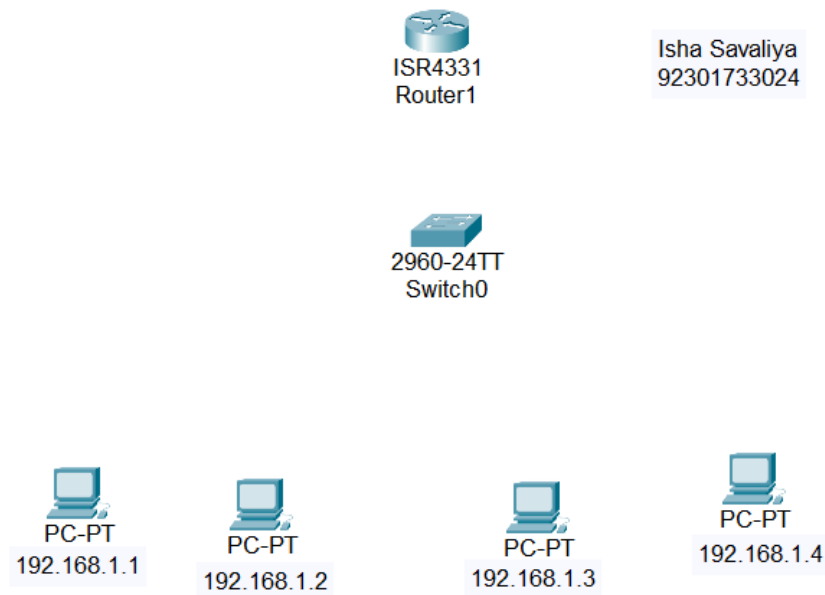
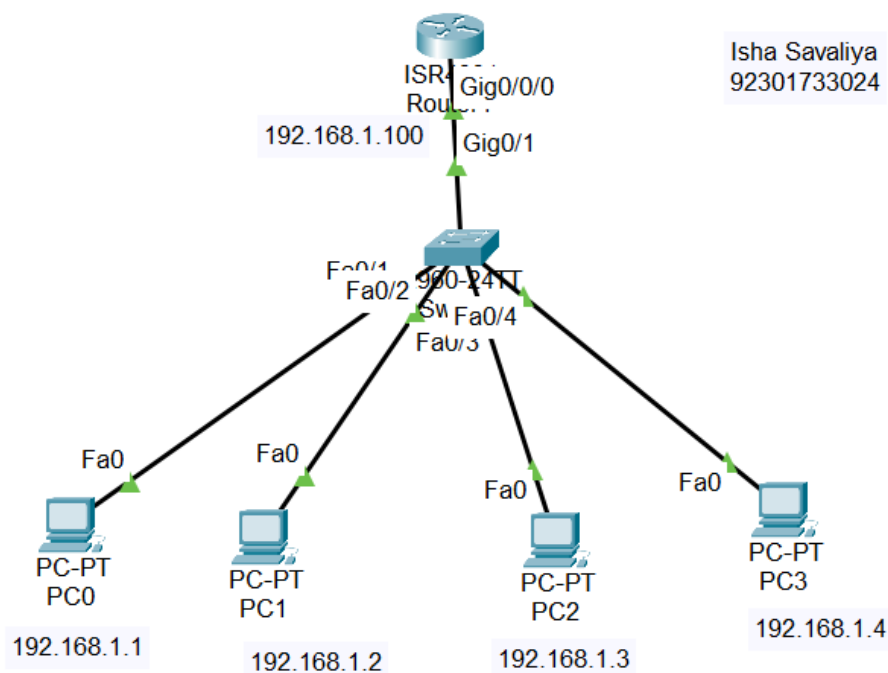

 Marwadi University Marwadi Chandarana Group	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology	
Subject: Computer Networks (01CT0503)	Aim: Configure DHCP server.	
Experiment No: 09	Date: 01-10-2025	Enrolment No: 92301733024

Step – 1:- Open Cisco Packet Tracer and take one Router, one Switch, and four PCs.



Step – 2 : Connect the PCs to the Switch (FastEthernet) and the Switch to the Router (GigabitEthernet) using copper straight-through cables.



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Step – 3 :- Assign the IP Address to the the Routers. Create IP DHCP Pool for network 192.168.1.0

Router1

Physical
Config
CLI
Attributes

IOS Command Line Interface

```

4194304K bytes of physical memory.
3207167K bytes of flash memory at bootflash:.
0K bytes of WebUI ODM Files at webui:.

--- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: no

Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int g0/0/0
Router(config-if)#ip address 192.168.1.0 255.255.255.0
Bad mask /24 for address 192.168.1.0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up


Router(config-if)#exit
Router(config)#hoatname isha
      ^
% Invalid input detected at '^' marker.

Router(config)#hostname isha
isha(config)#ip dhcp pool ict
isha(dhcp-config)#network 192.168.1.0 255.255.255.0
isha(dhcp-config)#default-router 192.168.1.100
isha(dhcp-config)#dns-server 192.168.1.50
isha(dhcp-config)#%DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged 192.168.1.3.
%DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged 192.168.1.4.

```

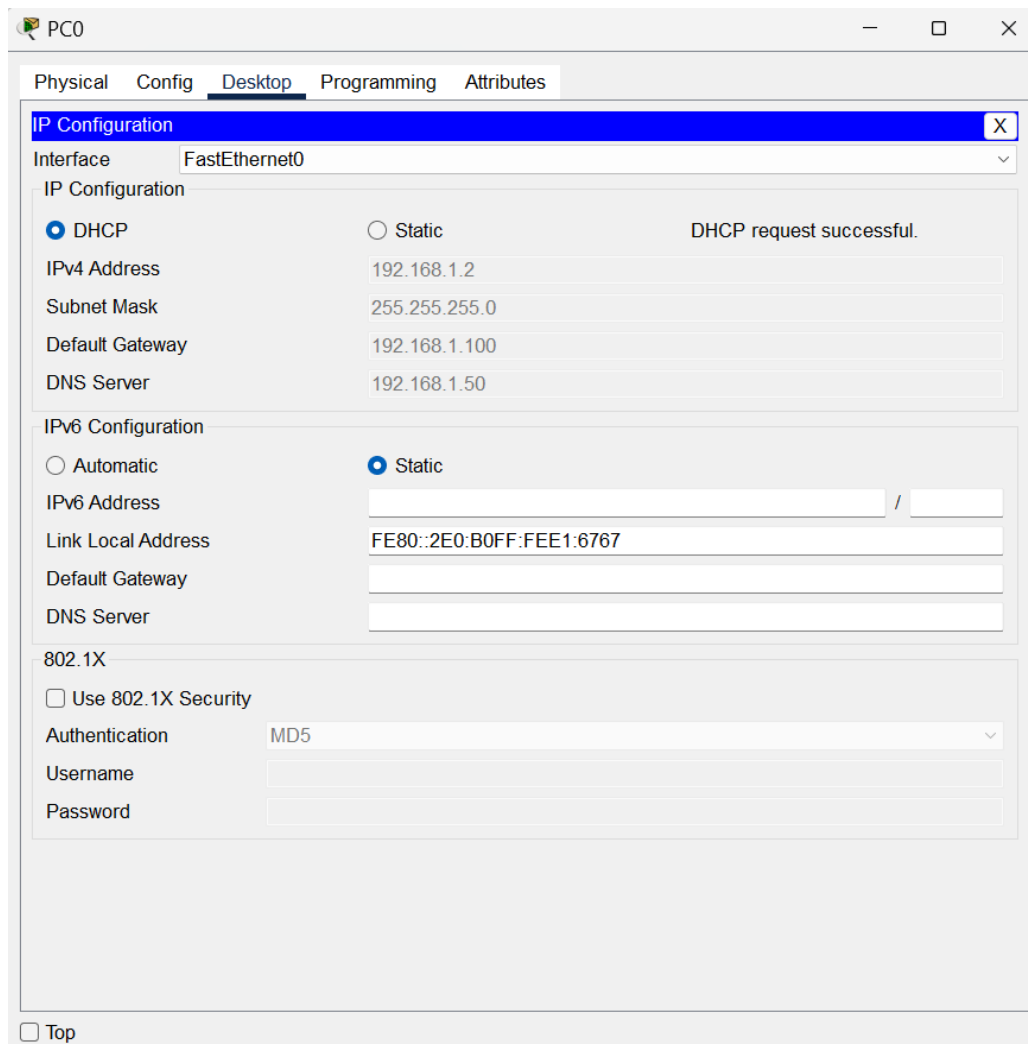
Copy
Paste

☐ Top

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- **ip dhcp pool iict:-** This command creates a new DHCP pool called iict. A DHCP pool is a range of IP addresses that can be assigned dynamically to clients on the network.
- **network 192.168.1.0 255.255.255.0 :-** This command specifies the network address and the subnet mask for the DHCP pool. In this case, the network is 192.168.1.0 with a subnet mask of 255.255.255.0. The DHCP server has the provision to assign an IP address to any of the clients connecting to it within the range of 192.168.1.1-192.168.1.254.
- **default-route 192.168.1.100 :-** this command specifies the default gateway.
- **dns-server 192.168.1.50 :-** this will provide the address of DNS server.


Step – 9 :- Configure the PCs to obtain their IP addresses using DHCP.



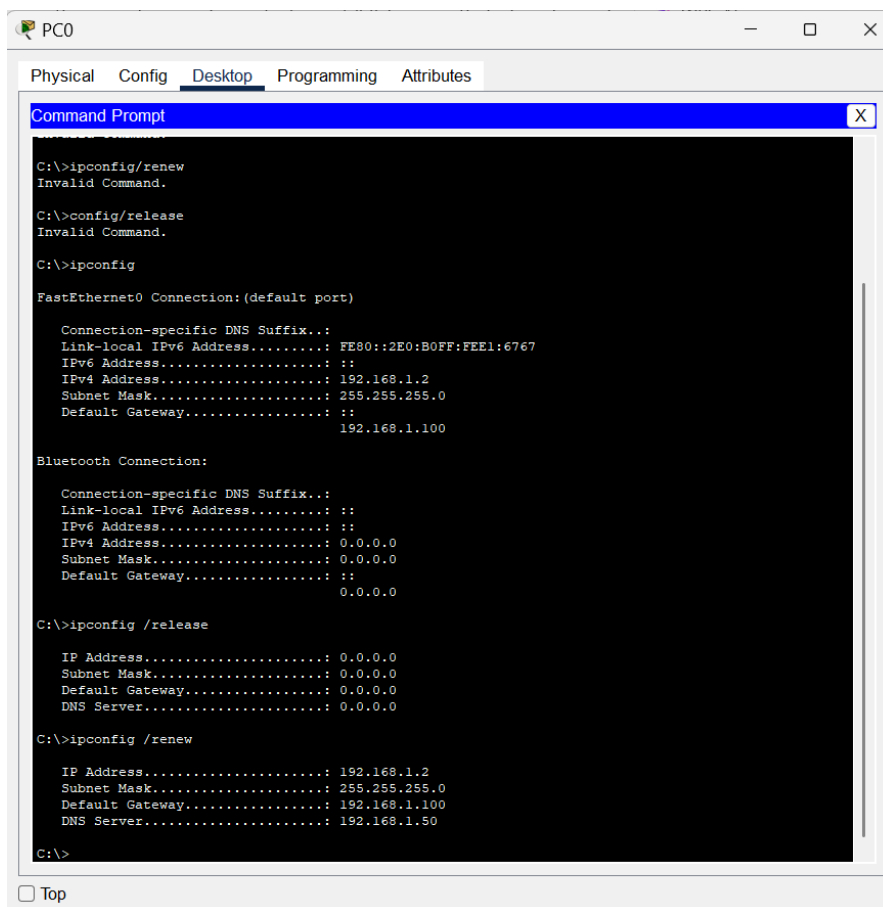
The screenshot shows the 'PC0' configuration window with the 'Desktop' tab selected. The 'IP Configuration' section is expanded, showing the 'FastEthernet0' interface. The 'DHCP' radio button is selected, and the 'DHCP request successful.' message is displayed. The configuration details are as follows:

Field	Value
Interface	FastEthernet0
IP Configuration	
<input checked="" type="radio"/> DHCP	<input type="radio"/> Static
IPv4 Address	192.168.1.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.100
DNS Server	192.168.1.50
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	
Link Local Address	FE80::2E0:B0FF:FEE1:6767
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MD5
Username	
Password	

At the bottom left, there is a 'Top' button.

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Step – 10 :- Use the release IP address command to test reassignment.



```

PCO
Physical Config Desktop Programming Attributes
Command Prompt
C:\>ipconfig/renew
Invalid Command.

C:\>config/release
Invalid Command.

C:\>ipconfig

FastEthernet0 Connection: (default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: FE80::2E0:B0FF:FEE1:6767
    IPv6 Address . . . . .: ::
    IPv4 Address. . . . .: 192.168.1.2
    Subnet Mask . . . . .: 255.255.255.0
    Default Gateway . . . . .: ::
                                   192.168.1.100

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: ::
    IPv6 Address . . . . .: ::
    IPv4 Address. . . . .: 0.0.0.0
    Subnet Mask . . . . .: 0.0.0.0
    Default Gateway . . . . .: ::
                                   0.0.0.0

C:\>ipconfig /release

IP Address. . . . .: 0.0.0.0
Subnet Mask . . . . .: 0.0.0.0
Default Gateway . . . . .: 0.0.0.0
DNS Server . . . . .: 0.0.0.0

C:\>ipconfig /renew

IP Address. . . . .: 192.168.1.2
Subnet Mask . . . . .: 255.255.255.0
Default Gateway . . . . .: 192.168.1.100
DNS Server . . . . .: 192.168.1.50

C:\>
  
```

Conclusion :-

By performing this experiment, I learned how to configure a router as a DHCP server. We created an IP pool, assigned a range of IP addresses, set the DNS server address, and defined the default gateway. This helped us establish successful communication while ensuring efficient use of IP addresses and minimizing wastage.