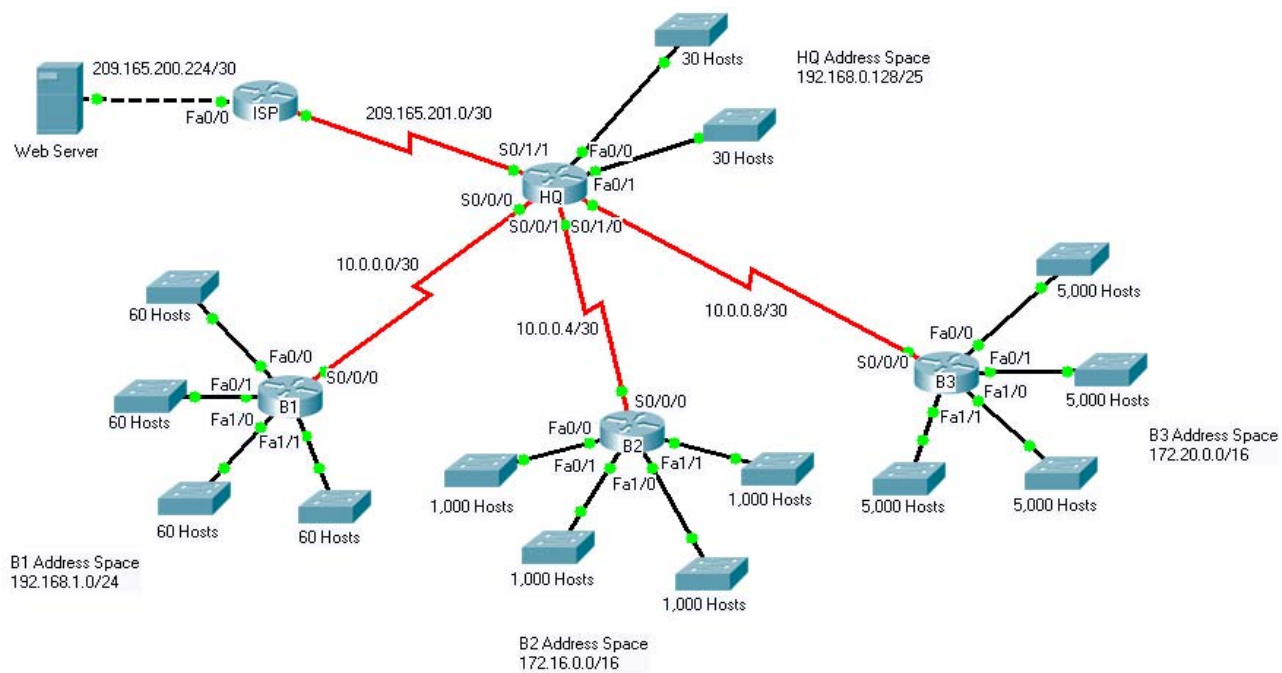


## Ch3 - Packet Tracer Skills Integration Challenge

### Topology Diagram



## Introduction:

This activity focuses on subnetting skills, basic device configurations and static routing. Once you have configured all devices, you will test for end to end connectivity and examine your configuration.

## Addressing Table

Device	Interface	IP Address	Subnet Mask
HQ	Fa0/0		
	Fa0/1		
	S0/0/0	10.0.0.1	255.255.255.252
	S0/0/1	10.0.0.5	255.255.255.252
	S0/1/0	10.0.0.9	255.255.255.252
	S0/1/1	209.165.201.2	255.255.255.252
B1	Fa0/0		
	Fa0/1		
	Fa1/0		
	Fa1/1		
	S0/0/0	10.0.0.2	255.255.255.252
B2	Fa0/0		
	Fa0/1		
	Fa1/0		
	Fa1/1		
	S0/0/0	10.0.0.6	255.255.255.252
B3	Fa0/0		
	Fa0/1		
	Fa1/0		
	Fa1/1		
	S0/0/0	10.0.0.10	255.255.255.252
ISP	S0/0/0	209.165.201.1	255.255.255.252
	Fa0/0	209.165.200.225	255.255.255.252
Web Server	NIC	209.165.200.226	255.255.255.252

## Objectives

- Design and document an addressing scheme based on requirements.
- Select appropriate equipment and cable the devices.
- Apply a basic configuration to the devices.
- Configure static and default routing.

- Verify full connectivity between all devices in the topology.

### **Task 1: Design and document an addressing scheme.**

#### **Step 1: Design an addressing scheme.**

Based on the network requirements shown in the topology, design an appropriate addressing scheme.

- The HQ, B1, B2, and B3 routers each have an address space. Subnet the address space based on the host requirements.
- For each address space, assign subnet zero to the Fa0/0 LAN, subnet 1 to the Fa0/1, and so on.

#### **Step 2: Document the addressing scheme.**

- Document the IP addresses and subnet masks. Assign the first IP address to the router interface.
- For the WAN links, assign the first IP address to HQ.

### **Task 2: Apply a basic configuration.**

Using your documentation, configure the routers with basic configurations including addressing and hostnames. Use **cisco** as the line passwords and **class** as the secret password. Use 64000 as the clock rate. ISP is the DCE in its WAN link to HQ. HQ is the DCE for all other WAN links.

### **Task 3: Configure static and default routing**

Configure static and default routing using the exit interface argument.

- HQ should have three static routes and one default route.
- B1, B2, and B3 should have one default route.
- ISP should have seven static routes. This will include the three WAN links between HQ and the branch routers B1, B2, and B3.

## Task 5: Test connectivity and examine the configuration.

### Step 1: Test connectivity.

- You should now have end-to-end connectivity. Use ping to test connectivity across the network. Each router should be able to ping all other router interfaces and the Web Server.
- Use extended ping to test LAN connectivity to the Web Server. For example, to test the Fa0/0 interface on B1, you would do the following:

```
B1#ping
Protocol [ip]:
Target IP address: 209.165.200.226
Repeat count [5]:
Datagram size [100]:
Timeout in seconds [2]:
Extended commands [n]: yes
Source address or interface: 192.168.1.1
Type of service [0]:
Set DF bit in IP header? [no]:
Validate reply data? [no]:
Data pattern [0xABCD]:
Loose, Strict, Record, Timestamp, Verbose[none]:
Sweep range of sizes [n]:
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 209.165.200.226, timeout is 2 seconds:
Packet sent with a source address of 192.168.1.1
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 67/118/138 ms
```

- Troubleshoot until pings are successful.

### Step 2: Examine the configuration.

Use verification commands to make sure your configurations are complete.