

WORKSHEET 3.2

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Subject Name: Computer Networks

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1. **Aim:** *Configure DHCP server using Packet Tracer.*

2. **Objective:** *To understand how DHCP works.*

3. **S/W Requirement:** - *Packet Tracer or NS2*

4. **H/W Requirement:** -

- **Processor** – *Any suitable Processor e.g. Celeron*
- **Main Memory** - *128 MB RAM*
- **Hard Disk** – *minimum 20 GB IDE Hard Disk*
- **Removable Drives**–*1.44 MB Floppy Disk Drive*
–*52X IDE CD-ROM Drive*
- **PS/2 HCL Keyboard and Mouse**

5. **Method:** -

1. *Build the network topology.*
2. *On the router, configure interface fa0/0 to act as the default gateway for our*

```
LAN.Router>enable  
Router#config terminal  
Router(config)#int fa0/0  
Router(config-if)#ip add 192.168.1.1 255.255.255.0
```

```
Router(config-if)#no shutdown  
Router(config-if)#exit
```

3. Configure **DHCP** server on the Router. In the server we will define a **DHCP pool** of IP addresses to be assigned to hosts, a **Default gateway** for the LAN and a **DNS Server**.

```
Router(config)#  
Router(config)#ip dhcp pool MY_LAN  
Router(dhcp-config)#network 192.168.1.0 255.255.255.0  
Router(dhcp-config)#default-router 192.168.1.1  
Router(dhcp-config)#dns-server 192.168.1.10
```

We can add `ip dhcp excluded-address` command to our configuration so as to configure the router to exclude addresses 192.168.1.1 through 192.168.1.10 when assigning addresses to clients. The `ip dhcp excluded-address` command may be used to reserve addresses that are statically assigned to key hosts.

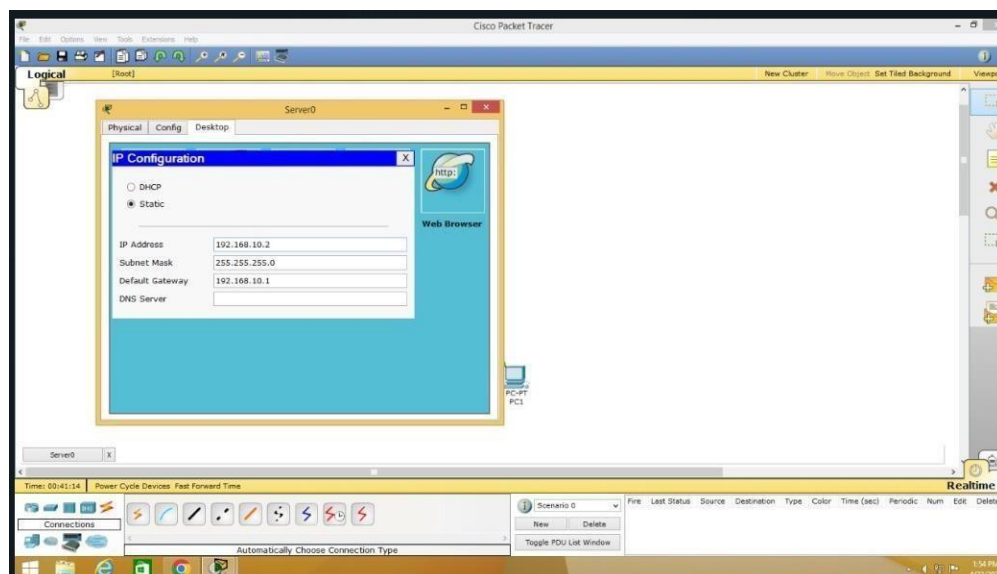
So add the above command under the **global configuration mode**.

```
Router(config)#ip dhcp excluded-address 192.168.1.1 192.168.1.10
```

4. Now go to every PC and on their **IP configuration** tabs, enable **DHCP**. Every PC should be able to obtain an IP address, default gateway and DNS server, as defined in step 2.

For example, to enable DHCP on PC1:

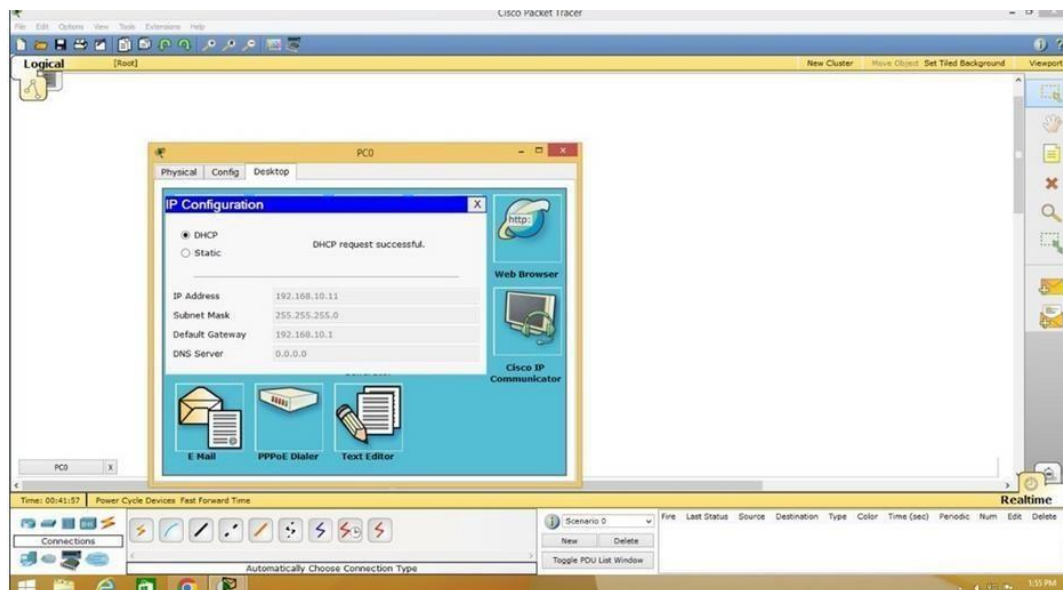
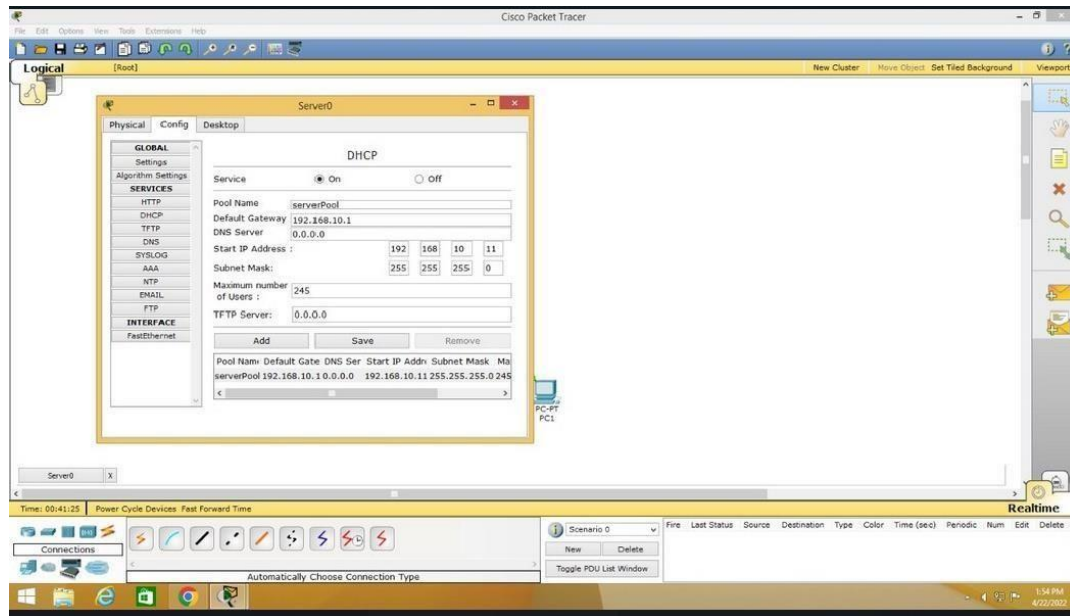
Click **PC1->Desktop->IP configuration**. Then enable DHCP.

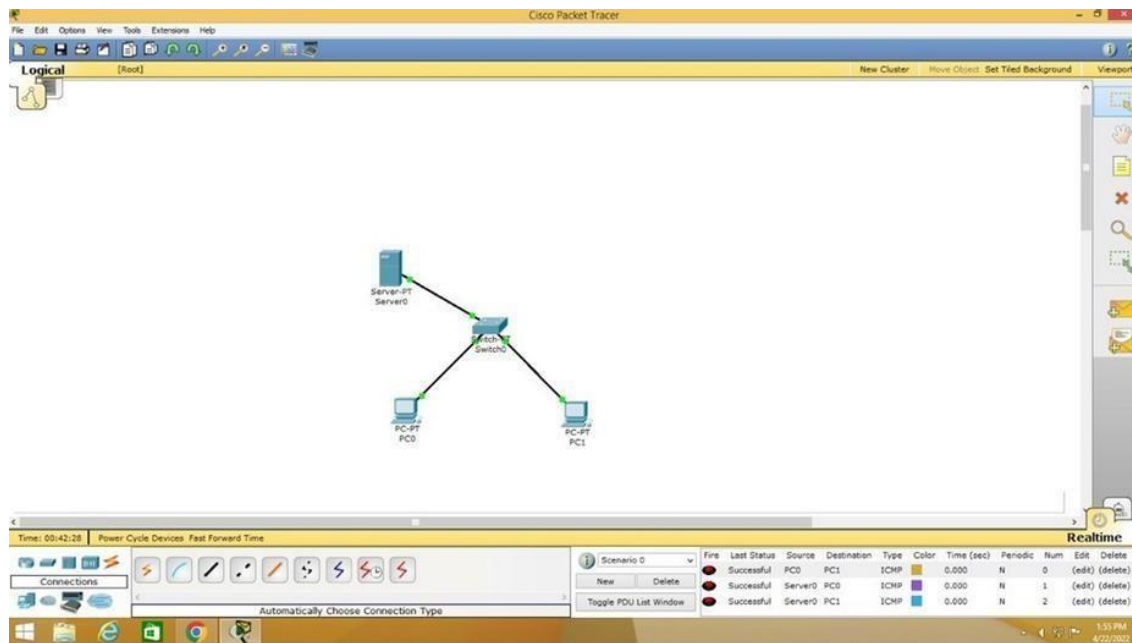
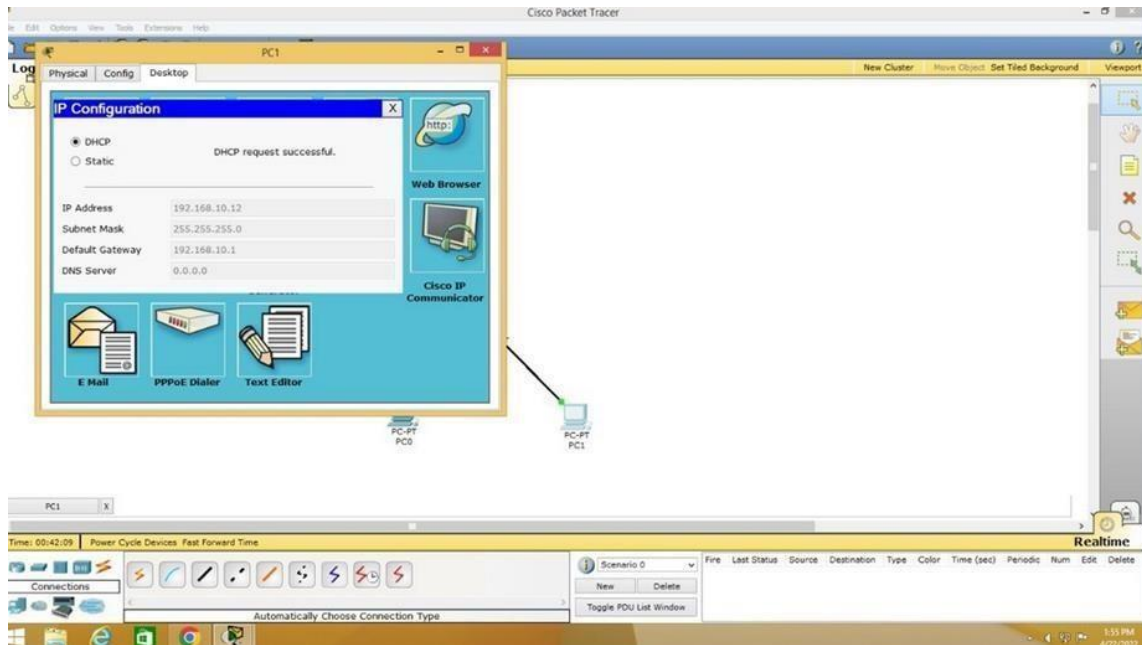




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RESULT: *Understood the concept of DHCP.*