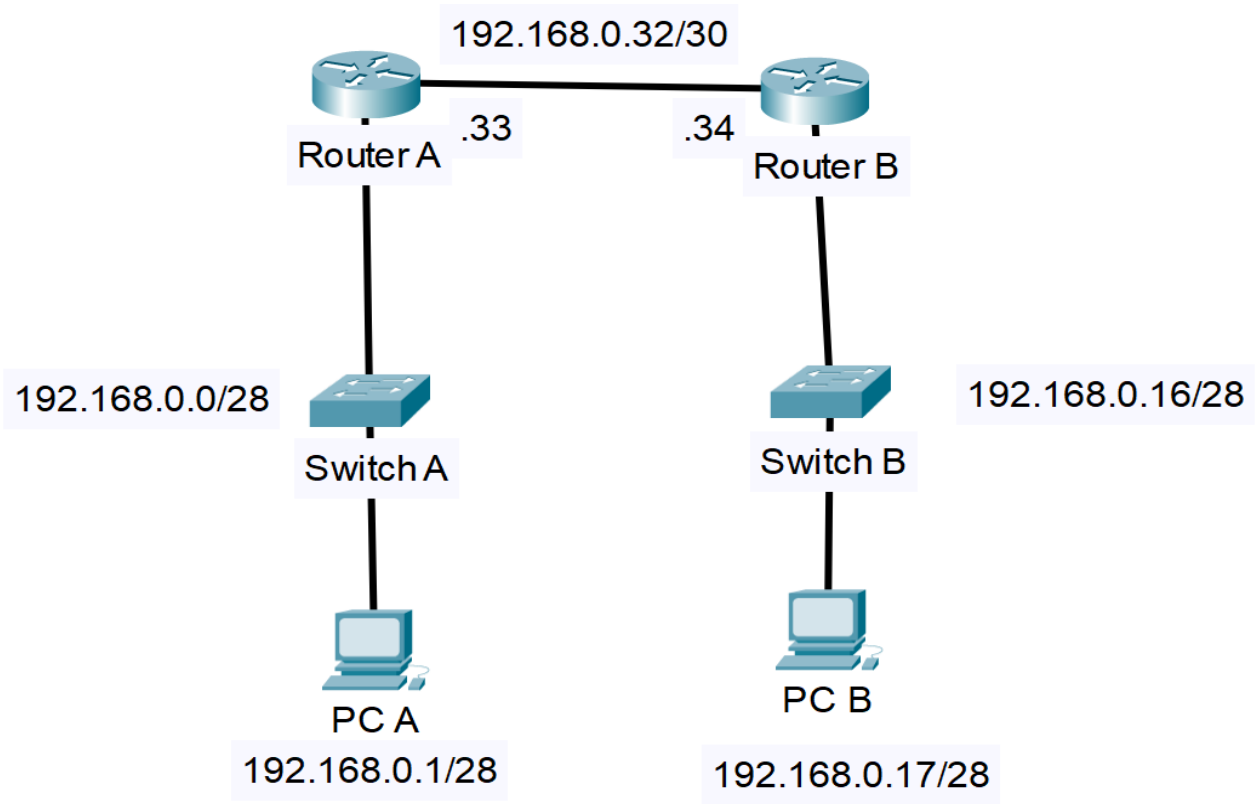
Simple OSPF Communication (At-Home Lab)

Objective: My objective in this at-home lab was to set up a simple network to have my (2) 2811 routers use OSPF to advertise their networks. I chose to use OSPF due to dynamic routing instead of setting up static routes. I started with an RFC 1918 address of 192.168.0.0/16 and did VLSM to simulate preserving as many addresses as possible.

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

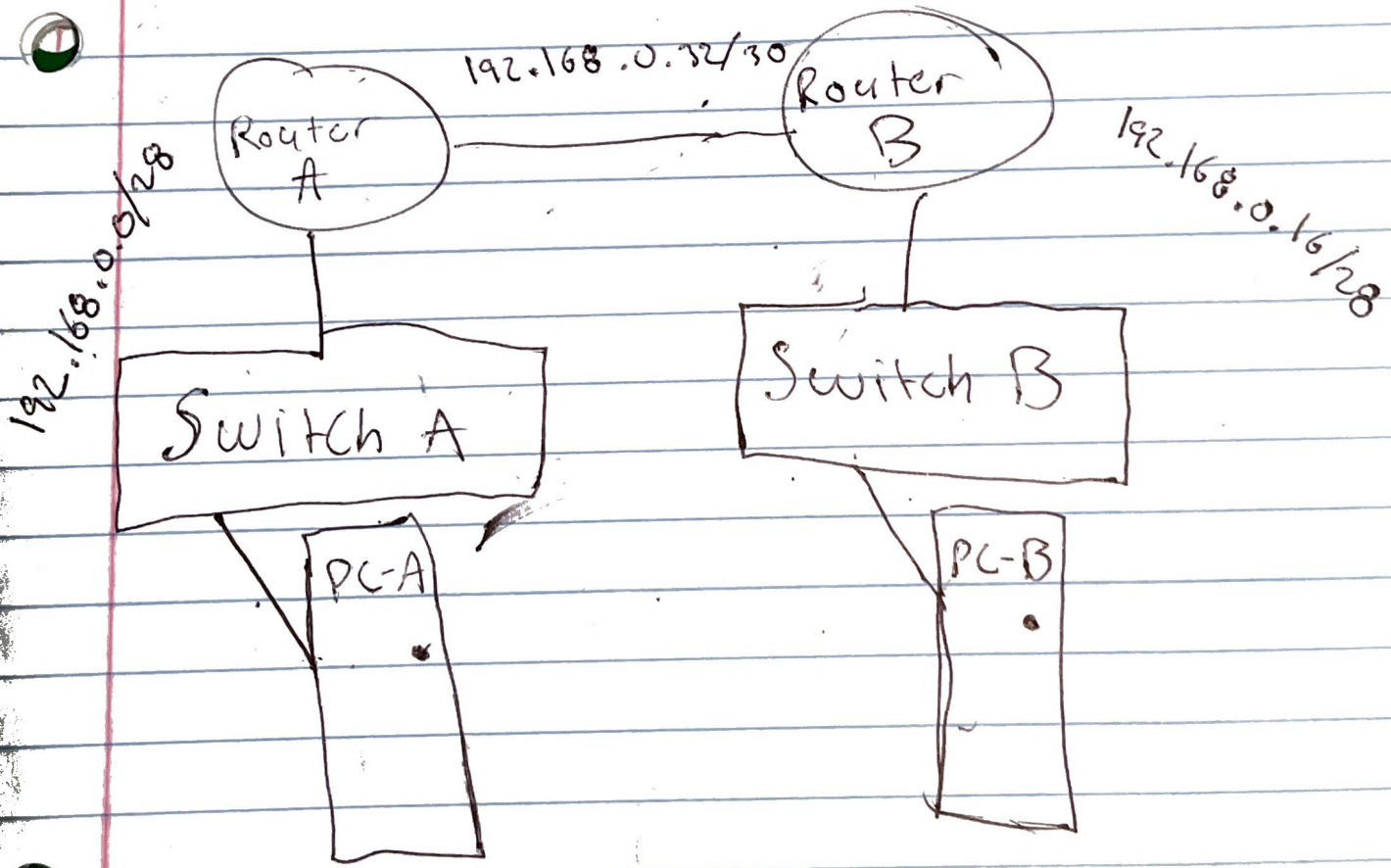
Key Steps:

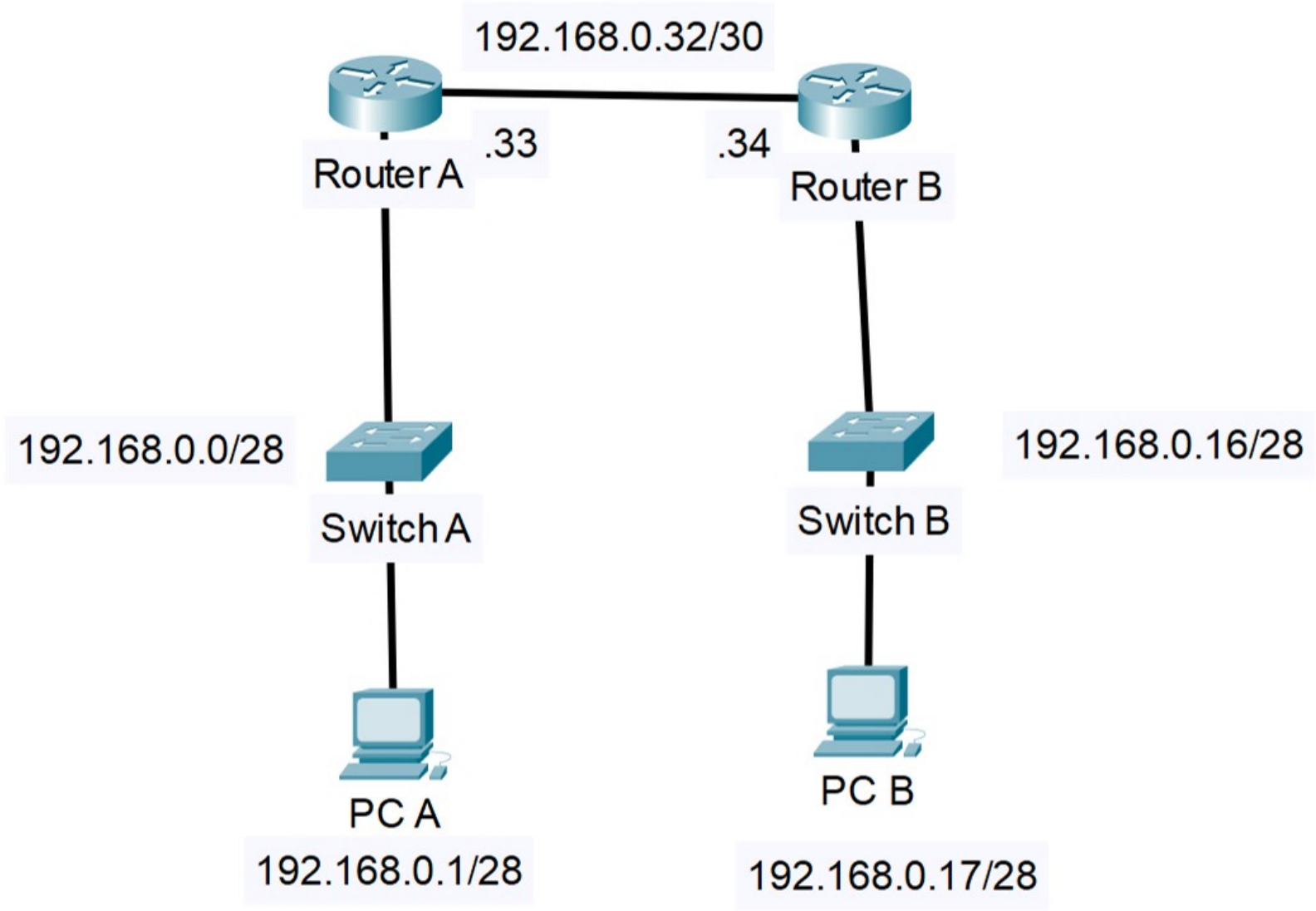
a. Split up 192.168.0.0/16 using VLSM to make 3 subnets (2 subnets require at least 10 host and 1 subnet is a P2P)
b. Assign the first usable address to a PC within the first 2 subnets according to their network address
c. Make a point-to-point connection between both routers with the last subnet
d. Activate OSPF on each interface to advertise all networks that each router has
e. Ensure you have passive interfaces on every other interface to minimize traffic



Router A F0/0 - 192.168.0.14/28
Router A F0/1 - 192.168.0.33/~~29~~ 30
Router B F0/0 - 192.168.0.30/28
Router B F0/1 - 192.168.0.34/30
PC-A 192.168.0.1/28
PC-B 192.168.0.17/28

Router A F0/0 → SW A 0/1 PC-A → SW A F0/2
Router A F0/1 → Router B F0/1 PC-B → SW B F0/2
Router B F0/0 → SW B 0/1
Router B F 0/1 → ~~SW~~ Router A F0/1




192.168.0.32/30
.33
.34
Router A
Router B
192.168.0.0/28
192.168.0.16/28
Switch A
Switch B
PC A
PC B
192.168.0.1/28
192.168.0.17/28

```
FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::205:5EFF:FE8D:51C6
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.0.1
   Subnet Mask.....: 255.255.255.240
   Default Gateway.....: ::
                                 192.168.0.14

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 192.168.0.17

Pinging 192.168.0.17 with 32 bytes of data:

Reply from 192.168.0.17: bytes=32 time<1ms TTL=126
Reply from 192.168.0.17: bytes=32 time=10ms TTL=126
Reply from 192.168.0.17: bytes=32 time<1ms TTL=126
Reply from 192.168.0.17: bytes=32 time=10ms TTL=126

Ping statistics for 192.168.0.17:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 10ms, Average = 5ms
```

```
FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::250:FFF:FE0C:2E72
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.0.17
   Subnet Mask.....: 255.255.255.240
   Default Gateway.....: ::
                                 192.168.0.30

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 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time<1ms TTL=126
Reply from 192.168.0.1: bytes=32 time<1ms TTL=126
Reply from 192.168.0.1: bytes=32 time=1ms TTL=126
Reply from 192.168.0.1: bytes=32 time=10ms TTL=126

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 10ms, Average = 2ms
```