



R. P. Shaha University

- an institution of Kumudini Welfare Trust of Bengal (BD) Ltd.

Department: COMPUTER SCIENCE AND ENGINEERING
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Program: Bachelor of Computer Science and Engineering
Course Title: Computer Network Lab
Course Code : CSE 314

LAB REPORT FOR FINAL EXAMINATION EVALUATION

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Final Lab report

Introduction: This lab demonstrates to build a network connection using packet tracer software. There are 4 Routers, 4 Switches, 8 End devices. A static routing has been implemented in this network.

Preferred Tools: Packet Tracer

Components:

- 4 Routers (Model: ISR 4331)- Router 0, Router 1, Router 2, Router 3
 - 4 Switches (Model: 2960-24TT)- Switch 0, Switch 1, Switch 2, Switch 3
 - 8 PC as End Devices -PC 0, PC 1, PC 2, PC 3, PC 4, PC 5, PC 6, PC 7
 - Wire: Copper straight through, automatically choose connection type wire •
- Additional Hardware: NIM 2T adapters for serial port connection.

Network Design steps:

1. Start Packet Tracer
2. Choose 4 router, 4 Switch, 8 pc as end device
3. Every router is connected with one switch & 2 pc's with copper straight wire. Router to Router is connected with automatically choose connection type wire.
4. For router-to-router connection
 - Click on the router 0 ⑦ go to physical option ⑦ Turn off the switch of port ⑦ Go on NIM-2T option on left side ⑦ take one port from below & put in on last port ⑦ turn on switch ⑦ save ⑦ exit. By these we will get 2 more serial port for connection. Do the same thing for other routers. Then connect the routers with automatically choose connection type wire.
5. Configure the IP as bellow given.
 - **Routers to switch to PC:**
 - **Router 0**(IP: 192.168.1.1-default IP) is connected with switch 0 & pc0(IP: 192.168.1.2) & pc1(IP: 192.168.1.3).
 - **Router 1**(IP: 192.168.2.1- default IP) is connected with switch 1 & pc2(IP: 192.168.2.2) & pc3(IP: 192.168.2.3)
 - **Router 2**(IP: 192.168.3.1- default IP) is connected with switch 2 & pc4(IP: 192.168.3.2) & pc5(IP: 192.168.3.3)
 - **Router 3**(IP: 192.168.4.1- default IP) is connected with switch 3 & pc6(IP: 192.168.4.2) & pc7(IP: 192.168.4.3)

[Note: For all subnet mask will be 255.255.255.0]

- **Routers to Routers:**

- Router 0(192.168.5.1) is connected through serial port 0 with Router 1(192.168.5.2) through serial port0
- Router 1(192.168.6.1) is connected through serial port 1 with Router 2(192.168.6.2) through serial port 0.
- Router 2(192.168.7.1) is connected through serial port 1 with Router 3(192.168.7.2) through serial port 0.

7. Static Routing step⑦click on router⑦click on configure⑦go to the option static. Then we will get 3 option network, mask & next hope. This information will be filled like the steps below

- For router 0 we need to sends message to router1,2 & 3 also the pc's under this routers. So for step the static routing will be like:

For router 0 to router 1 & router 1's all devices

□ Network: 192.168.2.0 Mask:
255.255.255.0
Next Hope: 192.168.5.2
Then click on "Add"

For router 0 to router 2 & router 2's all devices

□ Network: 192.168.3.0 Mask:
255.255.255.0
Next Hope: 192.168.5.2
Then click on "Add"

For router 0 to router 3 & router 4's all devices

□ Network: 192.168.4.0 Mask:
255.255.255.0
Next Hope: 192.168.5.2
Then click on "Add"

For router 0 to router 4 & router 4's all devices

□ Network: 192.168.3.0 Mask:
255.255.255.0
Next Hope: 192.168.5.2
Then click on "Add"

For router 0 to access the routes of router 2 & 3. For the route of router 2

□ Network: 192.168.6.0 Mask:
255.255.255.0
Next Hope: 192.168.5.2
Then click on "Add"

For the route of router 3 we have to get access from below

□ Network: 192.168.7.0 Mask:
255.255.255.0
Next Hope: 192.168.5.2
Then click on “Add”

- For router 1 we need to sends message to router 0,2 & 3 also the pc’s under this routers. So for step the static routing will be like: **For router 1 to router 0 & router 0’s all devices**

□ Network: 192.168.1.0 Mask:
255.255.255.0
Next Hope: 192.168.5.1
Then click on “Add”

For router 1 to router 2 & router 2’s all devices

□ Network: 192.168.3.0 Mask:
255.255.255.0
Next Hope: 192.168.6.2
Then click on “Add”

For router 1 to router 3 & router 4’s all devices

□ Network: 192.168.4.0 Mask:
255.255.255.0
Next Hope: 192.168.6.2
Then click on “Add”

For router 1 to access the routes of router 3.

Network: 192.168.7.0 Mask:
255.255.255.0
Next Hope: 192.168.6.2
Then click on “Add”

- For router 2 we need to sends message to router 0,1 & 3 also the pc’s under this routers. So for step the static routing will be like: **For router 2 to router 0 & router 0’s all devices**

□ Network: 192.168.1.0 Mask:
255.255.255.0
Next Hope: 192.168.6.1
Then click on “Add”

For router 2 to router 1 & router 1’s all devices

□ Network: 192.168.2.0 Mask:
255.255.255.0
Next Hope: 192.168.6.1
Then click on “Add”

For router 2 to router 3 & router 4’s all devices

□ Network: 192.168.4.0 Mask:
255.255.255.0
Next Hope: 192.168.7.2
Then click on “Add”

For router 2 to access the routes of router 0.

Network: 192.168.5.0 Mask:
255.255.255.0
Next Hope: 192.168.6.1
Then click on “Add”

- For router 3 we need to sends message to router 0,1 & 2 also the pc’s under this routers. So for step the static routing will be like:

For router 3 to router 0 & router 0’s all devices

□ Network: 192.168.1.0 Mask:
255.255.255.0
Next Hope: 192.168.7.1
Then click on “Add”

For router 3 to router 1 & router 1’s all devices

□ Network: 192.168.2.0 Mask:
255.255.255.0
Next Hope: 192.168.7.1
Then click on “Add”

For router 3 to router 2 & router 2’s all devices

□ Network: 192.168.3.0 Mask:
255.255.255.0
Next Hope: 192.168.7.1
Then click on “Add”

For router 3 to access the routes of router 0.

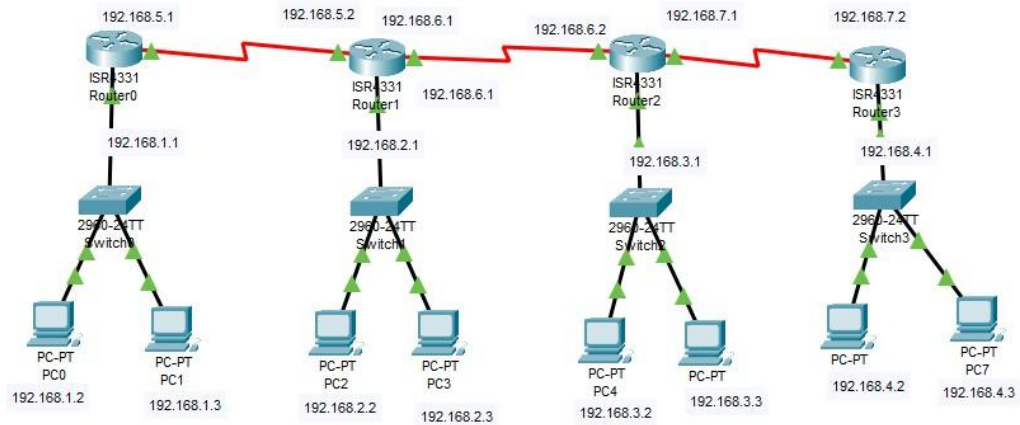
Network: 192.168.5.0 Mask:
255.255.255.0
Next Hope: 192.168.6.1
Then click on “Add”

For router 3 to access the routes of router 1.

Network: 192.168.6.0 Mask:
255.255.255.0
Next Hope: 192.168.7.1
Then click on “Add”

8. Now we can send message to any network.

Input :



Output :

For router 0:

From PC 0:















Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC1	ICMP		0.000	N	0	(edit)	
	Successful	PC0	PC2	ICMP		0.000	N	1	(edit)	
	Successful	PC0	PC3	ICMP		0.000	N	2	(edit)	
	Successful	PC0	PC4	ICMP		0.000	N	3	(edit)	
	Successful	PC0	PC5	ICMP		0.000	N	4	(edit)	
	Successful	PC0	PC6	ICMP		0.000	N	5	(edit)	
	Successful	PC0	PC7	ICMP		0.000	N	6	(edit)	

From PC 1:















Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC1	PC0	ICMP		0.000	N	0	(edit)	
	Successful	PC1	PC2	ICMP		0.000	N	1	(edit)	
	Successful	PC1	PC3	ICMP		0.000	N	2	(edit)	
	Successful	PC1	PC4	ICMP		0.000	N	3	(edit)	
	Successful	PC1	PC5	ICMP		0.000	N	4	(edit)	
	Successful	PC1	PC6	ICMP		0.000	N	5	(edit)	
	Successful	PC1	PC7	ICMP		0.000	N	6	(edit)	

For router 1:

From PC 2:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC2	PC0	ICMP		0.000	N	0	(edit)	
	Successful	PC2	PC1	ICMP		0.000	N	1	(edit)	
	Successful	PC2	PC3	ICMP		0.000	N	2	(edit)	
	Successful	PC2	PC4	ICMP		0.000	N	3	(edit)	
	Successful	PC2	PC5	ICMP		0.000	N	4	(edit)	
	Successful	PC2	PC6	ICMP		0.000	N	5	(edit)	
	Successful	PC2	PC7	ICMP		0.000	N	6	(edit)	

From PC 3:















Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC3	PC0	ICMP		0.000	N	0	(edit)	
	Successful	PC3	PC1	ICMP		0.000	N	1	(edit)	
	Successful	PC3	PC2	ICMP		0.000	N	2	(edit)	
	Successful	PC3	PC4	ICMP		0.000	N	3	(edit)	
	Successful	PC3	PC5	ICMP		0.000	N	4	(edit)	
	Successful	PC3	PC6	ICMP		0.000	N	5	(edit)	
	Successful	PC3	PC7	ICMP		0.000	N	6	(edit)	

For router 2: From















PC 4:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC4	PC0	ICMP		0.000	N	0	(edit)	
	Successful	PC4	PC1	ICMP		0.000	N	1	(edit)	
	Successful	PC4	PC2	ICMP		0.000	N	2	(edit)	
	Successful	PC4	PC3	ICMP		0.000	N	3	(edit)	
	Successful	PC4	PC5	ICMP		0.000	N	4	(edit)	
	Successful	PC4	PC6	ICMP		0.000	N	5	(edit)	
	Successful	PC4	PC7	ICMP		0.000	N	6	(edit)	













From PC 5:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC5	PC0	ICMP		0.000	N	0	(edit)	
	Successful	PC5	PC1	ICMP		0.000	N	1	(edit)	
	Successful	PC5	PC2	ICMP		0.000	N	2	(edit)	
	Successful	PC5	PC3	ICMP		0.000	N	3	(edit)	
	Successful	PC5	PC4	ICMP		0.000	N	4	(edit)	
	Successful	PC5	PC6	ICMP		0.000	N	5	(edit)	
	Successful	PC5	PC7	ICMP		0.000	N	6	(edit)	

**For router 3: From
PC 6:**

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC6	PC0	ICMP		0.000	N	0	(edit)	
	Successful	PC6	PC1	ICMP		0.000	N	1	(edit)	
	Successful	PC6	PC2	ICMP		0.000	N	2	(edit)	
	Successful	PC6	PC3	ICMP		0.000	N	3	(edit)	
	Successful	PC6	PC4	ICMP		0.000	N	4	(edit)	
	Successful	PC6	PC5	ICMP		0.000	N	5	(edit)	
	Successful	PC6	PC7	ICMP		0.000	N	6	(edit)	

From PC 7:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC7	PC0	ICMP		0.000	N	0	(edit)	
	Successful	PC7	PC1	ICMP		0.000	N	1	(edit)	
	Successful	PC7	PC2	ICMP		0.000	N	2	(edit)	
	Successful	PC7	PC3	ICMP		0.000	N	3	(edit)	
	Successful	PC7	PC4	ICMP		0.000	N	4	(edit)	
	Successful	PC7	PC5	ICMP		0.000	N	5	(edit)	
	Successful	PC7	PC6	ICMP		0.000	N	6	(edit)	

Conclusion : This lab helps to set up a basic network with routers, switches, and end devices(PCs) using static routing. The network was successfully configured, and all devices are available to communicate.