

NAME: DIVYANSHU SHARMA

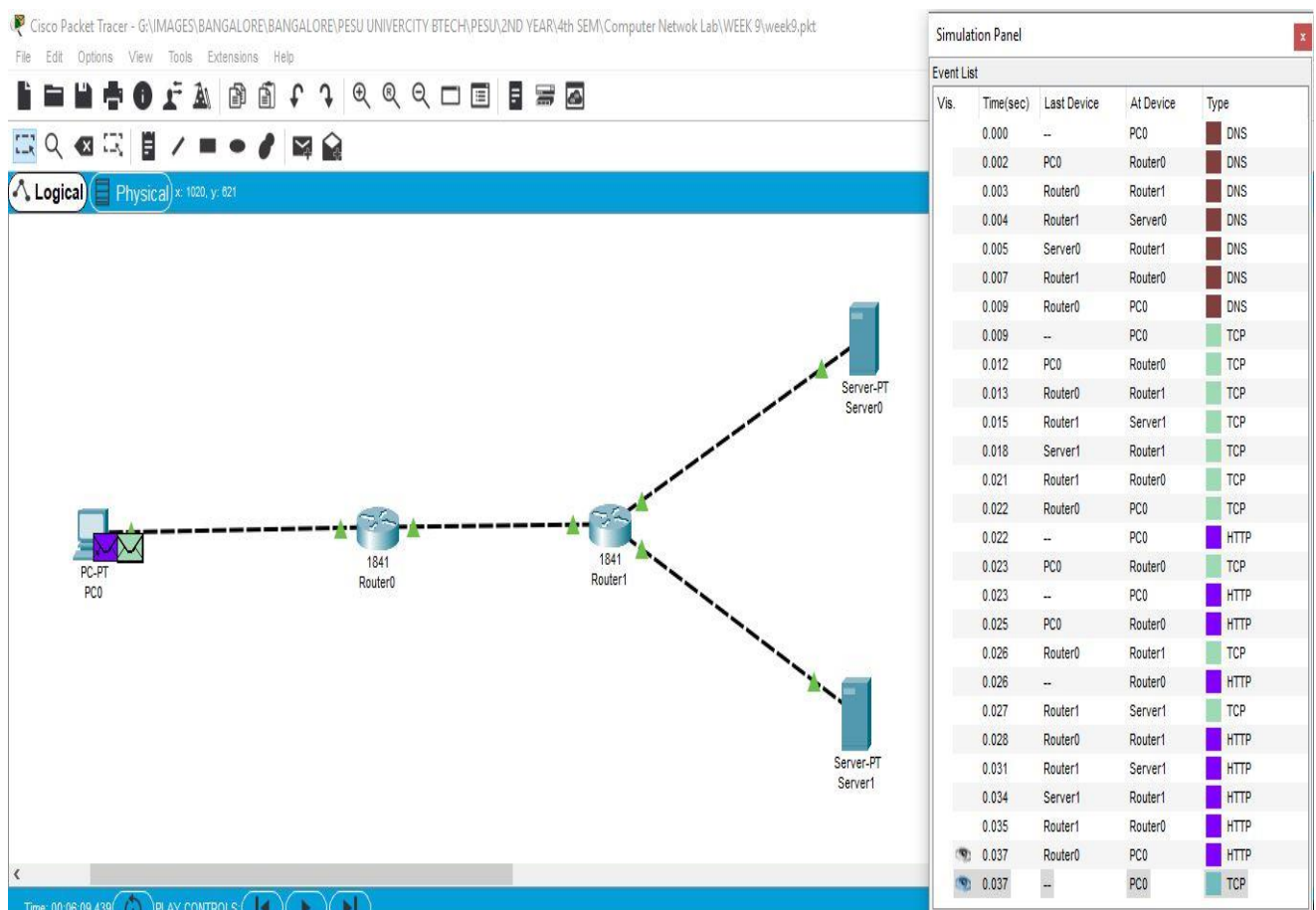
PES1UG20CS806

CN LAB (WEEK 9)

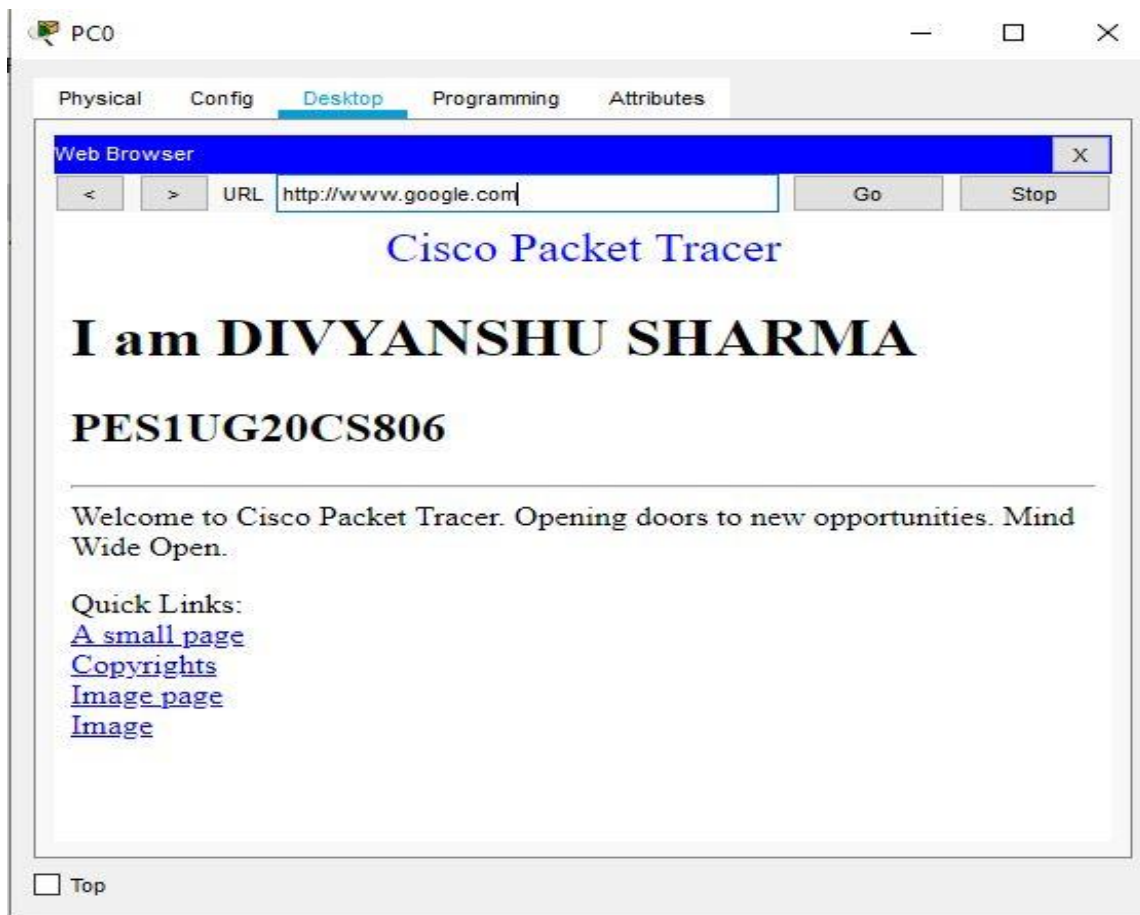
# Task 1

## 1.1 Configuring Topology

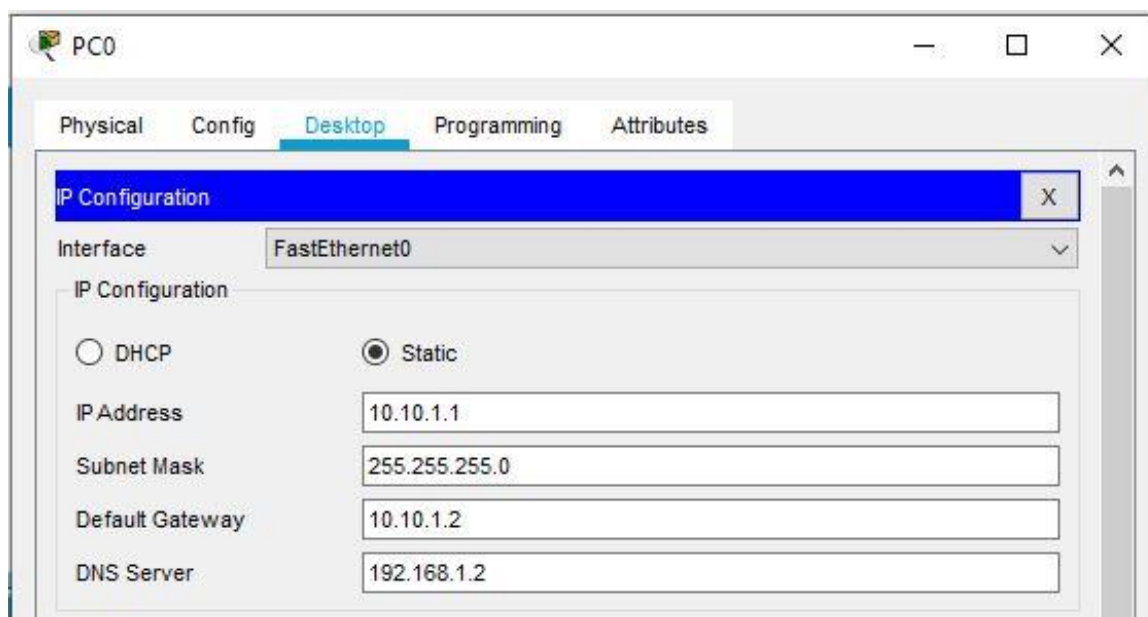
- The network devices are organized in the required topology shown.
- IP Addresses have been assigned to each interface being used on the routers and end systems.
- The routing tables are then configured manually by adding the required routing information.
- The two servers in the topology correspond to a DNS Server that serves DNS queries from the PC and a web server that serves webpages stored on it. The server is appropriately configured as well.
- An HTTP request is made from the PC for the page index.html in the domain google.com.



HTTP Request with DNS Service



Response Received after HTTP Request



PC0

Router0

Physical **Config** CLI Attributes

<b>GLOBAL</b>	<b>FastEthernet0/0</b>	
Settings	Port Status <input checked="" type="checkbox"/> On	
Algorithm Settings	Bandwidth <input checked="" type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto	
<b>ROUTING</b>	Duplex <input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto	
Static	MAC Address 0006.2A5A.7301	
RIP	<div>IP Configuration</div> <div>IP Address 10.10.1.2</div> <div>Subnet Mask 255.255.255.0</div>	
<b>SWITCHING</b>	Tx Ring Limit 10	
VLAN Database		
<b>INTERFACE</b>		
FastEthernet0/0		
FastEthernet0/1		

Router0 Config

Router0

Physical **Config** CLI Attributes

<b>GLOBAL</b>	<b>FastEthernet0/1</b>	
Settings	Port Status <input checked="" type="checkbox"/> On	
Algorithm Settings	Bandwidth <input checked="" type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto	
<b>ROUTING</b>	Duplex <input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto	
Static	MAC Address 0006.2A5A.7302	
RIP	<div>IP Configuration</div> <div>IP Address 10.10.2.1</div> <div>Subnet Mask 255.255.255.0</div>	
<b>SWITCHING</b>	Tx Ring Limit 10	
VLAN Database		
<b>INTERFACE</b>		
FastEthernet0/0		
FastEthernet0/1		

Router0 Config

Router0

Physical **Config** CLI Attributes

**GLOBAL**

Settings

Algorithm Settings

**ROUTING**

Static

RIP

**SWITCHING**

VLAN Database

**INTERFACE**

FastEthernet0/0

FastEthernet0/1

Static Routes

Network

Mask

Next Hop

Add

Network Address

192.168.1.0/24 via 10.10.2.2

192.168.2.0/24 via 10.10.2.2

Remove

Router0 Router Table

Router1

Physical **Config** CLI Attributes

**GLOBAL**

Settings

Algorithm Settings

**ROUTING**

Static

RIP

**SWITCHING**

VLAN Database

**INTERFACE**

FastEthernet0/0

FastEthernet0/1

Ethernet0/0/0

FastEthernet0/0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address

IP Configuration

IP Address

Subnet Mask

Tx Ring Limit

Router1 config

Router1

Physical **Config** CLI Attributes

**GLOBAL**

Settings

Algorithm Settings

**ROUTING**

Static

RIP

**SWITCHING**

VLAN Database

**INTERFACE**

FastEthernet0/0

**FastEthernet0/1**

Ethernet0/0/0

**FastEthernet0/1**

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0090.0C81.DA02

IP Configuration

IP Address 192.168.1.1

Subnet Mask 255.255.255.0

Tx Ring Limit 10

Router1 config

Router1

Physical **Config** CLI Attributes

**GLOBAL**

Settings

Algorithm Settings

**ROUTING**

Static

RIP

**SWITCHING**

VLAN Database

**INTERFACE**

FastEthernet0/0

FastEthernet0/1

**Ethernet0/0/0**

**Ethernet0/0/0**

Port Status ☒ On

Bandwidth ☒ 10 Mbps ☐ 100 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0090.21CE.5742

IP Configuration

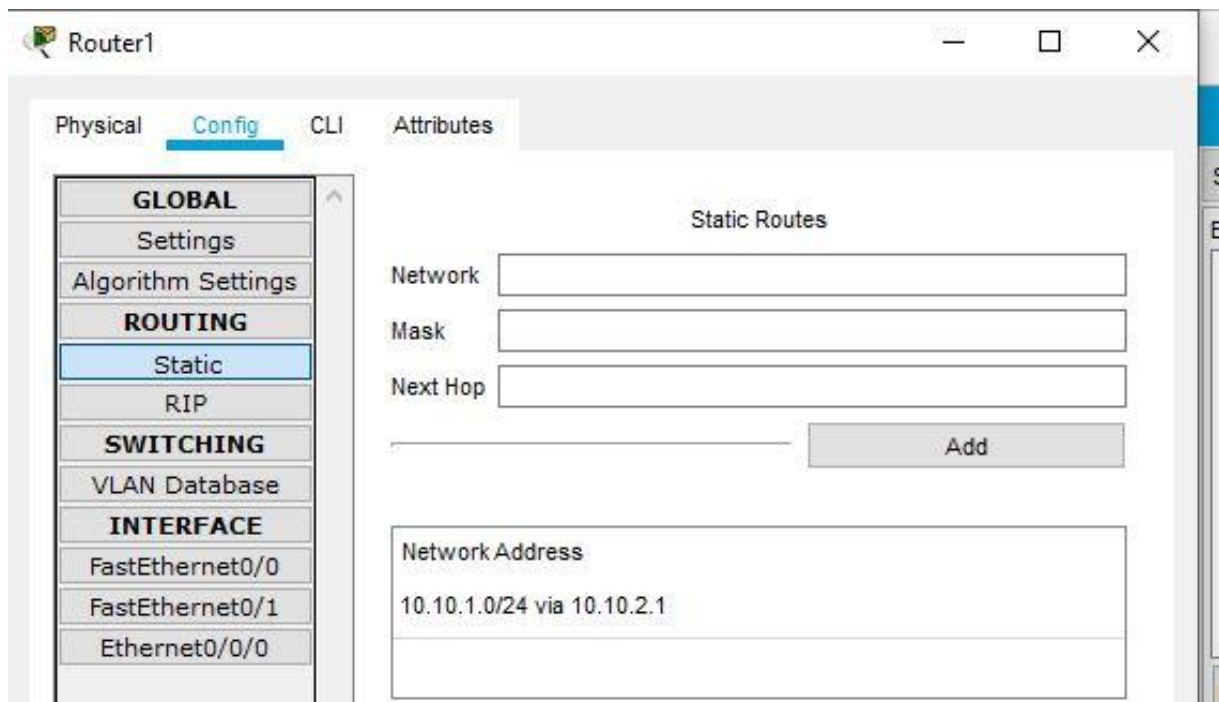
IP Address 192.168.2.1

Subnet Mask 255.255.255.0

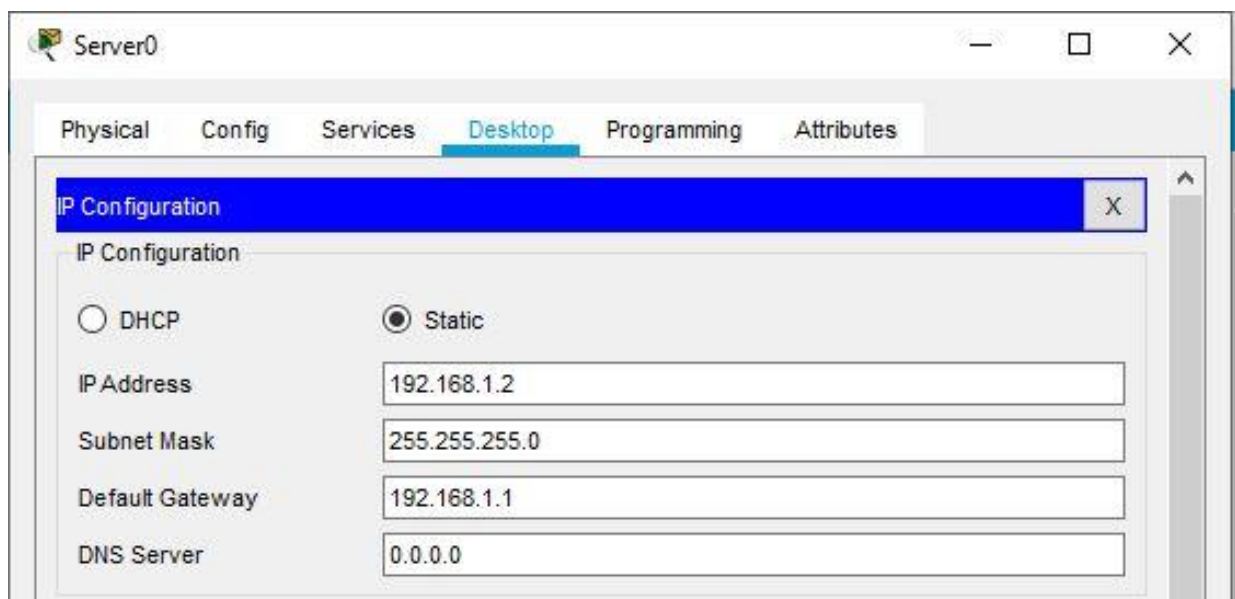
Tx Ring Limit 10

Router1 config





Router1 Router Table



DNS Server IP confug

Server0

Physical Config **Services** Desktop Programming Attributes

**SERVICES**

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS**
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DNS

DNS Service ☒ On ☐ Off

Resource Records

Name  Type **A Record** ▾

Address

Add Save Remove

No.	Name	Type	Detail
0	www.google.com	A Record	192.168.2.2

DNS Service

Server1

Physical Config Services **Desktop** Programming Attributes

**IP Configuration** X

IP Configuration

☐ DHCP ☒ Static

IP Address

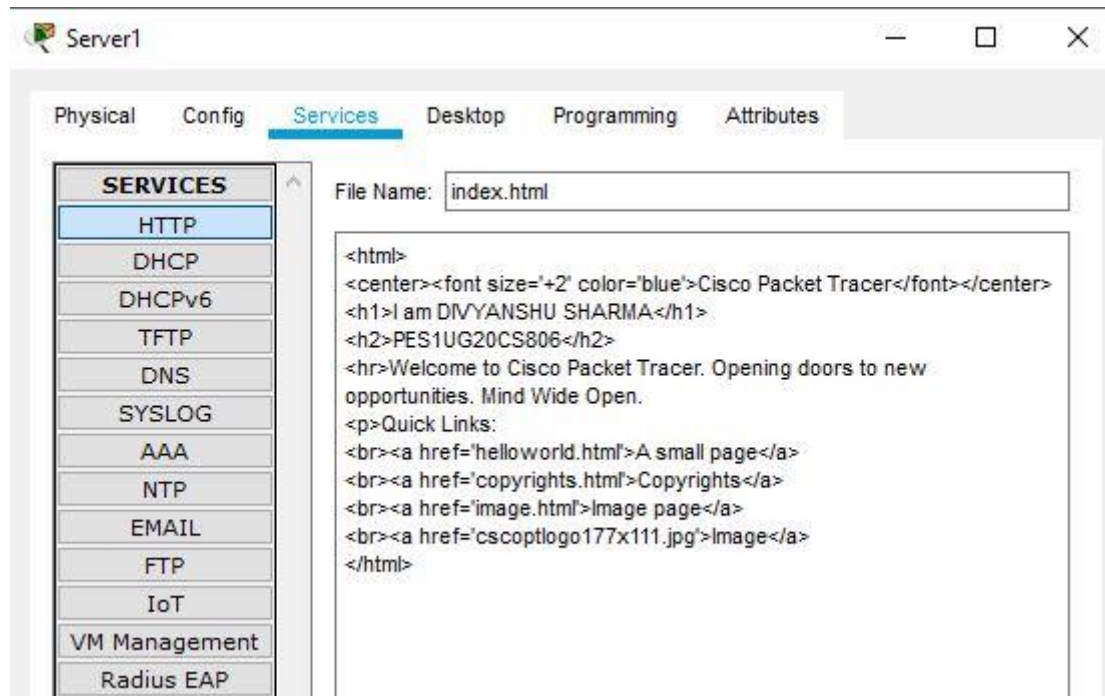
Subnet Mask

Default Gateway

DNS Server

Web Server IP config





Web Server service

## 1.2 Configuring Network and Routing Tables

### 1.2.1 End Systems

End System	Interface Name	IP Address	Subnet Mask	Gateway	DNS Server
PC0	FastEthernet0	10.10.1.1	255.255.255.0	10.10.1.2	192.168.1.2
Server0-DNS	FastEthernet0	192.168.1.2	255.255.255.0	192.168.1.1	
Server1-Web	FastEthernet0	192.168.2.2	255.255.255.0	192.168.2.1	

## 1.2.2 Routers

Router	Interface Name	IP Address	Subnet Mask
Router0	FastEthernet0/0	10.10.1.2	255.255.255.0
Router0	FastEthernet0/1	10.10.2.1	255.255.255.0
Router1	FastEthernet0/0	10.10.2.2	255.255.255.0
Router1	FastEthernet0/1	192.168.1.1	255.255.255.0
Router1	Ethernet0/0/0	192.168.2.1	255.255.255.0

## 1.2.3 Routing Table

Router	Destination Network	Next Hop
Router0	192.168.1.0/24	10.10.2.2
Router0	192.168.2.0/24	10.10.2.2
Router1	10.10.1.0/24	10.10.2.1

## 1.2 Observations

The first run has taken about 0.037 seconds to complete, while the second run takes just 0.040 seconds. This difference has occur due to cache.

