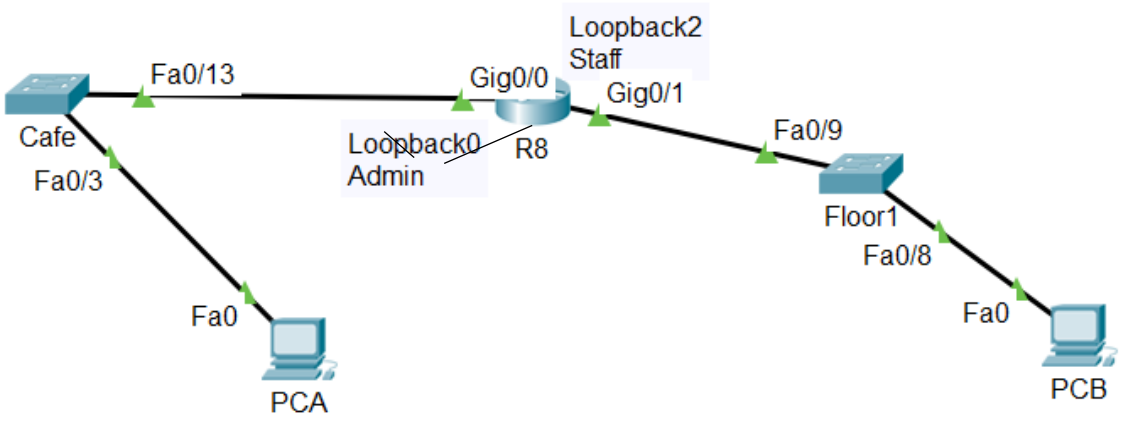
Practice Skills Based Assessment: On-Campus
80 minutes
This activity is not assessed. It is intended as a sample for the Skill Based Assessment

Overview:

In this Practice Skills Based assessment you will calculate the subnet and IP address information for a given network topology and use physical devices to correctly cable and configure the required network devices.

Topology:



Question 1: Calculate IPv4 subnet information (20 marks)

In this scenario, you are a network administrator for a small subdivision within a larger company. You must create multiple subnets out of the 172.16.96.0/21 network address space to meet the following requirements:

- All IP addresses should be allocated sequentially from the start of the first network to meet the subnetting requirements (there must be no space between the subnets). This activity will require different subnet masks depending on the host requirements (Variable Length Subnetting).
- The subnet connected to Gig0/0 to R8 requires a maximum of 525 actual host IP addresses.
- The subnet connected to Gig0/1 to R8 requires a maximum of 255 actual host IP addresses.
- The subnet connected to Loopback0 to R8 requires a maximum of 175 actual host IP addresses.
- The subnet connected to Loopback2 to R8 requires a maximum of 125 actual host IP addresses.

Note: Not all of the device subnet masks will NOT be the same length due to the different numbers of hosts required.

List the subnets from first to last below.

	Subnet Address	/	Prefix	Subnet Mask (dotted decimal)
1.	_____	/	____	_____
2.	_____	/	____	_____
3.	_____	/	____	_____
4.	_____	/	____	_____

On the router R8:

Gig0/0 is assigned the first available IP address on that network.

Gig0/1 is assigned the first available IP address on that network.

Loopback0 is assigned the first available IP address on that network.

Loopback2 is assigned the first available IP address on that network.

On the Switch Cafe:

Its VLAN 1 IP address will be the 54th address on that network. Its default gateway will be the Gig0/0 interface.

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On the Switch Floor1:

Its VLAN 1 IP address will be the 26th address on that network. Its default gateway will be the Gig0/1 interface.

On PC-A:

Its IP address will be the 5th address on that network. Its default gateway will be the Gig0/0 interface.

On PC-B:

Its IP address will be the 12th available address on that network. Its default gateway will be the Gig0/1 interface.

Fill in the table with appropriate IP addresses and subnets masks in slash prefix notation.

Device	Interface	IPv4 Address	Subnet Mask	Default Gateway
R8	G0/0			N/A
	G0/1			N/A
	Loopback0			N/A
	Loopback2			N/A
Cafe	Vlan1			
Floor1	Vlan1			
PCA	NIC			
PCB	NIC			

IPv6 IP addresses have been supplied as follows (you do not need to do any calculations, just use the numbers as given):

Note: the IPv6 addresses are numbered from 1 to 7, do not include 0 as the first network and do not follow the same rules as the IPv4 networks.

Device	Interface	IPv4 Address	Subnet Mask	Default Gateway
R8	G0/0	2001:DB8:ACAD:1::1	/64	N/A
	G0/1	2001:DB8:ACAD:2::1	/64	N/A
	Loopback0	2001:DB8:ACAD:3::1	/64	N/A
	Loopback2	2001:DB8:ACAD:4::1	/64	N/A
Cafe	Vlan1	N/A	N/A	N/A
Floor1	Vlan1	N/A	N/A	N/A
PCA	NIC	2001:DB8:ACAD:1::6	/64	2001:DB8:ACAD:1::1
PCB	NIC	2001:DB8:ACAD:2::D	/64	2001:DB8:ACAD:2::1

Question 2: (6 marks)

For all devices in the topology:

Cable the network according to the topology.

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Question 3: (10.5 marks)

For router and each switch in the topology:

1. Disable DNS lookup to prevent the device from attempting to translate incorrectly entered commands as though they were hostnames
2. Assign device name according to the topology
3. Assign class as the privileged EXEC encrypted password
4. Assign cisco as the console password and then enable login and logging synchronous
5. Assign cisco as the VTY password and then enable login and logging synchronous
6. Encrypt the clear text passwords
7. Create an appropriate banner that will warn anyone accessing the device that unauthorized access is prohibited:

   Unauthorised access is strictly prohibited.

Question 4: (8 marks)

Assign all IPv4 and IPv6 addresses according to the addressing Tables.

Question 5: (3.5 marks)
Prepare all devices to be accessible for ping and telnet, including from remote networks.

Question 6: (2 marks)

1. User PCA must ping Switch Floor1
2. User PCB must ping Switch Cafe