

ACTIVITY- 3

OBJECTIVES

1. Setting a SOHO (Small Office/Home Office) network with switched LAN.
2. Learning IP configuration.
3. Testing connectivity.

RESOURCES

1. Packet Tracer software.

REFERENCES

[1] Netacad, "Introduction to Packet Tracer", <https://www.netacad.com/courses/intro-packet-tracer/>

INTRODUCTION

In this activity, you will create a simple SOHO (Small Office Home Office) network using a few switches, one router and some end devices.

There is a bonus question /task in this activity that can earn you 2 points for your final grades.

TASK 1: Create Topology

1. Start PT using your credentials. A new default topology will be presented. Save the file as 'YourName-Act3.pkt'. (Make sure to use your name in the file name. 10% deduction for wrong file name).
2. Drop the following nodes in the topology.
3. Follow Fig. 1 to connect the nodes.
4. Rename nodes using your initials and nodes type and number. Follow the pattern of the figure.

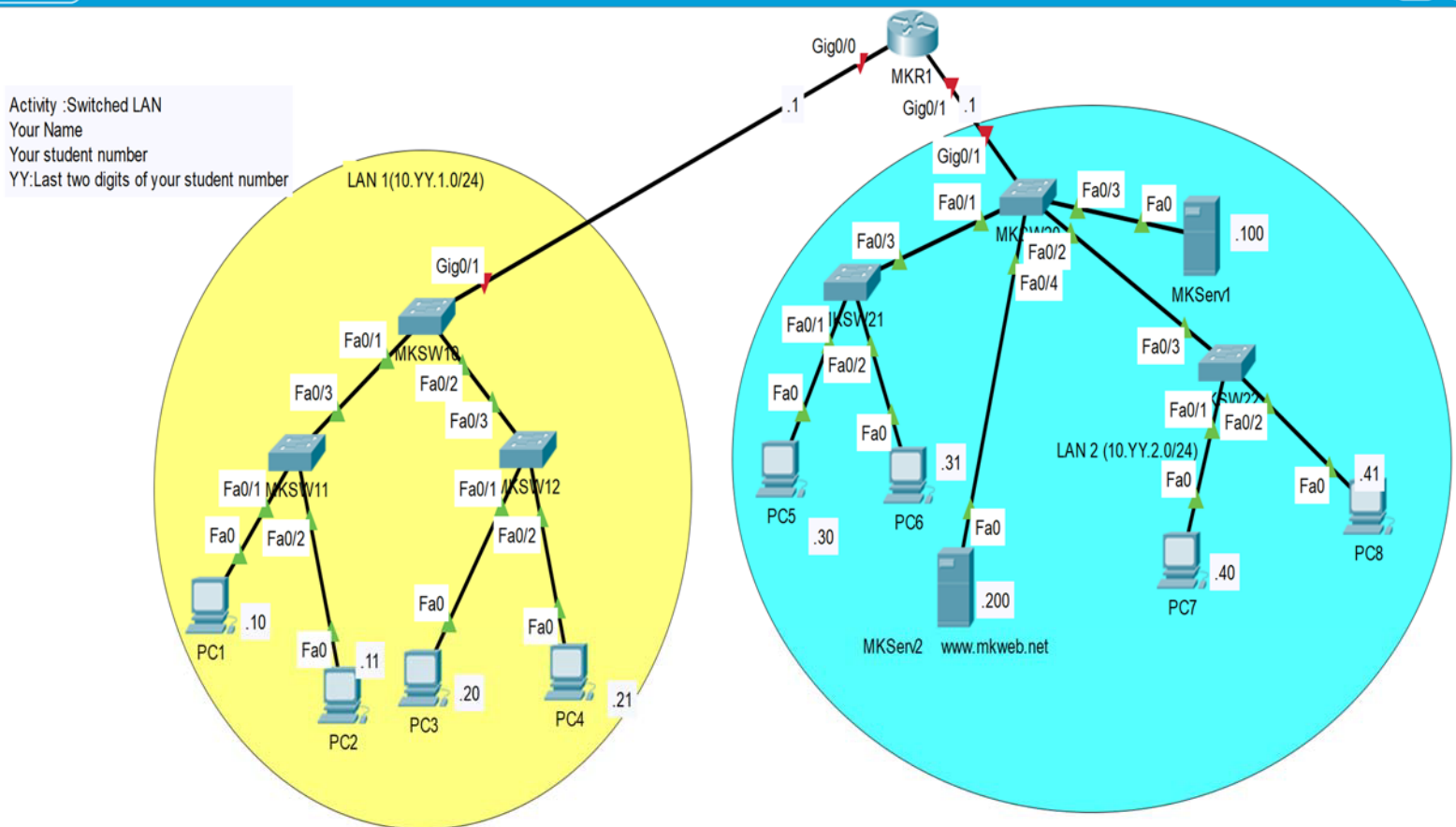
Node Type	Count	Description
Router (2901)	1	This router will serve as the gateway for LAN1 and LAN2, interconnecting both the LANs. Interface GigabitEthernet0/0 will serve LAN1. IP Address of this interface will be 10.YY.1.1 Interface GigabitEthernet0/1 will serve LAN2. IP Address of this interface will be 10.YY.2.1 Here YY is last two digits of your student number.
Switch (2960)	6	3 switches per LAN SW10 and SW20 are for aggregating traffic from the lower switches. Other switches provide connectivity to the end nodes.
PC	8	4 PCs per LAN PCs in LAN 1(PC1,PC2,PC3 and PC4) will have the IP Address from the subnet 10.YY.1.0/24 subnet. PCs in LAN 2(PC5,PC6,PC7 and PC8) will have the IP Address from the subnet 10.YY.1.0/24 subnet. For the PCs to be able to send and receive packets you need to set IP, subnet mask, gateway router and DNS Server IP Address in the PCs
Server	2	Serv1 (IP: 10.YY.2.100) will be used as DNS Server Serv2 (IP: 10.YY.2.200) will be used as a Web Server You need to configure these devices to act as a Proper Server

BONUS POINTS

Note: The Server can be added and configured to work as DNS server and web server. If you attempt this part, it earns you additional 2 points (bonus points) added to final grades.

Points will be given only if both the server are configured completely and from any of the PC, your network web page is opened in the browser.

Figure 1



TASK 2: IP Configuration

1. Follow the following table to configure IP Settings in the PCs, Servers and Routers.

Node	IP Address	Subnet Mask
<u>PC1</u>	<u>10.YY.1.10</u>	255.255.255.0
<u>PC2</u>	<u>10.YY.1.11</u>	Default Gateway
<u>PC3</u>	<u>10.YY.1.20</u>	10.YY.1.1
<u>PC4</u>	<u>10.YY.1.21</u>	DNS Server
		10.YY.2.100
<u>PC5</u>	<u>10.YY.2.30</u>	<u>Subnet Mask</u>
<u>PC6</u>	<u>10.YY.2.31</u>	<u>255.255.255.0</u>
<u>PC7</u>	<u>10.YY.2.40</u>	<u>Default Gateway</u>
<u>PC8</u>	<u>10.YY.2.41</u>	<u>10.YY.2.1</u>
		<u>DNS Server</u>
		<u>10.YY.2.100</u>
<u>Serv1 (DNS)</u>	<u>10.YY.2.100</u>	<u>Subnet Mask</u>
		<u>255.255.255.0</u>
		<u>Default Gateway</u>
		<u>10.YY.2.1</u>
		<u>DNS Server</u>
		<u>10.YY.2.100</u>
<u>Serv2 (Web Server)</u>	<u>10.YY.2.200</u>	<u>Subnet Mask</u>
		<u>255.255.255.0</u>
		<u>Default Gateway</u>
		<u>10.YY.2.1</u>
		<u>DNS Server</u>
		<u>10.YY.2.100</u>
<u>Router</u> <u>GigabitEthernet0/0</u>	<u>10.YY.1.1</u>	<u>Subnet Mask</u>
		<u>255.255.255.0</u>
<u>Router</u> <u>GigabitEthernet0/1</u>	<u>10.YY.2.1</u>	<u>Subnet Mask</u>
		<u>255.255.255.0</u>

TASK 3: Testing Connectivity within LANs

1. Perform Ping test for connectivity within LAN1. Take a clear snapshot. Place it as Output #2.
2. Perform Ping test for connectivity within LAN2. Take a clear snapshot. Place it as Output #3.
3. Perform Ping test for connectivity between LAN1 and LAN2. Take a clear snapshot. Place it as Output #4.

(if bonus question is attempted)

Testing server:

Open the Web Browser from PC4. Type the URL of your web server.
(e.g. www.mkweb.net)

TASK 4: Documentation

1. Annotate the topology as shown in fig. 1. Take a clear snapshot. Place it as Output #1.
2. (optional, required if bonus question is attempted). Take a clear snapshot of server test. Place it as Output #5.
3. Save all your work. Show to the professor when asked. Failure to show the PT Project, working as reported, will result in zero marks in the activity.

REPORT SUBMISSION

1. Give appropriate title or captions (small description) to all the output boxes. (10% marks)
2. Rename this file according to your name (10% deduction for wrong file name). (Example name of file: JohnRoss-Act3.doc)
3. Submit the report in SLATE dropbox.