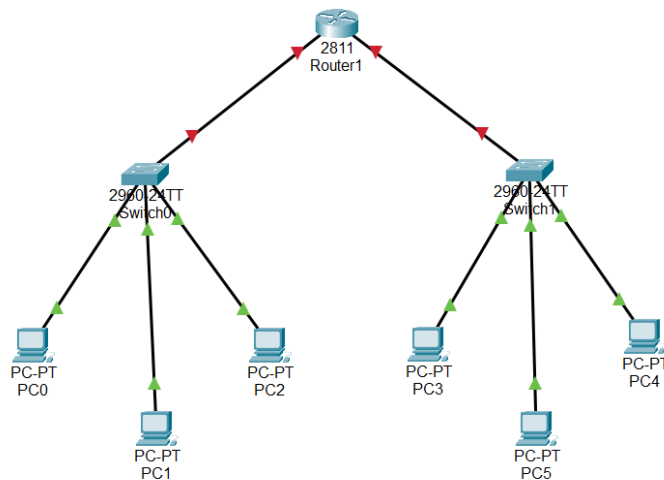
 Marwadi University Marwadi Chandarana Group	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology	
Subject: Computer Networks (01CT0503)	Aim: Configure DHCP server.	
Experiment No: 09	Date: 10-09-2024	Enrolment No: 92200133029

Aim: Configure DHCP server.

Step-1 : Open cisco packet tracer take switches, router and pcs. Connect router to the switch and switch to the pc via copper straight cable.



Step-2 : Give the ip address to both the ports of the router which are connected to switch. For giving the ip address open cli for the router and execute the command for the ip address.

```

Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

```

```


Router(config-if)#
Router(config-if)#int fa0/1
Router(config-if)#ip add 192.168.2.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Router(config-if)#

```

 Marwadi University Marwadi Chandarana Group	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology	
Subject: Computer Networks (01CT0503)	Aim: Configure DHCP server.	
Experiment No: 09	Date: 10-09-2024	Enrolment No: 92200133029

Step-3 : Now configure the DHCP server. DHCP (Dynamic host configuration protocol) is the protocol which automatically assigns Ip addresses and other network settings like DNS and gateway to the devices, making network setup easier and preventing IP conflicts. It simplifies network management by handling IP assignment dynamically. For that execute following command –

```
ip dhcp excluded-address <Ip add>
ip dhcp excluded-address <Ip add>
ip dhcp pool <pool name>
network <Ip add> <subnet mask>
default-router 192.168.1.1
dns-server 8.8.8.8
```

The command **ip dhcp excluded-address** is used to specify Ip addresses that should not be assigned to DHCP clients.

The command **ip dhcp pool <pool name>** creates a DHCP pool. This pool contains the range of IP addresses and network settings like DNS and gateways, that will be assigned to DHCP clients.

The command **network <Ip add> <subnet mask>** in DHCP configuration defines the network range from which Ip addresses will be assigned to clients.


The command **default-router 192.168.1.1** specifies the default gateway for DHCP clients. This is the IP address that clients will use to send traffic outside their local network

The command **dns-server 8.8.8.8** set the DNS server that clients will use to resolve domain names. Here, Google's public DNS (8 . 8 . 8 . 8) is used.

```
Router>
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip dhcp excluded-address 192.168.1.1
Router(config)#ip dhcp excluded-address 192.168.2.1
Router(config)#ip dhcp pool MA102
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
^
% Invalid input detected at '^' marker.

Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#default-route 192.168.1.1
^
% Invalid input detected at '^' marker.

Router(dhcp-config)#default-route 192.168.1.1
Router(dhcp-config)#dns-server 8.8.8.8
Router(dhcp-config)#exit
Router(config)#
Router(config)#
```

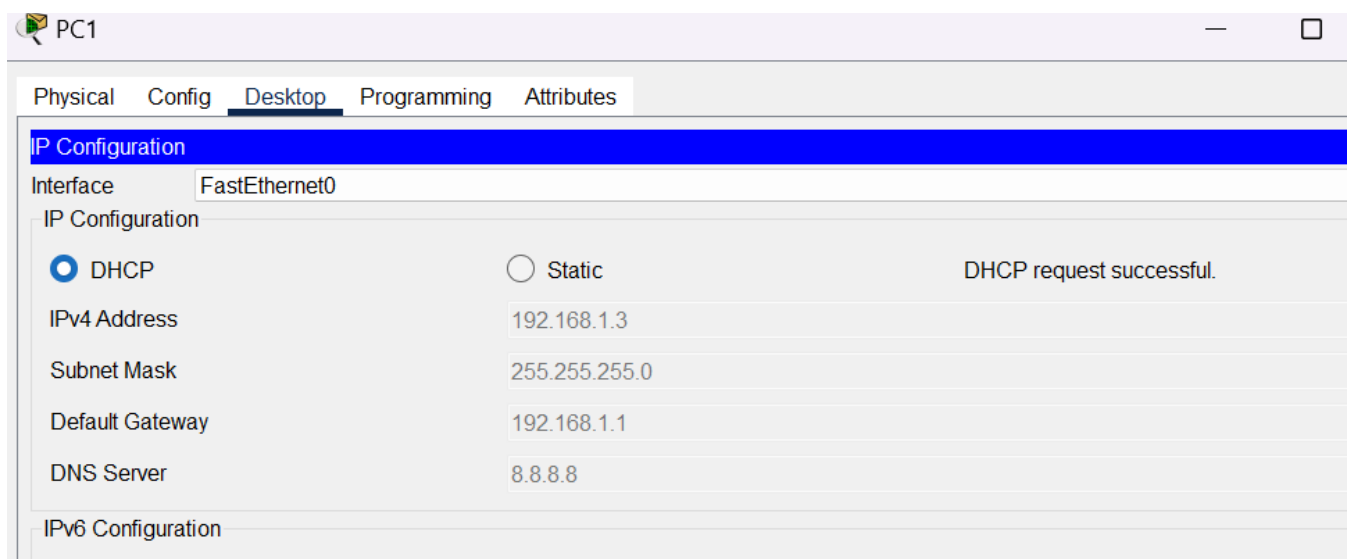
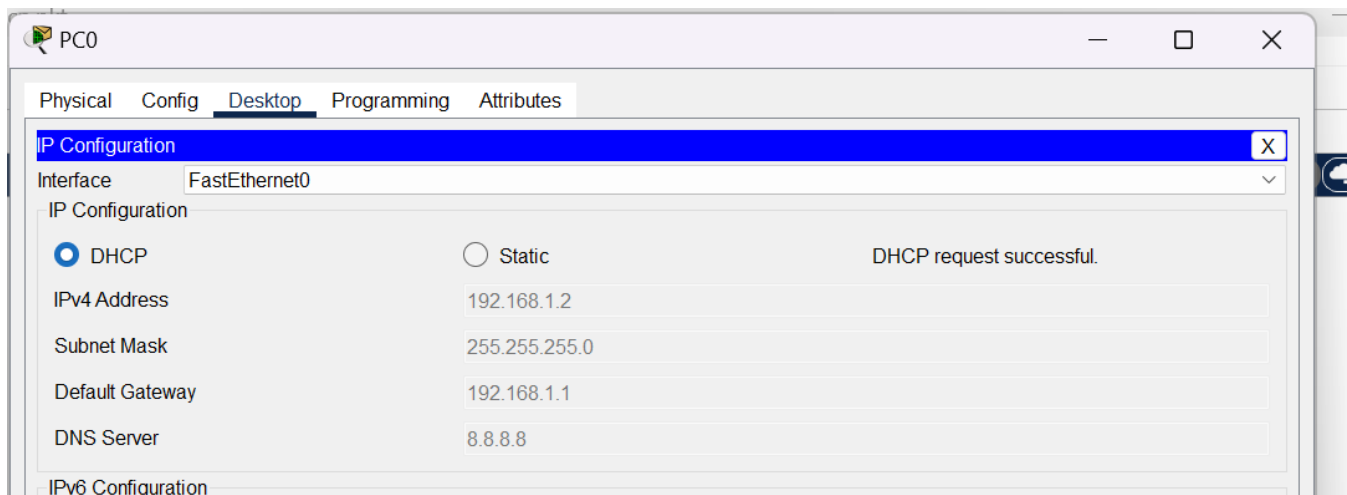
 Marwadi University Marwadi Chandarana Group	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology	
Subject: Computer Networks (01CT0503)	Aim: Configure DHCP server.	
Experiment No: 09	Date: 10-09-2024	Enrolment No: 92200133029


```

Router(config)#
Router(config)#ip dhcp pool MA115
Router(dhcp-config)#network 192.168.2.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.2.1
Router(dhcp-config)#dns-server 8.8.8.8
Router(dhcp-config)#exit
Router(config)#

```

Step-4 : Now after DHCP configuration check whether the pcs are got the Ip addresses dynamically or not. For that open the pc's Ip configuration in that you got two options static or DHCP. When you click on the DHCP you will see that the pc will get the Ip address by DHCP server.



 Marwadi University Marwadi Chandarana Group	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology	
Subject: Computer Networks (01CT0503)	Aim: Configure DHCP server.	
Experiment No: 09	Date: 10-09-2024	Enrolment No: 92200133029

PC3

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 192.168.2.2

Subnet Mask 255.255.255.0

Default Gateway 192.168.2.1

DNS Server 8.8.8.8

IPv6 Configuration

PC5

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 192.168.2.3


Subnet Mask 255.255.255.0

Default Gateway 192.168.2.1

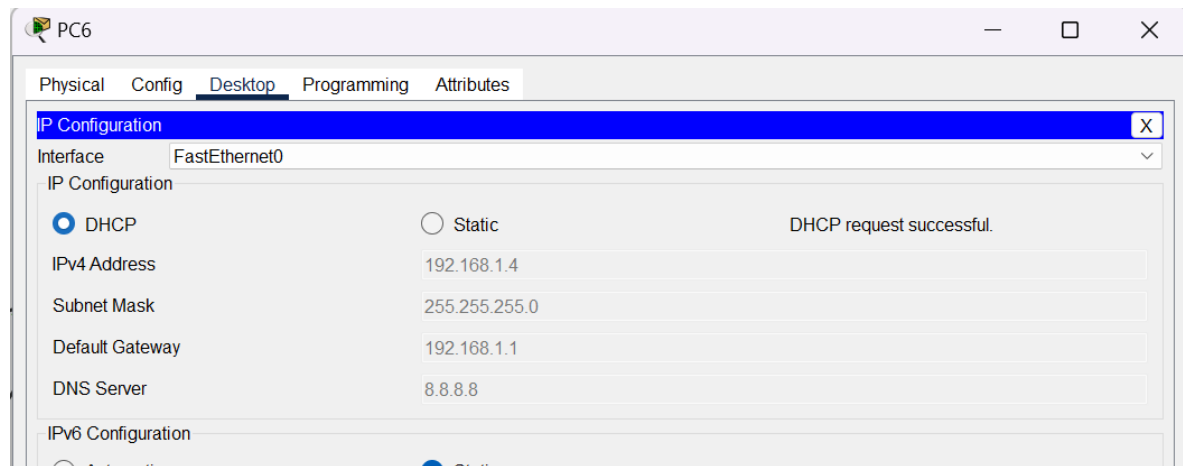
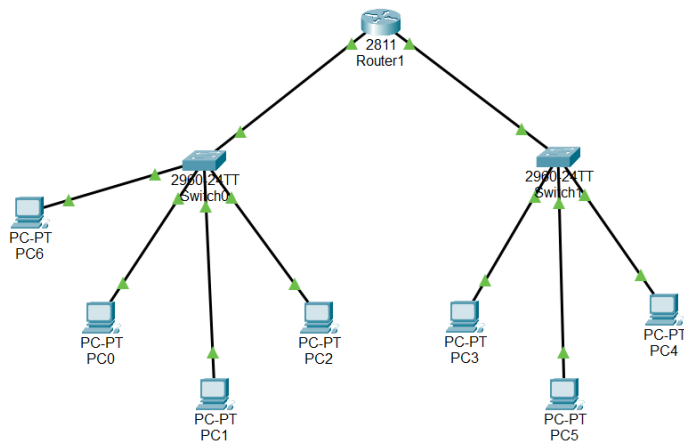
DNS Server 8.8.8.8

IPv6 Configuration

☐ Automatic ☒ Static

 Marwadi University Marwadi Chandarana Group	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology	
Subject: Computer Networks (01CT0503)	Aim: Configure DHCP server.	
Experiment No: 09	Date: 10-09-2024	Enrolment No: 92200133029

Step-5 : Now when we connect the other pc in the network after the DHCP configuration, then also that pc will get the Ip address dynamically.



Conclusion :

In this experiment, I explored DHCP configuration and how it makes network management easier. DHCP assigns IP addresses to devices automatically, which means I don't have to set them up manually, reducing the chances of IP conflicts. By automating this process, DHCP simplifies the configuration of network settings like subnet masks, default gateways, and DNS servers, enabling devices to connect smoothly. Overall, using DHCP improves efficiency and reliability when managing network resources.



Marwadi University
Faculty of Engineering and Technology
Department of Information and Communication Technology

**Subject: Computer
Networks (01CT0503)**

Aim: Configure DHCP server.

Experiment No: 09

Date: 10-09-2024

Enrolment No: 92200133029



Marwadi University
Faculty of Engineering and Technology
Department of Information and Communication Technology

**Subject: Computer
Networks (01CT0503)**

Aim: Configure DHCP server.

Experiment No: 09

Date: 10-09-2024

Enrolment No: 92200133029



Marwadi University
Faculty of Engineering and Technology
Department of Information and Communication Technology

**Subject: Computer
Networks (01CT0503)**

Aim: Configure DHCP server.

Experiment No: 09

Date: 10-09-2024

Enrolment No: 92200133029



Marwadi University
Faculty of Engineering and Technology
Department of Information and Communication Technology

**Subject: Computer
Networks (01CT0503)**

Aim: Configure DHCP server.

Experiment No: 09

Date: 10-09-2024

Enrolment No: 92200133029



Marwadi University
Faculty of Engineering and Technology
Department of Information and Communication Technology

**Subject: Computer
Networks (01CT0503)**

Aim: Configure DHCP server.

Experiment No: 09

Date: 10-09-2024

Enrolment No: 92200133029



Marwadi University
Faculty of Engineering and Technology
Department of Information and Communication Technology

**Subject: Computer
Networks (01CT0503)**

Aim: Configure DHCP server.

Experiment No: 09

Date: 10-09-2024

Enrolment No: 92200133029