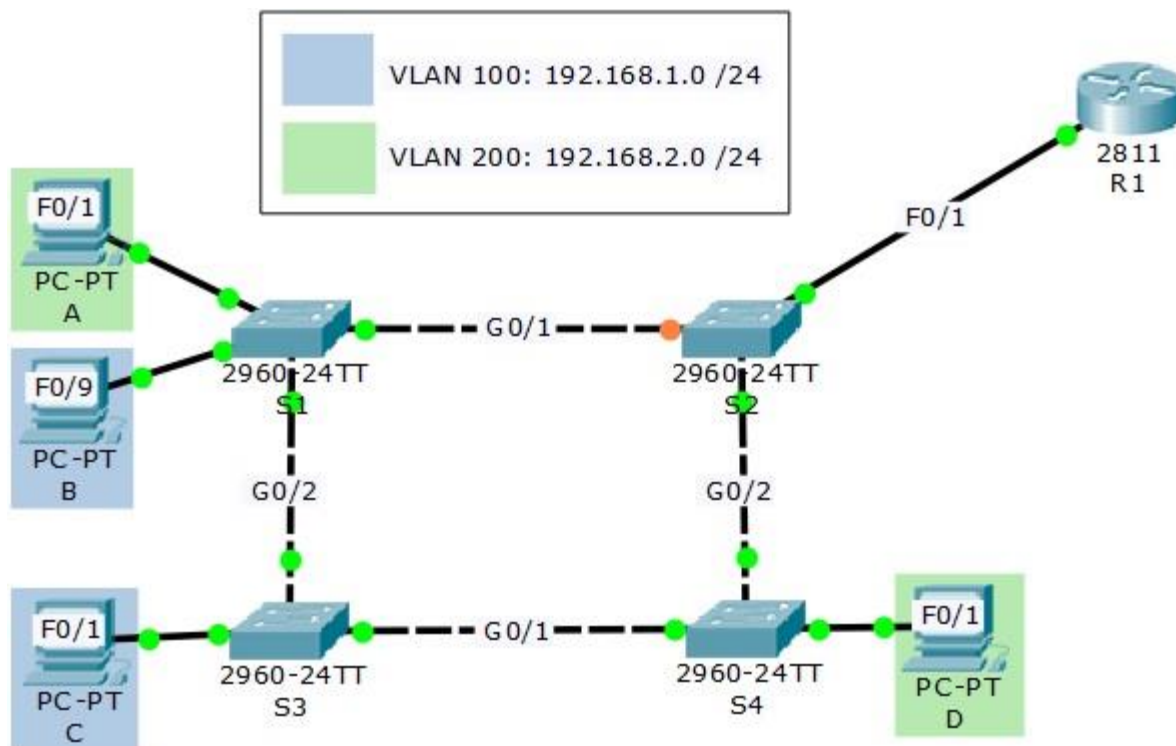


**Goal.** Recreate the diagram below and configure the following:

1. Hostname according to the diagram and a banner on R1 with your name.
2. Access interfaces and VLANs – 8 interfaces per VLAN.
3. Trunk interfaces.
4. Make sure to create all VLANs on all switches.
5. Configure R1 as a "Router-on-a-stick", with a DHCP server for both VLANs.
6. IP addresses on PCs using DHCP.



#### 1. Hostname, banner

```
Router(config)#hostname R1
```

```
R1(config)#banner motd #Cyber Quince#
```

#### 2. Access mode and VLANs

```
S1(config)#interface range FastEthernet 0/1-8
S1(config-if-range)#switchport mode access
S1(config-if-range)#switchport access vlan 200
```

```
S1(config)#interface range FastEthernet 0/9-16
S1(config-if-range)#switchport mode access
S1(config-if-range)#switchport access vlan 100
% Access VLAN does not exist. Creating vlan 100
```

### 3. Trunk

```
S3(config)#interface range GigabitEthernet 0/1-2
S3(config-if-range)#switchport mode trunk
```

#### ***S2-R1 link:***

```
S2(config)#interface FastEthernet 0/1
S2(config-if)#switchport mode trunk
```

### 4. Creating VLANs on switches

```
S2(config)#vlan 100
S2(config)#vlan 200
```

### 5. Router on a stick

```
R1(config)#interface FastEthernet 0/1
R1(config-if)#no shutdown

R1(config)#interface FastEthernet 0/1.100
R1(config-subif)#encapsulation dot1Q 100
R1(config-subif)#ip address 192.168.1.1 255.255.255.0

R1(config)#interface FastEthernet 0/1.200
R1(config-subif)#encapsulation dot1Q 200
R1(config-subif)#ip address 192.168.2.1 255.255.255.0
```

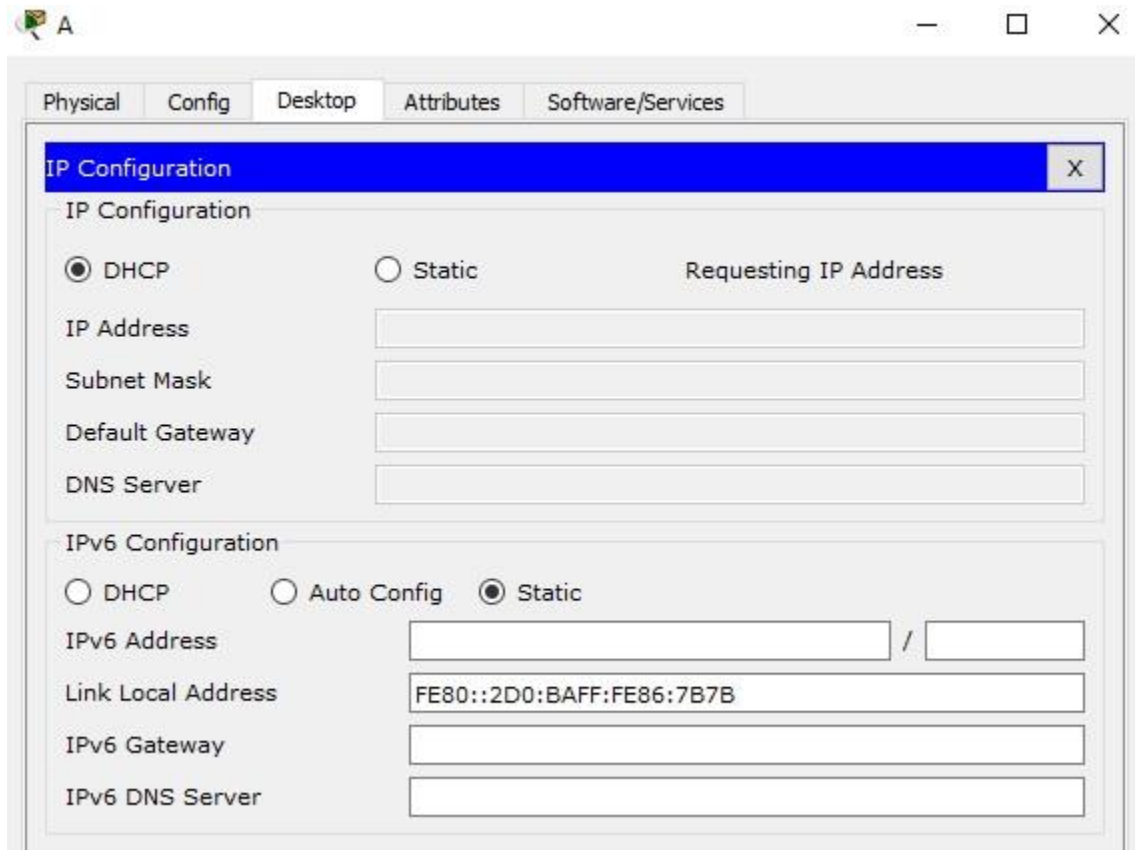
#### ***DHCP server on R1***

```
R1(config)#ip dhcp excluded-address 192.168.1.0 192.168.1.10
R1(config)#ip dhcp excluded-address 192.168.2.0 192.168.2.10

R1(config)#ip dhcp pool Vlan100
R1(dhcp-config)#network 192.168.1.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.1.1

R1(config)#ip dhcp pool Vlan200
R1(dhcp-config)#network 192.168.2.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.2.1
```

## 6. PC IP addresses



The image shows a network configuration window with a title bar containing a small icon and the letter 'A'. The window has four tabs: 'Physical', 'Config', 'Desktop', and 'Attributes', with 'Config' being the active tab. Below the tabs is a sub-header 'IP Configuration' with a close button 'X'. The main content area is divided into two sections. The first section, 'IP Configuration', has three radio buttons: 'DHCP' (selected), 'Static', and 'Requesting IP Address'. Below these are four text input fields labeled 'IP Address', 'Subnet Mask', 'Default Gateway', and 'DNS Server'. The second section, 'IPv6 Configuration', has three radio buttons: 'DHCP', 'Auto Config', and 'Static' (selected). Below these are four text input fields: 'IPv6 Address' (with a slash separator), 'Link Local Address' (containing the value 'FE80::2D0:BAFF:FE86:7B7B'), 'IPv6 Gateway', and 'IPv6 DNS Server'.

Physical Config Desktop Attributes Software/Services

IP Configuration X

IP Configuration

☒ DHCP ☐ Static Requesting IP Address

IP Address

Subnet Mask

Default Gateway

DNS Server

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::2D0:BAFF:FE86:7B7B

IPv6 Gateway

IPv6 DNS Server