

# COMPUTER NETWORK LABORATORY

## LAB 1: INTRODUCTION

Computer Network Laboratory 9/06/2023

Sample program

Definitions:

**LAN (Local Area Network):**  
A LAN is a collection of devices connected together in one physical location such as building, office or home.

**WAN (Wide Area Network):**  
A WAN is a large network of information that is not tied to a single location.

**Ethernet:**  
Ethernet is the traditional technology for connecting devices in a wired local area network or wide area network.

**IP address:**  
An Internet Protocol (IP) address is a unique numerical identifier for every device or network that connects to the internet.

**Hub:**  
Hub is the central part of a circular object.

**Switch:**  
Switch is a high-speed device that receives incoming data packets and redirects them to their destination on a local area network.

**Server:**  
A server is a computer program or device that provides a service to another computer program and its user, also known as client.

**End devices:**  
End devices are either the source or destination of data transmitted over the network.

Nodes: 0/0

A node is a point of intersection/connection within a data communication network.

Steps Involved

Step 1: Drag and drop the PC and Server to workspace.

Step 2: Firstly, Copper straight-through cable was selected and connected the devices with it. If red lights are shown, remove that and copper cross-over cable is selected, and green lights are shown.

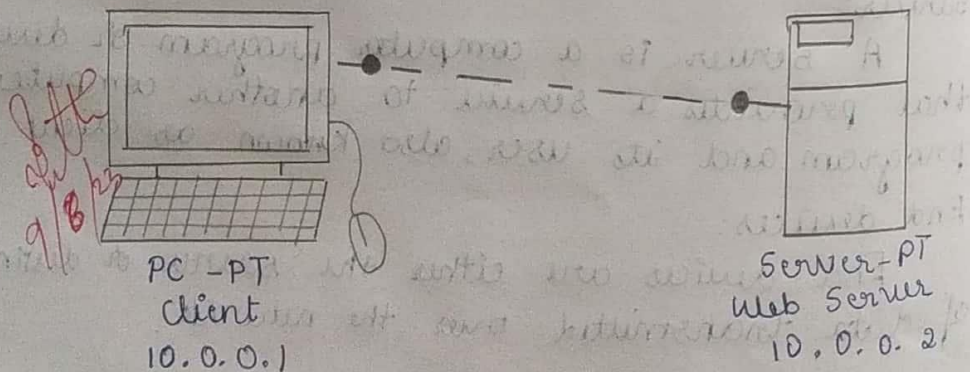
Step 3: Click on the PC. While paying attention to the link lights, turn the power on, off and on. Same step is followed for server.

Step 4: Open PC configuration window, set the display name as client and DNS server to 10.0.0.2. Under Interface, click fastethernet and set the IP address as 10.0.0.1

Step 5: Open server configuration window, change the display name to web server and under interface, click fastethernet and set the IP address as 10.0.0.2.

Step 6: Open server service, click DNS and set the domain name as www.foreflab.com. Set the IP address as 10.0.0.2 and click add.

Step 7: Save the work using the file > save as option.





Realtime [In Command Prompt]

ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

|            |           |          |          |         |
|------------|-----------|----------|----------|---------|
| Reply from | 10.0.0.1: | bytes=32 | time=0ms | TTL=128 |
| Reply from | 10.0.0.1: | bytes=32 | time=1ms | TTL=128 |
| Reply from | 10.0.0.1: | bytes=32 | time=5ms | TTL=128 |
| Reply from | 10.0.0.1: | bytes=32 | time=3ms | TTL=128 |

Ping statistics for 10.0.0.1:

Packets: Sent=4, Received=4, Lost=0 (0% loss)

Approximate round trip times in milli-seconds:

Minimum=0ms, Maximum=5ms, Average=2ms

ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data:

Request timed out.

Request timed out.

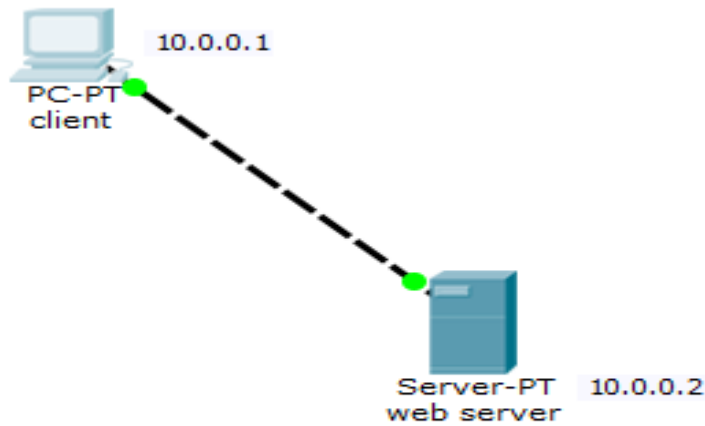
Request timed out.

Request timed out.

Ping statistics for 10.0.0.3:

Packets: Sent=4, Received=0, Lost=4 (100% loss)

## TOPOLOGY:



## COMMAND PROMPT OUTPUT:

The screenshot shows a Packet Tracer PC Command Line window for PC2. The window has tabs for Physical, Config, Desktop, and Custom Interface. The Desktop tab is active, showing a desktop environment with a Command Prompt window open. The Command Prompt window has a blue title bar and a black background with white text. The text shows the execution of two ping commands: 'ping 10.0.0.2' and 'ping 10.0.0.1'. The output for each ping shows four successful replies with 32 bytes of data, and ping statistics indicating 0% loss and approximate round trip times.

```
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Reply from 10.0.0.2: bytes=32 time=2ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128

Ping statistics for 10.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms

PC>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes=32 time=3ms TTL=128
Reply from 10.0.0.1: bytes=32 time=2ms TTL=128
Reply from 10.0.0.1: bytes=32 time=5ms TTL=128
Reply from 10.0.0.1: bytes=32 time=2ms TTL=128

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 5ms, Average = 3ms
```

