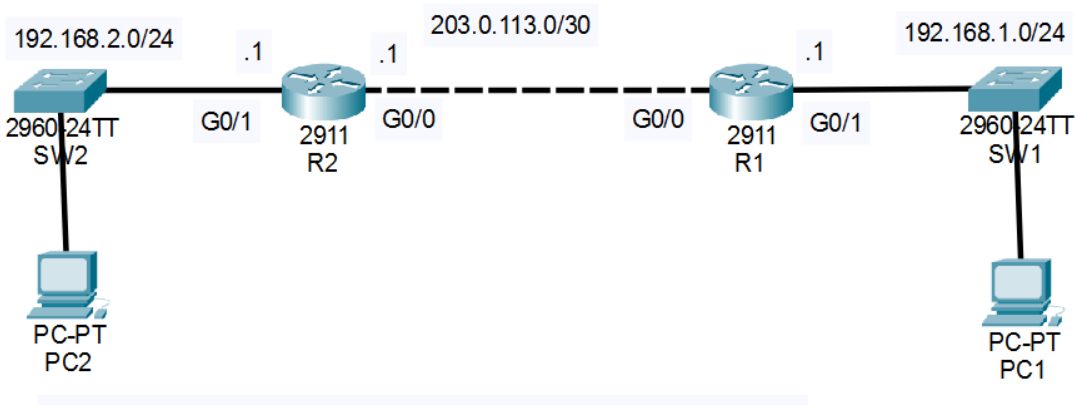
Network Topology:



Instructions and actions:

1. Configure the following DHCP pools on R2:

   POOL1: 192.168.1.0/24 (reserve .1 to .10)
   DNS 8.8.8.8
   Domain: jeremysitlab.com
   Default Gateway: R1

   Therefore, configuring R2 as a DHCP server:

```
R2>en
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#ip dhcp excluded-address 192.168.1.1 192.168.1.10
R2(config)#ip dhcp pool POOL_1
R2(dhcp-config)#network 192.168.1.0/24
                       ^
% Invalid input detected at '^' marker.

R2(dhcp-config)#network 192.168.1.0 /24
                                    ^
% Invalid input detected at '^' marker.

R2(dhcp-config)#network 192.168.1.0 255.255.255.0
R2(dhcp-config)#dns-server 8.8.8.8
R2(dhcp-config)#domain-name jeremysitlab.com
R2(dhcp-config)#default-router 192.168.1.1
R2(dhcp-config)#do sh ip dhcp binding
IP address       Client-ID/              Lease expiration        Type
                 Hardware address
R2(dhcp-config)#do sh dhcp binding
sh dhcp binding
       ^
% Invalid input detected at '^' marker.

R2(dhcp-config)#do sh ip dhcp binding
IP address       Client-ID/              Lease expiration        Type
                 Hardware address
R2(dhcp-config)#exit
R2(config)#do sh ip dhcp binding
IP address       Client-ID/              Lease expiration        Type
                 Hardware address
R2(config)#exit
```

   POOL2: 192.168.2.0/24 (reserve .1 to .10)
   DNS 8.8.8.8
   Domain: jeremysitlab.com

Default Gateway: R2

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#ip dhcp excluded-address 192.168.2.1 192.168.2.10
R2(config)#ip dhcp pool POOL_2
R2(dhcp-config)#network 192.168.2.0 255.255.255.0
R2(dhcp-config)#dns-server 8.8.8.8
R2(dhcp-config)#domain-name jeremysitlab.com
R2(dhcp-config)#default-router 192.168.2.1
R2(dhcp-config)#do sh ip dhcp binding
IP address       Client-ID/              Lease expiration        Type
                 Hardware address
R2(dhcp-config)#
```

POOL3: 203.0.113.0/30 (reserve .1)

```
R2(config)#ip dhcp excluded-address 203.0.113.1
R2(config)#ip dhcp pool POOL_3
R2(dhcp-config)#network 203.0.113.0 255.255.255.252
R2(dhcp-config)#exit
R2(config)#
```

2. Configure R1's G0/0 interface as a DHCP client.

```
R1>en
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int g0/0
R1(config-if)#ip address dhcp
R1(config-if)#do sh ip int g0/0
GigabitEthernet0/0 is administratively down, line protocol is down
(disabled)
  Internet protocol processing disabled

R1(config-if)#no shutdown

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed
state to up

R1(config-if)#
%DHCP-6-ADDRESS_ASSIGN: Interface GigabitEthernet0/0 assigned DHCP address
203.0.113.2, mask 255.255.255.252, hostname R1


R1(config-if)#do sh ip int g0/0
GigabitEthernet0/0 is up, line protocol is up (connected)
  Internet address is 203.0.113.2/30
  Broadcast address is 255.255.255.255
```

R1's g0/0 got the IP address 203.0.113.2

3. Configure R1 as a DHCP relay agent for the 192.168.1.0/24 subnet.

```
R1(config)#int g0/1
R1(config-if)#ip helper-address 203.0.113.1
R1(config-if)#do sh ip int g0/1
GigabitEthernet0/1 is up, line protocol is up (connected)
  Internet address is 192.168.1.1/24
  Broadcast address is 255.255.255.255
  Address determined by setup command
  MTU is 1500 bytes
  Helper address is 203.0.113.1
```

4. Use the CLI of PC1 and PC2 to make them request an IP address from their DHCP server.

   PC1:

```
C:\>ipconfig /renew

   IP Address.....................: 192.168.1.12
   Subnet Mask....................: 255.255.255.0
   Default Gateway................: 192.168.1.1
   DNS Server.....................: 8.8.8.8
```

   PC2:

```
C:\>ipconfig /renew

   IP Address.....................: 192.168.2.11
   Subnet Mask....................: 255.255.255.0
   Default Gateway................: 192.168.2.1
   DNS Server.....................: 8.8.8.8
```

   So, the assigned IP address for PC1 is 192.168.1.12 and for PC2 is 192.168.2.11.