

## **IP Assigned to the components and CLI commands used for this network**

### **1. Network Addressing Table**

<b>Component</b>	<b>VLAN</b>	<b>IP Address</b>	<b>Subnet Mask</b>	<b>Default Gateway</b>
<b>Engineering PCs</b>	10	172.16.10.x	255.255.255.128	172.16.10.1
<b>Sales PCs</b>	20	172.16.10.x	255.255.255.192	172.16.10.129
<b>Guest PCs</b>	30	172.16.10.x	255.255.255.224	172.16.10.193
<b>HR Admin PCs</b>	40	172.16.10.x	255.255.255.224	172.16.10.225
<b>Server</b>	50	172.16.11.2	255.255.255.240	172.16.11.1
<b>Switch (Mgmt)</b>	50	172.16.11.14	255.255.255.240	172.16.11.1
<b>Core Router (WAN)</b>	—	172.16.11.253	255.255.255.252	172.16.11.254
<b>Edge Router (WAN)</b>	—	172.16.11.254	255.255.255.252	172.16.11.253

### **2. Switch Configuration Commands**

#### **VLAN Creation and Port Assignment:**

```
vlan 10 (Repeat for 20, 30, 40, 50)
```

```
interface FastEthernet 0/1
```

```
switchport mode access
```

```
switchport access vlan 10
```

#### **Trunking (Link to Router):**

```
interface GigabitEthernet 0/1
```

```
switchport mode trunk
```

#### **Management IP Setup:**

```
interface vlan 50
```

```
ip address 172.16.11.14 255.255.255.240
```

```
no shutdown
```

```
exit
```

```
ip default-gateway 172.16.11.1
```

### **3. Core Router Configuration Commands**

#### **Sub-Interface Setup (Router-on-a-Stick):**

```
interface GigabitEthernet 0/0/0
```

```
no shutdown
```

```
exit
```

```
interface GigabitEthernet 0/0/0.10
```

```
encapsulation dot1q 10
```

```
ip address 172.16.10.1 255.255.255.128
```

```
interface GigabitEthernet 0/0/0.40
```

```
encapsulation dot1q 40
```

```
ip address 172.16.10.225 255.255.255.224
```

#### **WAN Link and Static Route:**

```
interface GigabitEthernet 0/0/1
```

```
ip address 172.16.11.253 255.255.255.252
```

```
no shutdown
```

```
exit
```

```
ip route 0.0.0.0 0.0.0.0 172.16.11.254
```

### **4. Edge Router Configuration Commands**

#### **Interface and Return Route:**

```
interface GigabitEthernet 0/0/0
```

```
ip address 172.16.11.254 255.255.255.252
```

```
no shutdown
```

```
exit
```

```
ip route 172.16.0.0 255.255.0.0 172.16.11.253
```

#### **Saving Work (On all devices):**

```
write memory
```