How to configure DHCP within a LAN in a packet Tracer

Here,we are going to see how to configure DHCP within a LAN in a packet tracer,
DHCP-Dynamic Host Configuration Protocol
DHCP Proces,(DORA)
   =>Discover(Client discovers the DHCP Server for Ip request)
   =>Offer (DHCP servers offers ip to a client and it will wait for the request from cleint
   =>Request (Client reply for requesting offered ip address from dhcp server,sometimes there will be   more dhcp servers.So,client receives offer from multiple servers.client will reply for only one   offer.So, other offers will be canceled and replaced in a pool.)
   =>Acknowledgement (Final step from server sending all infromation to client like DNS,Default   Gateway,tftp,domain name,...)

DHCP Server uses Port 67,Client uses port 68
It uses UDP(User Datagram Protocol).

Step 1: Create a LAN like this,
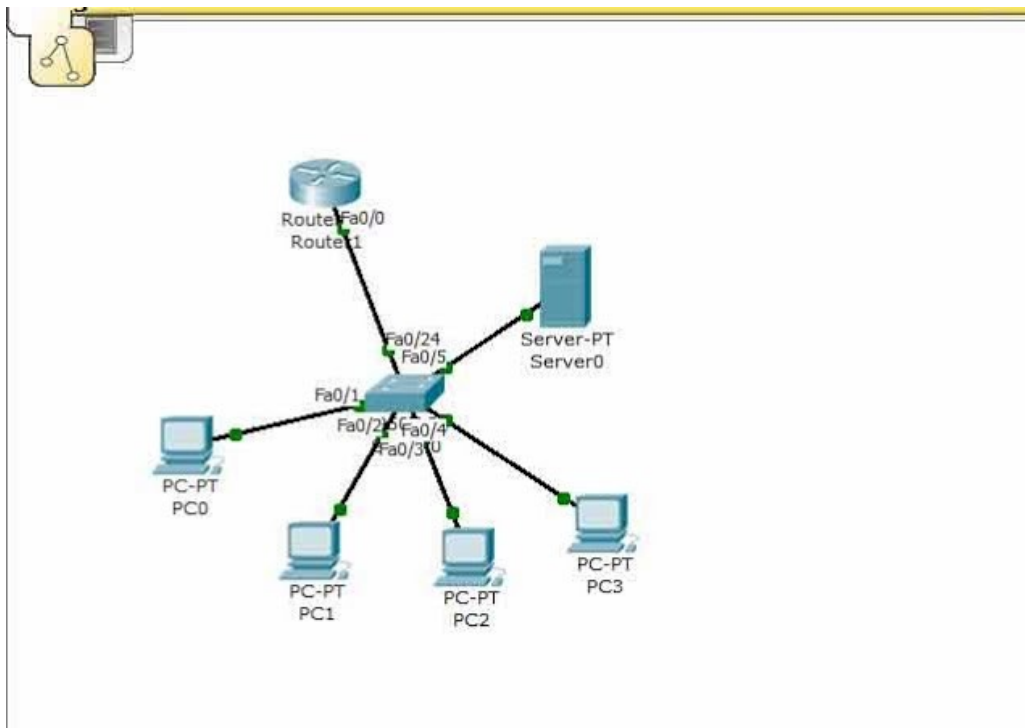
Step 2: Configure router interface with ip 10.0.0.1 and subnet mask 255.0.0.0

```
Router>enable
Router#config t
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#
```

Step 3:click on server-> config, then assign gateway in our example 10.0.0.1

Step 4: Then Click on Fastethernet and assign ip address and subnet mask.I am going to use 10.0.0.2 and subnet mask 255.0.0.0 for our server.

Step 5: Click on DHCP,there you can see default pool**,**

**step 6:**Just give default gate way,here we are using 10.0.0.1.

Step 7:DNS server,Just give our server ip address,10.0.0.2.

Step 8: Then just edit start ip address.I am going to give 10.0.0.10 and subnet mask 255.0.0.0

Step 9: In Maximum Number of Users,Here we are using Class A Network so we can use 1,67,77,216 ip address.just give how many ip address you want in this pool.I am going to give 500

Step 10: Assign TFTP server ip address,just give our server ip address,10.0.0.2.

Step 11: And click on save.That's it...
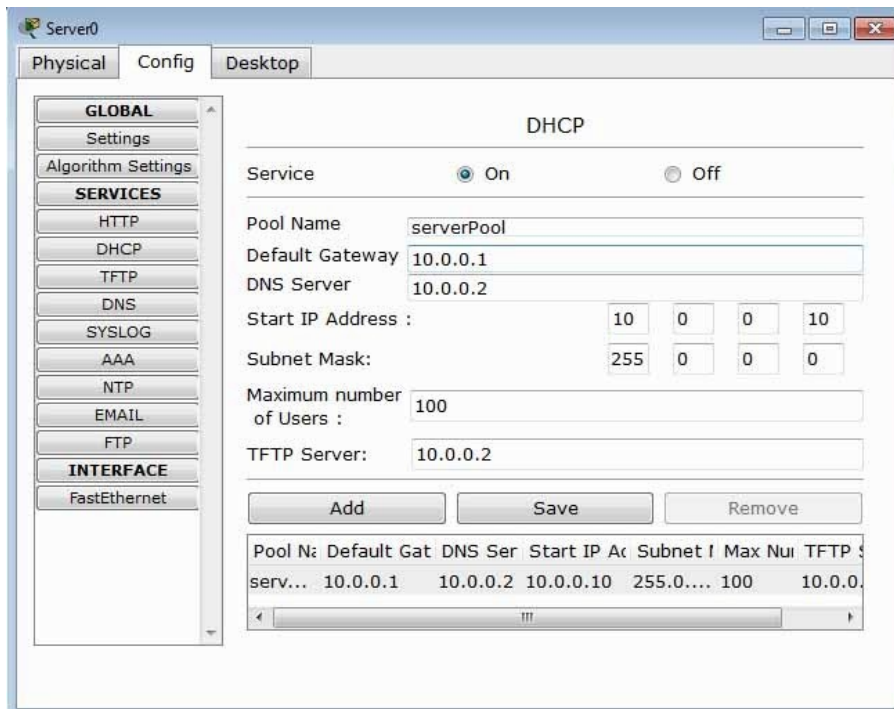
Step 12: Now, Click on any of the PC-> then click on Desktop->Ip configuration,and Choose 'DHCP' wait for some time,if your dhcp request failed then try few more times.This is how you should get.
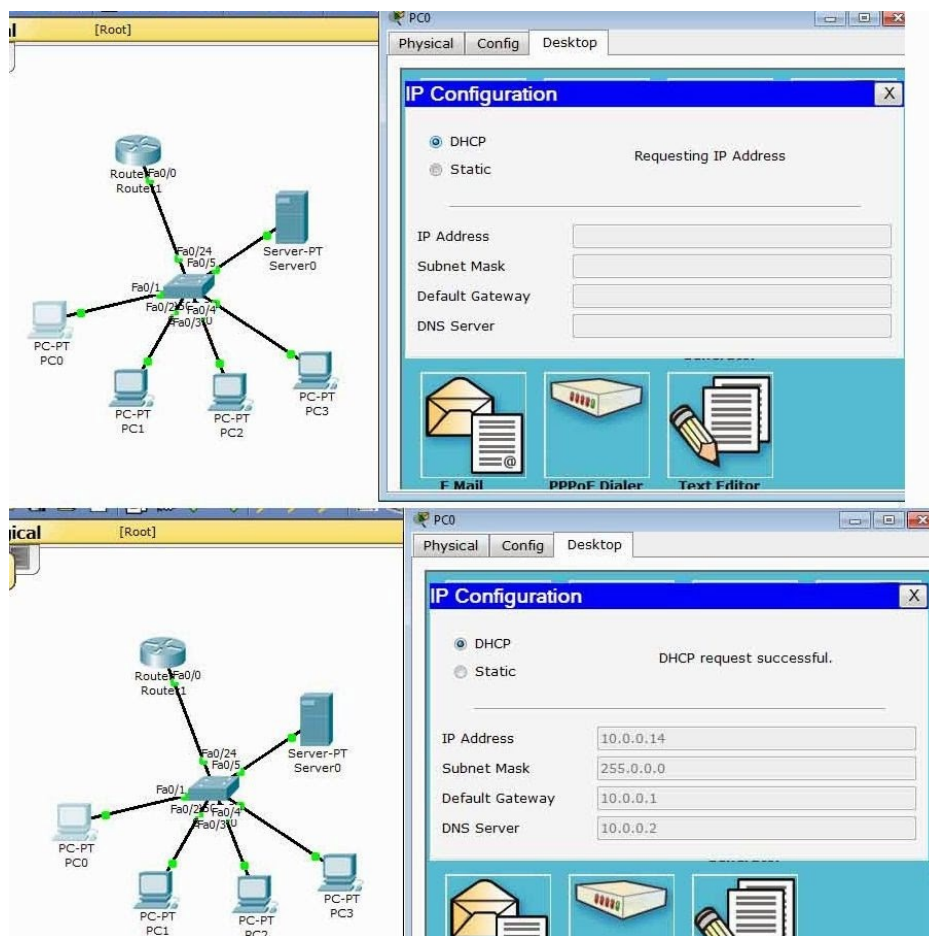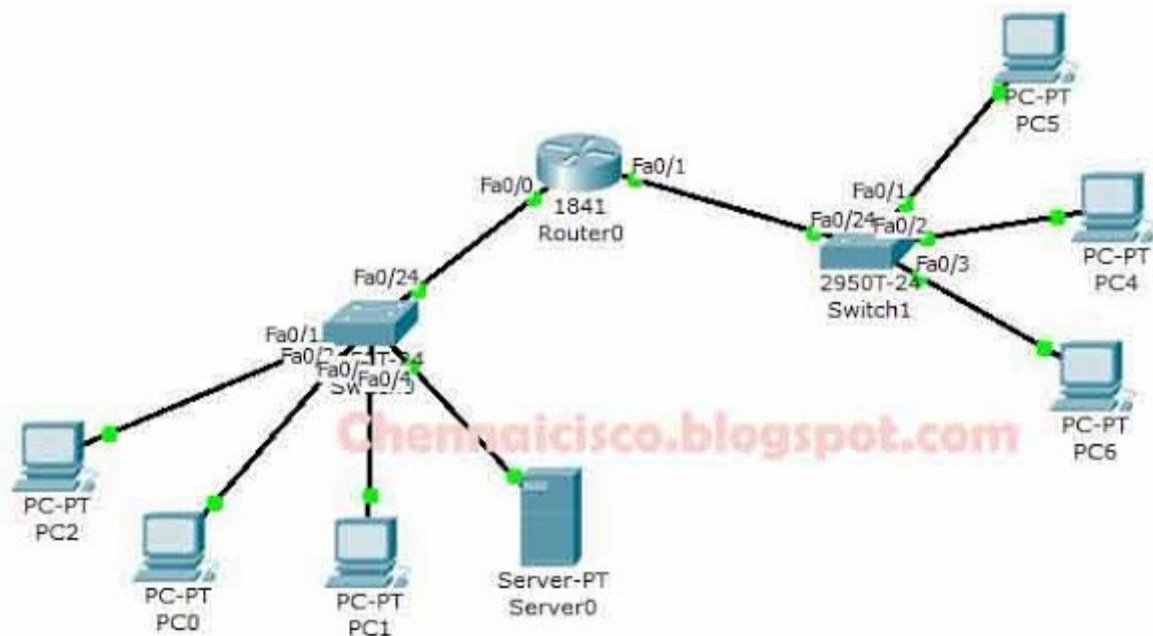
How to get IP from DHCP that is Present in Some other Network Using Ip Helper Address

SOLUTION:

Here we are going to see, how to configure DHCP for multiple netowrks .Can we get ip address from DHCP that is prensent in other network? yes we can.Lets see how to do with help of 'ip helper-address'.

Step 1: Create a topology like this,

Step 2: Configure the router interface fastethernet0/0 and fastethernet 0/1 with ip address .

Router>enable
Router#config terminal
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit

Router(config)#interface fastethernet0/1
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit

Step 3: Click on server->config->then just give the gateway ip address .Gateway for this network

is 10.0.0.1

Step 4: Then click on fastethernet assign ip address.I am going to give 10.0.0.2 and subnetmask 255.0.0.0.Once we have configured the ip address for the server,DHCP server automatically assign 10 network for default pool.We don't have to create pool for 10 Network again.Just we need to give ip for DNS,Gateway and TFTP then we may configure starting ip address or leave it and Save.

Step 5: Now,Click on Pc in a LAN with Server and Check whether DHCP working fine in this network.Click on any PC->Desktop->Ip configuration->Choose DHCP,then you will get ip from dhcp server for this PC.
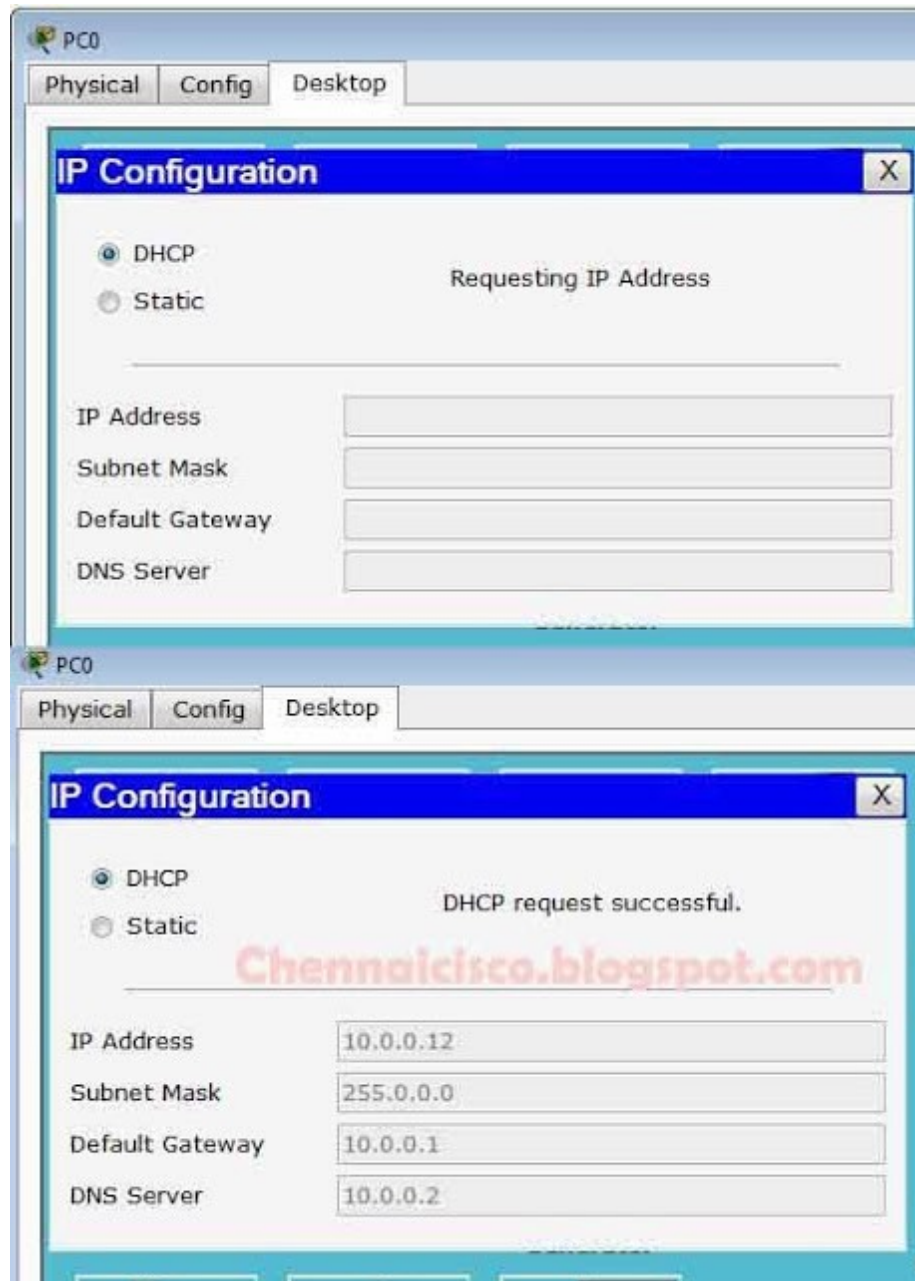
Step 6: Now,we see how to get ip address for PC that is in a network without Server.For that, first we have to add network pool in a dhcp server.
So,Click on Server->Config->DHCP.

Step 7: Just edit Pool Name with any other name.I am going to give 20Network.

Default Gateway->20.0.0.1,
DNS Server->10.0.0.2

Start Ip Address->20.0.0.10
Subnet Mask->255.0.0.0
Maximun Number Of Users->100
TFTP Server10.0.0.2

Then,Click on Add and Save.

Step 8:Now go to router and give ip helper address under fastethernet0/1,that is server address here our server address is 10.0.0.2.Now we can get ip for this network also

In Router,(Global configuration mode)

Router(config)#interface fastethernet0/1
Router(config-if)#ip helper-address 10.0.0.2
Router(config-if)#exit

Step 9: Now,check whether PC from network without server getting ip from the DHCP server in another Network.Click on any PC->Desktop->Ip configuration->Choose DHCP.Now i got ip address from dhcp server.