LAB 7: Consider a network topology and IP address assignment of your choice and illustrate concept of HTTP, DNS & DHCP server setup in Packet Tracer.

Objective: To configure and understand the HTTP, DNS and DHCP service using Packet Tracer

Device used

S.N.	Device	Model	Quantity
1	PC	PC	4
2	Switch	2960 IOS15	2
3	Router	ISR4331	1
4	Cable	Straight through	9
5	Server	PT-Server	3

Background

HTTP:

HTTP (HyperText Transfer Protocol) is the protocol used to transfer hypertext between two computers. It provides a standard between a web browser and a web server to establish communication.

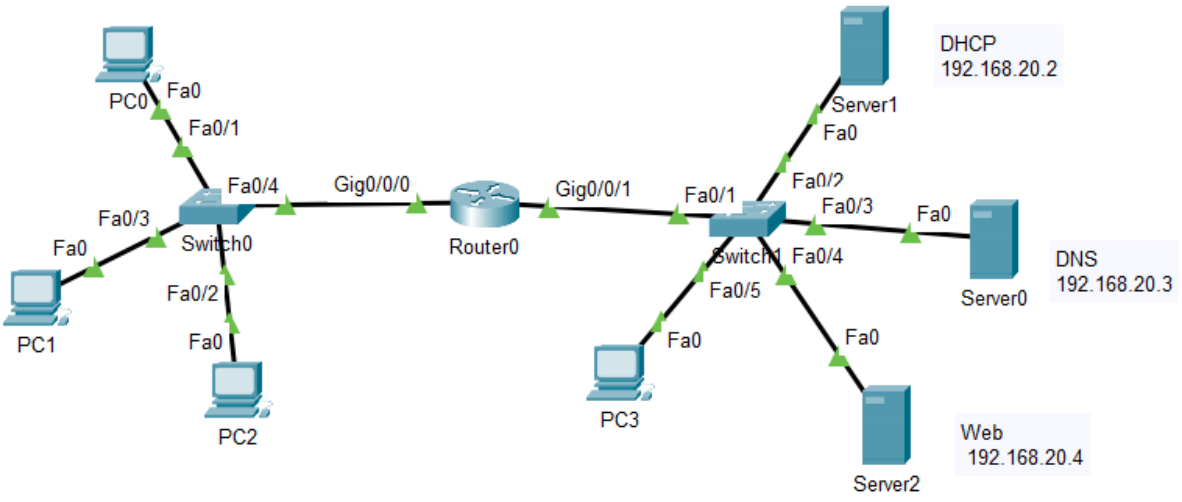
DNS:

The domain name system (DNS) is a naming database in which internet domain names are located and translated into Internet Protocol (IP) addresses.

DHCP:

DHCP (Dynamic Host Configuration Protocol) is a network management protocol used to dynamically assign an Internet Protocol (IP) address to any device, or node, on a network so they can communicate using IP.

Topology

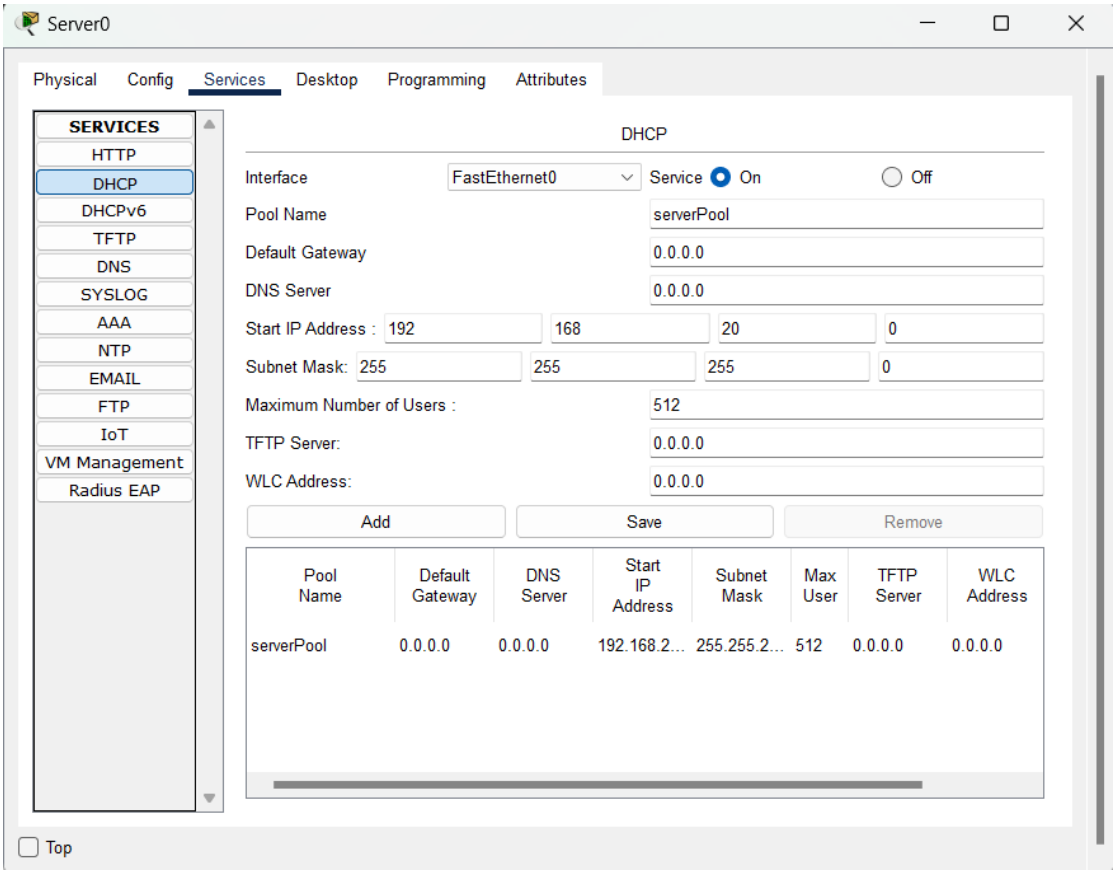


IP Address Plan

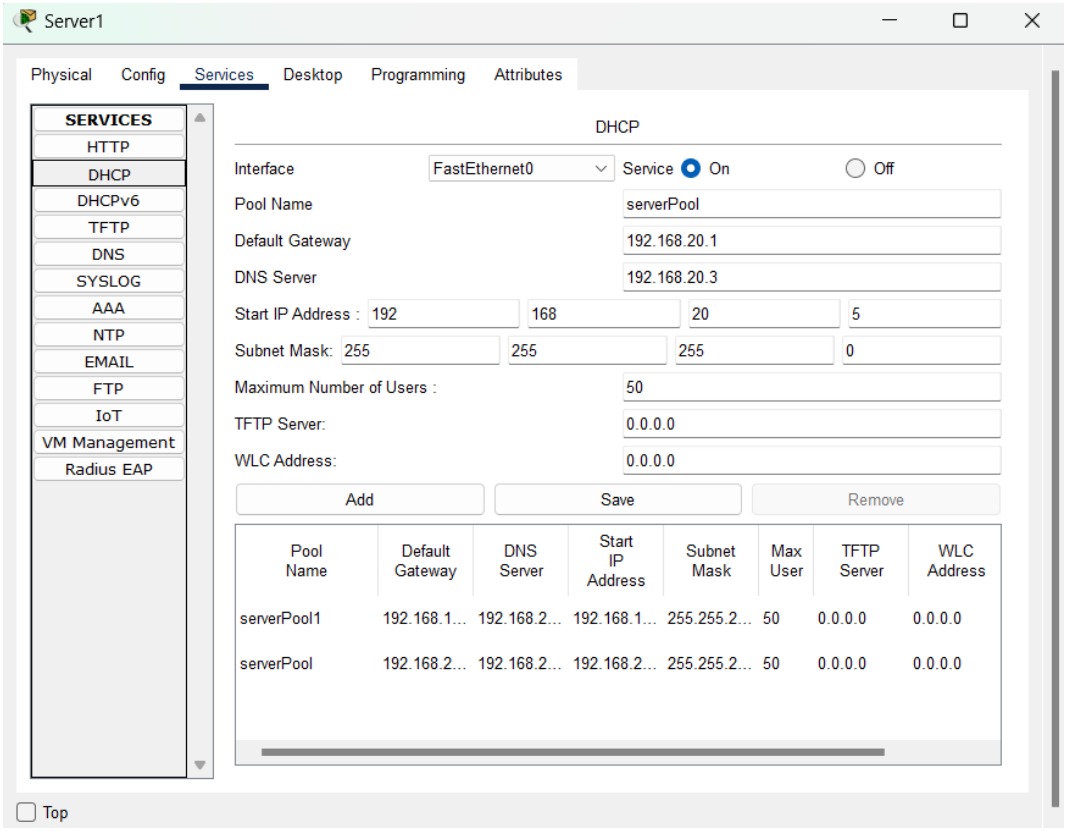
Device	Interface	IP	Subnet Mask	DNS Server	Default gateway
Router 0	gig 0/0/0	192.168.10.1	255.255.255.0	Default	-
Router 0	Gig 0/0/0	192.168.20.1	255.255.255.0	Default	-
Server 0	NIC	192.168.20.3	255.255.255.0	192.168.20.3	192.168.20.1
Server 1	NIC	192.168.20.2	255.255.255.0	192.168.20.3	192.168.20.1
Server 2	NIC	192.168.20.4	255.255.255.0	192.168.20.3	192.168.20.1
All PC will get the IP address from DHCP server dynamically.					

Procedure

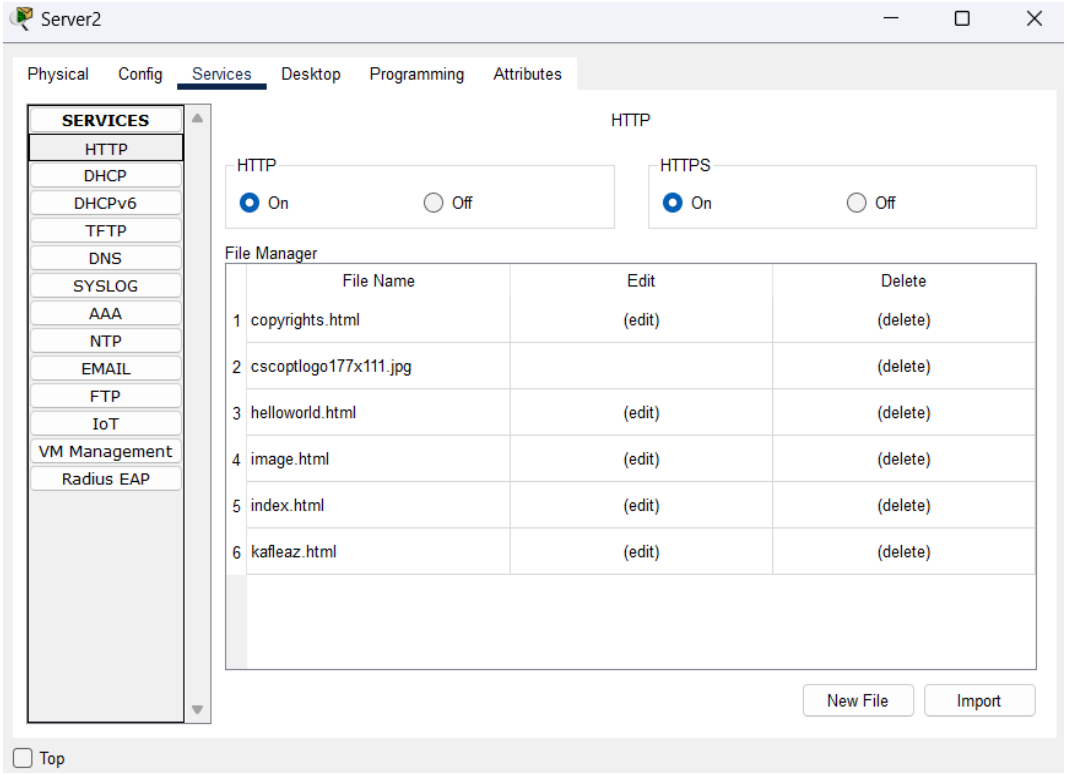
1. Switches are joined with a router
2. 3 PCs are joined with a switch
3. 3 servers and a PC is joined with another server
4. Assign the IP address to each server as shown in IP table.
5. Set up the DHCP Server as shown below



6. Set up the DNS Server as shown below



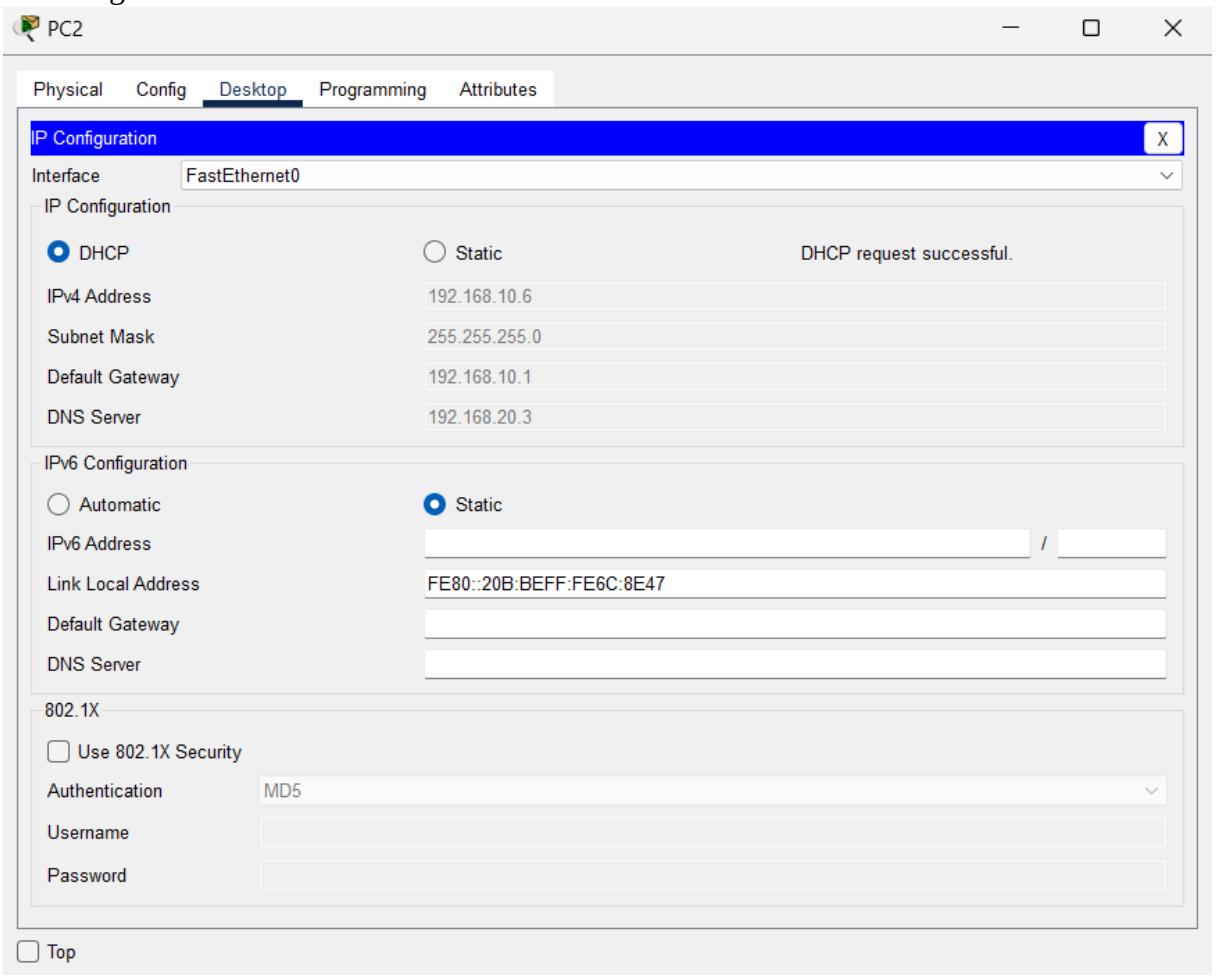
7. Set up the WEB Server as shown below



8. Setup the router interface as:
   Router>enable
   Router#configure terminal
   Router(config)#interface GigabitEthernet0/0/0
   Router(config-if)#ip address 192.168.10.1 255.255.255.0
   Router(config-if)#no shutdown
   Router(config-if)#exit
   Router(config)#interface GigabitEthernet0/0/1
   Router(config-if)#ip address 192.168.20.1 255.255.255.0
   Router(config-if)#no shutdown
   Router(config-if)#exit

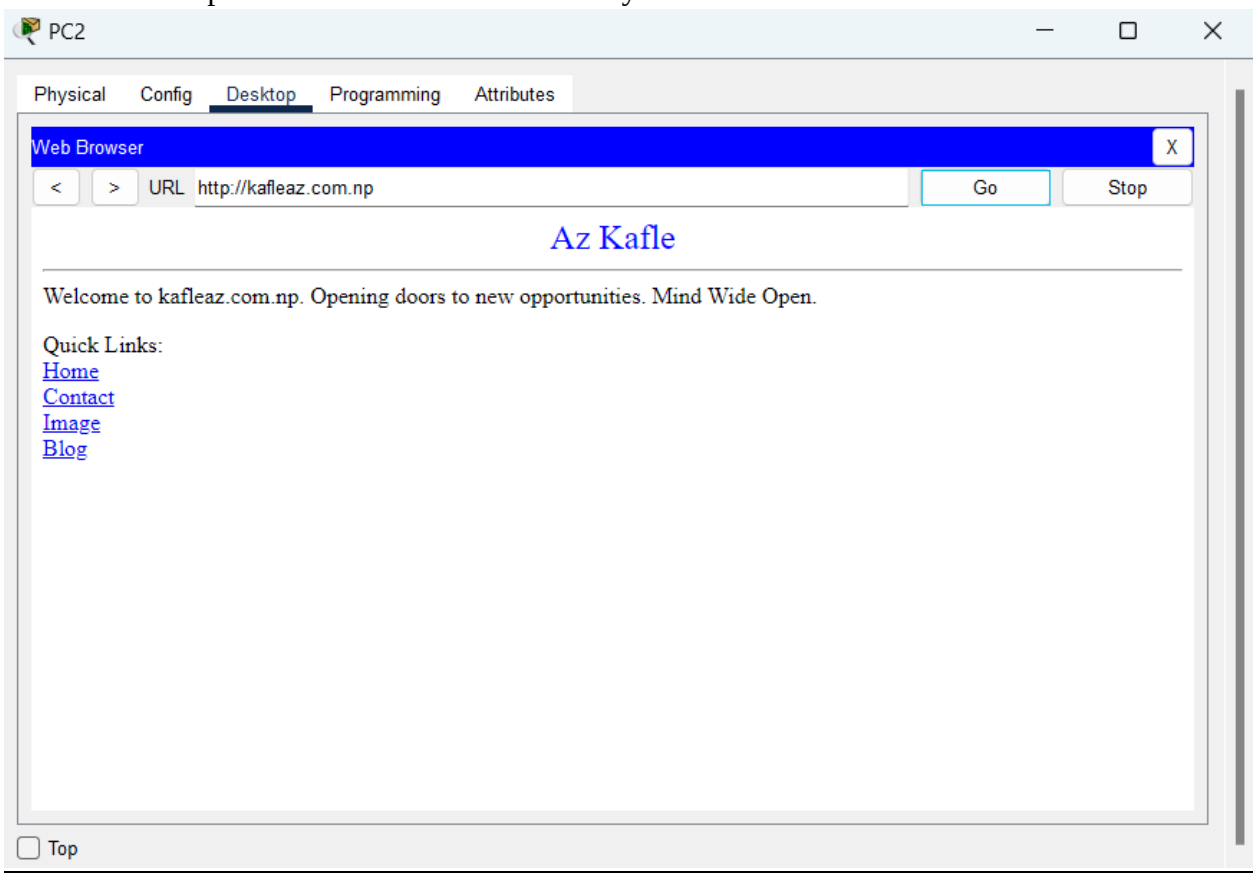
   To forward broadcast message to DHCP server:
   Router(config)#interface gig 0/0/0
   Router(config-if)#ip helper-address 192.168.20.2

9. Get the IP in each PC by selecting DHCP Option as: click on PC-> click on desktop tab and the select the DHCP then DHCP request sent to the DHCP server and server will assign the IP as shown below



Verification

Click in any one PC select desktop tab select web browser and then enter tek.com.np then you will get the following response from the Web server after resolving domain name tek.com.np into IP address 192.168.20.4 by the DNS server



Conclusion

In this way we can setup DHCP, DNS and Web server in our network and these services works in close association as shown in this experiment.