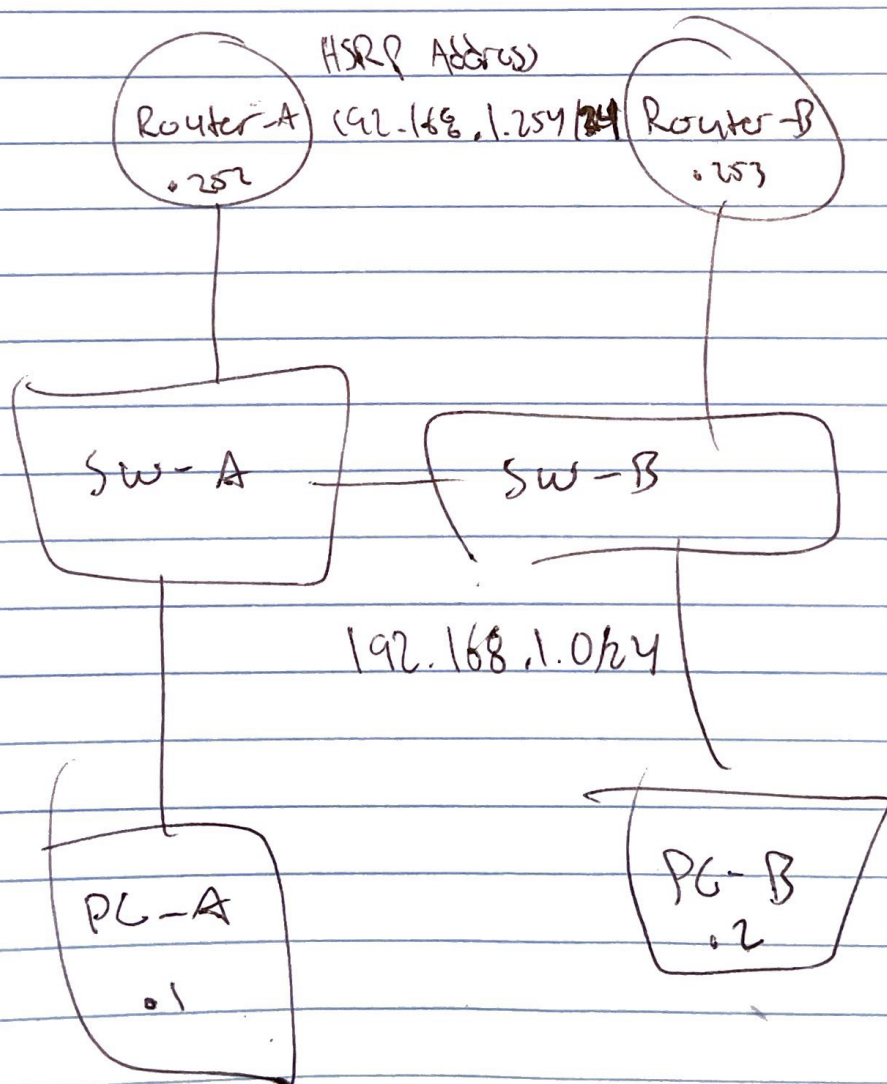
Router-B - 192.168.1.253/24 - F 0/0

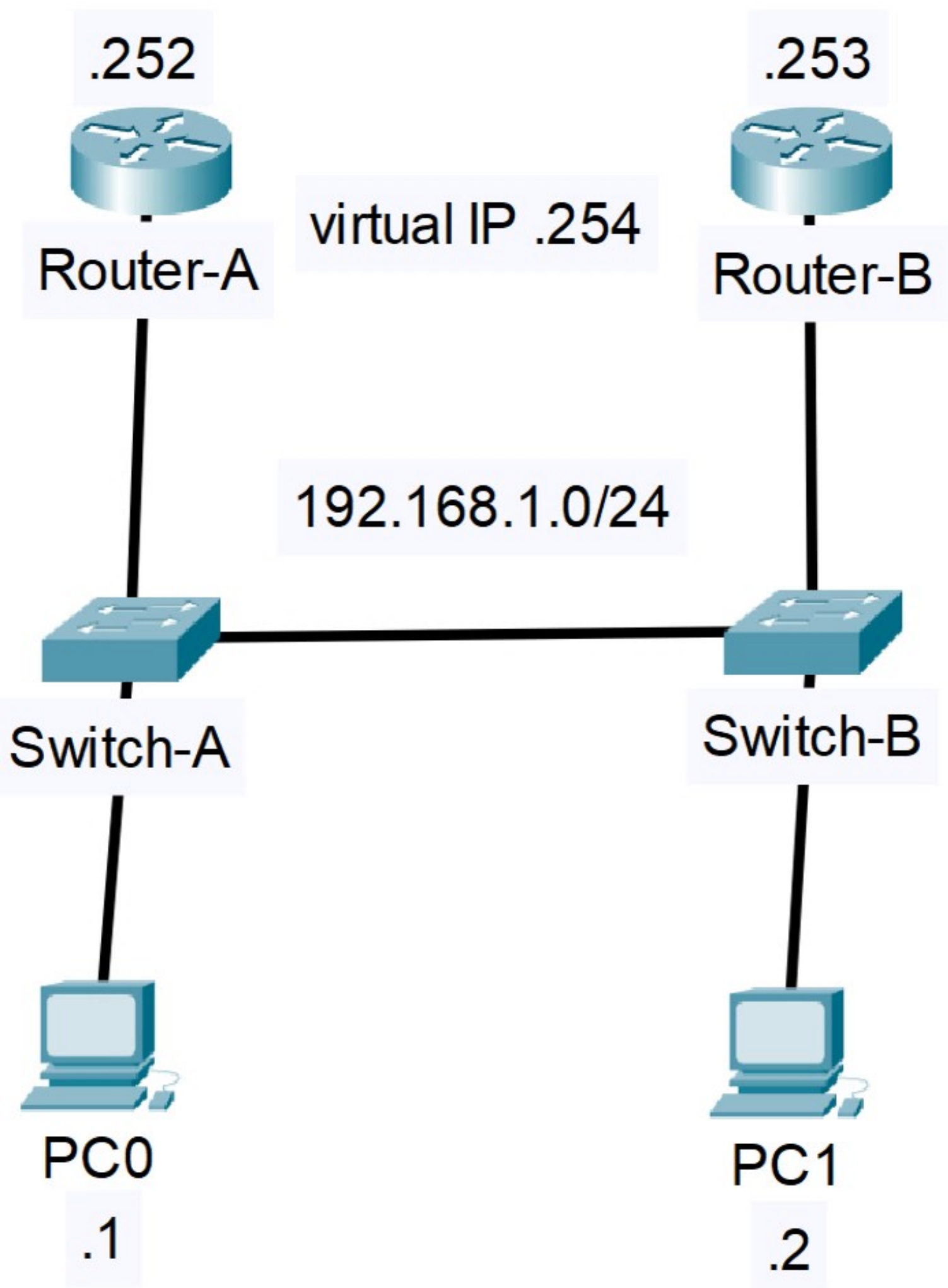
PC-A - 192.168.1.1/24 - SW-A 0/1

PC-B - 192.168.1.2/24 - SW-B 0/1

0/2 SW-A → Router-A 0/0

0/2 SW-B → Router-B 0/0









FastEthernet0 Connection: (default port)

```
Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: FE80::206:2AFF:FEDC:6073
IPv6 Address.....: ::
IPv4 Address.....: 192.168.1.1
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
                        192.168.1.254
```

Bluetooth Connection:

```
Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
                        0.0.0.0
```

C:\>ping 192.168.1.254

Pinging 192.168.1.254 with 32 bytes of data:

```
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255
Reply from 192.168.1.254: bytes=32 time<1ms TTL=255
```

Ping statistics for 192.168.1.254:

```
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```



```
Router-A#sh standby
FastEthernet0/0 - Group 1
  State is Active
    6 state changes, last state change 00:06:18
  Virtual IP address is 192.168.1.254
  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 0.54 secs
  Preemption enabled
  Active router is local
  Standby router is 192.168.1.253, priority 99 (expires in 6 sec)
  Priority 101 (configured 101)
  Group name is hsrp-Fa0/0-1 (default)
Router-A#
```

```
Router-B#sh stand
FastEthernet0/0 - Group 1
  State is Standby
    14 state changes, last state change 00:06:32
  Virtual IP address is 192.168.1.254
  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 0.935 secs
  Preemption disabled
  Active router is 192.168.1.252, priority 101 (expires in 6 sec)
    MAC address is 0000.0C07.AC01
  Standby router is local
  Priority 99 (configured 99)
  Group name is hsrp-Fa0/0-1 (default)
Router-B#
```

Switch-A#sh spanni

VLAN0001

Spanning tree enabled protocol ieee

Root ID      Priority      24577  
             Address      00D0.5898.6A78  
             This bridge is the root  
             Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec

Bridge ID    Priority      24577    (priority 24576 sys-id-ext 1)  
             Address      00D0.5898.6A78  
             Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec  
             Aging Time    20

| Interface | Role | Sts | Cost | Prio.Nbr | Type |
|-----------|------|-----|------|----------|------|
|-----------|------|-----|------|----------|------|

|       |      |     |    |       |     |
|-------|------|-----|----|-------|-----|
| Fa0/1 | Desg | FWD | 19 | 128.1 | P2p |
| Fa0/3 | Desg | FWD | 19 | 128.3 | P2p |

Switch-A#|



Switch-B#sh span

VLAN0001

Spanning tree enabled protocol ieee

Root ID      Priority      24577  
             Address      00D0.5898.6A78  
             Cost          19  
             Port          3(FastEthernet0/3)  
             Hello Time   2 sec   Max Age 20 sec   Forward Delay 15 sec

Bridge ID    Priority      28673    (priority 28672 sys-id-ext 1)  
             Address      000A.F3C2.547D  
             Hello Time   2 sec   Max Age 20 sec   Forward Delay 15 sec  
             Aging Time   20

| Interface | Role | Sts | Cost | Prio.Nbr | Type |
|-----------|------|-----|------|----------|------|
|-----------|------|-----|------|----------|------|

|       |      |     |    |       |     |
|-------|------|-----|----|-------|-----|
| Fa0/3 | Root | FWD | 19 | 128.3 | P2p |
| Fa0/1 | Desg | FWD | 19 | 128.1 | P2p |
| Fa0/5 | Desg | FWD | 19 | 128.5 | P2p |

Switch-B#