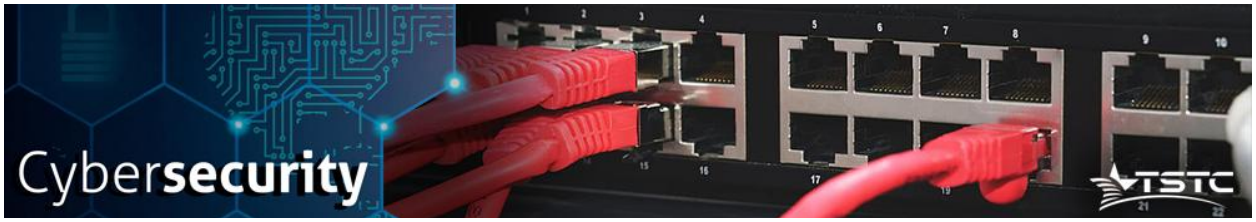


Module 2 Mastery Assessment Lab

Introduction

In this Module 2 Performance Assessment, your focus is RIP and Static Routing configurations.

Objectives

Complete all requirements below.

Assignment

In this skills assessment, you will subnet your networks to the network requirements given and complete the addressing table below. You will then configure IP addressing for all devices.

Next you will configure RIPv2 routing for all networks except the hidden file server network.

Configure static routing so the 1st floor and 2nd floor VLANs will be able to reach the internal file server network. The internal network should not be reachable from the external ISP router.

Then configure default static routes on all 3 routers so the 1st Floor LAN, 2nd Floor LAN and Cyber Vlan 500 can reach the ISP router.

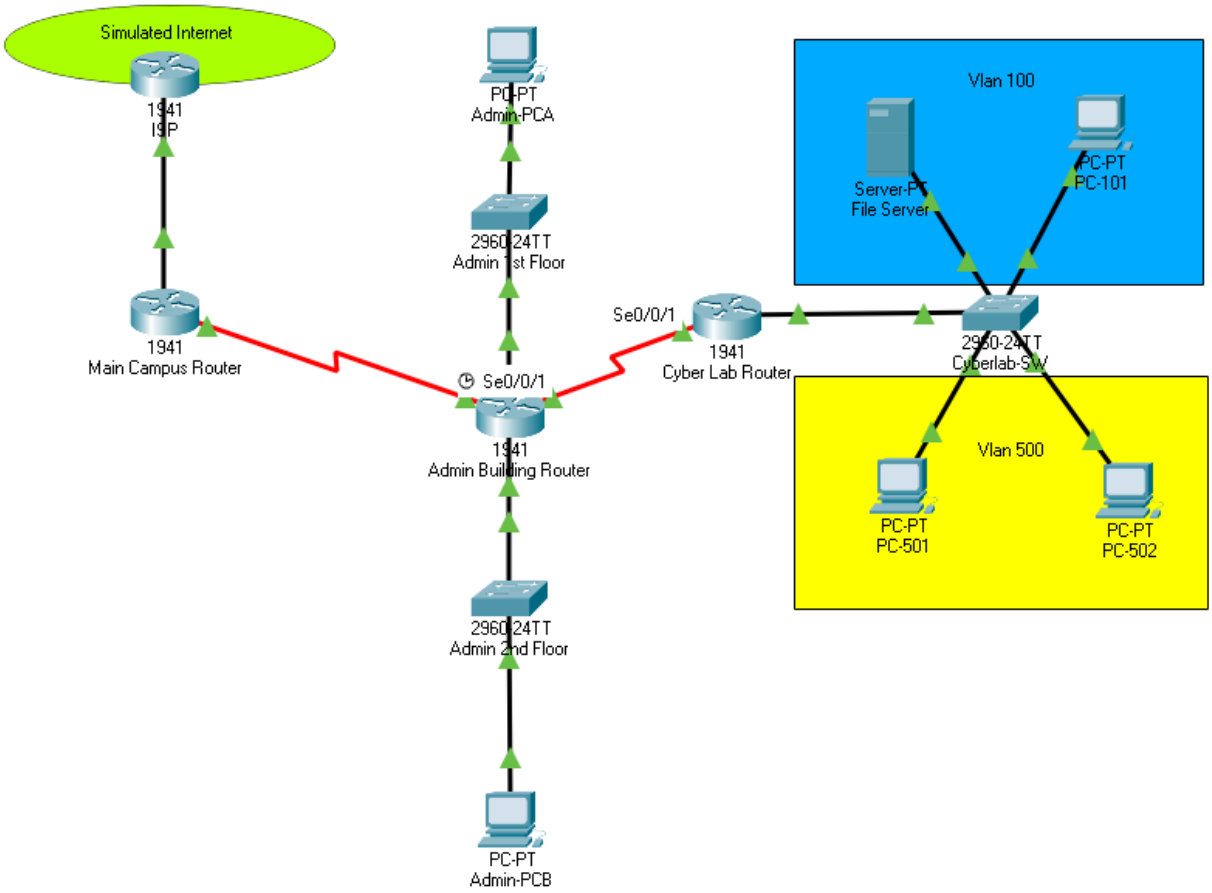
Finally, you will verify your configurations and test connectivity between end devices.

Note: The ISP router is already configured.

Required Resources

- 4 Routers (Cisco 1941 with Cisco IOS Release 15.2(4) M3 universal image or comparable)
- 3 Cisco 2960 Switches (Software (C2960-LANBASE-M), Version 12.2)
- 4 PCs (Windows 7, Vista, or XP with terminal emulation program, such as Tera Term)
- Your Computer workstation
- Cisco Packet Tracer (online)
- Provided Packet Tracer File

Topology



Requirements

Complete the lab in this order:

Part 1: Complete the subnetting and addressing scheme
Part 2: Configure Device Basic Settings
Part 3: Configure RIPv2 for IPv4 dynamic routing protocol
Part 4: Configure static routes to internal file server network
Part 5: Configure static routes for external connectivity to the ISP

Part 1: Complete the subnetting and addressing scheme

In this topology you need to subnet the following address into 4 subnets for the LANs.The router to router point to point links are already documented in the addressing table.

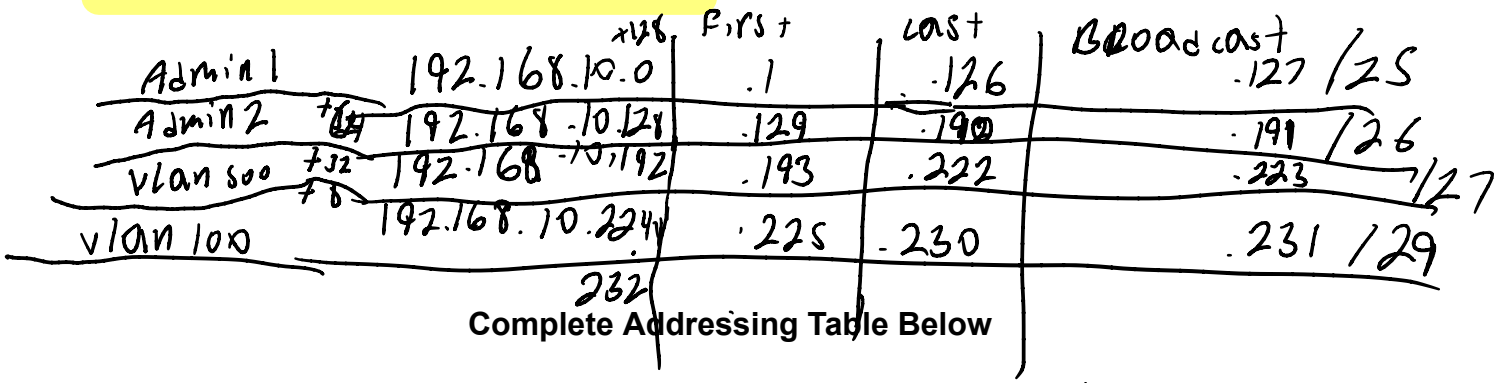
Subnet the following network in 4 subnets. **192.168.10.0 255.255.255.0**

Admin 1st Floor Lan - 100 hosts needed
Admin 2nd Floor lan - 32 hosts needed
Vlan 500 - 20 Hosts needed
Internal VLAN 100 - 4 hosts

Interface Addressing Scheme

On your router LAN interfaces use the first usable address in the corresponding subnet. (Router to Router links are already documented in the Addressing Table)

For the PC's, use the last usable address in the corresponding subnet, and in VLANs 100 use the last usable address on the file server and 2nd to last address on PC-101. VLAN 500 PCs use the last 2 addresses in the corresponding. Also configure the correct default gateways for each PC.



Complete Addressing Table Below

11010001.01000101.11001000.11100001
11111111.11111111.11111111.11111100

Addressing Table

128| 64|32|16| 8| 4|2|1

256|128|64|32|16|8|4|2

Device	Interface	IP Address	Subnet Mask	Default Gateway	Network IP Address
ISP Router	G0/1	209.165.200.225	255.255.255.252	N/A	209.165.200. 224
MainCampusR	G0/0	209.165.200.226	255.255.255.252	N/A	
	S0/0/0	172.16.1.1	255.255.255.252	N/A	172.16.1.0
AdminBldgR	G0/0	192.168.10.129	255.255.255.192	N/A	192.168.10.0
	G0/1	192.168.10.1	255.255.255.128	N/A	192.168.10.12
	S0/0/0	172.16.1.2	255.255.255.252	N/A	172.16.1.0
	S0/0/1	172.16.2.2	255.255.255.252	N/A	172.16.2.0
CyberlabR	S0/0/1	172.16.2.1	255.255.255.252	N/A	172.16.2.0
	G0/0.100	192.168.10.225	255.255.255.248	N/A	192.168.10.224
	G0/0.500	192.168.10.193	255.255.255.224	N/A	192.168.10.192
File-Server	Fa0	192168.10.230	255.255.255.248	192.168.10.225	192.168.10.224
PC-101	Fa0	192168.10.229	255.255.255.248	192.168.10.225	192.168.10.224
PC-501	Fa0	192168.10.221	255.255.255.224	192.168.10.193	192.168.10.192
PC-502	Fa0	192168.10.222	255.255.255.224	192.168.10.193	192.168.10.192
PC-A	Fa0	192168.10.126	255.255.255.128	192.168.10.1	192168.10.0
PC-B	Fa0	192168.10.190	255.255.255.192	192.168.10.129	192.168.10.128

11010001.01000101.11001000.11100010

Part 2: Configure Device Basic Settings

Note: The ISP router is already configured.

Main Campus Router
Hostname: MainCampusR
Disable DNS lookups
Console Line password: cyber
Privileged Exec Password: security
Configure interface S0/0/0 - 172.16.1.1 255.255.255.252

Admin Building Router
Hostname: AdminBldgR
Disable DNS lookups
Console Line password: cyber
Privileged Exec Password: security
Interface S0/0/0 - 172.16.1.2 255.255.255.252
Interface S0/0/1 - 172.16.2.2 255.255.255.252
Configure each LAN interface (G0/0 & G0/1) with the 1st usable address in the corresponding subnet.

Cyber Lab Router
Hostname: CyberlabR
Disable DNS lookups
Console Line password: cyber
Privileged Exec Password: security
Interface S0/0/1 - 172.16.2.1 255.255.255.252
Interface G0/0 - (No ip address) Trunk link for VLANs 100 & 500
Configure each LAN sub-interface (G0/0.100 and G0/0.500) with the 1st usable address in the corresponding subnet.

Admin Switch 1st Floor

Hostname Admin-Fl-1
Console Line password: cyber
Privileged Exec Password: security

Admin Switch 2nd Floor
Hostname Admin-Fl-2
Console Line password: cyber
Privileged Exec Password: security

Cyber Lab Switch
Hostname:Cyberlab-SW
Console Line password: cyber
Privileged Exec Password: security
Vlan Database - VLAN 100 and VLAN 500
Vlan 100 Ports - FA0/2 / FA0/5
Vlan 500 Ports - FA0/10 / FA0/11
Set port FA0/1 to trunk mode

```
                                                Gig0/2
100  VLAN100                    active    Fa0/2, Fa0/5
500  VLAN500                    active    Fa0/10, Fa0/11
```

PCs and Server
Use the last usable address in the corresponding subnet, and in VLANs 100 use the last usable address on the file server and 2nd to last address on PC-101. VLAN 500 PCs use the last 2 addresses in the corresponding. Also configure the correct default gateways for each PC.

Part 3: Configure RIPv2 for IPv4 dynamic routing protocol

Main Campus Router
Enable RIP routing protocol
Configure RIP Version 2
Advertise Network on S0/0/0 interface

Admin Building Router
Enable RIP routing protocol
Configure RIP Version 2
Advertise Networks on all interfaces
Set G0/0 and G0/1 as passive-interfaces

Cyber Lab Router
Enable RIP routing protocol
Configure RIP Version 2

Advertise Networks on S/0/1, G0/0.500
Do not advertise VLAN 100 in RIP

Part 4: Configure static route to internal file server network

Admin Building Router.
Create a next-hop static route to (Vlan 100) the Internal File Server network.

Part 5: Configure static routes for external connectivity to the ISP

Main Campus Router
Configure directly connected default static route to (Simulated Internet) ISP router.

Admin Building Router
Configure directly connected default static route to (Simulated Internet) ISP router.

Cyber Lab Router
Configure directly connected default static route to (Simulated Internet) ISP router.

Verify all internal PC's can reach the internal file server. Verify all devices can ping the ISP Router (Simulated Internet) except the PCs in VLAN 100.Troubleshoot your networks until accomplished. Good Luck!

Submit Your Work:

Packet Tracer:
Submit Packet Tracer file as well as your text file with your findings and notes.

Rubric

Checklist/Single Point Mastery

Concerns Working Towards Proficiency	Criteria Standards for This Competency	Accomplished Evidence of Mastering Competency

	Criteria #1: Basic router and switch and PC configs (40 pts)	Configure basic router configs needed for all 3 routers. Configure CyberLab switch VLAN and Trunking needed. (40 pts)
	Criteria #2: Configure default static routes needed for all 3 routers.(10 pts)	Configure default static routes needed for all 3 routers to forward packets to the ISP router. (10 pts)
	Criteria #3: Configure RIPv2 parameters needed on all 3 routers for connectivity between internal networks. (40 pts)	Configure RIPv2 parameters needed on all 3 routers for connectivity between internal networks. (40 pts)
	Criteria #4: Test connectivity between all remote networks using ping. (10 pts)	Test connectivity between all remote networks using ping. (10 pts)