MIT World Peace University

Computer Networks
Second Year B. Tech, Semester 3

Configuration of a Simple LAN

Practical Report

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September 6, 2022

Contents

1 Aim and Objectives

To learn how to configure a simple LAN connection using Cisco Packet Tracer.

2 Devices

2.1 Devices Used

1. 1 Generic Switch
2. 2 Switch 2960 with 24 LAN Ports
3. 6 Generic PCs
4. 4 Laptops

2.2 Device Info and IP Addresses

Subnet Mask: 255.255.255.0

Name	Type	IP
PC0	PC	192.168.10.1
PC1	PC	192.168.10.2
PC2	PC	192.168.10.3
PC3	PC	192.168.10.4
PC4	PC	192.168.10.5
PC5	PC	192.168.10.6
Laptop0	Laptop	192.168.10.7
Laptop1	Laptop	192.168.10.8
Laptop2	Laptop	192.168.10.9
Laptop3	Laptop	192.168.10.10
Switch0	2950-24 Switch	None
Switch1	2950-24 Switch	None
Switch2	Generic Switch	None

3 Cables

1. Straight LAN Cable to connect unlike Devices
2. Crossover LAN Cable to connect like Devices

4 Procedure to Configure LAN

1. All 3 switches are connected with each other using crossover cables, as they are similar.
2. 4 PCs are connected to The first Switch
3. 4 Laptops are connected to the Second switch
4. 2 More computers are connected to another Switch.

5. Check the connection by opening the command prompt, and entering the commands ipconfig, and pinging the other computers.

5 Commands

1. **ipconfig**:

   In Windows, ipconfig is a console application designed to run from the Windows command prompt. This utility allows you to get the IP address information of a Windows computer. It also allows some control over your network adapters, IP addresses (DHCP-assigned specifically), even your DNS cache. Ipconfig replaced the older winipcfg utility.

2. **ping <ip addr>**:

   The ping command is a Command Prompt command used to test the ability of the source computer to reach a specified destination computer. It's a simple way to verify that a computer can communicate with another computer or network device.
   The ping command operates by sending Internet Control Message Protocol (ICMP) Echo Request messages to the destination computer and waiting for a response. The two major pieces of information that the ping command provides are how many of those responses are returned and how long it takes for them to return.

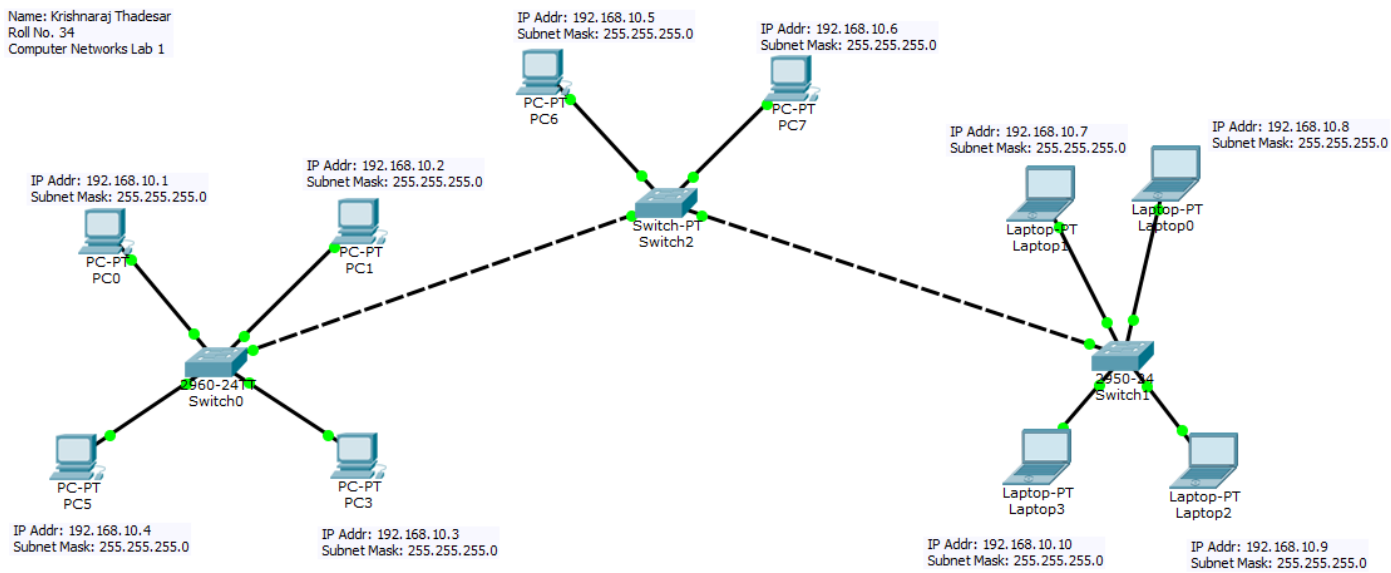
6 Platform

Operating System: Arch Linux x86-64
IDEs or Text Editors Used: Visual Studio Code
Programs Used: Cisco Packet Tracer v6.0.1

7 Output

```
FastEthernet0 Connection:(default port)

Link-local IPv6 Address.........: FE80::201:C9FF:FEE6:3985
IP Address......................: 192.168.1.1
Subnet Mask.....................: 255.255.255.0
Default Gateway.................: 0.0.0.0

PC>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time=1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=17ms TTL=128
Reply from 192.168.1.2: bytes=32 time=0ms TTL=128
Reply from 192.168.1.2: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.1.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 17ms, Average = 4ms
```

8 Connection Screenshot



9 Conclusion

A local area network was successfully created, deployed and tested on a simulator. The concept behind the Local area network was understood in detail. The various types of cables used to connect the devices were also used and explained. Commands to test computers on a network were also executed successfully. Various computers can be connected with each other and communicate seamlessly with the help of switches, Network Interface Cards, Computers and Straight as well as twisted Ethernet Cables. in a local area network.