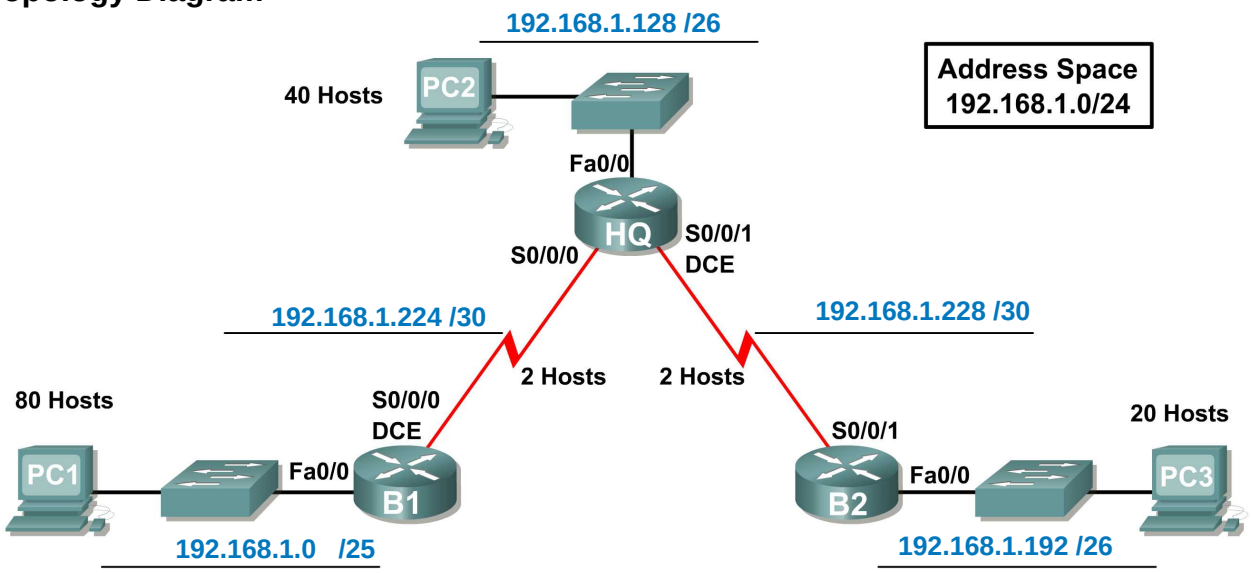
Ch1 - Packet Tracer Skills Integration Instructions

Topology Diagram



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
HQ	Fa0/0	192.168.1.129	255.255.255.192	N/A
	S0/0/0	192.168.1.225	255.255.255.252	N/A
	S0/0/1	192.168.1.229	255.255.255.252	N/A
B1	Fa0/0	192.168.1.1	255.255.255.128	N/A
	S0/0/0	192.168.1.226	255.255.255.252	N/A
B2	Fa0/0	192.168.1.193	255.255.255.224	N/A
	S0/0/1	192.168.1.230	255.255.255.252	N/A
PC1	NIC	192.168.1.126	255.255.255.128	192.168.1.1
PC2	NIC	192.168.1.190	255.255.255.192	192.168.1.129
PC3	NIC	192.168.1.222	255.255.255.224	192.168.1.193

Objectives

- Design and document an addressing scheme based on requirements.
- Select appropriate equipment and cable the devices.
- Apply a basic configuration to the devices.
- Verify full connectivity between all devices in the topology.
- Identify layer 2 and layer 3 addresses used to switch packets.

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.

- Starting with the largest LAN, determine the size of each subnet you will need for the given host requirement.
- After the addresses have been determined for all the LAN subnets, assign the first available address space to the WAN link between B1 and HQ.
- Assign the second available address space to the WAN link between HQ and B2.

(**Note:** Remember that the interfaces of network devices are also host IP addresses and are included in the above addressing requirements.)

Step 2: Document the addressing scheme.

- Use the blank spaces on the topology to record the network addresses in dotted-decimal/slash format.
- Use the table provided in the printed instructions to document the IP addresses, subnet masks and default gateway addresses.
  - For the LANs, assign the first IP address to the router interface. Assign the last IP address to the PC
  - For the WAN links, assign the first IP address to HQ.

Task 2: Select equipment and cable devices.

Step 1: Select the necessary equipment.

Select the remaining devices you will need and add them to the working space inside Packet Tracer. Use the labels as a guide as to where to place the devices.

Step 2: Finish cabling the devices.

Cable the networks according to the topology taking care that interfaces match your documentation in Task 1.

Task 3: Apply a basic configuration.

Step 1: Configure the routers.

Using your documentation, configure the routers with basic configurations including addressing. Use **cisco** as the line passwords and **class** as the secret password. Use 64000 as the clock rate.

Step 2: Configure the PCs.

Using your documentation, configure the PCs with an IP address, subnet mask, and default gateway.

Task 4: Test connectivity and examine the configuration.

Step 1: Test connectivity.

RIP routing has already been configured for you. Therefore, you should have end-to-end connectivity.

- Can PC1 ping PC2? **yes**

- Can PC1 ping PC3? ___yes__
- Can PC3 ping PC2? ___yes__

Troubleshoot until pings are successful.

Step 2: Examine the configuration.

Use verification commands to make sure your configurations are complete.

Task 5: Identify layer 2 and layer 3 addresses used to switch packets.

Step 1: Create a simple PDU ping packet

- Enter Simulation Mode.
- Use the Add Simple PDU button to create a ping from PC1 to PC3.
- Change “Edit Filters” so that only ICMP is simulated.

Step 2: Addresses at PC1

Record the addresses used by PC1 to send the ping packet to B1:

Layer 3 Source: SRC IP:192.168.1.126

Layer 3 Destination: DST IP:192.168.1.222

Layer 2 Source: SRC ADDR:0001.9713.0EDB

Layer 2 Destination: DEST ADDR:0002.1669.A701

Step 3: Addresses at B1

Record the addresses used by B1 to switch the ping packet to HQ:

Layer 3 Source: SRC IP:192.168.1.126

Layer 3 Destination: DST IP:192.168.1.222

Layer 2 Source: HDLC Frame HDLC

Layer 2 Destination: HDLC Frame HDLC

Step 4: Addresses at HQ

Record the addresses used by HQ to switch the ping packet to B2:

Layer 3 Source: SRC IP:192.168.1.126

Layer 3 Destination: DST IP:192.168.1.222

Layer 2 Source: HDLC Frame HDLC

Layer 2 Destination: HDLC Frame HDLC

Step 5: Addresses at B2

Record the addresses used by B2 to switch the ping packet to PC3:

Layer 3 Source: SRC IP:192.168.1.126

Layer 3 Destination: DST IP:192.168.1.222

Layer 2 Source: SRC ADDR:0001.64C5.8501

Layer 2 Destination: DEST ADDR:000D.BDBB.E27C

