EXPT NO :
DATE :

ANALYSE THE PERFORMANCE OF HTTP IN TCP/UDP IN NETWORK THROUGH THE SIMULATOR

AIM:

To analyse the performance of HTTP in TCP/UDP in network through the simulator.

SOFTWARE REQUIREMENTS:

CISCO Packet Tracer

THEORY:

The Transmission Control Protocol (TCP) is one of the main protocols of the Internet protocol suite. It originated in the initial network implementation in which it complemented the Internet Protocol (IP). Therefore, the entire suite is commonly referred to as TCP/IP. TCP provides reliable, ordered, and error-checked delivery of a stream of octets (bytes) between applications running on hosts communicating by an IP network. Major Internet applications such as the World Wide Web, email, remote administration, and file transfer rely on TCP.

Applications that do not require reliable data stream service may use the User Datagram Protocol (UDP), which provides a connectionless datagram service that emphasizes reduced latency over reliability.

The Hypertext Transfer Protocol (HTTP) is an application layer protocol in the Internet protocol suite model for distributed, collaborative, hypermedia information systems. HTTP is the foundation of data communication for the World Wide Web, where hypertext documents include hyperlinks to other resources that the user can easily access, for example by a mouse click or by tapping the screen in a web browser. HTTP provides multiple authentication schemes such as basic access authentication and digest access authentication which operate via a challenge–response mechanism whereby the server identifies and issues a challenge before serving the requested content.

HTTP provides a general framework for access control and authentication, via an extensible set of challenge–response authentication schemes, which can be used by a server to challenge a client request and by a client to provide authentication information

PROCEDURE:

Introduction to the Packet Tracer Interface using a Hub Topology

Step 1: Start Packet Tracer and Entering Simulation Mode

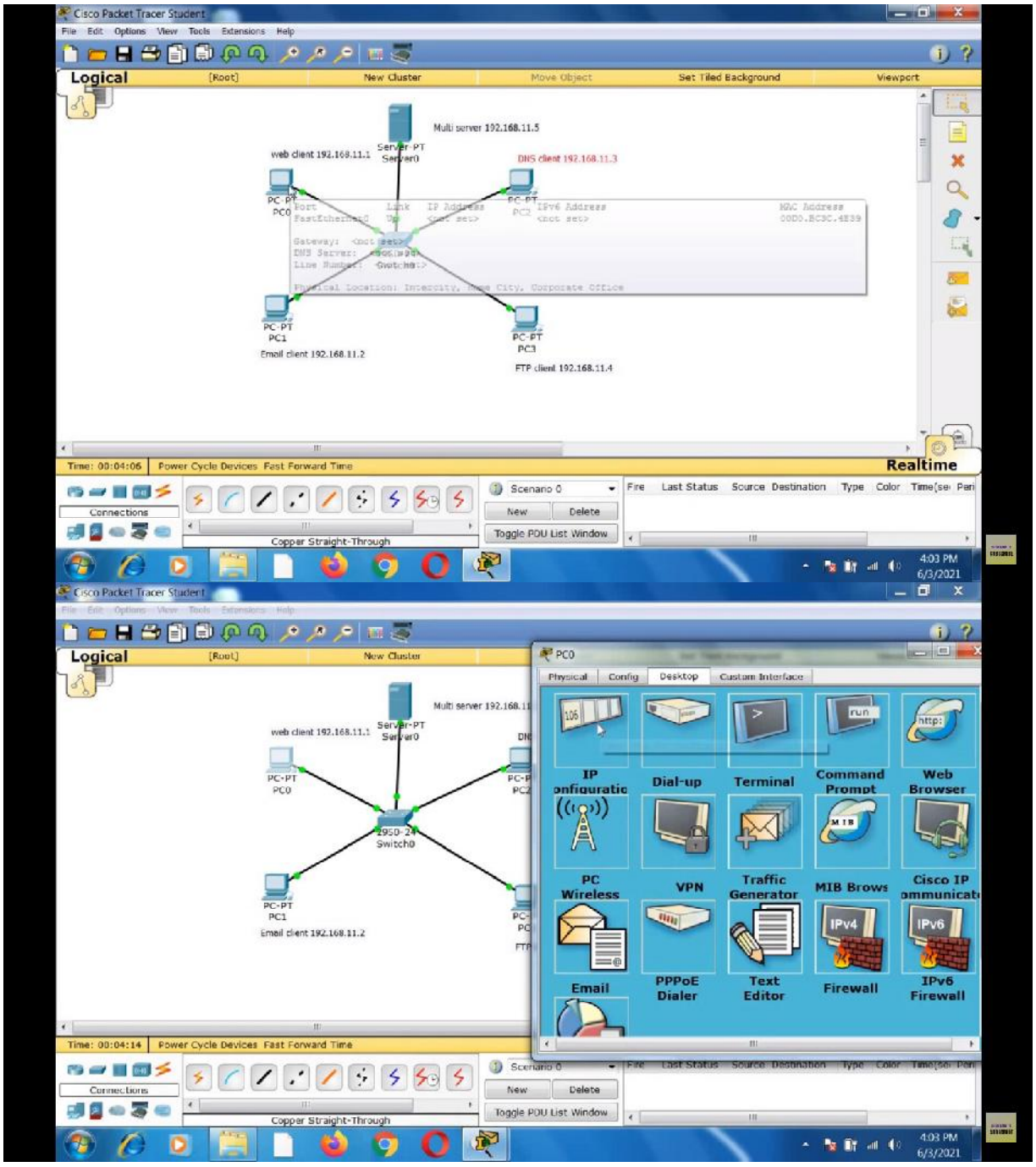
Step 2: Choosing Devices and Connections

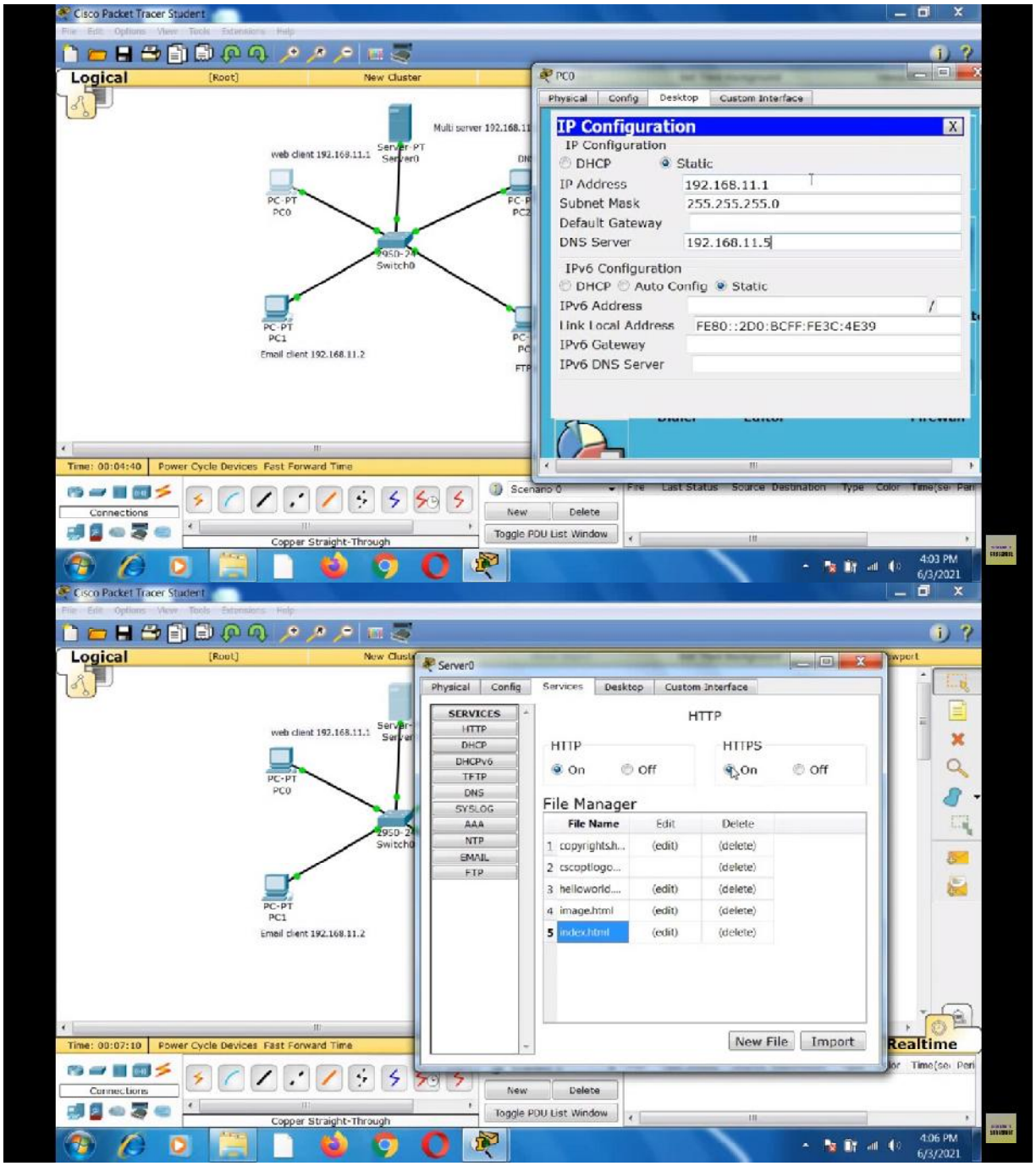
Step 3: Building the Topology – Adding Hosts

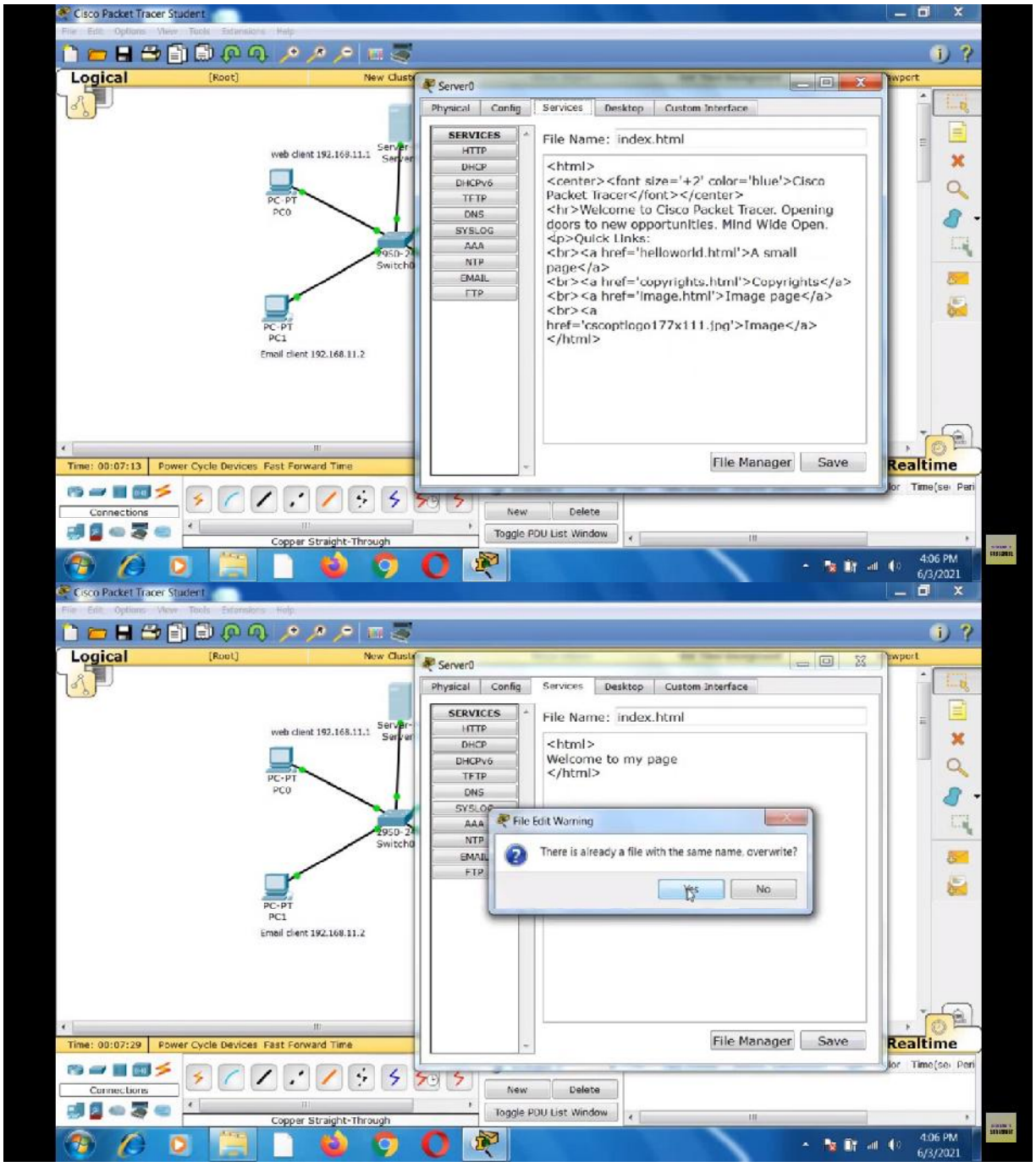
Step 4: Building the Topology – Connecting the Hosts to Hubs and Switches

Step 5: Configuring IP Addresses and Subnet Masks on the Hosts

Step 6: Connecting Hub0 to Switch0


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Multi server 192.168.11.5
Server-PT Server0
web client 192.168.11.1
DNS client 192.168.11.3
PC-PT PC0
PC-PT PC2
2950-24 Switch0
PC-PT PC1
Email client 192.168.11.2
PC-PT PC3
FTP client 192.168.11.4
Time: 00:04:06
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(se
4:03 PM
6/3/2021
PC0
Physical
Config
Desktop
Custom Interface
IP Configuration
Dial-up
Terminal
Command Prompt
Web Browser
PC Wireless
VPN
Traffic Generator
MIB Brows
Cisco IP ommunicat
Email
PPPoE Dialer
Text Editor
Firewall
IPv6 Firewall
Time: 00:04:14


Cisco Packet Tracer Student
Logical
[Root]
New Cluster
PC0
Physical
Config
Desktop
Custom Interface
IP Configuration
IP Configuration
DHCP
Static
IP Address
192.168.11.1
Subnet Mask
255.255.255.0
Default Gateway
DNS Server
192.168.11.5
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address
FE80::2D0:BCFF:FE3C:4E39
IPv6 Gateway
IPv6 DNS Server
web client 192.168.11.1
PC-PT
PC0
Switch0
PC-PT
PC1
Email client 192.168.11.2
Time: 00:04:40
Power Cycle Devices Fast Forward Time
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
4:03 PM
6/3/2021
Server0
Services
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
HTTPS
On
Off
File Manager
File Name
Edit
Delete
1 copyrights.h... (edit) (delete)
2 cscoptlogo... (delete)
3 helloworld.... (edit) (delete)
4 image.html (edit) (delete)
5 index.html (edit) (delete)
New File
Import
Time: 00:07:10
Realtime
4:06 PM
6/3/2021

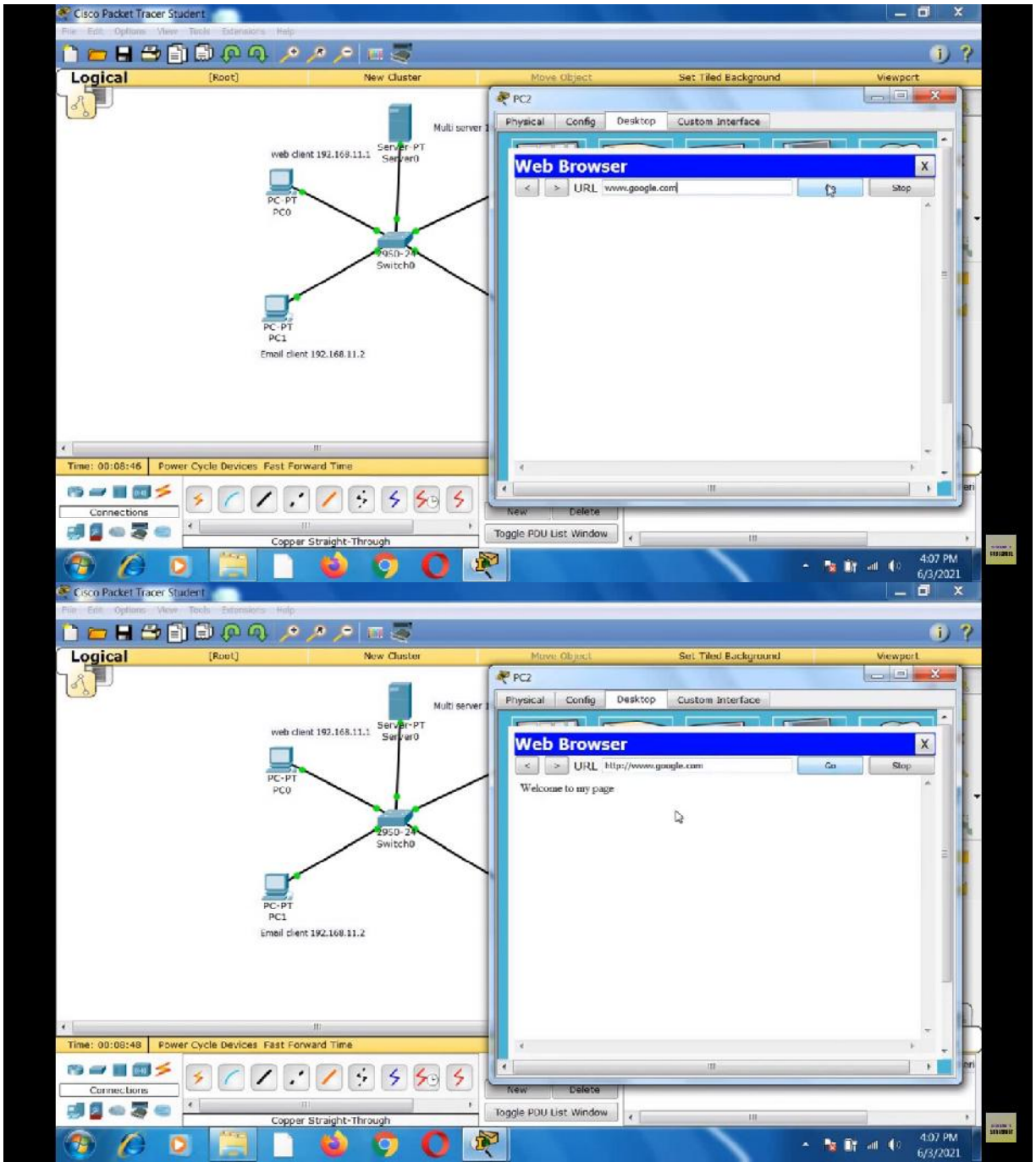

Cisco Packet Tracer Student
Logical
[Root]
Server0
Physical
Config
Services
Desktop
Custom Interface
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
File Name: index.html
<html>
Cisco Packet Tracer
<hr>Welcome to Cisco Packet Tracer. Opening doors to new opportunities. Mind Wide Open.
<p>Quick Links:

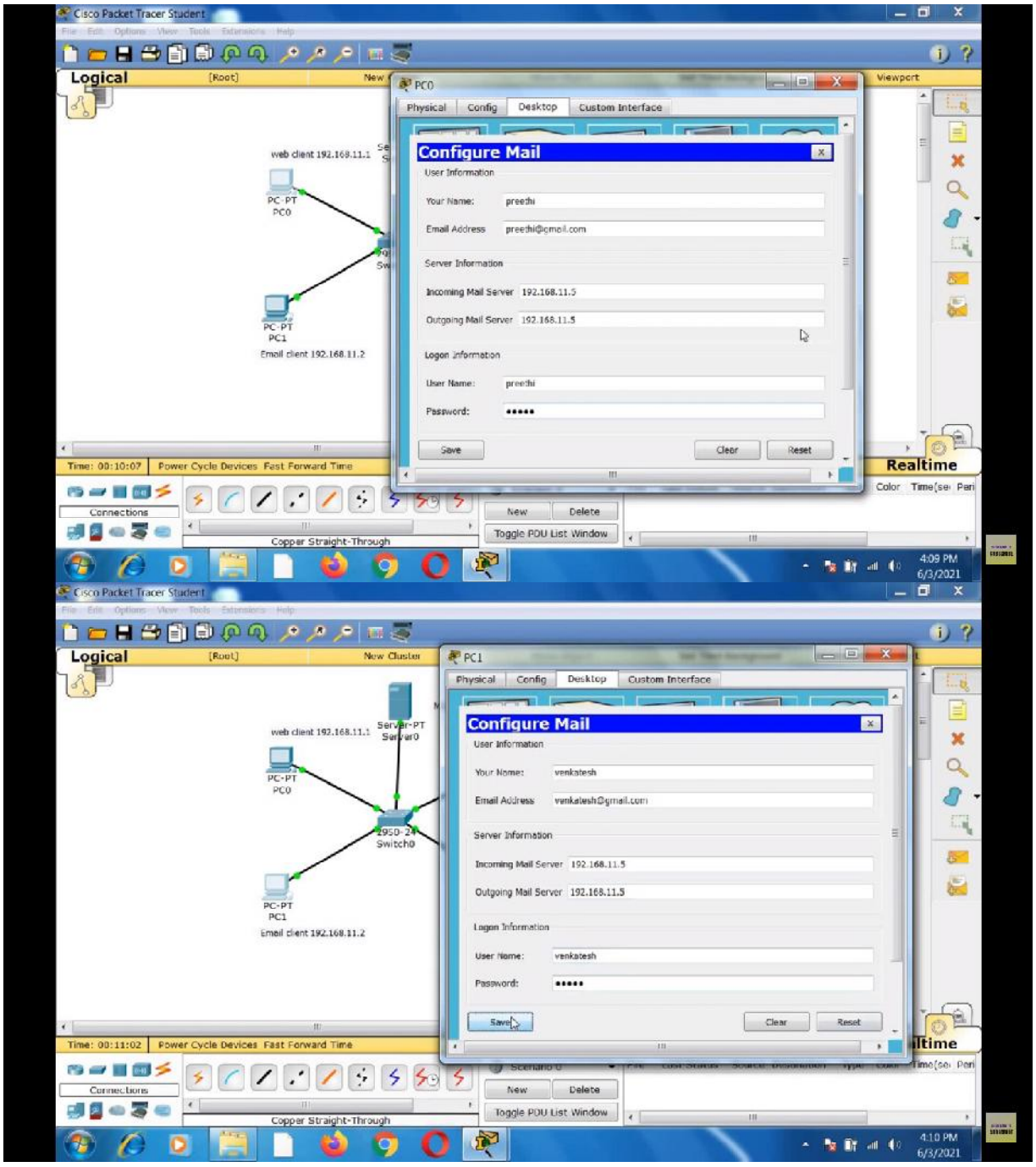
A small page

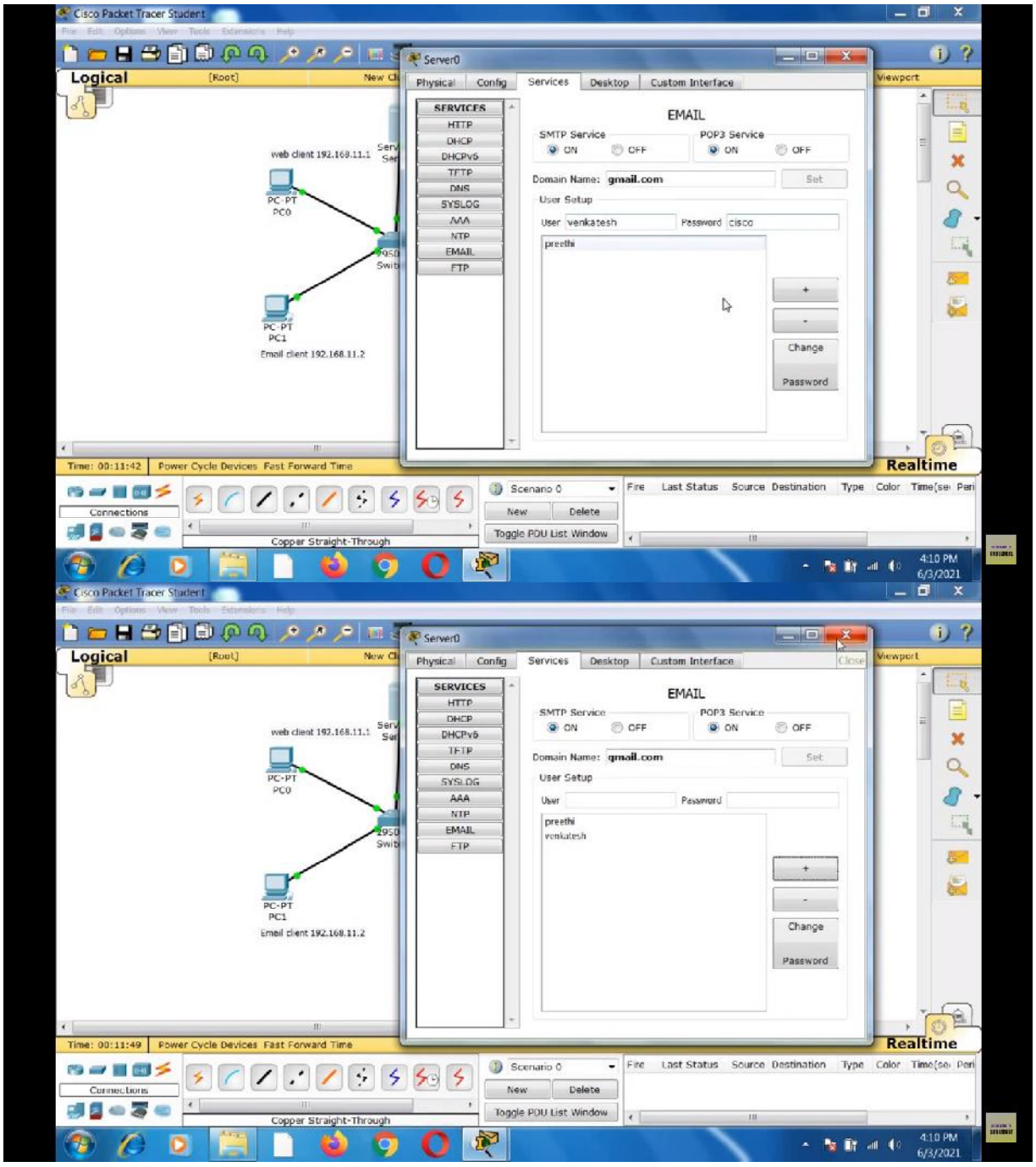
Copyrights

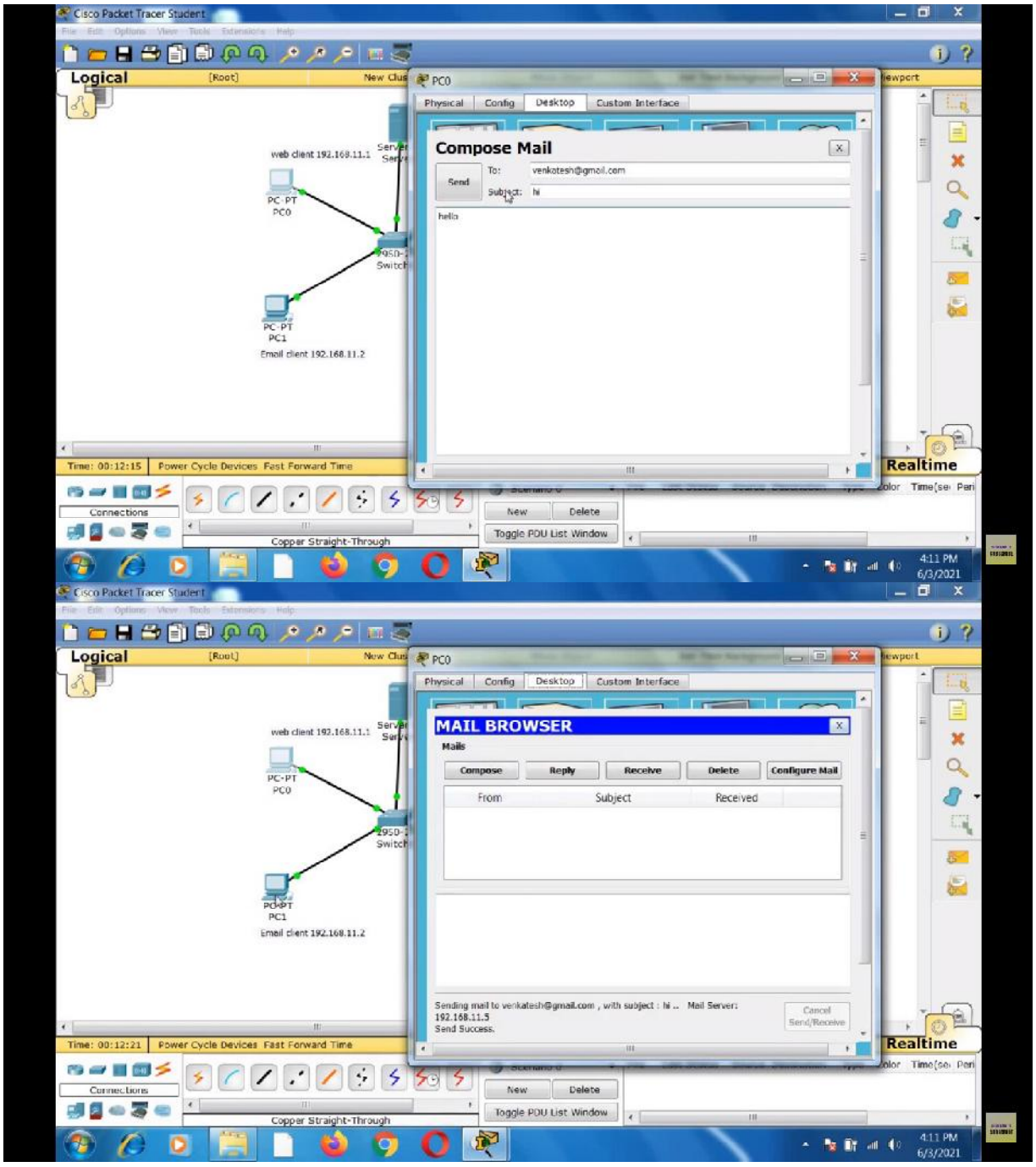
Image page

Image
</html>
File Manager
Save
web client 192.168.11.1
PC-PT PC0
PC-PT PC1
Email client 192.168.11.2
Time: 00:07:13
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:06 PM
6/3/2021
Cisco Packet Tracer Student
Logical
[Root]
Server0
Physical
Config
Services
Desktop
Custom Interface
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
AAA
NTP
FTP
File Name: index.html
<html>
Welcome to my page
</html>
File Edit Warning
There is already a file with the same name. overwrite?
Yes
No
File Manager
Save
web client 192.168.11.1
PC-PT PC0
PC-PT PC1
Email client 192.168.11.2
Time: 00:07:29
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:06 PM
6/3/2021


Cisco Packet Tracer Student
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
PC2
Physical
Config
Desktop
Custom Interface
Web Browser
URL
www.google.com
Stop
Server-PT
Server0
Multi server
web client 192.168.11.1
PC-PT
PC0
2950-24
Switch0
PC-PT
PC1
Email client 192.168.11.2
Time: 00:08:46
Power Cycle Devices
Fast Forward Time
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:07 PM
6/3/2021
Cisco Packet Tracer Student
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
PC2
Physical
Config
Desktop
Custom Interface
Web Browser
URL
http://www.google.com
Go
Stop
Welcome to my page
Server-PT
Server0
Multi server
web client 192.168.11.1
PC-PT
PC0
2950-24
Switch0
PC-PT
PC1
Email client 192.168.11.2
Time: 00:08:48
Power Cycle Devices
Fast Forward Time
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:07 PM
6/3/2021


Cisco Packet Tracer Student
Logical
[Root]
PC0
Physical
Config
Desktop
Custom Interface
Configure Mail
User Information
Your Name: preethi
Email Address: preethi@gmail.com
Server Information
Incoming Mail Server: 192.168.11.5
Outgoing Mail Server: 192.168.11.5
Logon Information
User Name: preethi
Password: *****
Save
Clear
Reset
web client 192.168.11.1
PC-PT PC0
PC-PT PC1
Email client 192.168.11.2
Time: 00:10:07
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:09 PM
6/3/2021
Cisco Packet Tracer Student
Logical
[Root]
New Cluster
PC1
Physical
Config
Desktop
Custom Interface
Configure Mail
User Information
Your Name: venkatesh
Email Address: venkatesh@gmail.com
Server Information
Incoming Mail Server: 192.168.11.5
Outgoing Mail Server: 192.168.11.5
Logon Information
User Name: venkatesh
Password: *****
Save
Clear
Reset
Server-PT Server0
web client 192.168.11.1
PC-PT PC0
2950-24 Switch0
PC-PT PC1
Email client 192.168.11.2
Time: 00:11:02
Power Cycle Devices Fast Forward Time
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:10 PM
6/3/2021


Cisco Packet Tracer Student
Logical
[Root]
Server0
Physical
Config
Services
Desktop
Custom Interface
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
EMAIL
SMTP Service
ON
OFF
POP3 Service
ON
OFF
Domain Name: gmail.com
Set
User Setup
User venkatesh
Password cisco
preethi
+
-
Change
Password
web client 192.168.11.1
PC-PT
PC0
PC-PT
PC1
Email client 192.168.11.2
Time: 00:11:42
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
4:10 PM
6/3/2021
Cisco Packet Tracer Student
Logical
[Root]
Server0
Physical
Config
Services
Desktop
Custom Interface
Close
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
EMAIL
SMTP Service
ON
OFF
POP3 Service
ON
OFF
Domain Name: gmail.com
Set
User Setup
User
Password
preethi
venkatesh
+
-
Change
Password
web client 192.168.11.1
PC-PT
PC0
PC-PT
PC1
Email client 192.168.11.2
Time: 00:11:49
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
4:10 PM
6/3/2021


Cisco Packet Tracer Student
Logical
[Root]
PC0
Physical
Config
Desktop
Custom Interface
Compose Mail
Send
To:
venkatesh@gmail.com
Subject:
hi
hello
web client 192.168.11.1
PC-PT
PC0
PC-PT
PC1
Email client 192.168.11.2
Time: 00:12:15
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:11 PM
6/3/2021
Cisco Packet Tracer Student
Logical
[Root]
PC0
Physical
Config
Desktop
Custom Interface
MAIL BROWSER
Mails
Compose
Reply
Receive
Delete
Configure Mail
From
Subject
Received
Sending mail to venkatesh@gmail.com , with subject : hi ... Mail Server: 192.168.11.5
Send Success.
Cancel Send/Receive
web client 192.168.11.1
PC-PT
PC0
PC-PT
PC1
Email client 192.168.11.2
Time: 00:12:21
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:11 PM
6/3/2021

VIVA QUESTION AND ANSWERS

1. What is HTTP?

2. What do you understand by an HTTP request and HTTP response?

3. What is secure HTTP?

4. Define the header files in the HTTP.

EXPT NO :
DATE :

DEVELOP CLIENT SERVER BASED TCP APPLICATIONS USING SOCKET PROGRAMMING

AIM:

To write a java program to implement chat client and server using TCP Sockets

COMPONENTS AND EQUIPMENTS REQUIRED:

PC with Java JDK Installed – 2 Nos

ALGORITHM:

SERVER

1. **C**reate a server socket and bind it to port.
2. Listen for new connection and when a connection arrives,accept it.
3. Read Client"s message and display it.
4. Get a message from user and send it to client
5. Repeat steps 3-4 until the client sends “end”
6. Close all streams
7. Close the server and client socket.

CLIENT

1. Create a client socket and connect it to the server"s port number.
2. Get a message from user and send it to server.
3. Read server"s response and display it
4. Repeat steps 2-3 until chat is terminated with “end” message.
5. Close all input/output streams.
6. Close the client socket.

PROGRAM

SERVER

```
import java.net.*;
 import java.io.*;
public class TCPServer
{
  public static void main(String s[])throws IOException
  {
    // Initialising the ServerSocket
      ServerSocket sok = new ServerSocket(3128);
   // Gives the Server Details Machine name, Port number
      System.out.println("Server Started :"+sok);
   // makes a socket connection to particular client after
        // which two way communication take place
     Socket so = sok.accept();
     System.out.println("Client Connected :"+ so);
     InputStream in = so.getInputStream();
     OutputStream os = so.getOutputStream();
     PrintWriter pr = new PrintWriter(os);
BufferedReader br = new BufferedReader(new InputStreamReader(in));
BufferedReader br1 = new BufferedReader(new InputStreamReader(System.in));
while(true)
     {
        System.out.println("Msg frm client: "+ br.readLine());
 System.out.print("Msg to client: ");
        pr.println(br1.readLine());
        pr.flush();
     }  }
}
```

CLIENT

```
import java.net.*;
import  java.io.*;
public class TCPClient
{
 public static void main(String s[])throws IOException
 {
  Socket sok = new Socket("localhost",3128);
  InputStream in = sok.getInputStream();
  OutputStream ou = sok.getOutputStream();
  PrintWriter pr = new PrintWriter(ou);
  BufferedReader br1 = new BufferedReader(new InputStreamReader(in));
  BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
  while(true)
  {
   System.out.print("Msg to Server:");
   pr.println(br.readLine());
   pr.flush();
   System.out.println("Msg frm server: "+br1.readLine());
  }
 }
}
```

OUTPUT:

VIVA QUESTION AND ANSWERS

1. What is socket in TCP?

2. Which socket is designed for TCP?

3. What does a socket consist of?

4. What is socket and why is it used?

RESULT:

EXPT NO :
DATE :

DEVELOP CLIENT SERVER BASED UDP APPLICATIONS USING SOCKET PROGRAMMING.

AIM

To write a java program to implement chat client and server using UDP Sockets

COMPONENTS AND EQUIPMENTS REQUIRED:

PC with Java JDK Installed – 2 Nos

ALGORITHM:

SERVER

1. **C**reate a server socket and bind it to port.
2. Listen for new connection and when a connection arrives, accept it.
3. Read Clients message and display it.
4. Get a message from user and send it to client
5. Repeat steps 3-4 until the client sends “end”
6. Close all streams
7. Close the server and client socket.

CLIENT

1. Create a client socket and connect it to the servers port number.
2. Get a message from user and send it to server.
3. Read servers response and display it
4. Repeat steps 2-3 until chat is terminated with “end” message.
5. Close all input/output streams.
6. Close the client socket.

CLIENT

```
import java.io.*;
import java.net.*;
class UDPClient
{
  public static void main(String args[]) throws Exception
  {
    BufferedReader inFromUser =
      new BufferedReader(new InputStreamReader(System.in));
    DatagramSocket clientSocket = new DatagramSocket();
    InetAddress IPAddress = InetAddress.getByName("localhost");
    byte[] sendData = new byte[1024];
    byte[] receiveData = new byte[1024];
    String sentence = inFromUser.readLine();
    sendData = sentence.getBytes();
    DatagramPacket sendPacket = new DatagramPacket(sendData, sendData.length, IPAddress,
    9876);
    clientSocket.send(sendPacket);
    DatagramPacket receivePacket = new DatagramPacket(receiveData, receiveData.length);
    clientSocket.receive(receivePacket);
    String modifiedSentence = new String(receivePacket.getData());
    System.out.println("FROM SERVER:" + modifiedSentence);
    clientSocket.close();
  }
}
```

SERVER

```
import java.io.*;
import java.net.*;
 class UDPServer
{
```

```
  public static void main(String args[]) throws Exception
    {
      DatagramSocket serverSocket = new DatagramSocket(9876);
        byte[] receiveData = new byte[1024];
        byte[] sendData = new byte[1024];
        while(true)
          {
            DatagramPacket receivePacket = new DatagramPacket(receiveData,
receiveData.length);
            serverSocket.receive(receivePacket);
            String sentence = new String( receivePacket.getData());
            System.out.println("RECEIVED: " + sentence);
            InetAddress IPAddress = receivePacket.getAddress();
            int port = receivePacket.getPort();
            String capitalizedSentence = sentence.toUpperCase();
            sendData = capitalizedSentence.getBytes();
            DatagramPacket sendPacket =
            new DatagramPacket(sendData, sendData.length, IPAddress, port);
            serverSocket.send(sendPacket);
          }
    }
}
```

VIVA QUESTION AND ANSWERS

1. Differentiate between TCP and UDP protocol.

2. Differentiate between Connectionless and connection oriented connection.

3. How do you implement reliable transmission in UDP protocol?

4. Explain how applications coexist between TCP and UDP.

RESULT:

EXPT NO :
DATE :

Study of Packet Tracer

AIM:

To study packer tracker for implementing various networking protocols

THEORY

Packet Tracer

Packet Tracer is a protocol simulator developed by Dennis Frezzo and his team at Cisco Systems. Packet Tracer (PT) is a powerful and dynamic tool that displays the various protocols used in networking, in either Real Time or Simulation mode. This includes layer 2 protocols such as Ethernet and PPP, layer 3 protocols such as IP, ICMP, and ARP, and layer 4 protocols such as TCP and UDP. Routing protocols can also be traced.

Before starting to follow the procedures below you should:

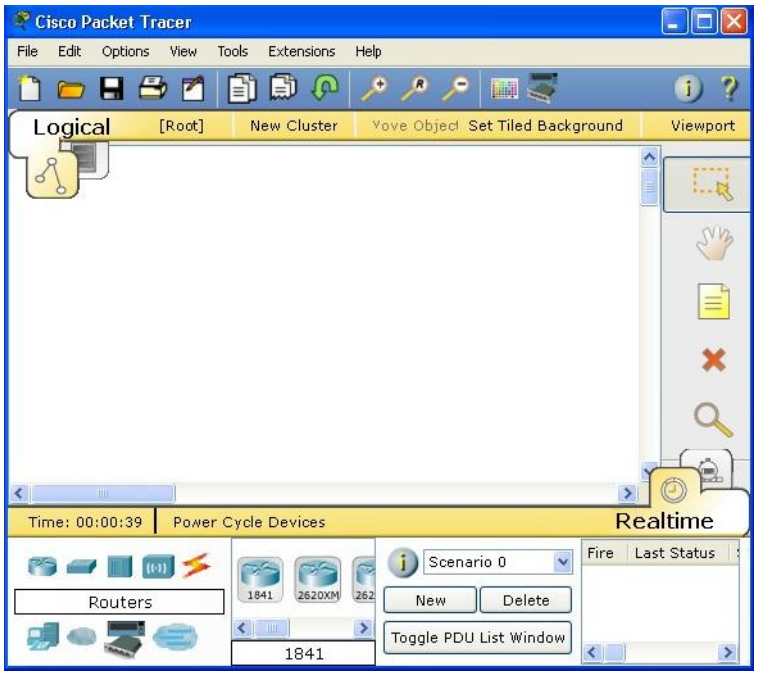
1. Download Packet Tracer Simulation Tool on your PC.
2. To get familiar with the Packet Tracer environment, watch this video named "Interface Overview" from the Help Tutorials.

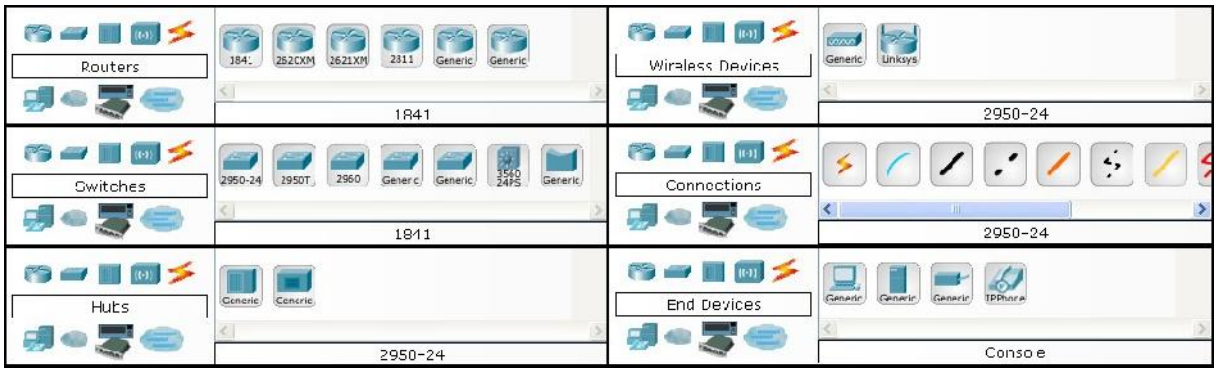
Introduction to the Packet Tracer Interface

Step 1: Start Packet Tracer and Entering Simulation Mode

Step 2 : Choosing Devices and Connections

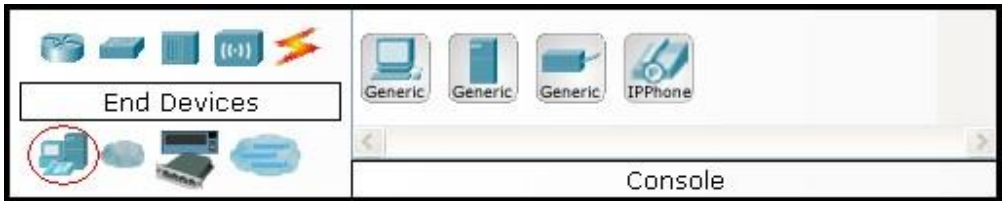
We will begin building our network topology by selecting devices and the media in which to connect them. Several types of devices and network connections can be used. For this lab we will keep it simple by using End Devices, Switches, Hubs, and Connections. Single click on each group of devices and connections to display the various choices.





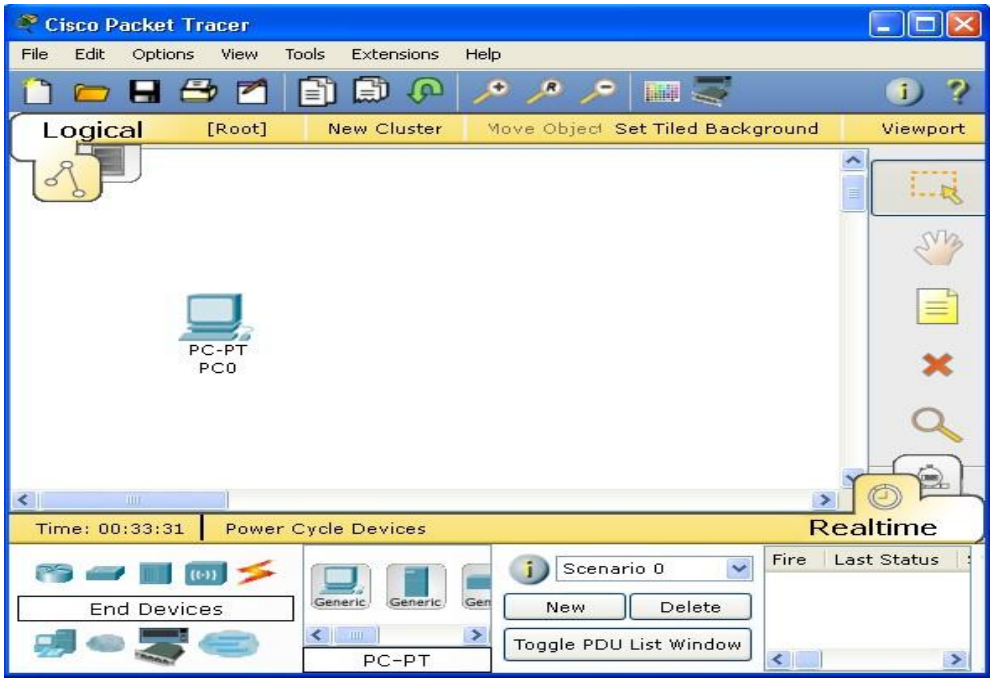
Step 3: Building the Topology – Adding Hosts

Single click on the End Devices.

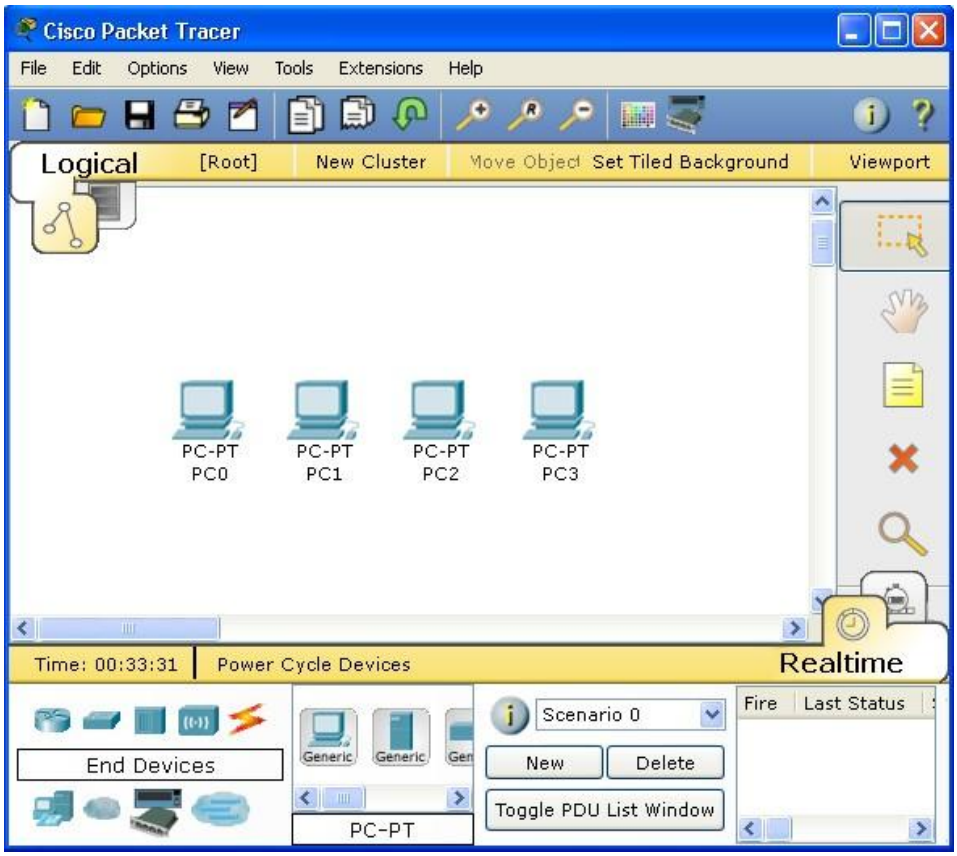


Single click on the Generic host.

Move the cursor into topology area. You will notice it turns into a plus "+" sign. Single click in the topology area and it copies the device.

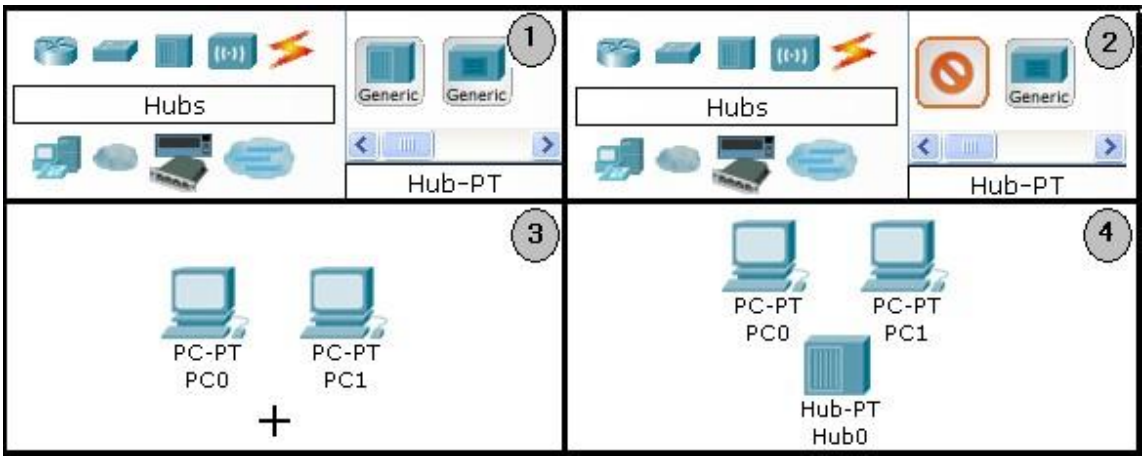


Add three more hosts.



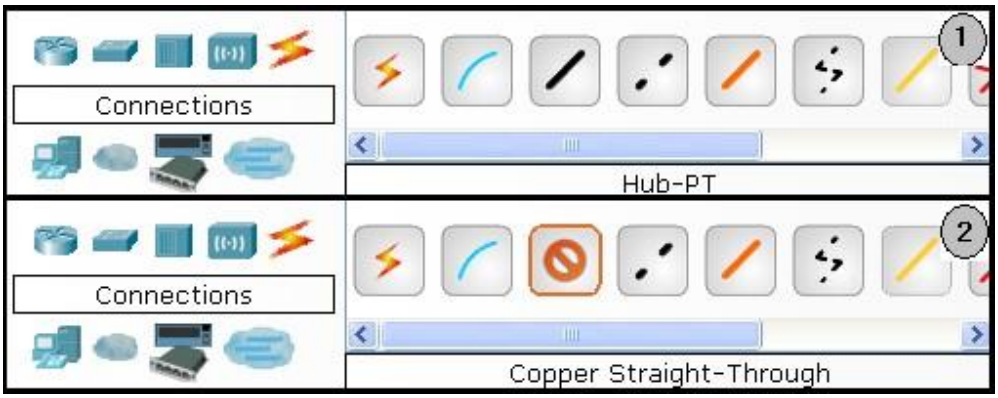
Step 4: Building the Topology – Connecting the Hosts to Hubs and Switches

Adding a Hub: Select a hub, by clicking once on Hubs and once on a Generic hub



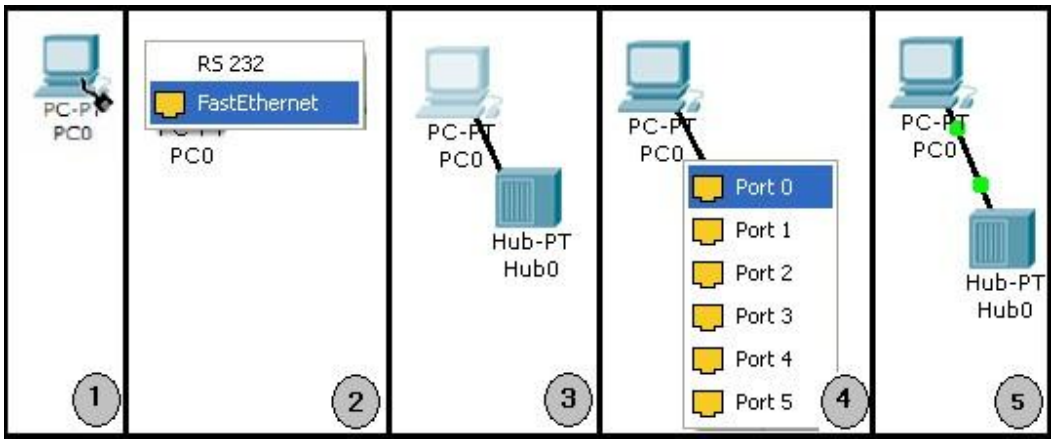
Connect PC0 to Hub0 by first choosing Connections.

Click once on the Copper Straight-through cable.

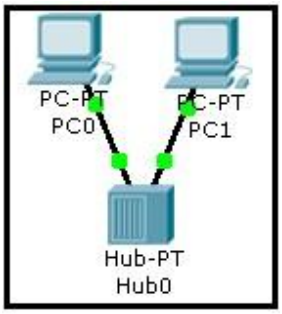


Perform the following steps to connect PC0 to Hub0:

1. Click once on PC0
2. Choose Fast Ethernet
3. Drag the cursor to Hub0
4. Click once on Hub0 and choose Port0
5. Notice the green link lights on both the PC0 Ethernet NIC and the Hub0 Port0 showing that the link is active.

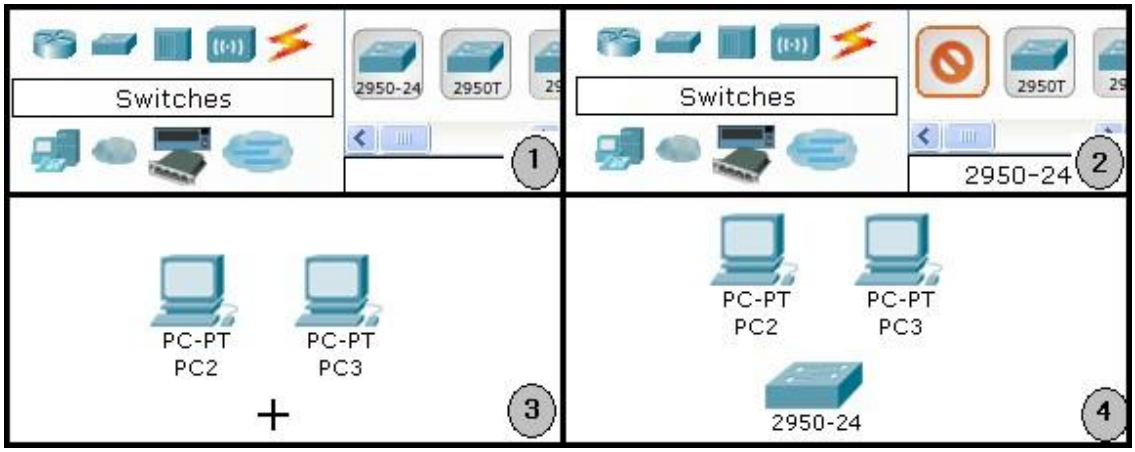


Repeat the steps above for PC1 connecting it to Port1 on Hub0. (The actual hub port you choose does not matter.)



Adding a Switch

Select a switch, by clicking once on Switches and once on a 2950-24 switch. Add the switch by moving the plus sign "+" below PC2 and PC3 and click once.

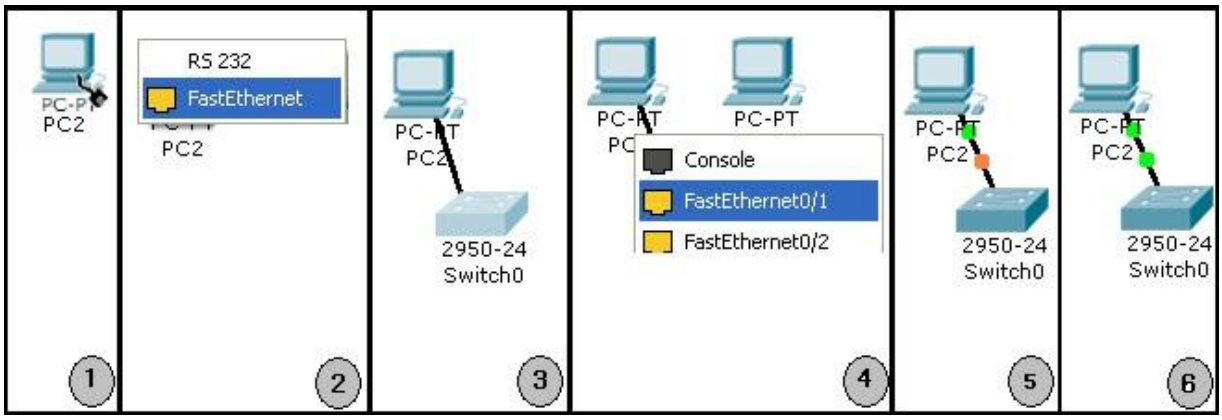


Connect PC2 to Switch0 by first choosing Connections.

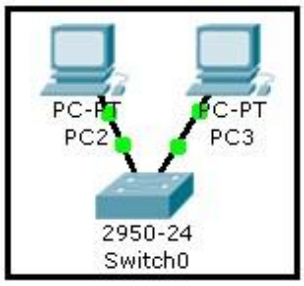
Click once on the Copper Straight-through cable.

Perform the following steps to connect PC2 to Switch0:

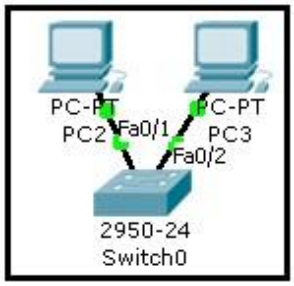
1. Click once on PC2
2. Choose Fast Ethernet
3. Drag the cursor to Switch0
4. Click once on Switch0 and choose FastEthernet0/1
5. Notice the green link lights on PC2 Ethernet NIC and amber light Switch0 FastEthernet 0/1 port. The switch port is temporarily not forwarding frames, while it goes through the stages for the Spanning Tree Protocol (STP) process.
6. After a about 30 seconds the amber light will change to green indicating that the port has entered the forwarding stage. Frames can now be forwarded out the switch port.



Repeat the steps above for PC3 connecting it to Port3 on switch0 on port FastEthernet0/2. (The actual switch port you choose does not matter.)

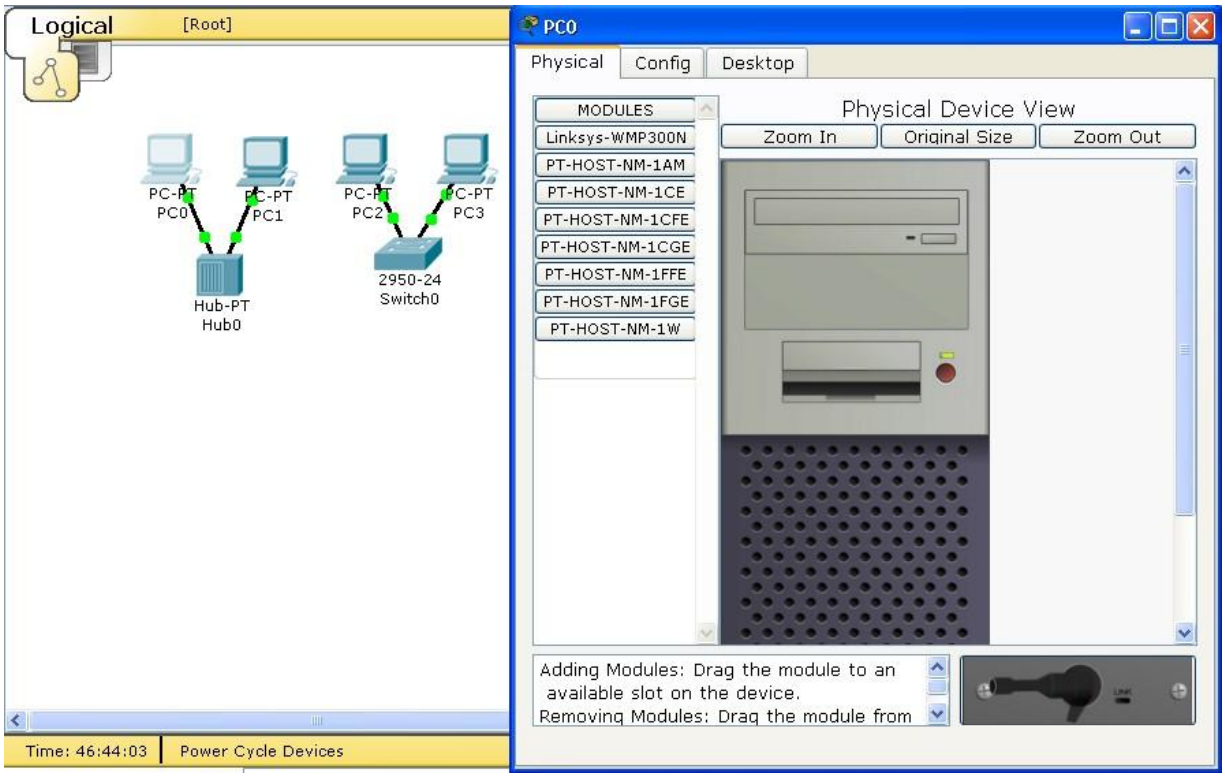


Move the cursor over the link light to view the port. Fa means Fast Ethernet, 100 Mbps Ethernet



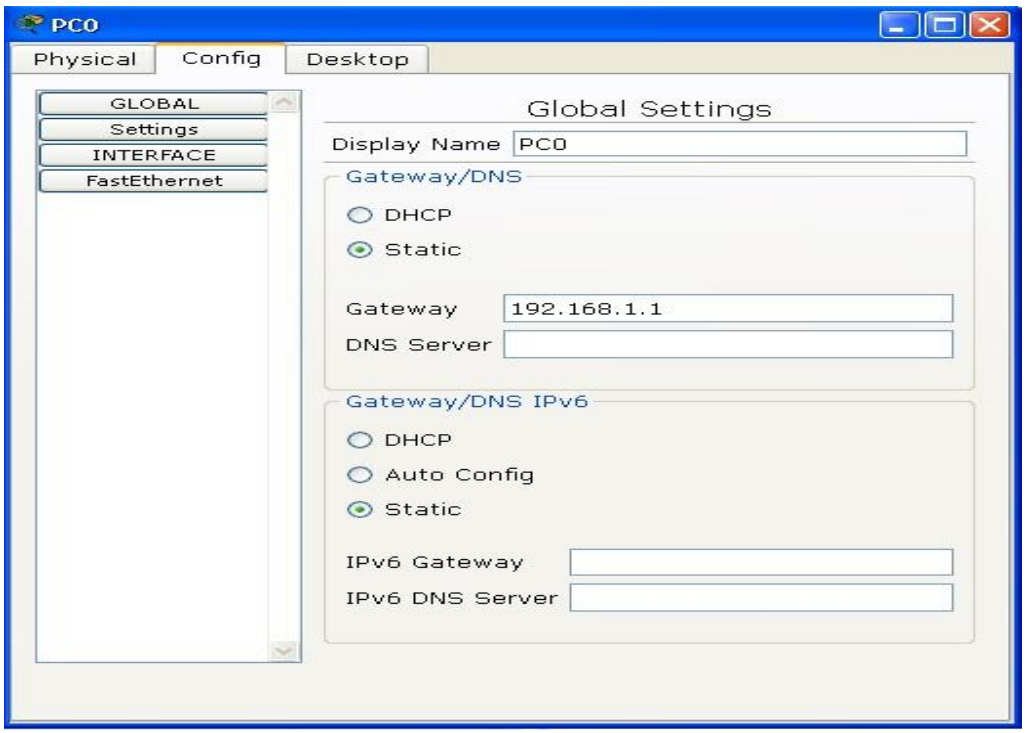
Step 5: Configuring IP Addresses and Subnet Masks on the Hosts

Before we can communicate between the hosts we need to configure IP Addresses and Subnet Masks on the devices.

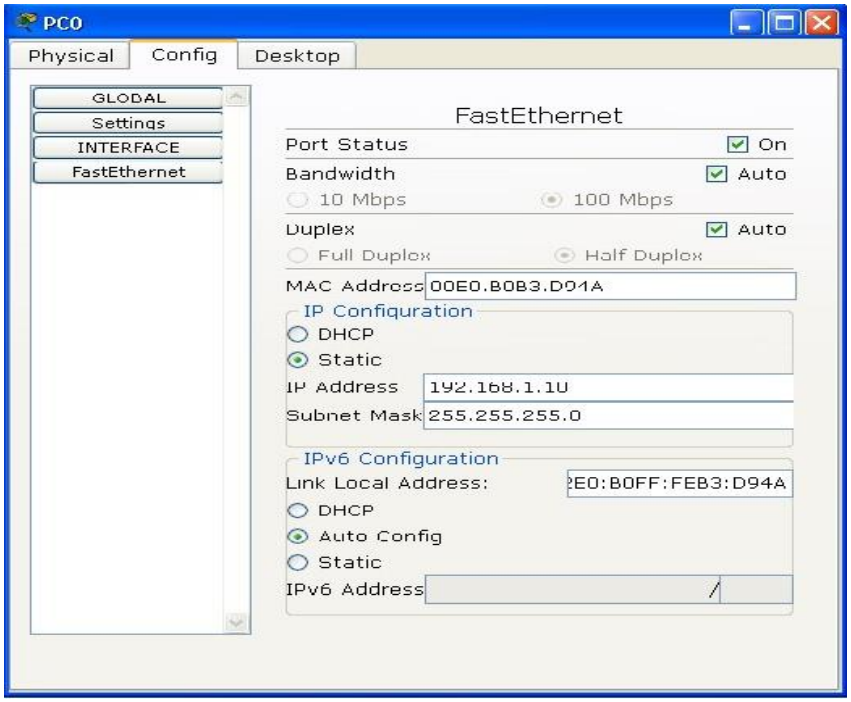


Click once on PC0.

Choose the Config tab. It is here that you can change the name of PC0. It is also here where you would enter a Gateway IP Address, also known as the default gateway. We will discuss this later, but this would be the IP address of the local router. If you want, you can enter the IP Address 192.168.1.1.



Click on FastEthernet. Although we have not yet discussed IP Addresses, add the IP Address to 192.168.1.10. Click once in the Subnet Mask field to enter the default Subnet Mask. You can leave this at 255.255.255.0. We will discuss this later.



Hub: If the host is connected to a hub, then the Ethernet NIC on the host will choose Half Duplex. Switch: If the host is connected to a switch, and the switch port is configured as Full Duplex (or Autonegotiation), then the Ethernet NIC on the host will choose Full Duplex. If the switch port is configured as Half Duplex, then the Ethernet NIC on the host will choose Half Duplex. (Full Duplex is a much more efficient option.) The information is automatically saved when entered.

Repeat these steps for the other hosts. Use the information below for IP Addresses and Subnet Masks.

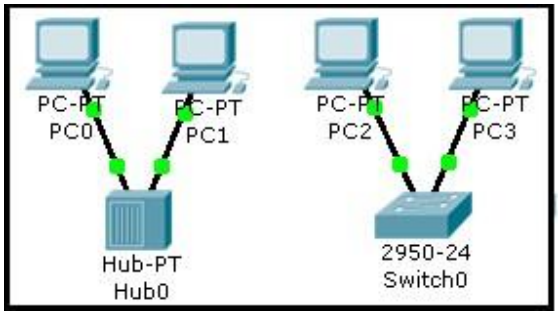
Host	IP Address	Subnet Mask
PC0	192.68.1.10	255.255.255.0
PC1	192.68.1.11	255.255.255.0
PC2	192.68.1.12	255.255.255.0
PC3	192.68.1.13	255.255.255.0

Verify the information: To verify the information that you entered, move the Select tool (arrow) over each host.

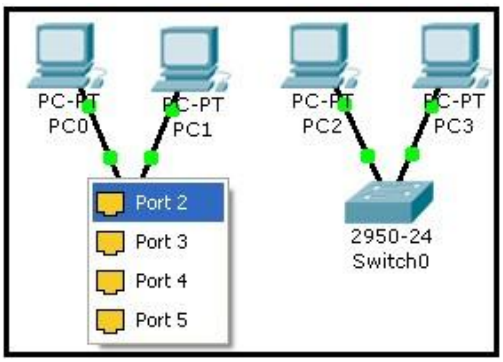
Connecting Hub0 to Switch0

To connect like-devices, like a Hub and a Switch, we will use a Cross-over cable. Click once the Cross-over Cable from the Connections options.

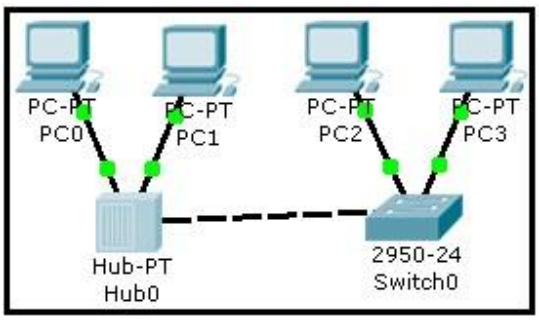
Move the Connections cursor over Hub0 and click once.



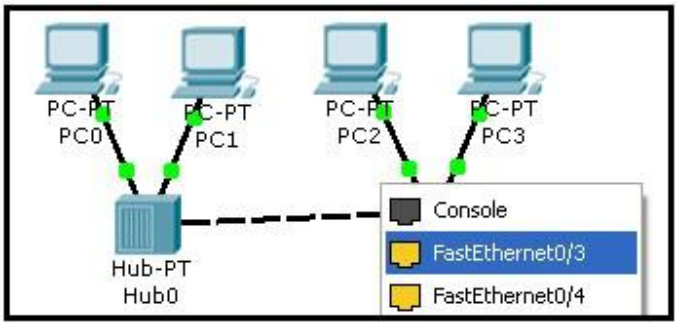
Select Port2 (actual port does not matter).



Move the Connections cursor to Switch0



Click once on Switch0 and choose FastEthernet0/3 (actual port does not matter).



EXPT.NO.	IMPLEMENTATION OF STAR AND RING TOPOLOGY
DATE:	

AIM:

To implement star and ring topology using packet tracer software.

SOFTWARE REQUIREMENTS:

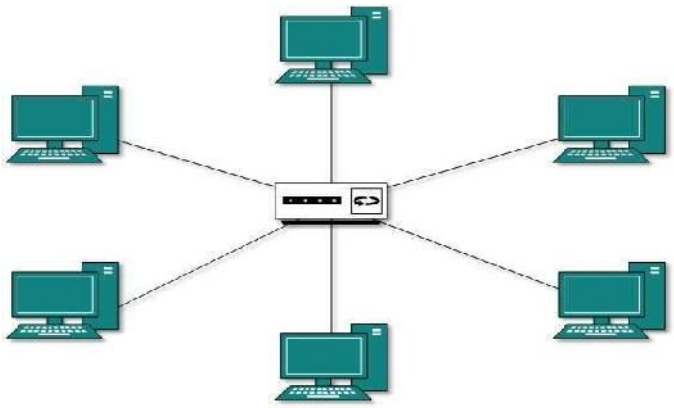
Cisco Packet Tracer

THEORY:

STAR TOPOLOGY:

All hosts in Star topology are connected to a central device, known as hub device, using a point-to-point connection. That is, there exists a point to point connection between hosts and hub. The hub device can be any of the following:

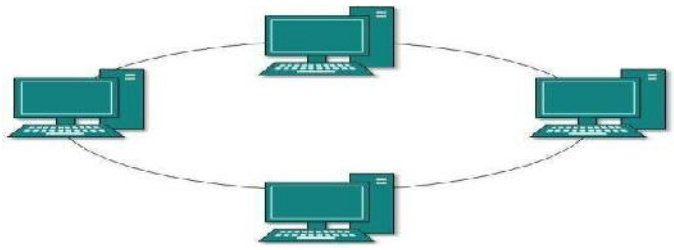
- Layer-1 device such as hub or repeater
- Layer-2 device such as switch or bridge
- Layer-3 device such as router or gateway



As in Bus topology, hub acts as single point of failure. If hub fails, connectivity of all hosts to all other hosts fails. Every communication between hosts, takes place through only the hub.Star topology is not expensive as to connect one more host, only one cable is required and configuration is simple.

RING TOPOLOGY:

In ring topology, each host machine connects to exactly two other machines, creating a circular network structure. When one host tries to communicate or send message to a host which is not adjacent to it, the data travels through all intermediate hosts. To connect one more host in the existing structure, the administrator may need only one more extra cable.



Failure of any host results in failure of the whole ring. Thus, every connection in the ring is a point of failure. There are methods which employ one more backup ring.

PROCEDURE:

1.In cisco packet tracer, open a new project from file menu.
2.Select the required components for the topology and connect them.
3.Configure the IP address for the PC's .
4.Now send the message between any two pc's and check whether the packets are moving from the source PC to the destination PC.
5.Using the command prompt, check the ping and traceroute commands.

OUTPUT:

STAR TOPOLOGY:

RING TOPOLOGY:

VIVA QUESTIONS:

1. Which topology is best star or ring?
2. Why is star topology better than ring?
3. Which topology has the highest reliability?
4. Where is ring topology commonly used?
5. Which cable is used in ring topology?

RESULT:

EX NO:	OBSERVING TCP CONVERSION USING WIRESHARK
DATE:	

AIM :

To analyse TCP packets using wireshark.

SOFTWARE REQUIRED :

Wireshark v 2.2.0,A computer with windows OS.

THEORY :

TRANSMISSION CONTROL PROTOCOL :

Transmission Control Protocol is considered as a reliable protocol. Transmission Control Protocol (TCP) is responsible for breaking up the message (Data from application layer) into TCP Segments and reassembling them at the receiving side. It is not sure that the data reaching at the receiving device is in the same order as the sending side, because of the problems in network or different paths packets flow to the destination. TCP is responsible for keeping the unordered segments in the right order. TCP assures a reliable delivery by resending anything that gets lost while traveling the network. The characteristics of tcp is given below :

Stream Data transfer: Applications working at the Application Layer transfers a contiguous stream of bytes to the bottom layers. It is the duty of TCP to pack this byte stream to packets, known as TCP segments, which are passed to the IP layer for transmission to the destination device. The application does not have to bother to chop the byte stream data packets.

Reliability: The most important feature of TCP is reliable data delivery. In order to provide reliability, TCP must recover from data that is damaged, lost, duplicated, or delivered out of order by the Network Layer. TCP assigns a sequence number to each byte transmitted, and expects a positive acknowledgment (ACK) from the receiving TCP layer. If the ACK is not received within a timeout interval, the data is retransmitted. The receiving TCP uses the sequence numbers to rearrange the TCP segments when they arrive out of order, and to eliminate duplicate TCP segments.

Flow control: Network devices operate at different data rates because of various factors like CPU and available bandwidth. It may happen a sending device to send data at a much faster rate than the receiver can handle. TCP uses a sliding window mechanism for implementing flow control. The number assigned to a segment is called the sequence number and this numbering is actually done at the byte level. The TCP at the receiving device, when sending an ACKback to the sender, also indicates to the TCP at the sending device, the number of bytes it can receive (beyond the last received TCP segment) without causing serious problems in its internal buffers.

Multiplexing: Multitasking achieved through the use of port numbers.

Connections: Before application processes can send data by using TCP, the devices must establish a connection. The connections are made between the port numbers of the sender and the receiver devices. A TCP connection identifies the end points involved in the connection. A socket number is a combination of IP address and port number, which can uniquely identify a connection.

Full duplex: TCP provides for concurrent data streams in both directions.

Connection establishment:

To establish a connection, TCP uses a three-way handshake. Before a client attempts to connect with a server, the server must first bind to and listen at a port to open it up for connections: this is called a passive open. Once the passive open is established, a client may initiate an active open. To establish a connection, the three-way (or 3-step) handshake occurs:

1. **SYN**: The active open is performed by the client sending a SYN to the server. The client sets the segment's sequence number to a random value A.
2. **SYN-ACK**: In response, the server replies with a SYN-ACK. The acknowledgment number is set to one more than the received sequence number i.e. A+1, and the sequence number that the server chooses for the packet is another random number, B.
3. **ACK**: Finally, the client sends an ACK back to the server. The sequence number is set to the received acknowledgement value i.e. A+1, and the acknowledgement number is set to one more than the received sequence number i.e. B+1.

At this point, both the client and server have received an acknowledgment of the connection. The steps 1, 2 establish the connection parameter (sequence number) for one direction and it is acknowledged. The steps 2, 3 establish the connection parameter (sequence number) for the other direction and it is acknowledged. With these, a full-duplex communication is established.

Connection termination:

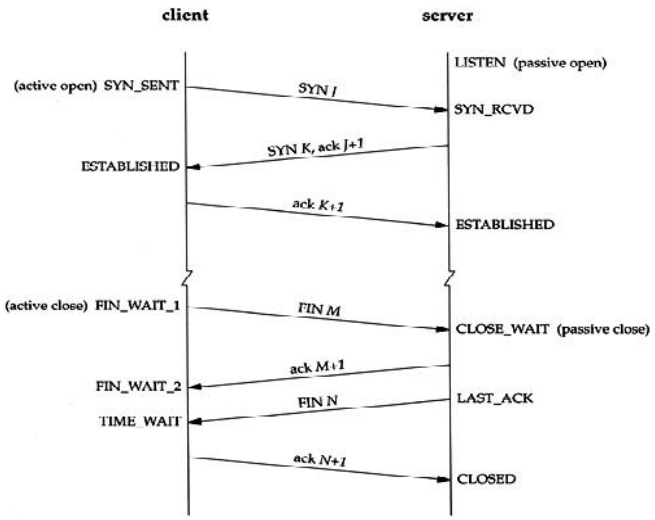


Fig : TCP connection establishment and termination

The connection termination phase uses a four-way handshake, with each side of the connection terminating independently. When an endpoint wishes to stop its half of the connection, it transmits a FIN packet, which the other end acknowledges with an ACK. Therefore, a typical tear-down requires a pair of FIN and ACK segments from each TCP endpoint. After the side that sent the first FIN has responded with the final ACK, it waits for a timeout before finally closing the connection, during which time the local port is unavailable for new connections; this prevents confusion due to delayed packets being delivered during subsequent connections.

A connection can be "half-open", in which case one side has terminated its end, but the other has not. The side that has terminated can no longer send any data into the connection, but the other side can. The terminating side should continue reading the data until the other side terminates as well. It is also possible to terminate the connection by a 3-way handshake, when host A sends a FIN and host B replies with a FIN & ACK (merely combines 2 steps into one) and host A replies with an ACK.

Some host TCP stacks may implement a half-duplex close sequence, as Linux or HP-UX do. If such a host actively closes a connection but still has not read all the incoming data the stack already received from the link, this host sends a RST instead of a FIN. This allows a TCP application to be sure the remote application has read all the data the former sent—waiting the FIN from the remote side, when it actively closes the connection. But the remote TCP stack cannot distinguish between a Connection

Aborting RST and Data Loss RST. Both cause the remote stack to lose all the data received.

TCP SEGMENT STRUCTURE :

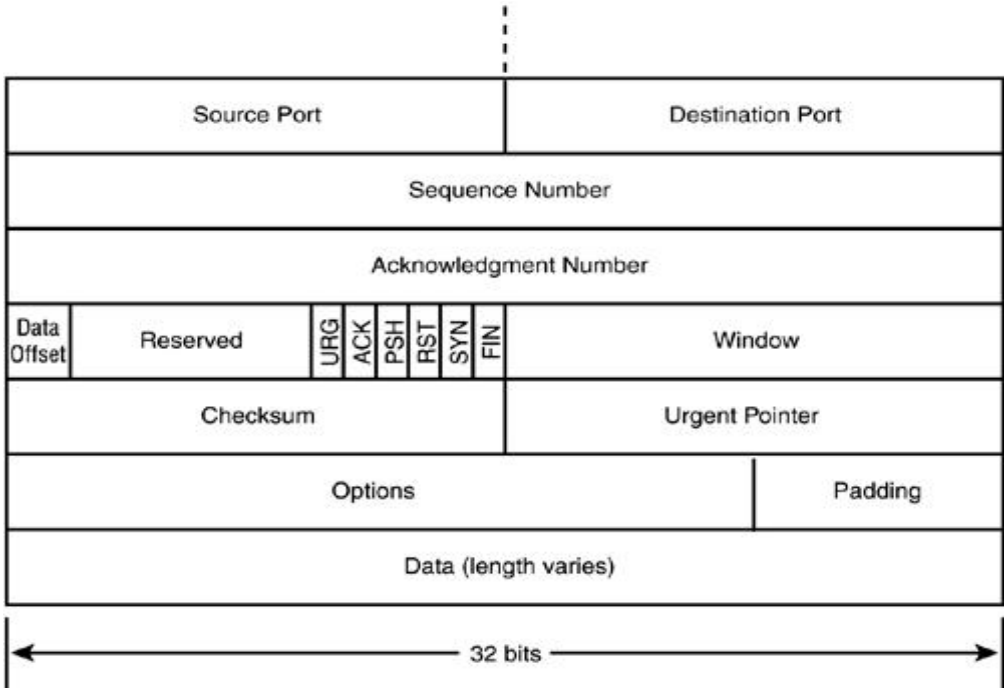


Fig :TCP segment structure

Source and Destination Ports:

Both source and destination ports are 16-bit fields identify protocol ports of the sending and receiving applications. The source and destination port numbers plus source and destination IP addresses in the IP header combine to uniquely identify each TCP connection referred as a socket.

Sequence Number:

Sequence number is a 32-bit wide field identifies the first byte of data in the data area of the TCP segment. We can identify every byte in a data stream by a sequence number.

Acknowledgement Number:

Acknowledge number is also a 32-bit wide field which identifies the next byte of data that the connection expects to receive from the data stream.

Header Length: Header length is a field which consists of 4 bit to specifies the length of the TCP header in 32-bit words. Receiving TCP module can calculate the start of the data area by examining the header length field.

Flags:

URG – URG flag tells the receiving TCP module as it is urgent data

ACK – ACK tells the receiving TCP module that the acknowledge number field contains a valid acknowledgement number

PSH – PSH flag tells the receiving TCP module to immediately send data to the destination application

RST – RST flag asks the receiving TCP module to reset the TCP connection

SYN – SYN flag tells the receiving TCP module to synchronize sequence number

FIN – FIN flag tells the receiving TCP module that the sender has finished sending data

Window Size:

Window size field is a 16-bit wide which tells the receiving TCP module the number of bytes that the sending end id willing to accept. The value in this field specifies the width of the sliding window.

Checksum:

TCP checksum is a 16-bit wide filed includes the TCP data in it's calculations. This field helps the receiving TCP module to detect data corruption. That is, TCP requires the sending TCP module to calculate and include checksums in this field and receiving TCP module to verify checksums when they receive data. The data corruption is detected in this way.

Urgent pointer:

Urgent pointer is a 16-bit wide field specifies a byte location in the TCP data area. It points to the last byte of urgent data in the TCP data area.

Options:

TCP header includes an optional options field like the IP header. During the initial negotiations between two ends of a TCP connection, this field is used with maximum segment size option, which advertise the largest segment that the TCP module expects to receive.

PROCEDURE:

TRANSMISSION CONTROL PROTOCOL (TCP):

OUTPUT :

VIVA QUESTIONS:

1.What is Wireshark TCP?
2.How does Wireshark monitor TCP traffic?
3.How does Wireshark identify TCP packets?
4.How does Wireshark analyze traffic?
5.What causes TCP fast retransmission?

RESULT :

Thus, the TCP packets are analysed using wireshark.

EXP NO:

DATE:

IMPLEMENTING SMART HOUSE AUTOMATION USING CISCO PACKET TRACER

Aim:

To design the smart house automation by using cisco packet tracer.

Software required:

CISCO PACKET TRACER

Procedure:

1. Launch Cisco Packet Tracer and start a new project.
2. Add smart devices (e.g., smart bulbs, plugs, thermostats, cameras) from the IoT category.
3. Add a wireless router to the workspace.
4. Configure the wireless router with SSID and network settings.
5. Connect smart devices to the wireless router using the "Connections" option.
6. Configure each smart device's settings and automation rules.
7. Test the setup in simulation mode, adjusting configurations as needed.

FIG 1. Smart home with IoT

Smart home is a living home that comprise of shrewd item to improve the every home action ahead of time, that can be mechanizing exercises of the home without the contribution of client such checking home condition should be possible by utilizing different sensor (Temperature, Humidity, sound, smoke, twist) at that point ventilate the earth dependent on the data of sensor..

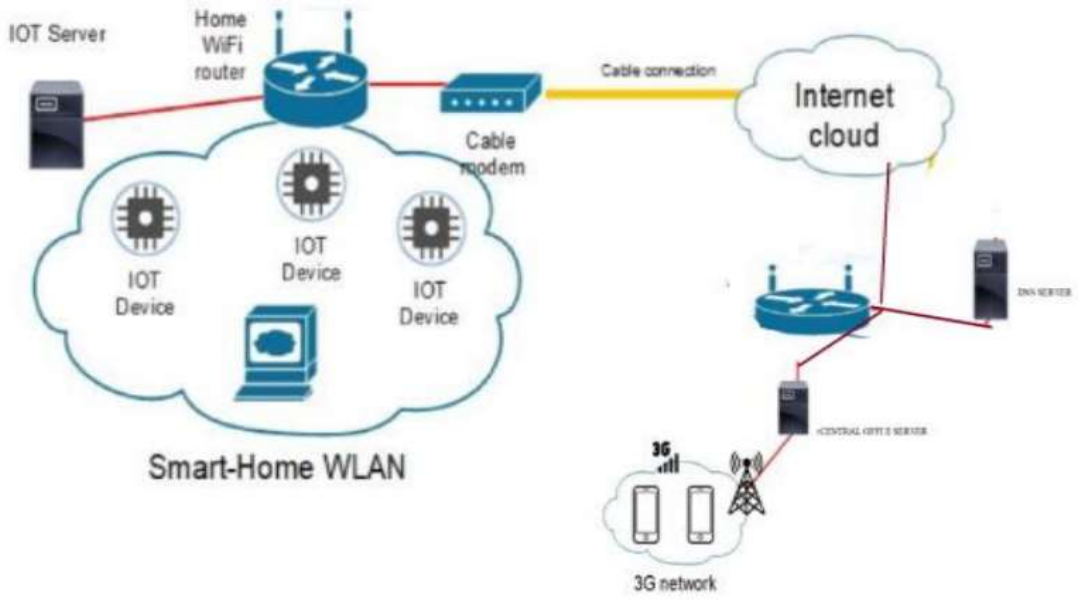


FIG 2. Block diagram of smart home Automation

To execute smart home, Cisco packet tracer 7.2 variant is utilized which is another discharged innovation that incorporates every smart article planned for office mechanization. These gadgets are: brilliant fan, keen light, savvy window, shrewd entry way. Be that as it may, the home door gives the controlling components by enlisting every single smart gadget separately by means of the cloud (WAN).

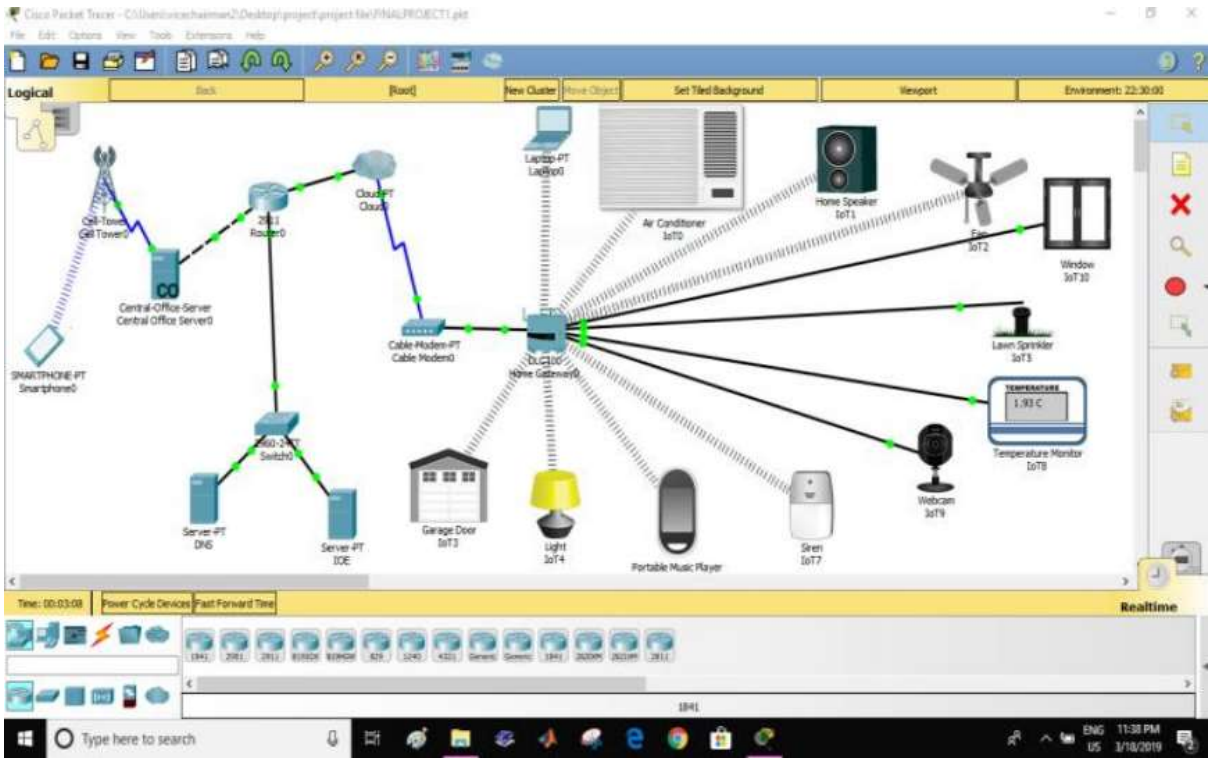
Implementation using Cisco packet tracer:

The circuit chart of keen home Automation is given as beneath appeared As clear at the above figure the house is created by utilizing the system test system which comprises of various gadgets an IOT passage with associated brilliant gadgets, IOT server, DNS server, IOT cloud (WAN), cell tower, Central office server, ISP server, advanced cell, link modem and PC.

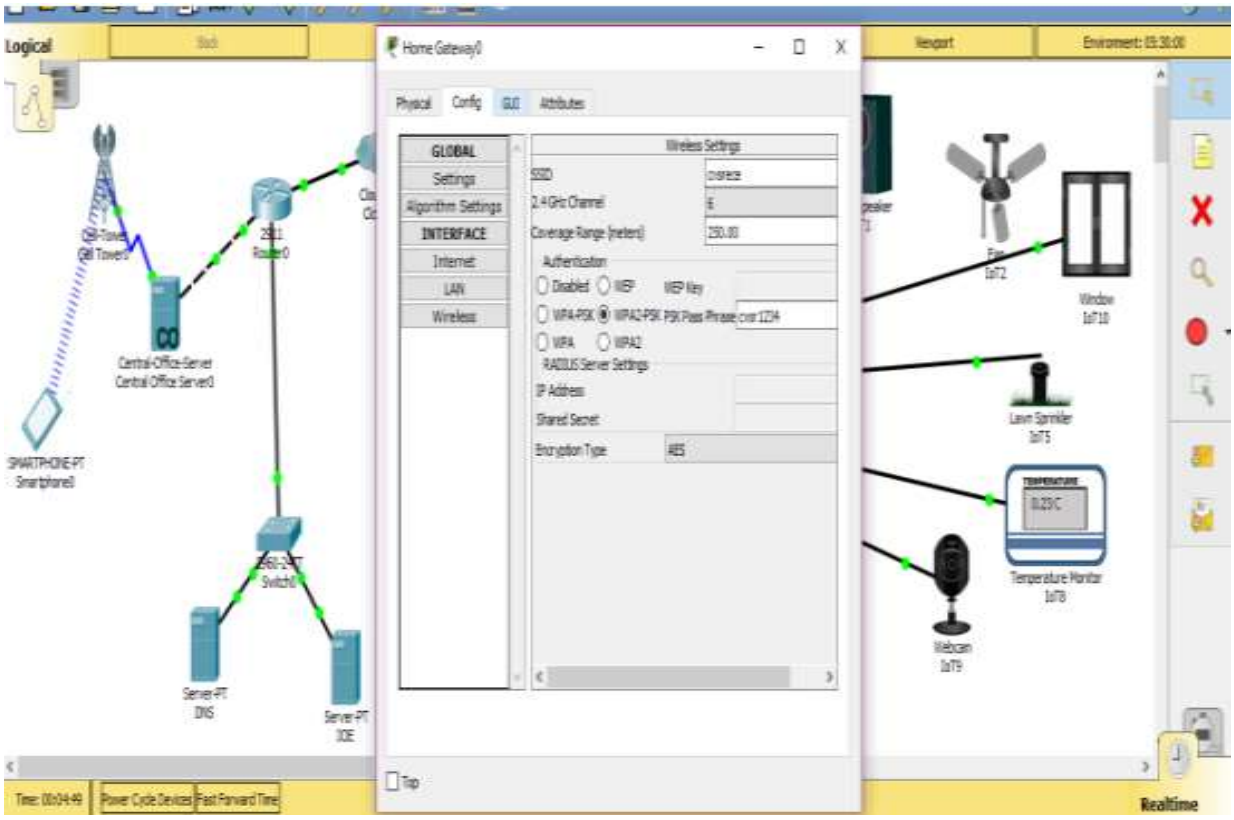
The server contains 1. internet of things server 2. Domain name server. The IOT server stores all the recognized data from the working environment and give customers an endorsed access to the advantages by entering username and mystery state.

Output:

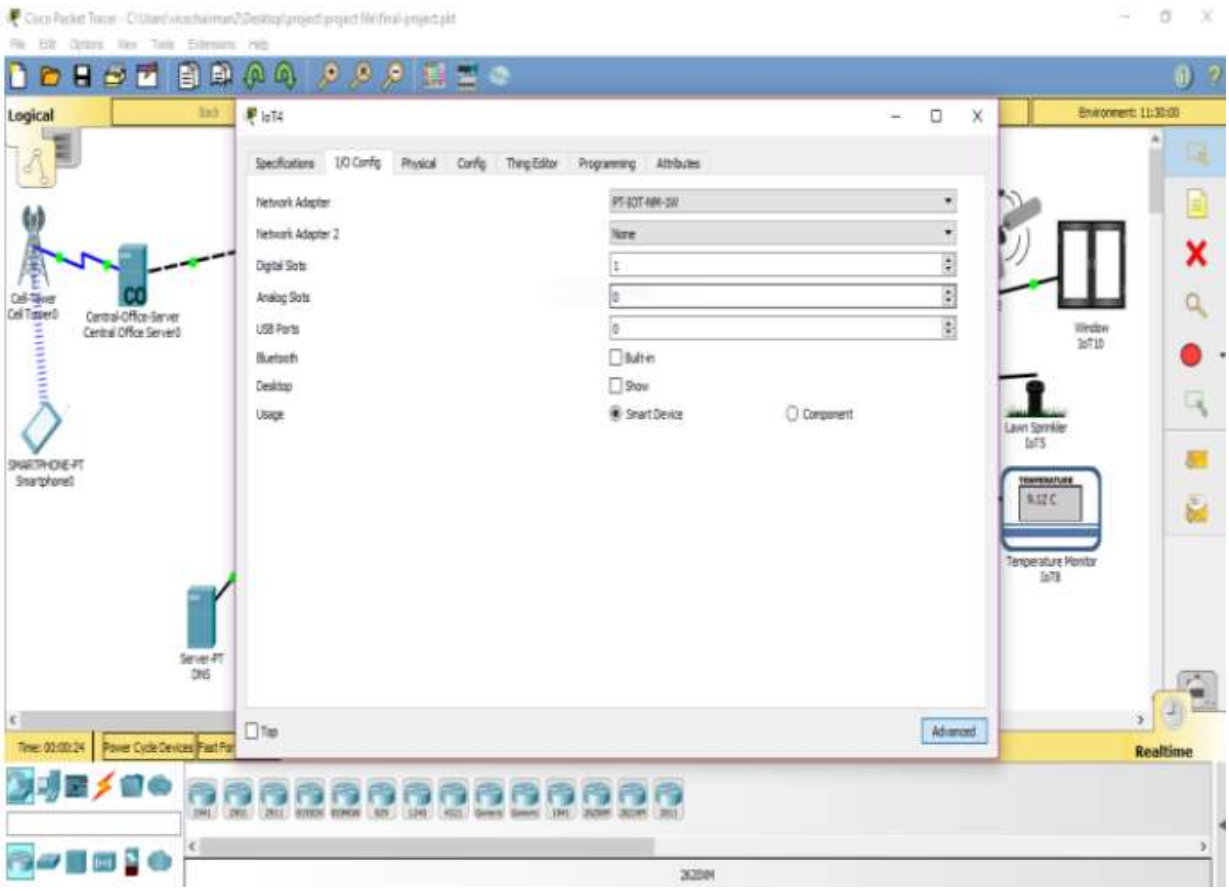
Step 1: Smart home circuit diagram



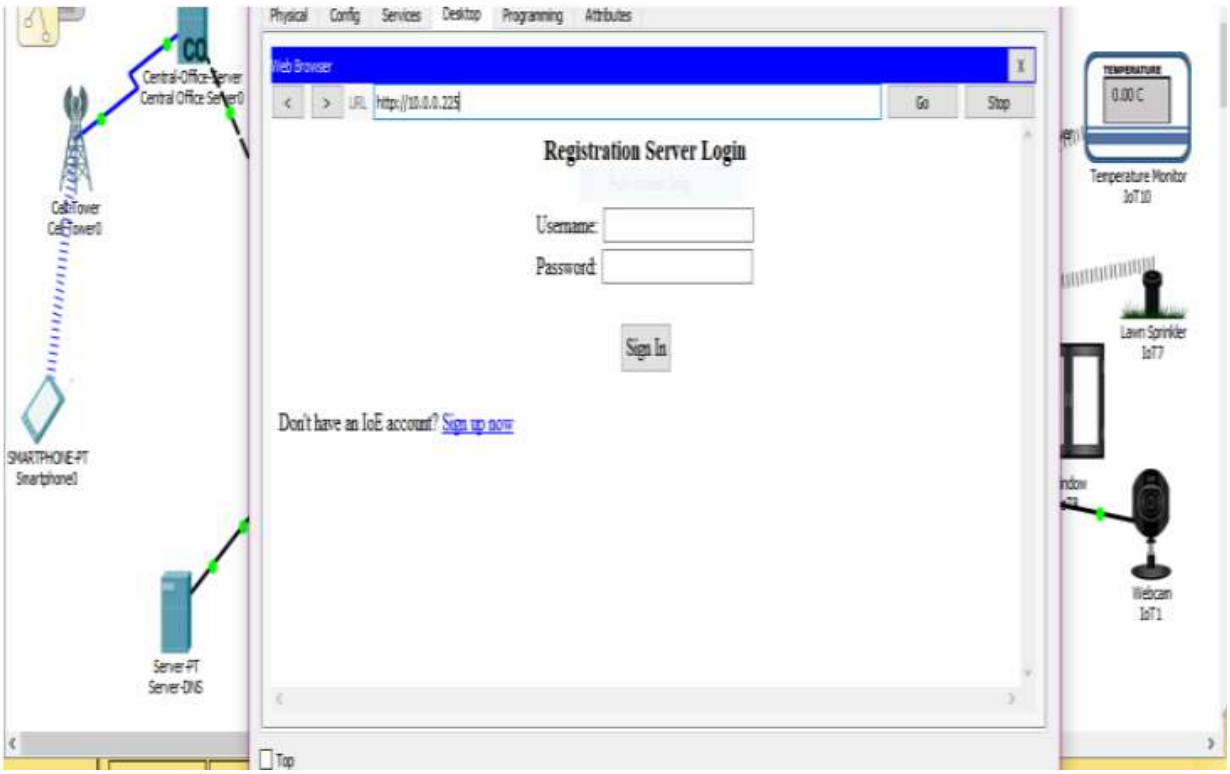
Step 2: Connecting the wireless devices to home gate way



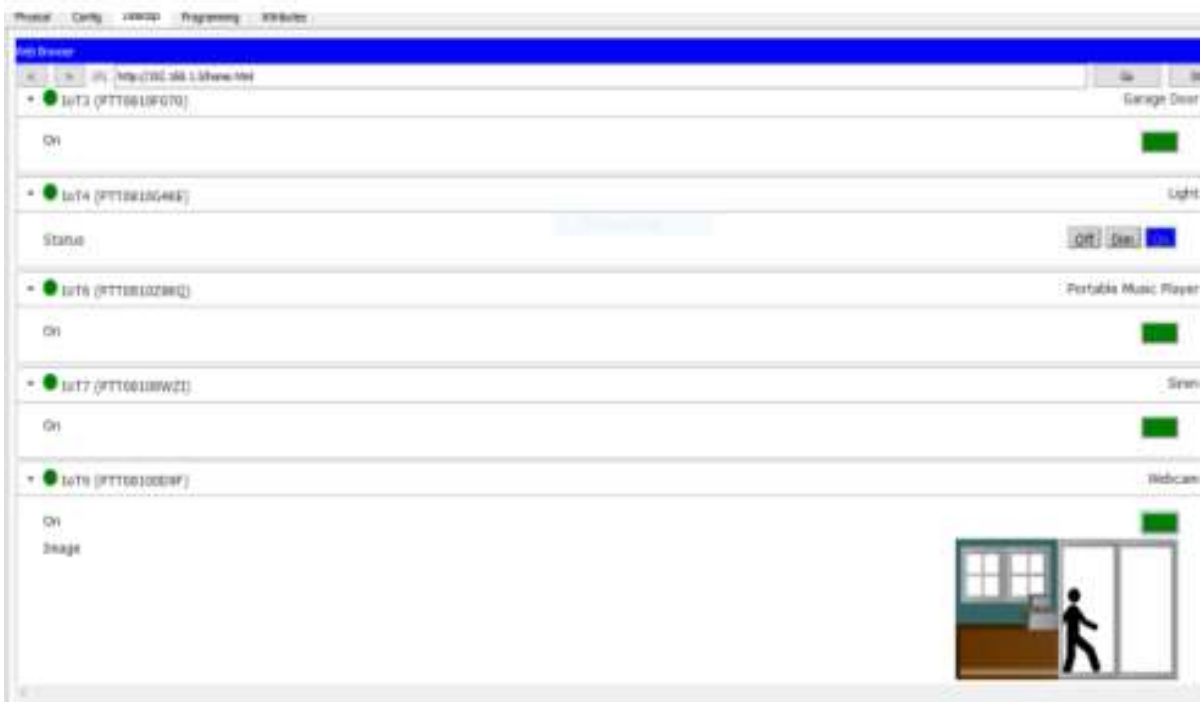
Step 3: Changing devices to wireless module



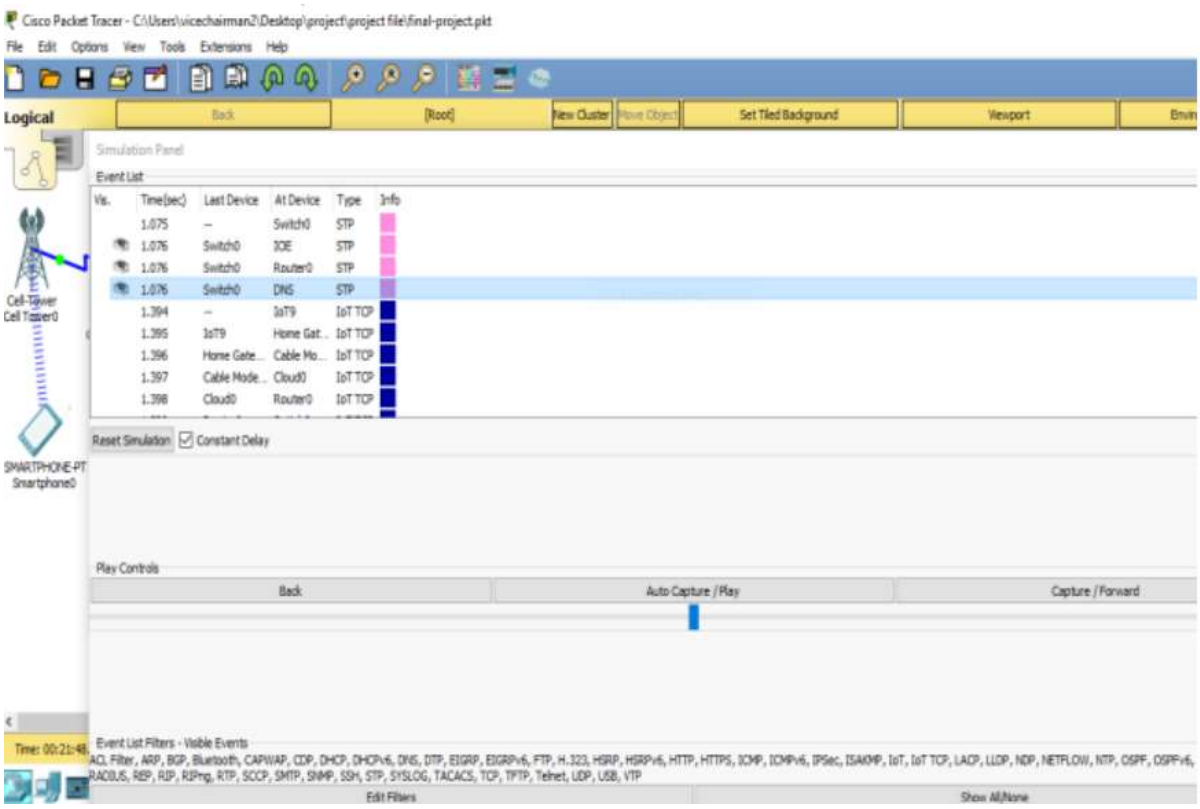
Step 4: Creating an account to register devices



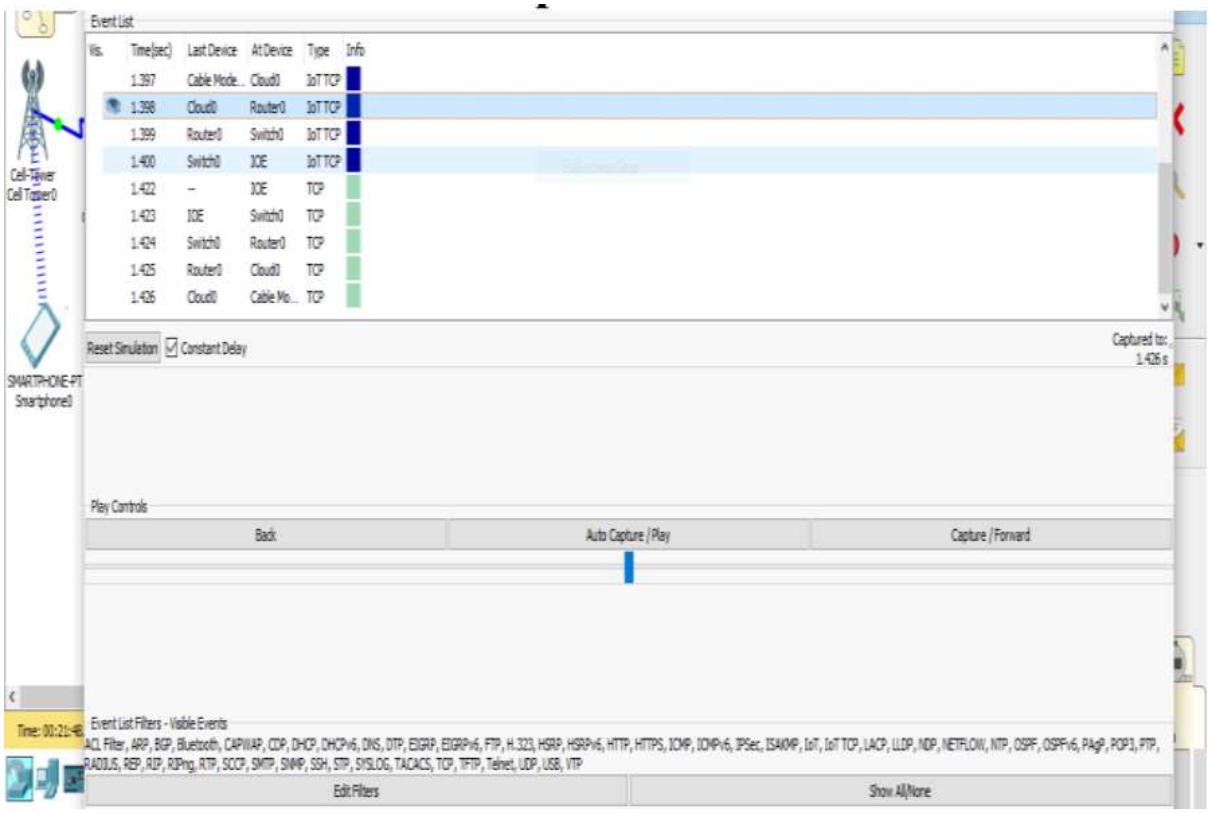
Step 5: Devices are in on state when operated through laptop



Step 6: Simulation environment in transmitting mode used protocol



Step 7: Simulation environment in receiving mode used protocol



Result:

Thus the smart home automation is implemented successfully using the Cisco packet tracer.

EX.NO:
DATE:

Simulation of Client to Server Communication Using NS2

AIM:

To Simulate the Client to server communication using NS2.

SOFTWARE REQUIRED:

1. Ns-2
2. Computer with XP/7 and Ethernet port

Procedure:

1. Open NS2 working window and type in the codes
2. Assign source and destinations for transmission and reception of data
3. Define TCP connections and UDP connections separately
4. Define animation window parameters to simulate data flow in slow styles
5. Save the file as congestion_control.tcl and run the code

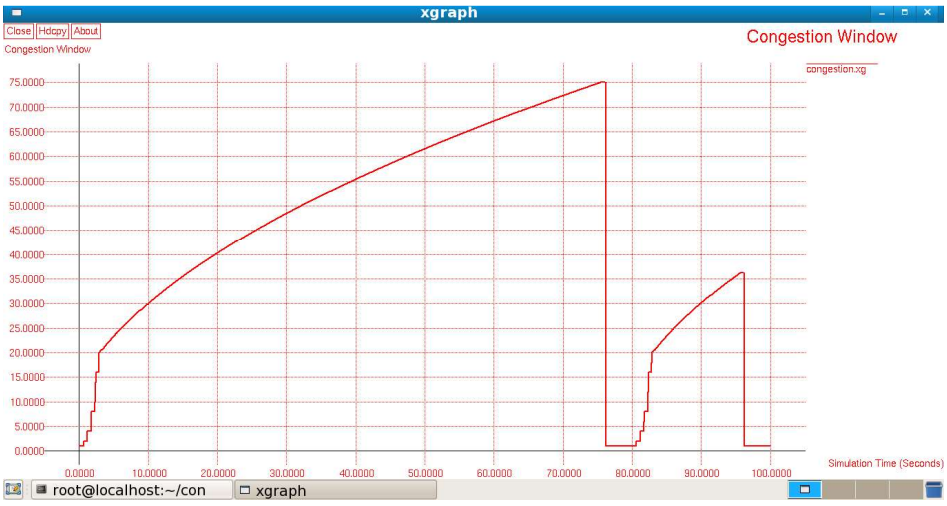
Program

```
#create simulator
set ns [new Simulator]

set nr [open thro.tr w]
$ns trace-all $nr
set nf [open thro.nam w]

$ns namtrace-all $nf
proc finish { } {
global ns nr nf
      $ns flush-trace
close $nf
close $nr
exec nam thro.nam &
         exit 0
      }
#to create nodes
set n0 [$ns node]
set n1 [$ns node]
```

```
set n2 [$ns node]
set n3 [$ns node]
set n4 [$ns node]
set n5 [$ns node]

# to create the link between the nodes with bandwidth, delay and queue
$ns duplex-link $n0 $n2   2Mb  10ms DropTail
$ns duplex-link $n1 $n2   2Mb  10ms DropTail
$ns duplex-link $n2 $n3 0.3Mb 200ms DropTail
$ns duplex-link $n3 $n4 0.5Mb  40ms DropTail
$ns duplex-link $n3 $n5 0.5Mb  30ms DropTail

# Sending node is 0 with agent as Reno Agent
set tcp1 [new Agent/TCP/Reno]
$ns attach-agent $n0 $tcp1

# receiving (sink) node is n4
set sink1 [new Agent/TCPSink]
$ns attach-agent $n4 $sink1

# establish the traffic between the source and sink
$ns connect $tcp1 $sink1

# Setup a FTP traffic generator on "tcp1"
set ftp1 [new Application/FTP]
$ftp1 attach-agent $tcp1
$ftp1 set type_ FTP

# start/stop the traffic
$ns at 0.1   "$ftp1 start"
$ns at 75.0 "$ftp1 stop"
$ns at 80.0   "$ftp1 start"
$ns at 95.0 "$ftp1 stop"

# Set simulation end time
$ns at 100.0 "finish"
# procedure to plot the congestion window
proc plotWindow {tcpSource outfile} {
global ns
set now [$ns now]
set cwnd [$tcpSource set cwnd_]
```

```
# the data is recorded in a file called congestion.xg (this can be plotted # using xgraph or
gnuplot. this example uses xgraph to plot the cwnd_
puts  $outfile  "$now $cwnd"
   $ns at [expr $now+0.1] "plotWindow $tcpSource  $outfile"
}
set outfile [open  "congestion.xg"  w]
$ns  at  0.0  "plotWindow $tcp1  $outfile"
proc finish {} {
          exec xgraph congestion.xg -bg "white" -fg "red" -zg "black" -lw "2" -t
"Congestion Window" -x "Simulation Time (Seconds)" -y "Congestion Window" -
geometry 600x600 &
exit 0
}
# Run simulation
$ns run
```

OUTPUT:



EXPT.NO.	IMPLEMENTATION OF STAR AND MESH TOPOLOGY
DATE:	

AIM:

To implement star topology using packet tracer software.

SOFTWARE REQUIREMENTS:

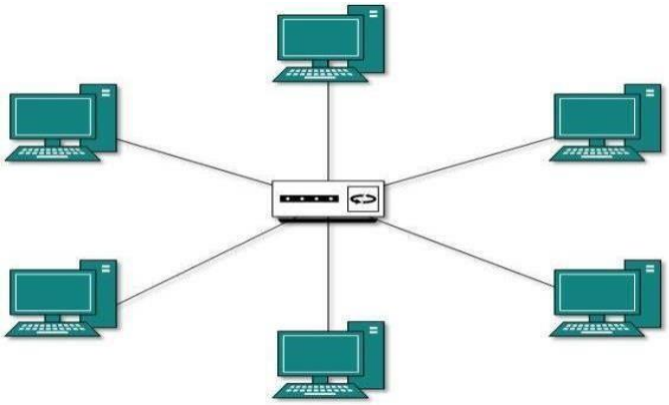
Cisco Packet Tracer

THEORY:

STAR TOPOLOGY:

All hosts in Star topology are connected to a central device, known as hub device, using a point-to-point connection. That is, there exists a point to point connection between hosts and hub. The hub device can be any of the following:

- Layer-1 device such as hub or repeater
- Layer-2 device such as switch or bridge
- Layer-3 device such as router or gateway



As in Bus topology, hub acts as single point of failure. If hub fails, connectivityof all hosts to all other hosts fails. Every communication between hosts, takes place through only the hub.Star topology is not expensive as to connect one more host, only one cable is required and configuration is simple.

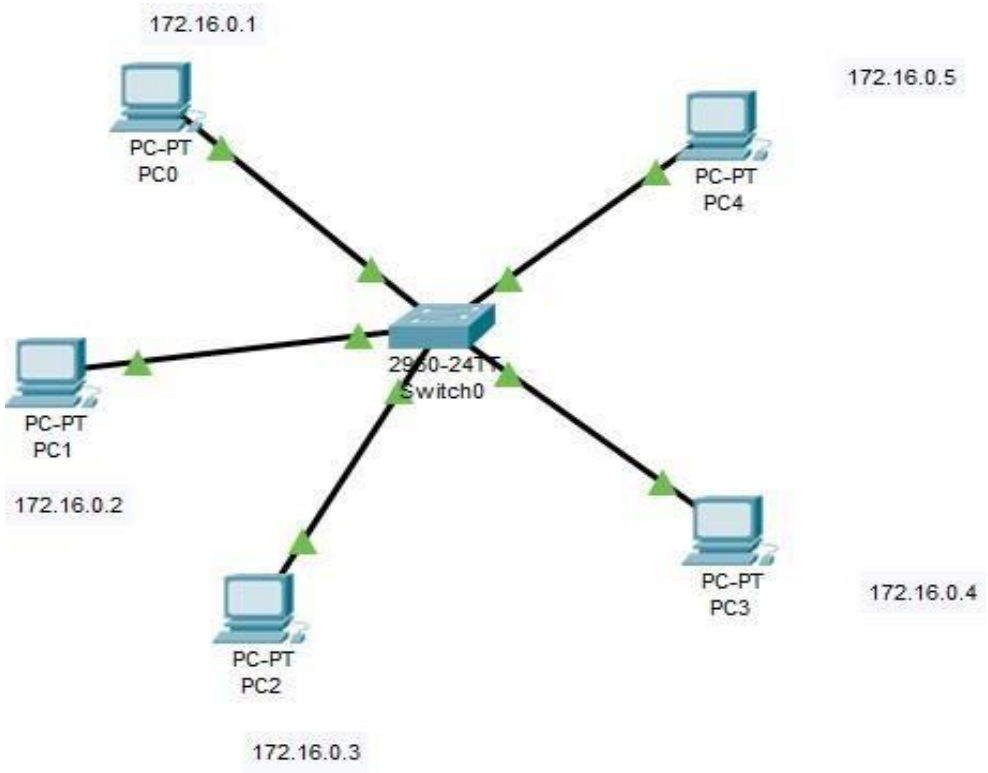
PROCEDURE:

1. In cisco packet tracer, open a new project from file menu.
2. Select the required components for thetopology and connect them
3. Configure the IP address for the PC's .
4. Now send the message between any two pc's and check whether the packets aremoving from the source PC to the destination PC.
5. Using the command prompt, check the ping and tracert commands.

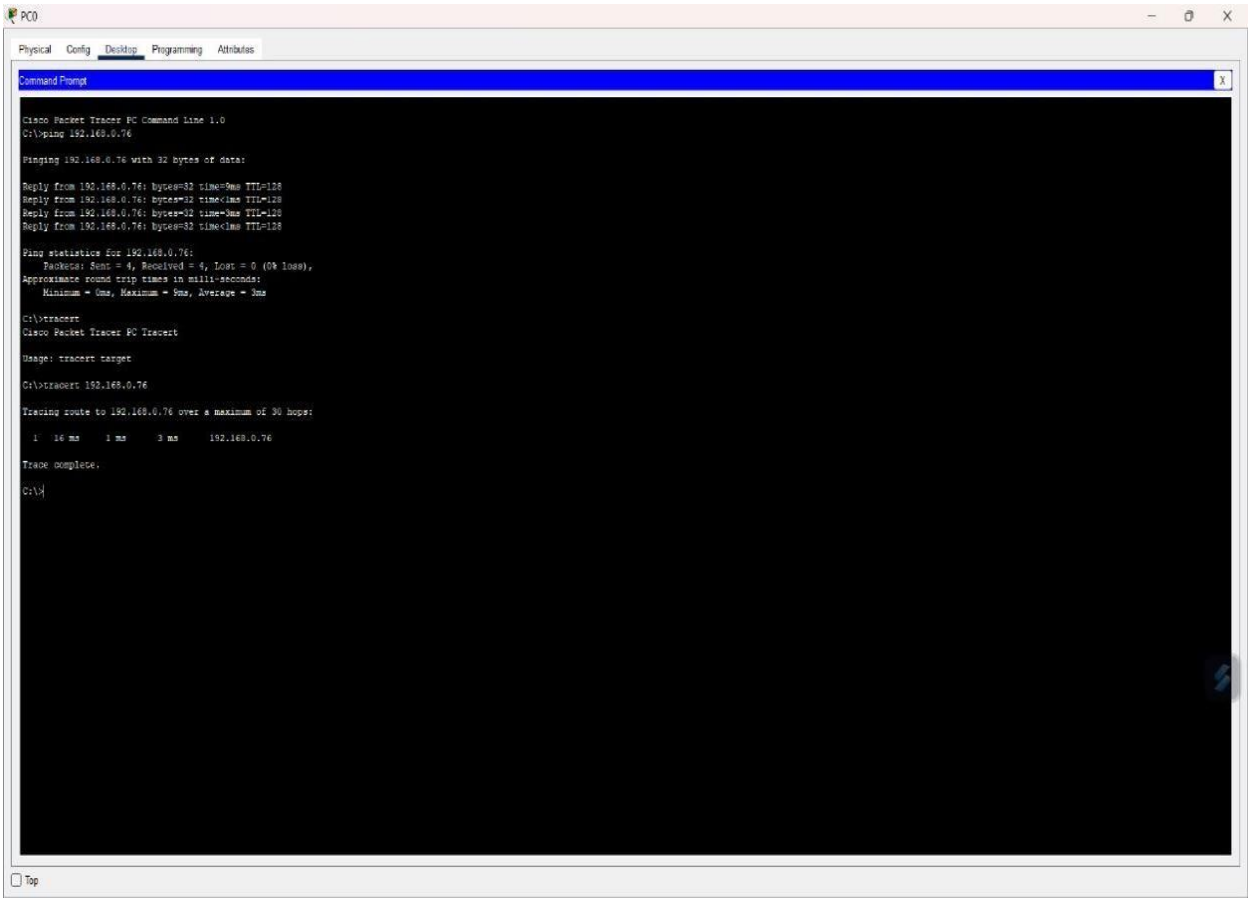
OUTPUT:

STAR TOPOLOGY:

The below figure shows the star topology :

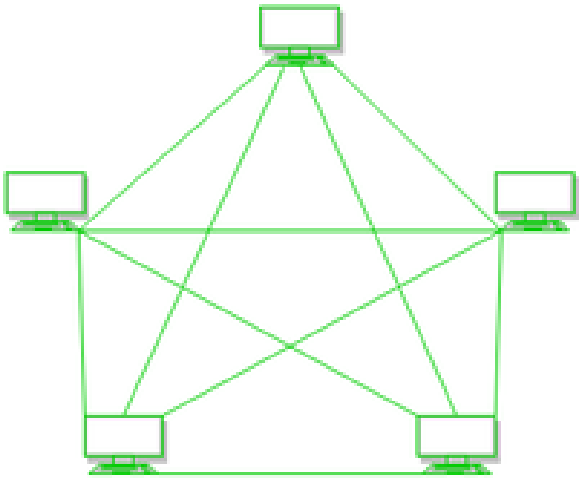


The below figure shows the ping and tracert commands :



MESH TOPOLOGY:

In mesh, all the computers are interconnected to every other during a network. Each computer not only sends its own signals but also relays data from other computers. The nodes are connected to every other completely via a dedicated link during which information is travel from nodes to nodes and there are N(N-1)/2 links in mesh if there are N nodes. Every node features a point-to-point connection to the opposite node. The connections within the mesh are often wired or wireless.



- Layer-1 device such as hub or repeater
- Layer-2 device such as switch or bridge
- Layer-3 device such as router or gateway

- Failure during a single device won't break the network.
- There is no traffic problem as there is a dedicated point to point links for every computer.
- Fault identification is straightforward.
- This topology provides multiple paths to succeed in the destination and tons of redundancy.
- It provides high privacy and security

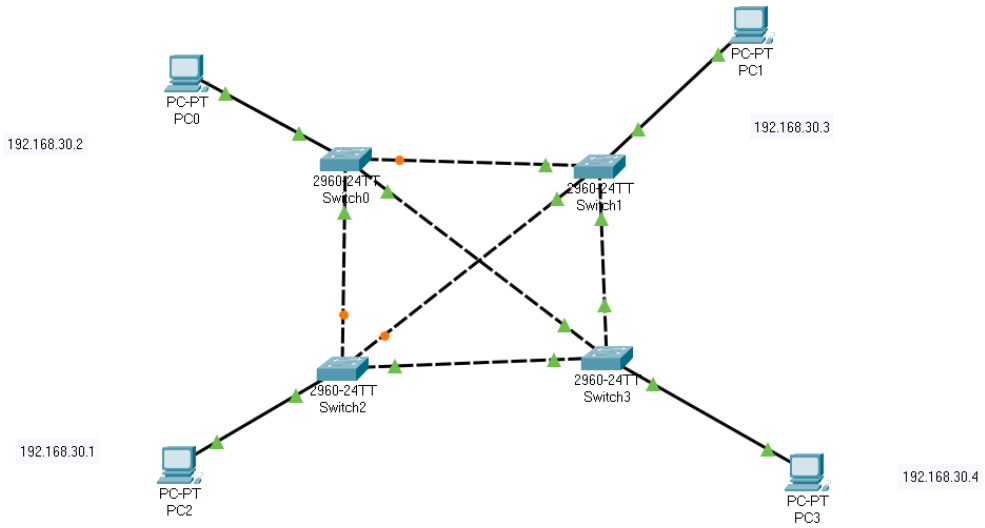
PROCEDURE:

1. In cisco packet tracer, open a new project from file menu.
2. Select the required components for thetopology and connect them,Configure the IP address for the PC's .
3. Now send the message between any two pc's and check whether the packets aremoving from the source PC to the destination PC.
4. Using the command prompt, check the ping and tracert command

OUTPUT:

MESH TOPOLOGY:

The below figure shows the mesh topology :



The below figure shows the ping and tracert commands :

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.30.4

Pinging 192.168.30.4 with 32 bytes of data:

Reply from 192.168.30.4: bytes=32 time<1ms TTL=128
Reply from 192.168.30.4: bytes=32 time<1ms TTL=128
Reply from 192.168.30.4: bytes=32 time=4ms TTL=128
Reply from 192.168.30.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.30.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 4ms, Average = 1ms

C:\>traceroute 192.168.30.4
Invalid Command.

C:\>
C:\>tracert 192.168.30.4

Tracing route to 192.168.30.4 over a maximum of 30 hops:

  1    0 ms      0 ms      0 ms      192.168.30.4

Trace complete.
```

VIVA QUESTIONS

1.Define Topology

2.What are the advantage of mesh topology?

3.List out the advantages of star topology.

4.List the disadvantage of mesh topology

5.What are the disadvantage of mesh topology

RESULT:

ANALYSIS OF NETWORK PROTOCOLS

EXPT NO :
DATE :

Analyze the performance of FTP in TCP/UDP in network through the simulator

AIM:

To analyze the performance of FTP in TCP/UDP in network through the simulator.

SOFTWARE REQUIREMENTS:

CISCO Packet Tracer

THEORY:

The Transmission Control Protocol (TCP) is one of the main protocols of the Internet protocol suite. It originated in the initial network implementation in which it complemented the Internet Protocol (IP). Therefore, the entire suite is commonly referred to as TCP/IP. TCP provides reliable, ordered, and error-checked delivery of a stream of octets (bytes) between applications running on hosts communicating by an IP network. Major Internet applications such as the World Wide Web, email, remote administration, and file transfer rely on TCP.

Applications that do not require reliable data stream service may use the User Datagram Protocol (UDP), which provides a connectionless datagram service that emphasizes reduced latency over reliability.

The File Transfer Protocol (FTP) is a standard communication protocol used for the transfer of computer files from a server to a client on a computer network. FTP is built on a client–server model architecture using separate control and data connections between the client and the server.[1] FTP users may authenticate themselves with a clear-text sign-in protocol, normally in the form of a username and password, but can connect anonymously if the server is configured to allow it. For secure transmission that protects the username and password, and encrypts the content, FTP is often secured with SSL/TLS (FTPS) or replaced with SSH File Transfer Protocol (SFTP).

PROCEDURE:

Introduction to the Packet Tracer Interface using a Hub Topology

Step 1: Start Packet Tracer and Entering Simulation Mode

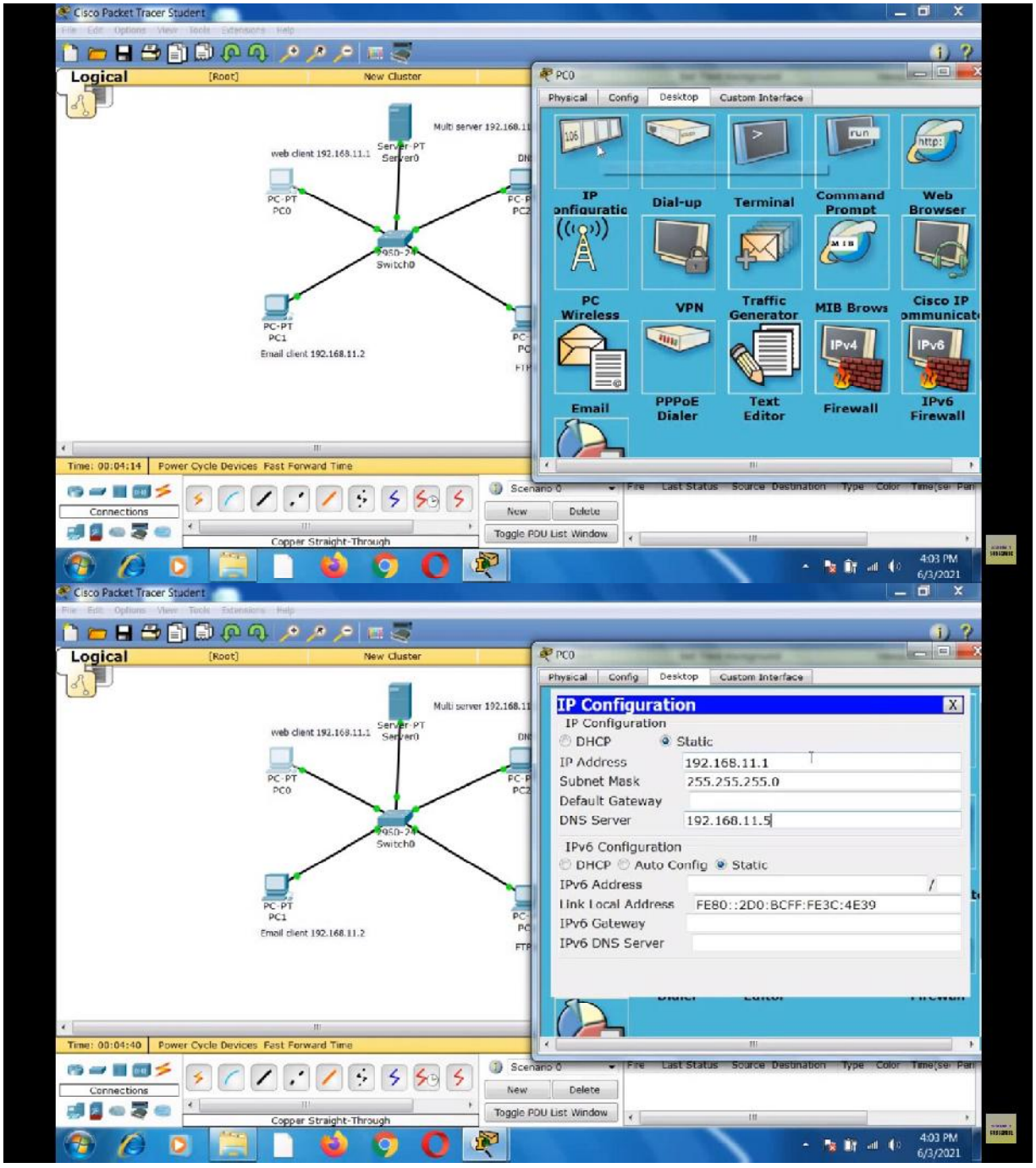
Step 2: Choosing Devices and Connections

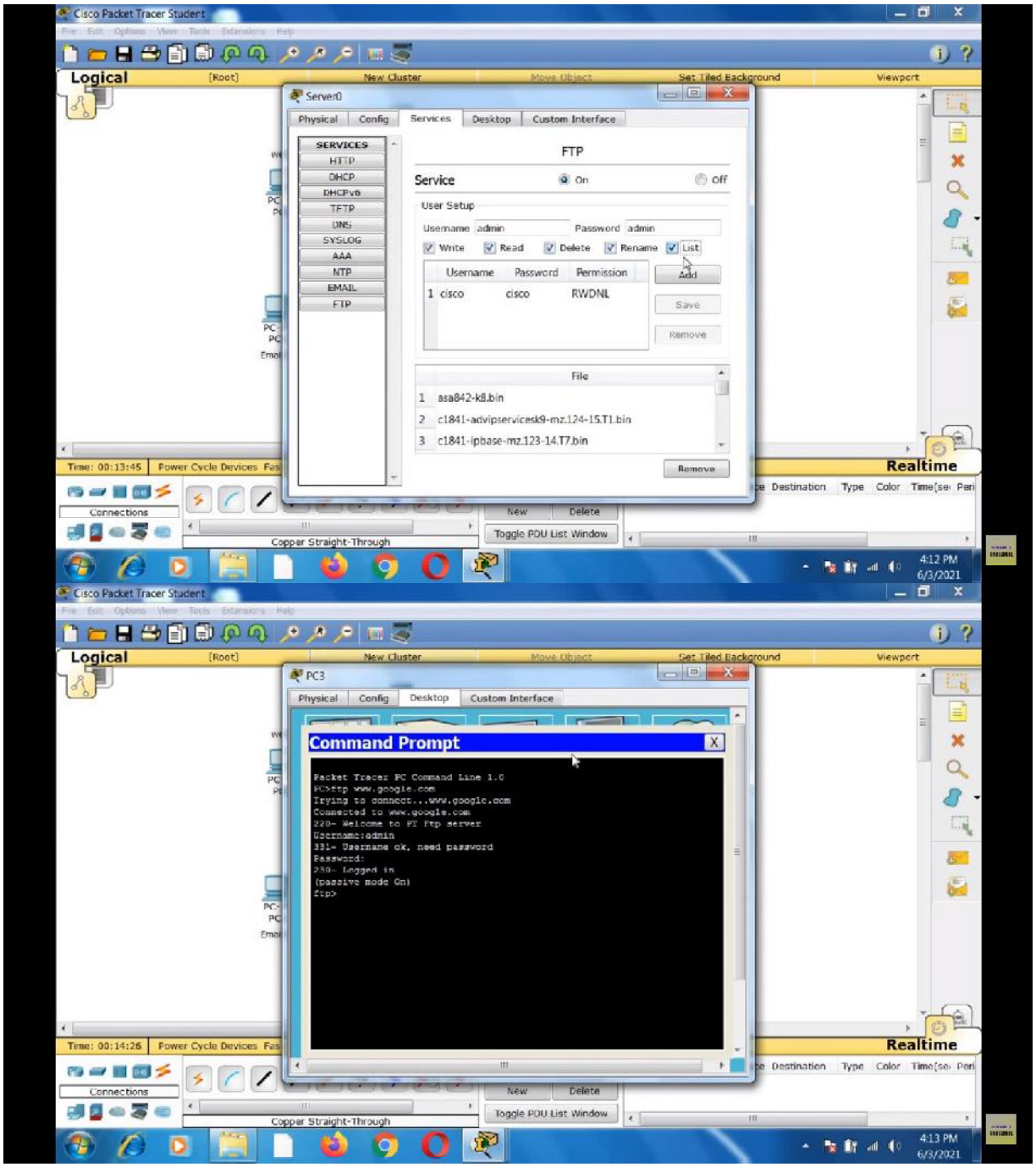
Step 3: Building the Topology – Adding Hosts

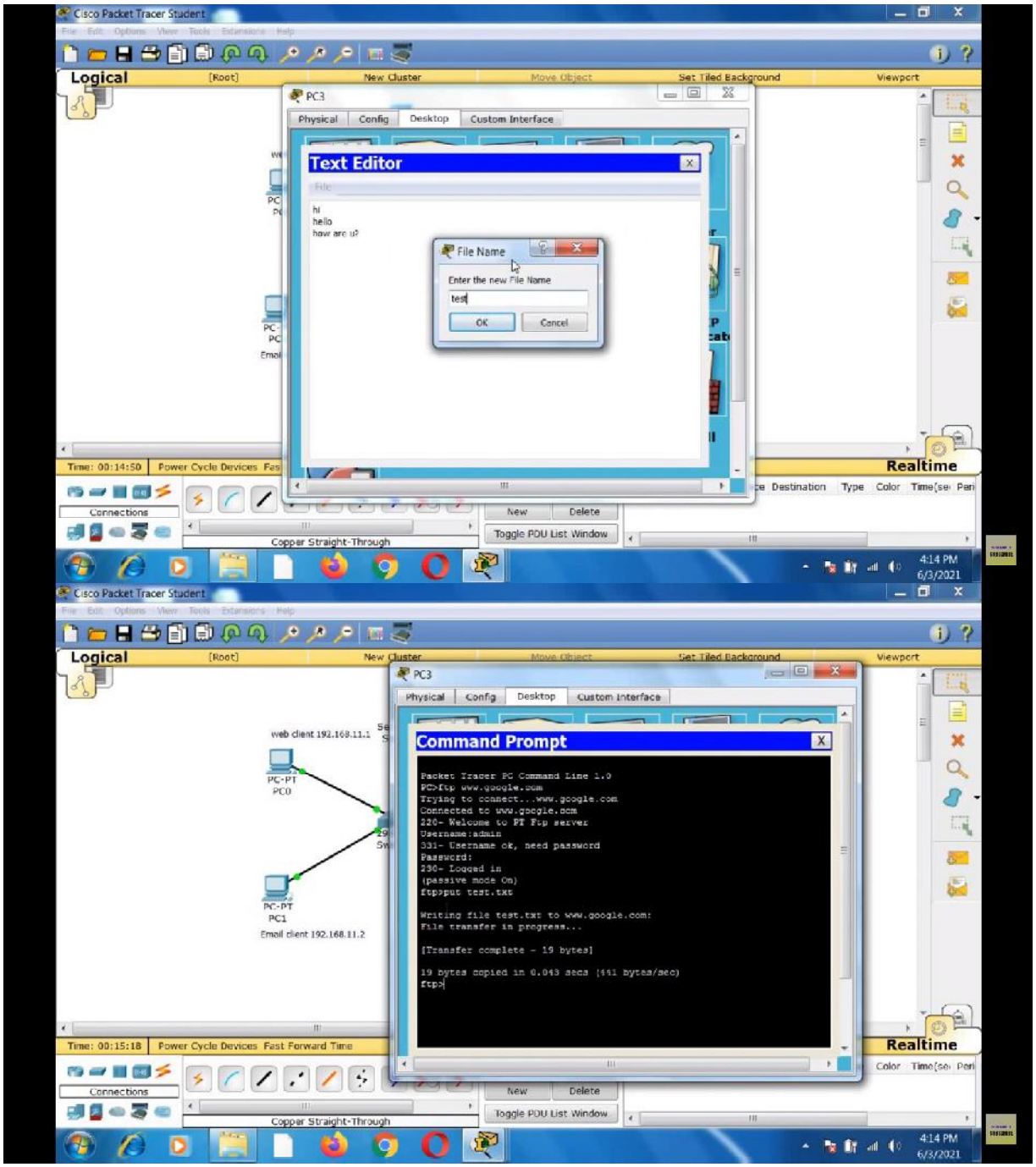
Step 4: Building the Topology – Connecting the Hosts to Hubs and Switches

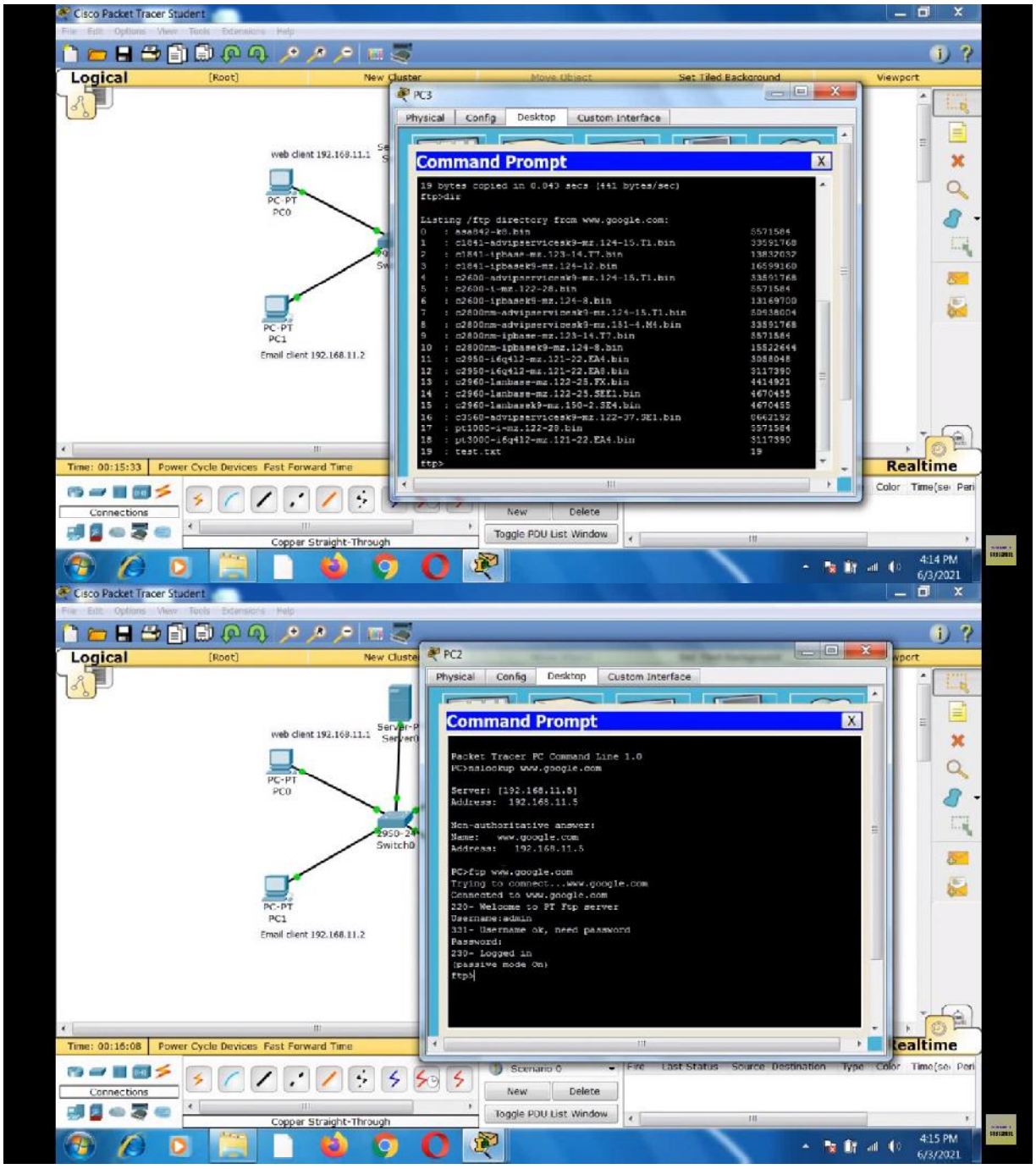
Step 5: Configuring IP Addresses and Subnet Masks on the Hosts

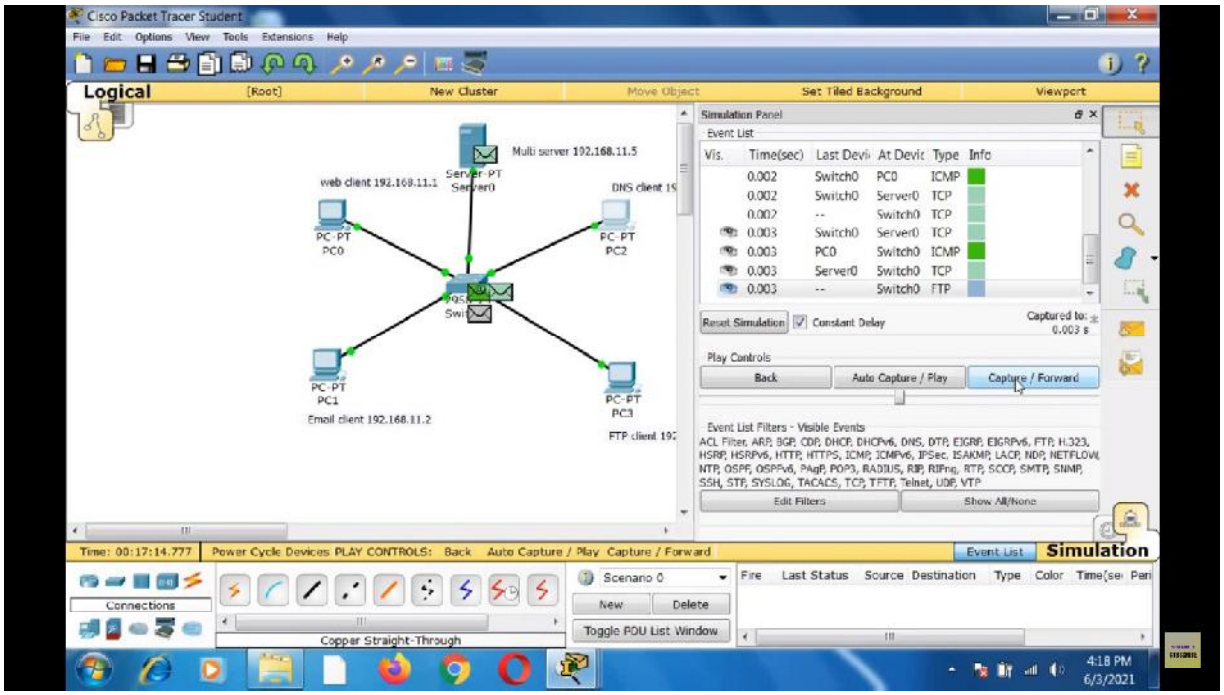
Step 6: Connecting Hub0 to Switch0




Cisco Packet Tracer Student
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Server0
Physical
Config
Services
Desktop
Custom Interface
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
FTP
Service
On
Off
User Setup
Username admin
Password admin
Write
Read
Delete
Rename
List
Username
Password
Permission
1 cisco
cisco
RWDNL
Add
Save
Remove
File
1 asa842-k8.bin
2 c1841-advipservicesk9-mz.124-15.T1.bin
3 c1841-ipbase-mz.123-14.T7.bin
Remove
Time: 00:13:45
Power Cycle Devices
Realtime
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:12 PM
6/3/2021
Cisco Packet Tracer Student
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
PC3
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ftp www.google.com
Trying to connect...www.google.com
Connected to www.google.com
220- Welcome to PT Ftp server
Username:admin
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>
Time: 00:14:26
Power Cycle Devices
Realtime
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:13 PM
6/3/2021


Cisco Packet Tracer Student
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
PC3
Physical
Config
Desktop
Custom Interface
Text Editor
File
hi
hello
how are u?
File Name
Enter the new File Name
test
OK
Cancel
Time: 00:14:50
Power Cycle Devices
Realtime
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:14 PM
6/3/2021
Cisco Packet Tracer Student
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
PC3
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ftp www.google.com
Trying to connect...www.google.com
Connected to www.google.com
220- Welcome to PT Ftp server
Username:admin
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>put test.txt
Writing file test.txt to www.google.com:
File transfer in progress...
[Transfer complete - 19 bytes]
19 bytes copied in 0.043 secs (441 bytes/sec)
ftp>
web client 192.168.11.1
PC-PT
PC0
PC-PT
PC1
Email client 192.168.11.2
Time: 00:15:18
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:14 PM
6/3/2021


Cisco Packet Tracer Student
Logical
[Root]
PC3
Physical
Config
Desktop
Custom Interface
Command Prompt
19 bytes copied in 0.043 secs (441 bytes/sec)
ftp>dir
Listing /ftp directory from www.google.com:
0 : asa842-k8.bin 5571584
1 : c1841-advipservicesk9-mz.124-15.T1.bin 33591768
2 : c1841-ipbase-mz.123-14.T7.bin 13832032
3 : c1841-ipbasek9-mz.124-12.bin 16599160
4 : c2600-advipservicesk9-mz.124-15.T1.bin 33591768
5 : c2600-i-mz.122-28.bin 5571584
6 : c2600-ipbasek9-mz.124-8.bin 13169700
7 : c2800nm-advipservicesk9-mz.124-15.T1.bin 50938004
8 : c2800nm-advipservicesk9-mz.151-4.M4.bin 33591768
9 : c2800nm-ipbase-mz.123-14.T7.bin 5571584
10 : c2800nm-ipbasek9-mz.124-8.bin 15522644
11 : c2950-i6q412-mz.121-22.EA4.bin 3058048
12 : c2950-i6q412-mz.121-22.EA8.bin 3117390
13 : c2960-lanbase-mz.122-25.FX.bin 4414921
14 : c2960-lanbase-mz.122-25.SEE1.bin 4670455
15 : c2960-lanbasek9-mz.150-2.SE4.bin 4670455
16 : c3560-advipservicesk9-mz.122-37.SE1.bin 8662192
17 : pt1000-i-mz.122-28.bin 5571584
18 : pt3000-i6q412-mz.121-22.EA4.bin 3117390
19 : test.txt 19
ftp>
web client 192.168.11.1
PC-PT PC0
PC-PT PC1
Email client 192.168.11.2
Time: 00:15:33
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:14 PM
6/3/2021
Cisco Packet Tracer Student
Logical
[Root]
PC2
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>nslookup www.google.com
Server: [192.168.11.5]
Address: 192.168.11.5
Non-authoritative answer:
Name: www.google.com
Address: 192.168.11.5
PC>ftp www.google.com
Trying to connect...www.google.com
Connected to www.google.com
220- Welcome to PT Ftp server
Username:admin
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>
web client 192.168.11.1
PC-PT PC0
2950-24 Switch0
PC-PT PC1
Email client 192.168.11.2
Time: 00:16:08
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
New
Delete
Toggle PDU List Window
4:15 PM
6/3/2021


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Multi server 192.168.11.5
web client 192.168.11.1
DNS client 19
PC-PT PC0
PC-PT PC2
PC-PT PC1
Email client 192.168.11.2
PC-PT PC3
FTP client 192
Simulation Panel
Event List
Vis. Time(sec) Last Devi At Devic Type Info
0.002 Switch0 PC0 ICMP
0.002 Switch0 Server0 TCP
0.002 -- Switch0 TCP
0.003 Switch0 Server0 TCP
0.003 PC0 Switch0 ICMP
0.003 Server0 Switch0 TCP
0.003 -- Switch0 FTP
Reset Simulation
Constant Delay
Captured to:
0.003 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
Edit Filters
Show All/None
Time: 00:17:14.777
Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward
Event List
Simulation
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec)
4:18 PM
6/3/2021

VIVA QUESTION AND ANSWERS

1. What is File Transfer Protocol

2. Explain security concerns of FTP

3. What is FTP bounce attack?