# Ch2 - Packet Tracer Skills Integration Challenge (Instructor Version)

## Introduction:

This activity focuses on basic device configurations and static routing. The addressing scheme has already been determined. Once you have configured all devices, you will test for end-to-end connectivity and examine your configuration.

## Learning Objectives

- Cable the devices.
- Apply a basic configuration to the devices.
- Configure static and default routing.
- Test connectivity and examine the configuration.

## Addressing Table:

| Device | Interface | IP Address | Subnet Mask | Default Gateway |
|---|---|---|---|---|
| HQ | S0/0/0 | 10.0.0.1 | 255.255.255.252 | N/A |
| | S0/0/1 | 10.0.0.5 | 255.255.255.252 | N/A |
| | Fa0/0 | 192.168.64.1 | 255.255.255.0 | N/A |
| | Fa0/1 | 192.168.65.1 | 255.255.255.0 | N/A |
| B1 | S0/0/0 | 10.0.0.2 | 255.255.252 | N/A |
| | Fa0/0 | 172.24.0.1 | 255.255.0.0 | N/A |
| | Fa0/1 | 172.25.0.1 | 255.255.0.0 | N/A |
| | Fa1/0 | 172.26.0.1 | 255.255.0.0 | N/A |
| | Fa1/1 | 172.27.0.1 | 255.255.0.0 | N/A |
| B2 | S0/0/0 | 10.0.0.6 | 255.255.255.0 | N/A |
| | Fa0/0 | 192.168.0.1 | 255.255.255.0 | N/A |
| | Fa0/1 | 192.168.1.1 | 255.255.255.0 | N/A |
| | Fa1/0 | 192.168.2.1 | 255.255.255.0 | N/A |
| | Fa1/1 | 192.168.3.1 | 255.255.255.0 | N/A |
| PC1 | NIC | 172.24.0.10 | 255.255.0.0 | 172.24.0.1 |
| PC2 | NIC | 172.25.0.10 | 255.255.0.0 | 172.25.0.1 |
| PC3 | NIC | 172.26.0.10 | 255.255.0.0 | 172.26.0.1 |
| PC4 | NIC | 172.27.0.10 | 255.255.0.0 | 172.27.0.1 |
| PC5 | NIC | 192.168.64.10 | 255.255.255.0 | 192.168.64.1 |
| PC6 | NIC | 192.168.65.10 | 255.255.255.0 | 192.168.65.1 |

 

| Device | Interface | IP Address | Subnet Mask | Default Gateway |
|---|---|---|---|---|
| **PC7** | **NIC** | 192.168.0.10 | 255.255.255.0 | 192.168.0.1 |
| **PC8** | **NIC** | 192.168.1.10 | 255.255.255.0 | 192.168.1.1 |
| **PC9** | **NIC** | 192.168.2.10 | 255.255.255.0 | 192.168.2.1 |
| **PC10** | **NIC** | 192.168.3.10 | 255.255.255.0 | 192.168.3.1 |

## Task 1: Cable the devices.

Cable the WAN. HQ s0/0/0 connects to B1 S0/0/0 and HQ s0/0/01 connects to B2 s0/0/0. HQ is the DCE side of both WAN links.

## Task 2: Apply a basic configuration.

Configure the routers with basic configurations including addressing.

- For the WAN links, assign the first address to HQ and the second address to the other router.
- For the LANs, assign the first address to the router interface. Make sure to also configure hostnames.
- Assign the .10 address to the PCs. Make sure to include the default gateway.
- Use **cisco** as the line passwords and **class** as the secret password.
- Use 64000 as the clock rate.

## Task 3: Configure static and default routing.

- Configure HQ with exactly two static routes using the local interface.

  **`ip route 192.168.0.0 255.255.252.0 Serial0/0/1`**

  **`ip route 172.24.0.0 255.252.0.0 Serial0/0/0`**

- Configure B1 and B2 with exactly one default route using the local interface.

  **`ip route 0.0.0.0 0.0.0.0 Serial0/0/0`** on both routers.

## Task 4: 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.
- Troubleshoot until pings are successful.

### Step 2: Examine the configuration.

Use verification commands to make sure your configurations are complete.

```
B1#sh run
Building configuration...
Current configuration : 918 bytes
!
version 12.3
```

```
no service password-encryption
!
hostname B1
!
enable secret 5 $1$R1Bq$sYDBEHoOo/v37vQk0Lwrr0
!
ip ssh version 1
no ip domain-lookup
!
interface FastEthernet0/0
 ip address 172.24.0.1 255.255.0.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 172.25.0.1 255.255.0.0
 duplex auto
 speed auto
!
interface Serial0/0/0
 ip address 10.0.0.2 255.255.255.252
!
interface Serial0/0/1
 no ip address
 shutdown
!
interface FastEthernet1/0
 ip address 172.26.0.1 255.255.0.0
 duplex auto
 speed auto
!
interface FastEthernet1/1
 ip address 172.27.0.1 255.255.0.0
 duplex auto
 speed auto
!
interface Vlan1
 no ip address
 shutdown
```

```
!
ip classless
ip route 0.0.0.0 0.0.0.0 Serial0/0/0
!
banner motd ^C
*********************************
  !!!AUTHORIZED ACCESS ONLY!!!
*********************************
^C
line con 0
 password cisco
 login
line vty 0 4
 password cisco
 login
!
End

B2#sh run
Building configuration...
Current configuration : 920 bytes
!
version 12.3
no service password-encryption
!
hostname B2
!
enable secret 5 $1$wFNU$IR5beBUctKScv.7OQ9fOj.
!
ip ssh version 1
no ip domain-lookup
!
interface FastEthernet0/0
 ip address 192.168.0.1 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 192.168.1.1 255.255.255.0
```

```
 duplex auto
 speed auto
!
interface Serial0/0/0
 ip address 10.0.0.6 255.255.255.252
!
interface Serial0/0/1
 no ip address
!
interface FastEthernet1/0
 ip address 192.168.2.1 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet1/1
 ip address 192.168.3.1 255.255.255.0
 duplex auto
 speed auto
!
interface Vlan1
 no ip address
 shutdown
!
ip classless
ip route 0.0.0.0 0.0.0.0 Serial0/0/0
!
banner motd ^C
********************************
  !!!AUTHORIZED ACCESS ONLY!!!
********************************
^C
line con 0
 password cisco
 login
line vty 0 4
 password cisco
 login
!
End
```

```
HQ#sh run
Building configuration...
Current configuration : 853 bytes
!
version 12.3
no service password-encryption
!
hostname HQ
!
enable secret 5 $1$h15A$nQ8iNwQIBKZdUP.40mySH1
!
ip ssh version 1
no ip domain-lookup
!
interface FastEthernet0/0
 ip address 192.168.64.1 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 192.168.65.1 255.255.255.0
 duplex auto
 speed auto
!
interface Serial0/0/0
 ip address 10.0.0.1 255.255.255.252
 clock rate 64000
!
interface Serial0/0/1
 ip address 10.0.0.5 255.255.255.252
 clock rate 64000
!
interface Vlan1
 no ip address
 shutdown
!
ip classless
ip route 192.168.0.0 255.255.252.0 Serial0/0/1
```

```
ip route 172.24.0.0 255.252.0.0 Serial0/0/0
!
banner motd ^C
*******************************
  !!!AUTHORIZED ACCESS ONLY!!!
*******************************
^C
line con 0
 password cisco
 login
line vty 0 4
 password cisco
 login
!
end
```