

## Lab 2

### Static and Dynamic Addressing

#### Network Address mean?

A network address is any logical or physical address that uniquely distinguishes a network node or device over a computer or telecommunications network. It is a numeric/symbolic number or address that is assigned to any device that seeks access to or is part of a network

#### Types of Network Addressing

There are three types of addressing in computer network, these are:

1. **Physical address:** this type of address is also called MAC address or link address. The long of MAC address is 48 bit and it unique for each device. The MAC address cannot be change even the device connect to different networks.
2. **Logical address:** this is the IP address of the device. It's a 32 bit long and it can be change every time the device connect to new network. There are two type of logical address which are IPV4 and IPV6. There are many differences between them.

#### How the device can get a new logical address?

There are two methods can be used to gives an IP address to the device; these are:

1. **Static addressing:** gives address to the device manually by the network administrator. This type of address cannot be change until the administrator change it. It can't be used for large network.
2. **Dynamic addressing:** the device can get IP address automatically by using DHCP server which used DHCP protocol.

#### Aim of This Lab

- The aim of this Lab is to show how to configure devices IP address manually (static addressing) and automatically (dynamic addressing) using cisco packet tracer.
- After this Lab, the Student can know how to work with DHCP server and how to configure it by using cisco packet tracer.

## Experiment Procedure

1. Design the network which consist of
  - a) 3 PCs.
  - b) Switch.
  - c) DHCP server.

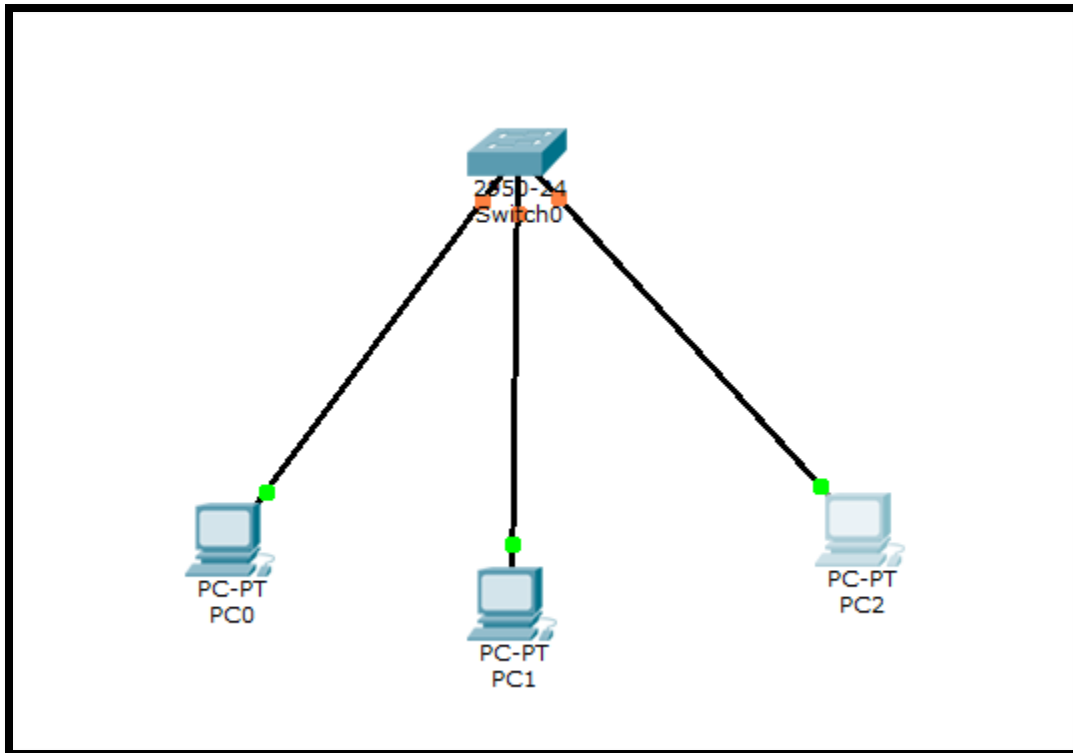


Figure 1

2. Configure the IP address of PCs statically as shown in figure below.

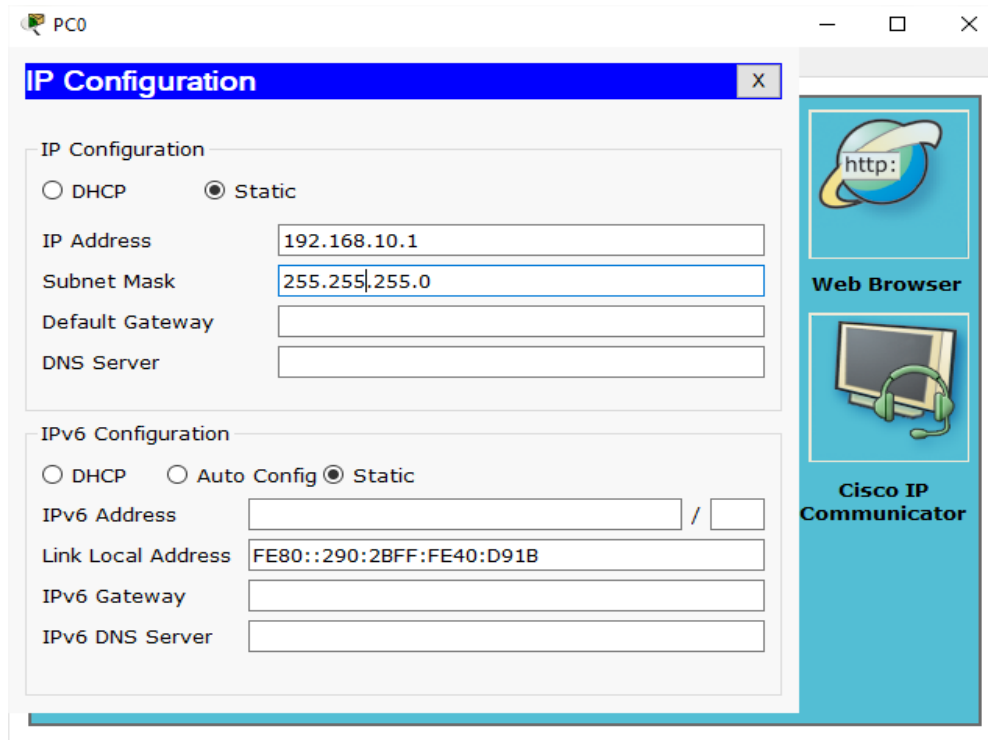


Figure 2

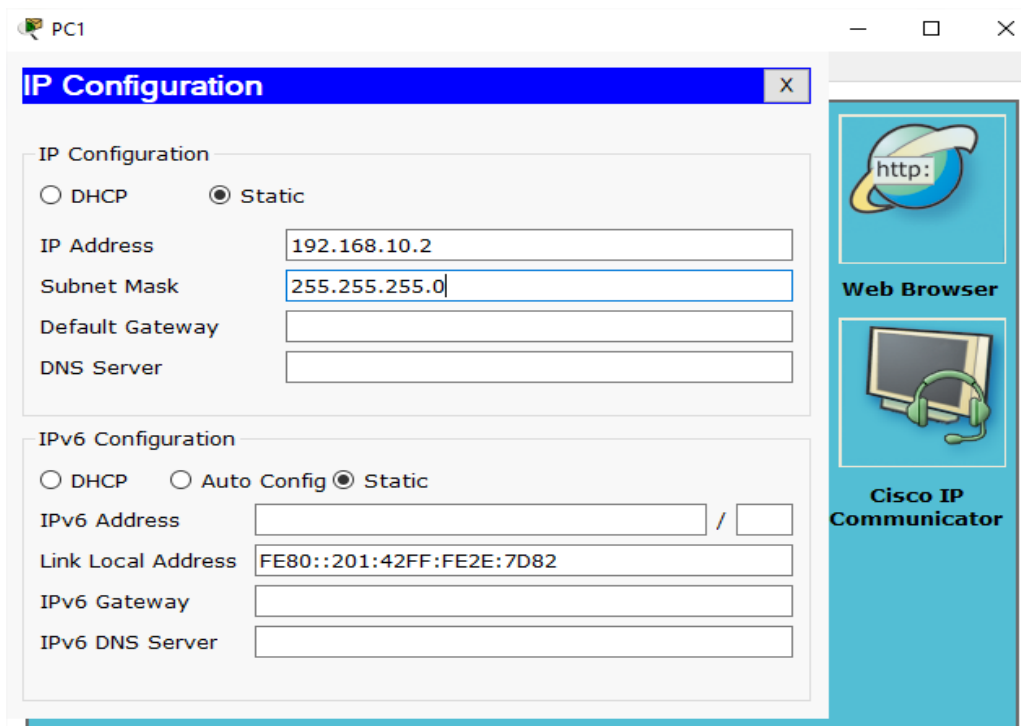


Figure 3

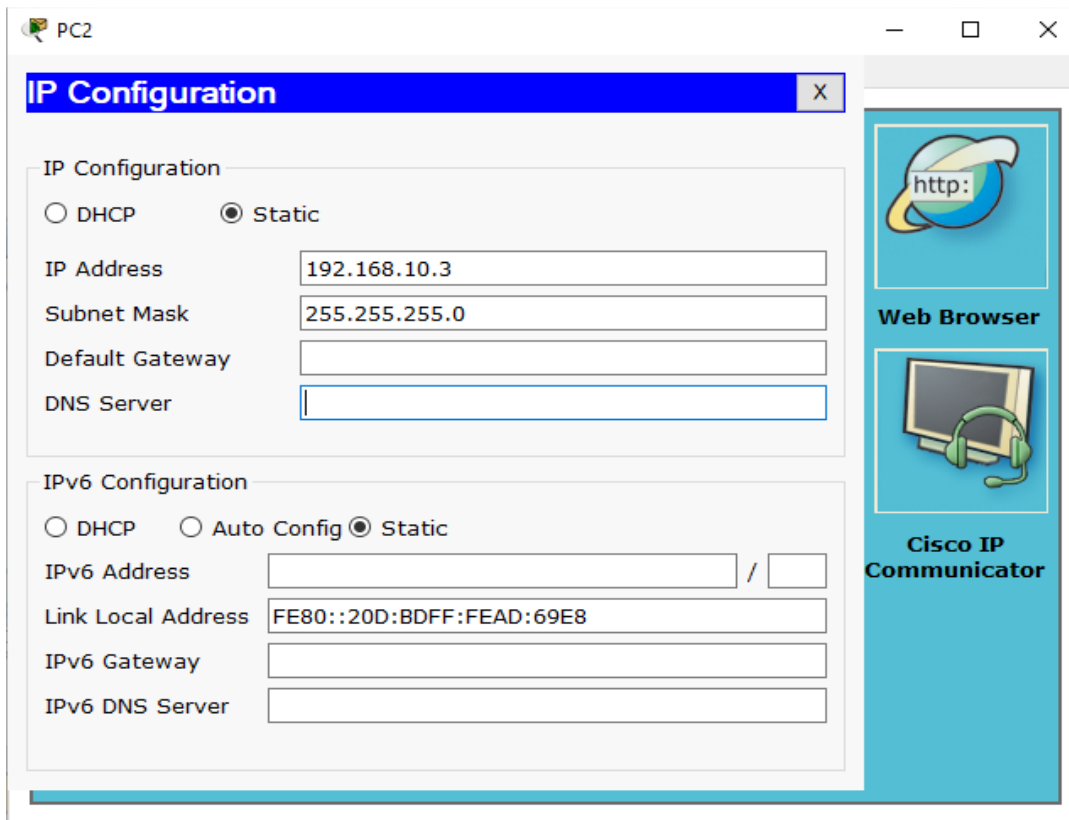


Figure 4

3. Now we want to check that the network is work correctly; this can be done by put message on any PC and send it to any other PC.

4. **Configure the IP address of PCs dynamic as shown below.**

- Connect the network shown in figure 5.
- Add to the network DHCP server.

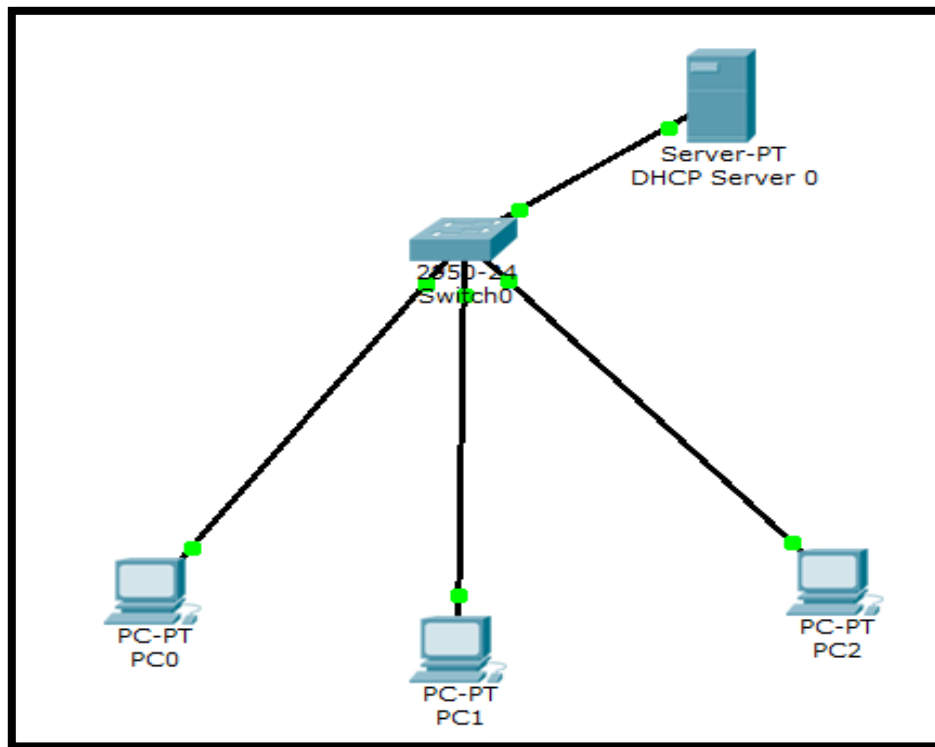
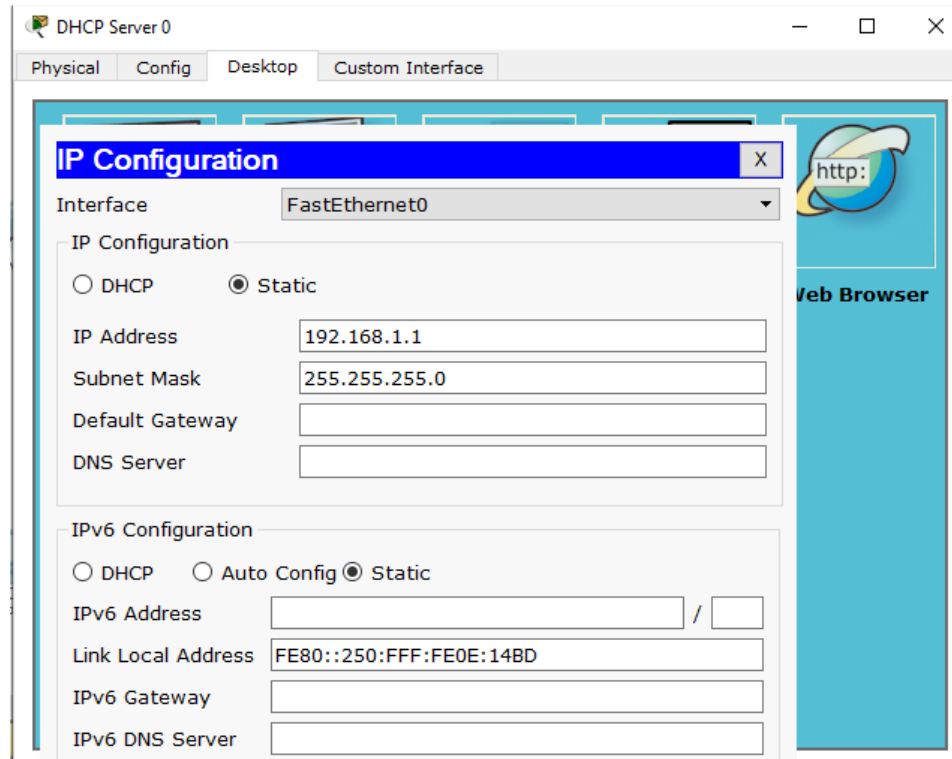


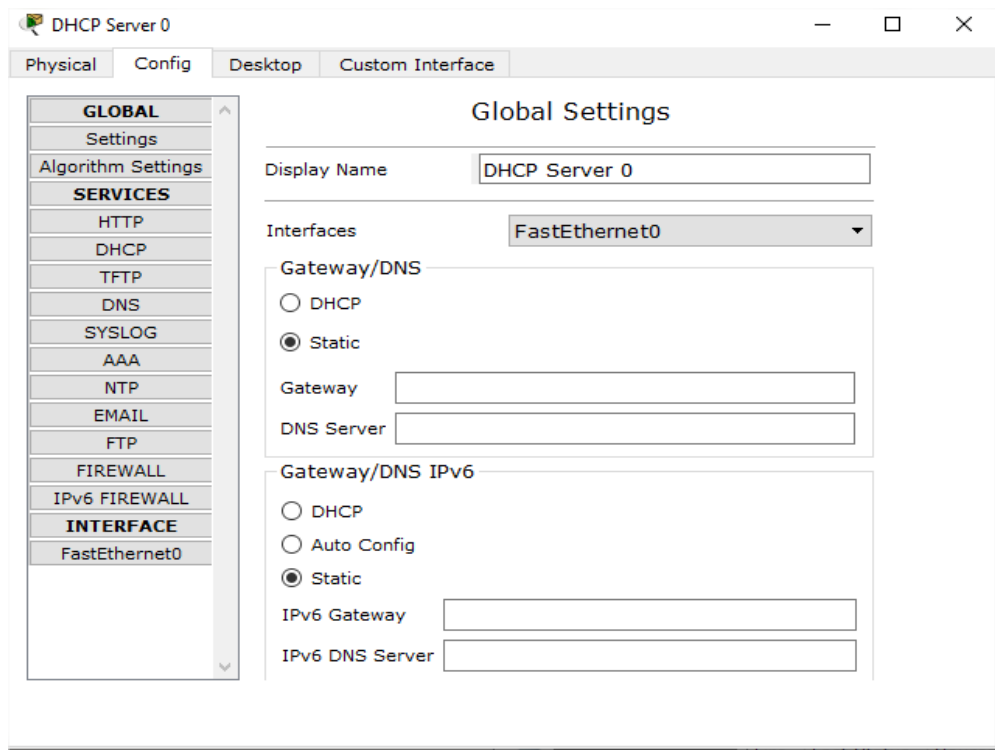
Figure 5

5. Configure the DHCP server as below

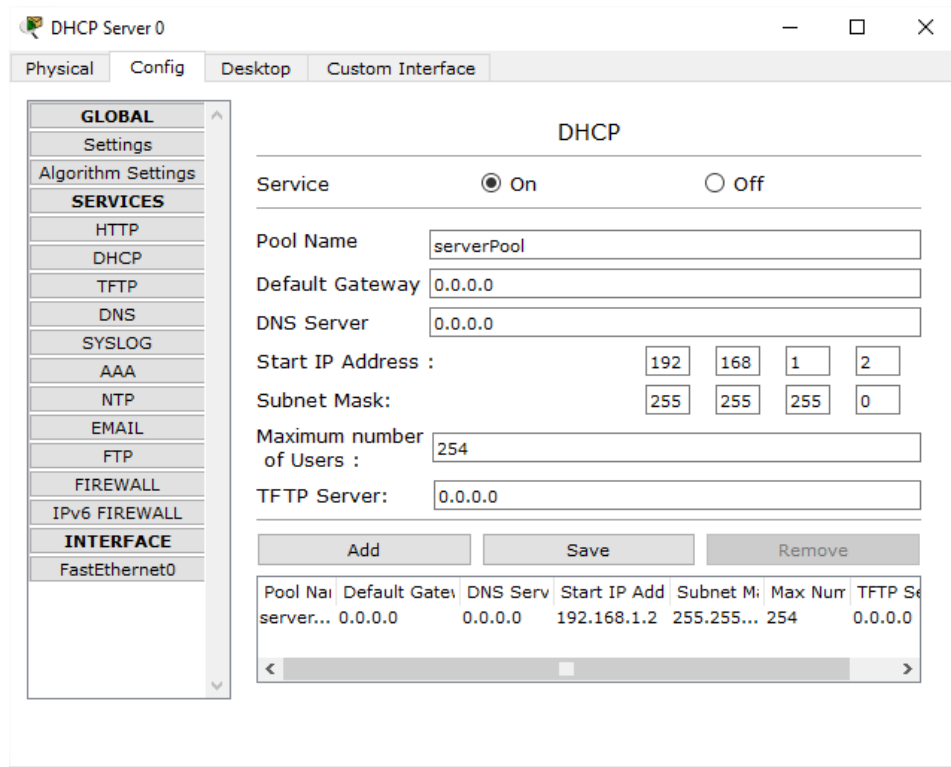
- Click on server
- Goto desktop and give static address



- Go to config. on the top of the server screen and configure the server



- Click on the left side the DHCP you will see the below window



- Set the service on
- Set the starting address and subnet mask
- Click save.

6. Go to PCs setting windows and click DHCP to get IP automatically as shown below

