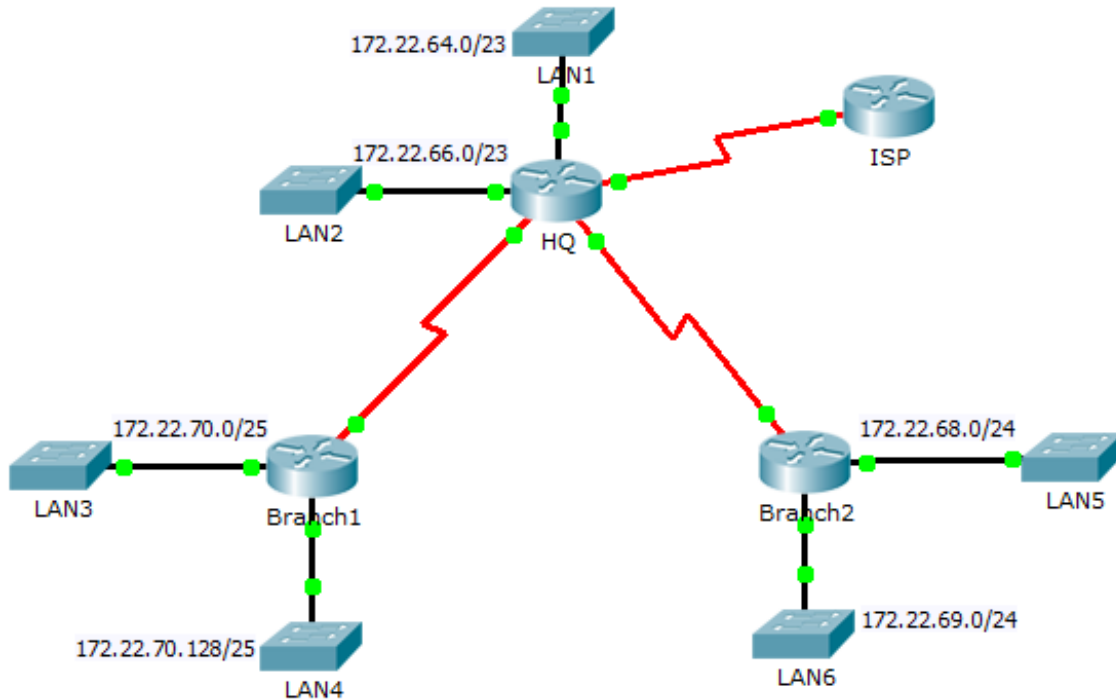


Packet Tracer - Configuring IPv4 Route Summarization - Scenario 2 (Instructor Version)

Instructor Note: Red font color or Gray highlights indicate text that appears in the instructor copy only.

Topology



Addressing Table

Device	Interface	IPv4 Address	Subnet Mask	Default Gateway
ISP	S0/0/1	198.0.0.1	255.255.255.252	N/A
HQ	G0/0	172.22.64.1	255.255.254.0	N/A
	G0/1	172.22.66.1	255.255.254.0	N/A
	S0/0/0	172.22.71.1	255.255.255.252	N/A
	S0/0/1	172.22.71.5	255.255.255.252	N/A
	S0/1/0	198.0.0.2	255.255.255.252	N/A
Branch1	G0/0	172.22.70.1	255.255.255.128	N/A
	G0/1	172.22.70.129	255.255.255.128	N/A
	S0/0/0	172.22.71.2	255.255.255.252	N/A
Branch2	G0/0	172.22.68.1	255.255.255.0	N/A
	G0/1	172.22.69.1	255.255.255.0	N/A
	S0/0/1	172.22.71.6	255.255.255.252	N/A
LAN1	VLAN 1	172.22.64.2	255.255.254.0	172.22.64.1
LAN2	VLAN 1	172.22.66.2	255.255.254.0	172.22.66.1
LAN3	VLAN 1	172.22.70.2	255.255.255.128	172.22.70.1
LAN4	VLAN 1	172.22.70.130	255.255.255.128	172.22.70.129
LAN5	VLAN 1	172.22.68.2	255.255.255.0	172.22.68.1
LAN6	VLAN 1	172.22.69.2	255.255.255.0	172.22.69.1

Objectives

Part 1: Calculate Summary Routes

Part 2: Configure Summary Routes

Part 3: Verify Connectivity

Background

In this activity, you will calculate and configure summary routes. Route summarization, also known as route aggregation is the process of advertising a contiguous set of addresses as a single address. After calculating summary routes for each LAN, you must summarize a route that includes all networks in the topology for the ISP to reach each LAN.

Part 1: Calculate Summary Routes

- What is the summary route to reach HQ LANs? **172.22.64.0 255.255.252.0**
- What is the summary route to reach Branch1 LANs? **172.22.70.0 255.255.255.0**
- What is the summary route to reach Branch2 LANs? **172.22.68.0 255.255.254.0**

- d. What is the summary route from the ISP router to reach all LANs? `172.22.64.0 255.255.248.0`

Part 2: Configure Summary Routes

Step 1: Configure the summary routes on the HQ router to other networks.

- a. Configure a directly attached summary route on **HQ** to reach the **Branch1** LANs.

```
HQ(config)# ip route 172.22.70.0 255.255.255.0 s0/0/0
```

- b. Configure a recursive summary route on **HQ** to reach the **Branch2** LANs.

```
HQ(config)# ip route 172.22.68.0 255.255.254.0 172.22.71.6
```

Step 2: Configure the summary routes on the Branch1 router to other networks.

- a. Configure a recursive summary route on **Branch1** to reach the **HQ** LANs.

```
Branch1(config)# ip route 172.22.64.0 255.255.252.0 172.22.71.1
```

- b. Configure a recursive summary route on **Branch1** to reach the **Branch2** LANs.

```
Branch1(config)# ip route 172.22.68.0 255.255.254.0 172.22.71.1
```

Step 3: Configure the summary routes on the Branch2 router to other networks.

- a. Configure a directly attached summary route on **Branch2** to reach the **Branch1** LANs.

```
Branch2(config)# ip route 172.22.70.0 255.255.255.0 s0/0/1
```

- b. Configure a recursive summary route on **Branch2** to reach the **HQ** LANs.

```
Branch2(config)# ip route 172.22.64.0 255.255.252.0 172.22.71.5
```

Step 4: Configure a summary route on ISP to reach all networks.

```
ISP(config)# ip route 172.22.64.0 255.255.248.0 s0/0/1
```

Part 3: Verify Connectivity

Verify that all switches and routers can ping other devices in the topology. If not, troubleshoot your summary routes to correct any issues.