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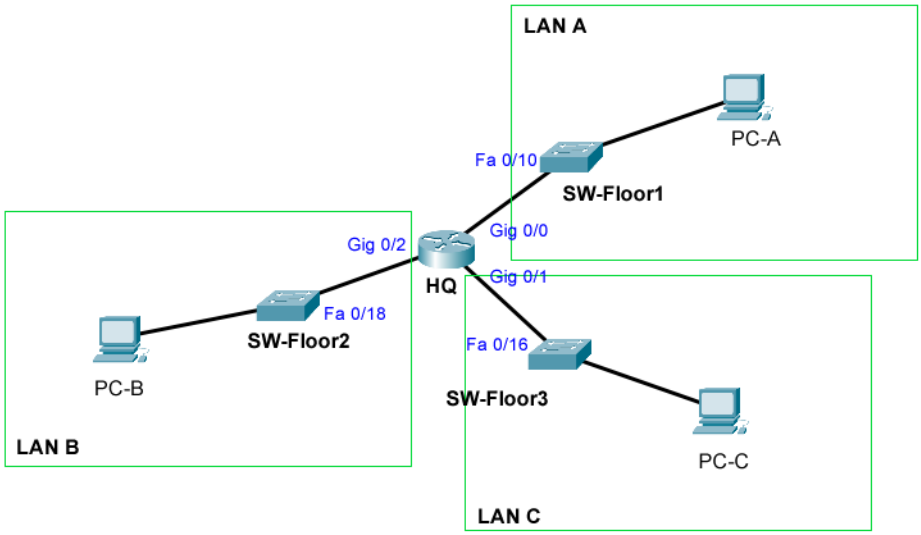
CpE 3105: Computer Networks and Security

Skills Assessment 1

Instructions

In this assessment, you will create a small network shown in the topology below, using your Packet Tracer and configure its devices. Configure the routers, switches and PCs to support IPv4 connectivity. Use the following resources: 1 **Cisco 2911 Router**, 3 **Cisco 2960 Switches** and 3 **PCs**. Follow the connections and its ports as shown in the topology.

Topology



IPv4 Addressing Scheme

Given the network address shown below, design an IP addressing scheme that satisfies the requirement.

LAN	Network Address
LAN A	172.18.0.0/24
LAN B	10.0.0.0/16
LAN C	192.168.0.0/24

The host computers will use the **LAST** available IP address in the given network. Switches will use the **second to the last** available host address. Ports on the network router will use the **FIRST** available host address. Write down the IP address information for each device: (use red font)

Device	Interface	IP Address	Subnet Mask	Default Gateway
HQ	Gig 0/0	172.18.0.1	255.255.255.0	NA
	Gig 0/1	10.0.0.1	255.255.0.0	NA
	Gig 0/2	192.168.0.1	255.255.255.0	NA
SW-Floor1	VLAN 1	172.18.0.253	255.255.255.0	172.18.0.1
SW-Floor2	VLAN 1	10.0.255.253	255.255.0.0	10.0.0.1

SW-Floor3	VLAN 1	192.168.0.253	255.255.255.0	192.168.0.1
PC-A		172.168.0.254	255.255.255.0	172.18.0.1
PC-B		10.0.255.254	255.255.0.0	10.0.0.1
PC-C		192.168.0.254	255.255.255.0	192.168.0.1

Configure Device IPv4 and Security Settings

1. Configure the host computers. Use the IP addresses you provided on the address table above.
2. Configure HQ. Configuration tasks for HQ include the following:
    a. Router Name: **HQ**
    b. Encrypted privileged EXEC password: **cpe3105**
    c. Console access password: **usccpe**
    d. Telnet access password: **usccpevty**
    e. Encrypt the clear text passwords
    f. Provide the message of the day: **Warning! You are entering HQ router.**
    g. Interface Gig 0/0: Set the layer 3 IPv4 Address, Set a description, and activate interface
    h. Interface Gig 0/1: Set the layer 3 IPv4 Address, Set a description, and activate interface
    i. Interface Gig 0/2: Set the layer 3 IPv4 Address, Set a description, and activate interface
3. Configure the switches. Configuration tasks include the following:
    a. Switch names. Refer to the address table above.
    b. Set the Layer 3 IPv4 address on the vlan1 interface of each switch. Provide the default gateway as well.
    c. Encrypted privileged EXEC password: **cpe3105**
    d. Console access password: **usccpe**
    e. Telnet access password: **usccpevty**
    f. Encrypt the clear text passwords
    g. Provide the message of the day: **Welcome to** *<hostname>* **switch!**
4. Verify the network connectivity. Use the ping command to test the connectivity between all network devices. Use the following table to methodically verify connectivity with each network device:

From	**To**	**IP Address**	**Ping Results** (success,fail)
PC-A	HQ, G0/0	172.18.0.1	success
PC-A	HQ, G0/1	10.0.0.1	success
PC-A	HQ, G0/2	192.168.0.1	success
PC-A	SW-Floor1	172.18.0.253	success
PC-A	SW-Floor2	10.0.255.253	success
PC-A	SW-Floor3	192.168.0.253	success
PC-A	PC-B	10.0.255.254	success
PC-A	PC-C	192.168.0.254	success
PC-B	HQ, G0/0	172.18.0.1	success
PC-B	HQ, G0/1	10.0.0.1	success
PC-B	HQ, G0/2	192.168.0.1	success
PC-B	SW-Floor1	172.18.0.253	success
PC-B	SW-Floor2	10.0.255.253	success
PC-B	SW-Floor3	192.168.0.253	success
PC-B	PC-A	172.168.0.254	success
PC-B	PC-C	192.168.0.254	success
PC-C	HQ, G0/0	172.18.0.1	success
PC-C	HQ, G0/1	10.0.0.1	success
PC-C	HQ, G0/2	192.168.0.1	success
PC-C	SW-Floor1	172.18.0.253	success
PC-C	SW-Floor2	10.0.255.253	success
PC-C	SW-Floor3	192.168.0.253	success
PC-C	PC-A	172.168.0.254	success

PC-C	PC-C	192.168.0.254	success

5. Save your packet tracer file as **SKA1.pkt** and submit it together with this document (saved as **SKA1.pdf**) in your Canvas.