

## Experiment No.: 06

### Experiment Name: Configuring a DHCP Server.

#### Objective:

- To learn computer networking
- To learn basics of DHCP Server
- To configure a DHCP Server

#### Introduction:

A DHCP Server is a network server that automatically provides and assigns IP addresses, default gateways and other network parameters to client devices. It relies on the standard protocol known as Dynamic Host Configuration Protocol or DHCP to respond to broadcast queries by clients.

A DHCP server automatically sends the required network parameters for clients to properly communicate on the network. Without it, the network administrator has to manually set up every client that joins the network, which can be cumbersome, especially in large networks. DHCP servers usually assign each client with a unique dynamic IP address, which changes when the client's lease for that IP address has expired.

#### Topology:

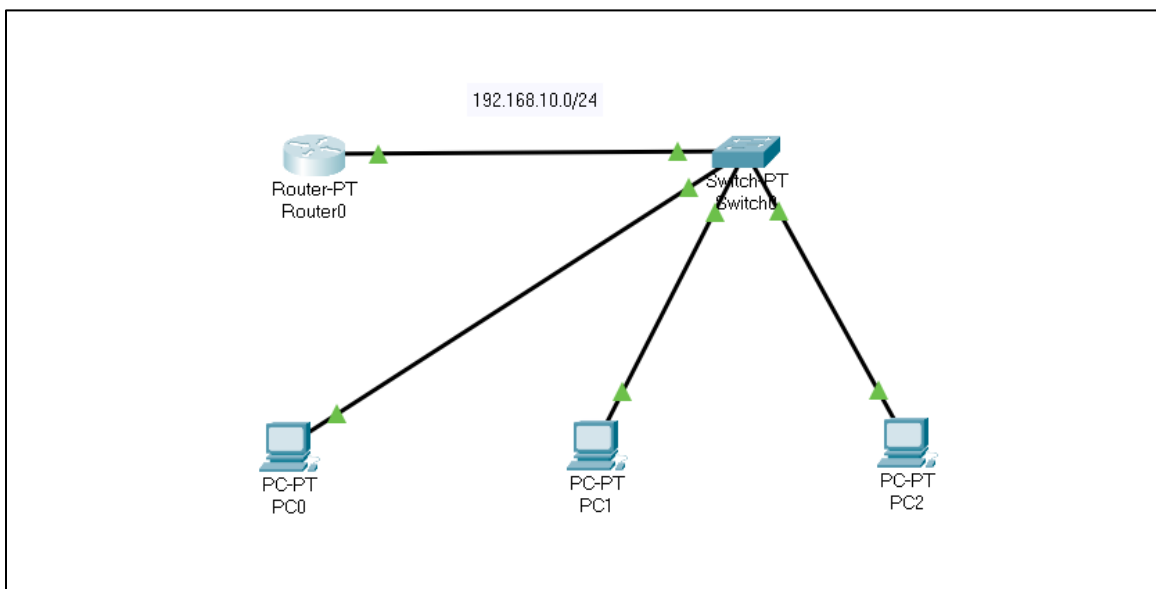


Fig: A DHCP Server Topology

## Command:

### Router-PT Router0:

**Router>** en

**Router#** configure terminal

**Router(config)#** interface fastEthernet 0/0

**Router(config-if)#** no shutdown

**Router(config-if)#** ip address 192.168.10.1 255.255.255.0

**Router(config-if)#** exit

**Router(config)#** ip dhcp pool Network1

**Router(dhcp-config)#** network 192.168.10.0 255.255.255.0

**Router(dhcp-config)#** default-router 192.168.10.1

**Router(dhcp-config)#** dns-server 192.168.10.9

## Result and Analysis:

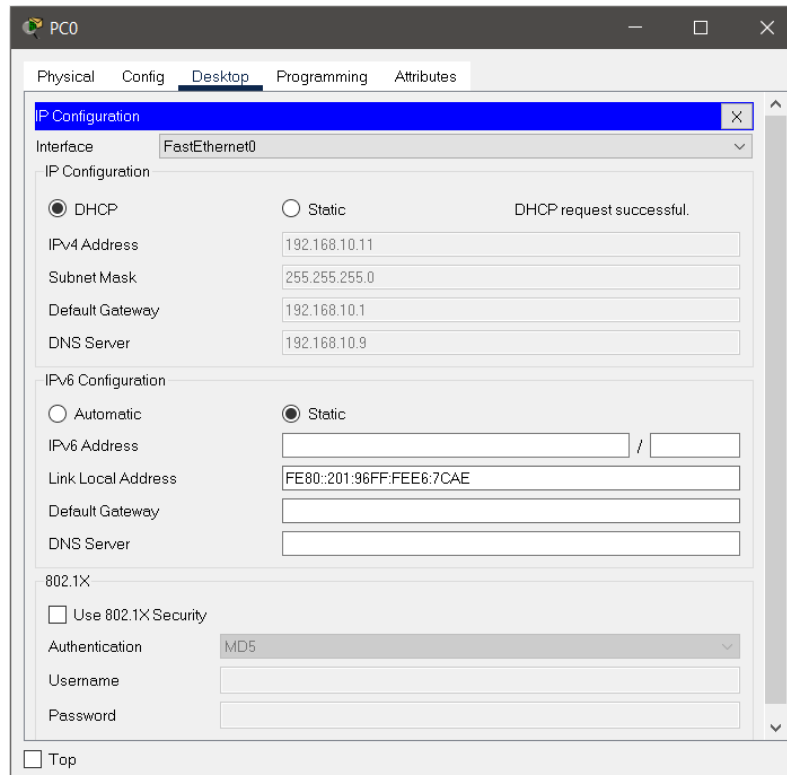


Fig: Dynamic IP of PC0

**Conclusion:**

In this experiment we configure a DHCP Server. The basic flow is that a DHCP server hands out configuration data, based on the administrator's policy, to a requesting client. Common network parameters requested include subnet mask, router, domain name server, hostname and domain name.

As the requesting client has no IP address when joining the network, it broadcasts the request. The protocol is thus used in a very early stage of IP communication. If such dynamic protocol is not used to get an IP address, the client has to use a predefined IP address generally called "static IP address", which is manually configured on the client network interface in configuration files or with a specific command.