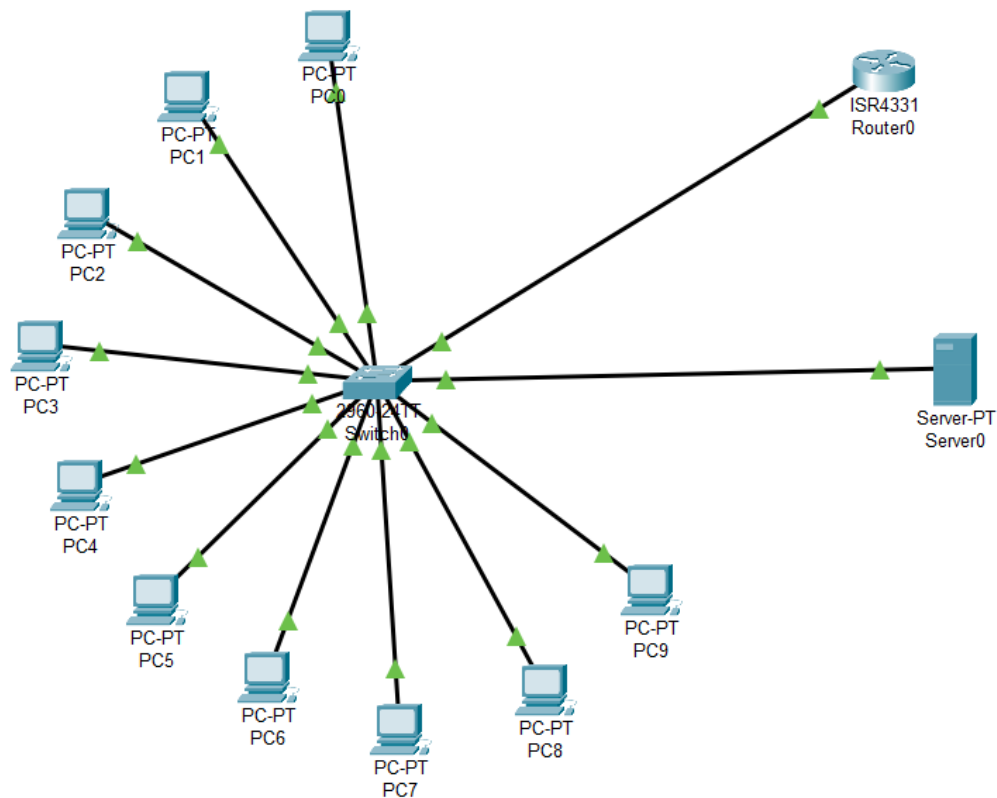


Practical No : 6

Aim : Configure a DHCP server with given scenario.



Theory :

Dynamic Host Configuration Protocol (DHCP) is used to automatically assign IP addresses and network configurations (like subnet mask, gateway, DNS) to devices in a network. It eliminates the need for manual IP configuration and ensures efficient IP address management.

Steps :

DHCP Configuration :

Switch : 2960-24TT

No. of PC's : 0-9(10)

Server : PT

Router : ISR4331

Server Configuration :

The top screenshot shows the 'Desktop' tab of the Server0 configuration interface. It contains sections for IP Configuration, IPv6 Configuration, and 802.1X. The IP Configuration section has radio buttons for DHCP and Static (selected). The Static IP configuration fields are: IPv4 Address (192.168.1.2), Subnet Mask (255.255.255.0), Default Gateway (192.168.1.1), and DNS Server (0.0.0.0). The IPv6 Configuration section has radio buttons for Automatic and Static (selected). The Static IPv6 configuration fields are: IPv6 Address (empty), Link Local Address (FE80::20A:41FF:FE98:DEE), Default Gateway (empty), and DNS Server (empty). The 802.1X section has a checkbox for 'Use 802.1X Security' (unchecked), a dropdown for 'Authentication' (MD5), and fields for 'Username' and 'Password'.

The bottom screenshot shows the 'Services' tab of the Server0 configuration interface. It features a 'SERVICES' list on the left and a 'DHCP' configuration section on the right. The 'SERVICES' list includes: HTTP, DHCP (selected), DHCPv6, TFTP, DNS, SYSLOG, AAA, NTP, EMAIL, FTP, IoT, VM Management, and Radius EAP. The 'DHCP' section has a dropdown for 'Interface' (FastEthernet0) and radio buttons for 'Service' (On) and 'Off'. The configuration fields are: Pool Name (serverPool), Default Gateway (192.168.1.1), DNS Server (0.0.0.0), Start IP Address (192), Subnet Mask (255), and Maximum Number of Users (246). The TFTP Server and WLC Address fields are both 0.0.0.0. Below these fields are 'Add', 'Save', and 'Remove' buttons. At the bottom, there is a table showing the configuration for the 'serverPool'.

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168.1.1	0.0.0.0	192.168.1.10	255.255.255.0	246	0.0.0.0	0.0.0.0

Router Configuration in CLI :

Router>enable

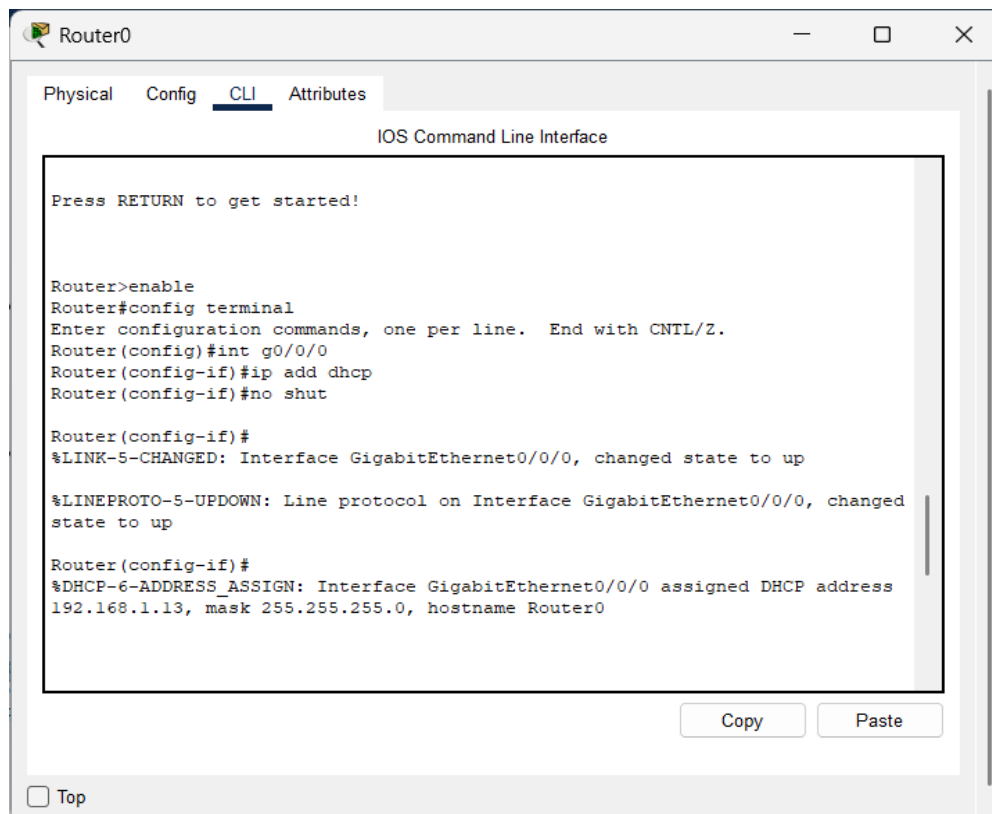
Router#config terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#int g0/0/0

Router(config-if)#ip add dhcp

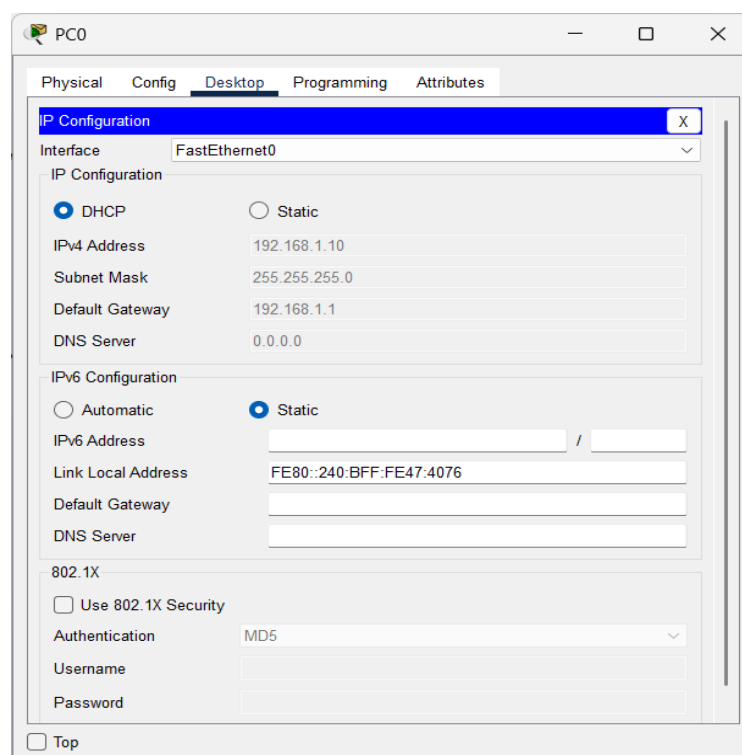
Router(config-if)#no shut



PC Configuration :

Select DHCP instead of Static in IP Configuration of each PC(0-9) , Automatically it will configure.

For ex:



Cisco Packet Tracer - D:\Rohit\Acn Cisco Practip6.pkt

File Edit Options View Tools Extensions Window Help

Logical Physical 1299, 1186

Root 12:28:00

The network diagram shows a central switch with multiple interfaces. It is connected to several PCs (PC1-PC9) and two servers (Server0, Server1). The connections are as follows:

- Switch Fa0/12 to PC1 Fa0
- Switch Fa0/11 to PC2 Fa0
- Switch Fa0/10 to PC3 Fa0
- Switch Fa0/9 to PC4 Fa0
- Switch Fa0/8 to PC5 Fa0
- Switch Fa0/7 to PC6 Fa0
- Switch Fa0/6 to PC7 Fa0
- Switch Fa0/5 to PC8 Fa0
- Switch Fa0/4 to PC9 Fa0
- Switch Fa0/3 to Server0 Fa0
- Switch Fa0/2 to Server1 Fa0

PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
1	Successful	PC0	Server0	ICMP	Black	0.000	N	0	(edit)	(delete)
2	Successful	PC0	Router0	ICMP	Yellow	0.000	N	1	(edit)	(delete)
3	Successful	PC0	PC9	ICMP	Green	0.000	N	2	(edit)	(delete)

Time: 00:04:51

Scenario 0

New Delete

Toggle PDU List Window

Copper Straight-Through