



## **Module 5 Mastery Assessment Packet Tracer - Skills Integration Challenge**

### **Introduction**

In this Module 5 Mastery Assessment students will be asked to step-and configure the network and ACLs as needed. Refer to your notes for commands.

### **Objectives**

Subnet and configure addressing,  
Configure dynamic and static routing  
Implement named access control lists.

### **Assignment**

In this challenge activity, you will finish the addressing scheme, configure routing, and implement named access control lists.

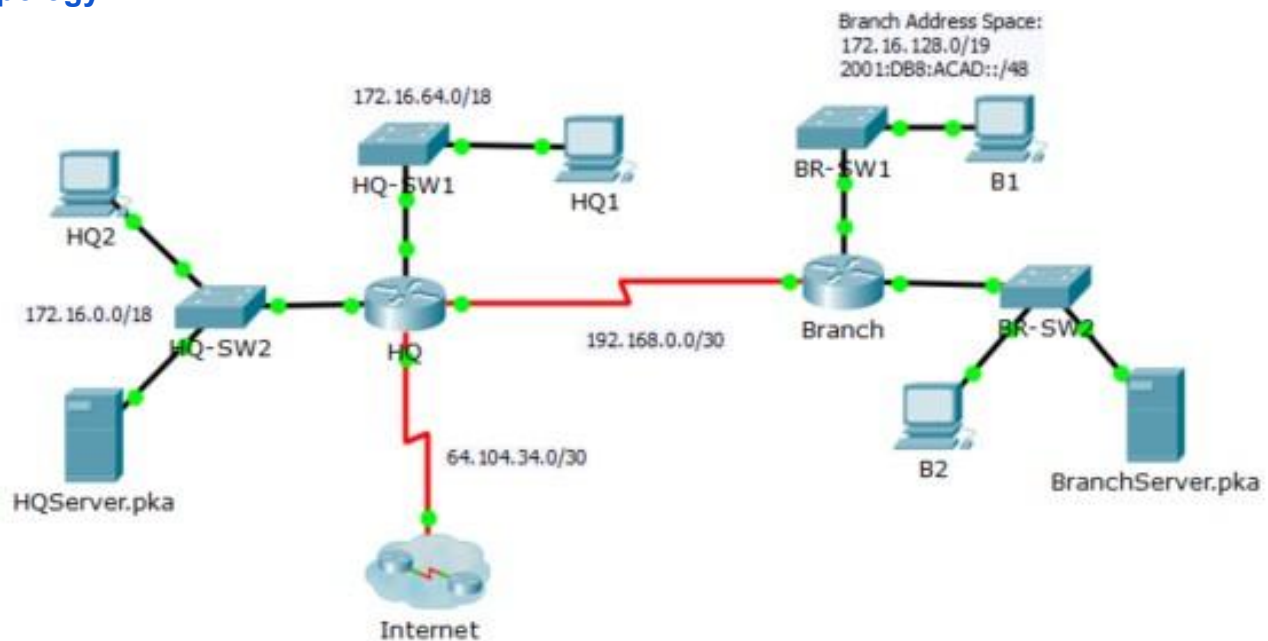
### **Required Resources**

Your Computer workstation  
Cisco Packet Tracer (online)  
Instructor Provided Packet Tracer file

**Packet Tracer - Skills Integration Challenge**

---

## Topology



## Addressing Table

| Device       | Interface | IP Address             | Subnet Mask     | Default Gateway |
|--------------|-----------|------------------------|-----------------|-----------------|
|              |           | IPv6 Address / Prefix  |                 |                 |
| HQ           | G0/0      | 172.16.127.254         | 255.255.192.0   | N/A             |
|              | G0/1      | 172.16.63.254          | 255.255.192.0   | N/A             |
|              | S0/0/0    | 192.168.0.1            | 255.255.255.252 | N/A             |
|              | S0/0/1    | 64.104.34.2            | 255.255.255.252 | 64.104.34.1     |
| Branch       | G0/0      | 172.16.159.254         | 255.255.240.0   | N/A             |
|              |           | 2001:DB8:ACAD:B1::1/64 |                 |                 |
|              | G0/1      | 172.16.143.254         | 255.255.240.0   | N/A             |
|              |           | 2001:DB8:ACAD:B2::1/64 |                 |                 |
|              | S0/0/0    | 192.168.0.2            | 255.255.255.252 | N/A             |
| HQ1          | NIC       | 172.16.64.1            | 255.255.192.0   | 172.16.127.254  |
| HQ2          | NIC       | 172.16.0.2             | 255.255.192.0   | 172.16.63.254   |
| HQServer.pka | NIC       | 172.16.0.1             | 255.255.192.0   | 172.16.63.254   |
| B1           | NIC       | 172.16.144.1           | 255.255.240.0   | 172.16.143.254  |
|              |           | 2001:DB8:ACAD:B1::2/64 |                 |                 |
| B2           | NIC       | 172.16.128.2           | 255.255.240.0   | 172.16.143.254  |

|  |  |                        |  |
|--|--|------------------------|--|
|  |  | 2001:DB8:ACAD:B2::2/64 |  |
|--|--|------------------------|--|

## Packet Tracer - Skills Integration Challenge

---

|                  |     |                        |               |                     |
|------------------|-----|------------------------|---------------|---------------------|
| BranchServer.pka | NIC | 172.16.128.1           | 255.255.240.0 | 172.16.143.254      |
|                  |     | 2001:DB8:ACAD:B2::3/64 |               | 2001:DB8:ACAD:B2::1 |

### Scenario

In this challenge activity, you will finish the addressing scheme, configure routing, and implement named access control lists.

### Requirements

- a. Divide 172.16.128.0/19 into two equal subnets for use on **Branch**.
  - 1) Assign the last usable IPv4 address of the second subnet to the Gigabit Ethernet 0/0 interface.
  - 2) Assign the last usable IPv4 address of the first subnet to the Gigabit Ethernet 0/1 interface.
  - 3) Document the IPv4 addressing in the Addressing Table.
  - 4) Configure **Branch** with appropriate IPv4 addressing.
- b. Configure **B1** with appropriate IPv4 address using the first available address of the network to which it is attached.
  - 1) Assign 2001:DB8:ACAD:B1::1/64 and 2001:DB8:ACAD:B2::1/64 to **Branch's** Gigabit Ethernet 0/0 and Gigabit Ethernet 0/1, respectively.
- c. Configure **Branch** with appropriate IPv6 addressing.
- d. Configure **B1** and **B2** with appropriate IPv6 addresses using the first available address of the network to which it is attached.
- e. Document the addressing in the Addressing Table.
- f. Configure **HQ** and **Branch** with OSPFv2 routing for IPv4 according to the following criteria:
  - Assign the process ID 1.
  - Advertise all attached IPv4 networks. Do not advertise the link to the Internet.
  - Configure appropriate interfaces as passive.
- g. Set a IPv4 default route on **HQ** which directs traffic to S0/0/1 interface. Redistribute the route to **Branch**.
- h. Design an IPv4 named access list **HQServer** to prevent any computers attached to the Gigabit Ethernet 0/0 interface of the **Branch** router from accessing **HQServer.pka**. All other traffic is permitted. Configure the access list on the appropriate router, apply it to the appropriate interface and in the appropriate direction.
- i. Design an IPv4 named access list **BranchServer** to prevent any computers attached to the Gigabit Ethernet 0/0 interface of the **HQ** router from accessing the HTTP and HTTPS service of the **Branch** server. All other traffic is permitted. Configure the access list on the appropriate router, apply it to the appropriate interface and in the appropriate direction.

- j. Design an IPv6 access-list named **NO-B1** to prevent any IPv6 traffic originating on **B1** to reach the **BranchServer.pka**. No traffic should be permitted from **B1** to **BranchServer.pka**. Apply the IPv6 access to the most appropriate location (interface and direction).