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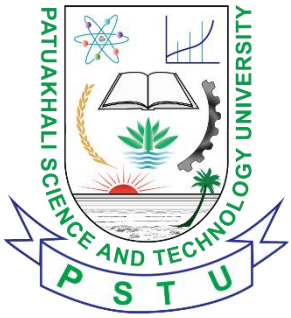

Assignment Name: Lab Problem 17

Course Code: CCE-314

Course Title: Computer Networks Sessional

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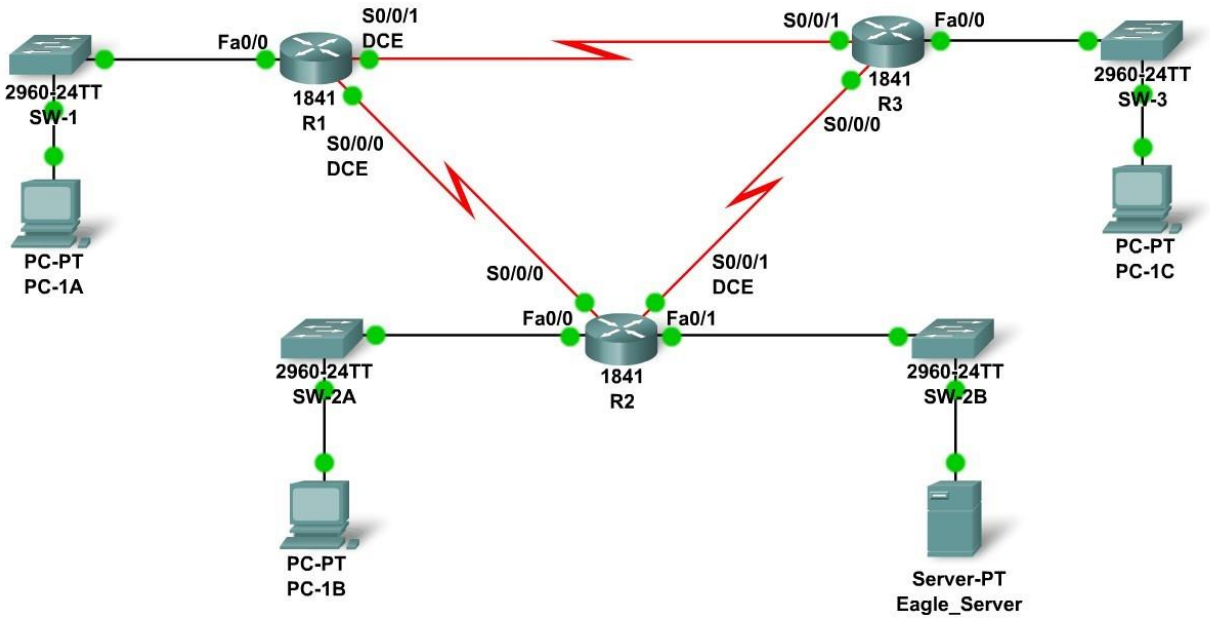
10.7.1: Skills Integration Challenge-Network Planning and Interface Configuration

Topology Diagram



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	Fa0/0	192.168.1.62	255.255.255.192	N/A
	S0/0/0	192.168.1.129	255.255.255.252	N/A
	S0/0/1	192.168.1.133	255.255.255.252	N/A
R2	Fa0/0	192.168.1.110	255.255.255.240	N/A
	Fa0/1	192.168.1.94	255.255.255.224	N/A
	S0/0/0	192.168.1.130	255.255.255.252	N/A
	S0/0/1	192.168.1.137	255.255.255.252	N/A
R3	Fa0/0	192.168.1.126	255.255.255.240	N/A
	S0/0/0	192.168.1.138	255.255.255.252	N/A
	S0/0/1	192.168.1.134	255.255.255.252	N/A
PC-1A	NIC	192.168.1.1	255.255.255.192	192.168.1.62
PC-1B	NIC	192.168.1.97	255.255.255.240	192.168.1.110
PC-1C	NIC	192.168.1.113	255.255.255.240	192.168.1.126
Eagle_Server	NIC	192.168.1.93	255.255.255.224	192.168.1.94

Learning Objectives

Upon completion of this lab, you will be able to:

- Build the network topology
- Plan the IP addresses
- Configure router and PC interfaces
- Test the network

Background

Practice your network building, planning, and configuration skills. Device names and routing have already been configured.

Task 1: Build the Network Topology.

Use the following charts, and the devices in the Device Pool, to create the topology.

Routers:

Hostname	Interface	Connects To	Interface
R1	Fa0/0	SW-1	Fa0/1
R1	S0/0/0 (DCE)	R2	S0/0/0
R1	S0/0/1 (DCE)	R3	S0/0/1
R2	Fa0/0	SW-2A	Fa0/1
R2	S0/0/1 (DCE)	R3	S0/0/0
R2	Fa0/1	SW-2B	Fa0/1
R3	Fa0/0	SW-3	Fa0/1

Switches:

Hostname	Interface	Connects To	Interface
SW-1	Fa0/2	PC-1A	FastEthernet
SW-2A	Fa0/2	PC-1B	FastEthernet
SW-2B	Fa0/2	Eagle_Server	FastEthernet
SW-3	Fa0/2	PC-1C	FastEthernet

Task 2: Create and Assign an Addressing Scheme.

You are asked to use the 192.168.1.0 /24 address space. Seven total networks are required; assign the networks in decreasing order of number of hosts required for efficient use of address space. Use the following charts to create an effective addressing scheme:

LAN:

Hostname	Interface	Number of Hosts
R1	Fa0/0	60
R2	Fa0/0	10
	Fa0/1	25
R3	Fa0/0	7

WAN:

Hostname	Address to be Assigned	Number of Hosts
R1-R2	R1-First host address	2
R1-R3	R1-First host address	2
R2-R3	R2-First host address	2

Use the following rules to assign the IP addresses.

- PC's will use the first host address in the subnet.
- Tthe server will use the second to last host address in its subnet.
- All FastEthernet ports on a router will use the last host address of the assigned subnet.

- The R1-R2 link will use the first WAN subnet, with R1 using the first usable address and R2 using the last usable adress.
- The R1-R3 link will use the second WAN subnet, with R1 using the first usable address and R3 using the last usable address.
- The R2-R3 link will use the third WAN subnet, with R2 using the first usable address and R3 using the last usable address.
- DCE interfaces should have clock rates of 56000.

Task 3: Interface Configuration

Perform interface configuration of the R1, R2, and R3 routers, the PCs, and the server according to the addressing scheme above.

Task 4: Testing Connectivity

Make sure all PCs can ping their gateways, other PCs, and the server.