LAB 5

Introduction to Packet Tracer, Creating of LAN and connectivity test in the LAN

Objective:

- To understand the network simulator tools.
- To understand LAN networking, creation of VLAN, IP addressing in the VLAN and VLAN Trunk

Overview:

Packet Tracer is a cross-platform visual simulation tool designed by Cisco Systems that allows users to create network topologies and imitate modern computer networks. The software allows users to simulate the configuration of Cisco routers and switches using a simulated command line interface. Packet Tracer makes use of a drag and drop user interface, allowing users to add and remove simulated network devices as they see fit. The software is mainly focused towards Cisco Networking Academy students as an educational tool for helping them learn fundamental CCNA concepts. Previously students enrolled in a CCNA Academy program could freely download and use the tool free of charge for educational use.

Packet Tracer allows users to create simulated network topologies by dragging and dropping routers, switches and various other types of network devices. A physical connection between devices is represented by a 'cable' item. Packet Tracer supports an array of simulated Application Layer protocols, as well as basic routing with RIP, OSPF, EIGRP, BGP, to the extents required by the current CCNA curriculum. As of version 5.3, Packet Tracer also supports the Border Gateway Protocol.

Simple LAN Configuration:

To create a simple LAN 3 PCs are connected to a central switch as shown in the figure below:
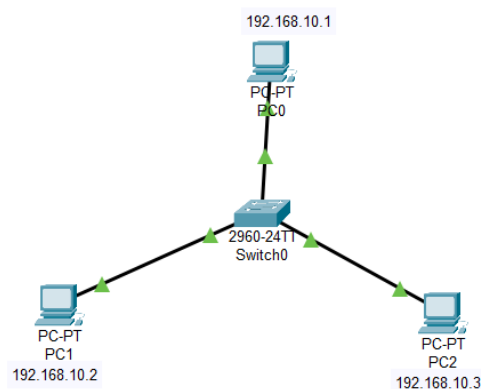
Configuration:

1. Connect the PCs to the Switch using Fast Ethernet.
2. Click on PC 0 and go to Desktop then to IP Configuration.
3. Set the IPv4 Address as 192.168.10.1.
4. Close the window.
5. Repeat the same steps to configure the IP Address in PC 1 and PC 2. Set the IP as 192.168.10.2 and 192.168.10.3 for PC 1 and PC 2 respectively.
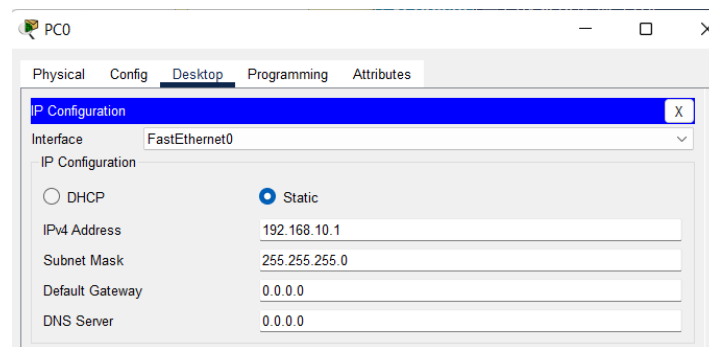
To test for proper configuration:

- Double click on any of the PC and go to desktop.
- Open Command prompt.
- Ping any other PC in the LAN. If the configuration is successful reply will be received else the request will be timed out.

Static Routing:

To create a static routing configuration two PCs are connected to a switch and the switch is connected to a Router this router is connected to another Router that is connected to a Switch that is connected to two PCs as shown in the figure below:
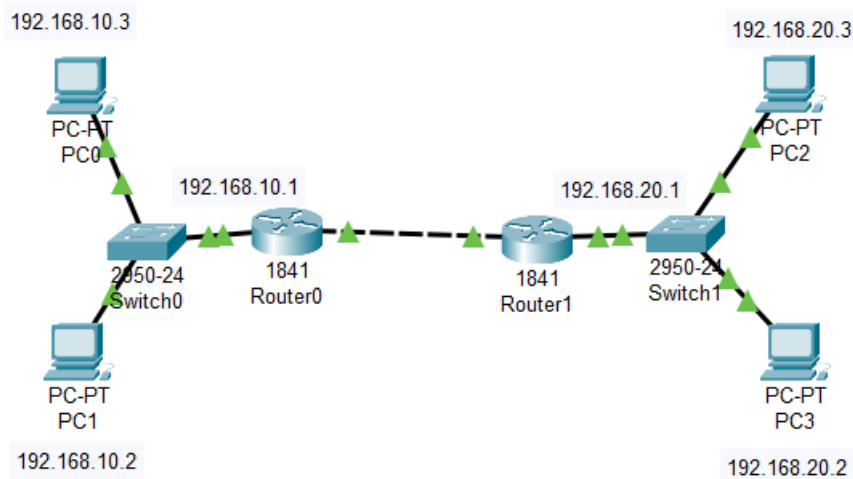
Configuration:

Connect the PCs to the Switch using Fast Ethernet then connect the Switch to a Router then mirror the connection.

For Routers:

In Router 0

- Double click on the router and go to config and then interface.
- In Fast Ethernet 0/0, Set the port status to on and set the IP Address as 192.168.30.1.
- In Fast Ethernet 0/1, Set the port status to on and set the IP Address as 192.168.10.1.
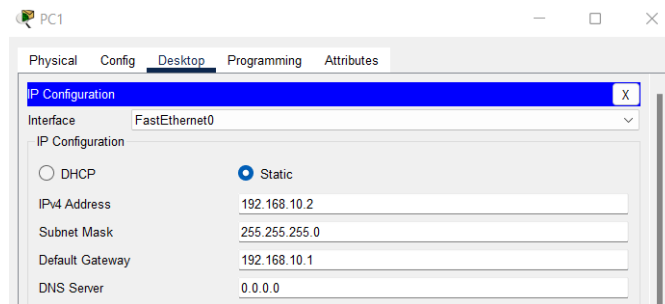- Close the window.

In Router 1

- Double click on the router and go to config and then interface.
- In Fast Ethernet 0/0, Set the port status to on and set the IP Address as 192.168.30.2.
- In Fast Ethernet 0/1, Set the port status to on and set the IP Address as 192.168.20.1.
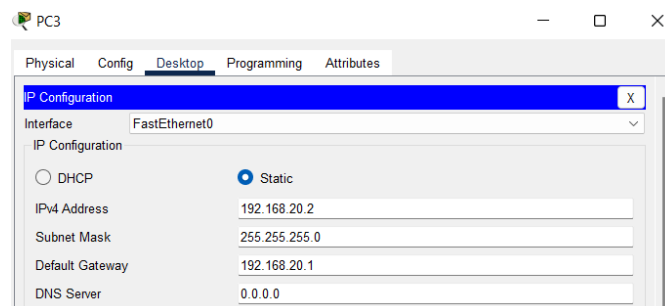- Close the window.
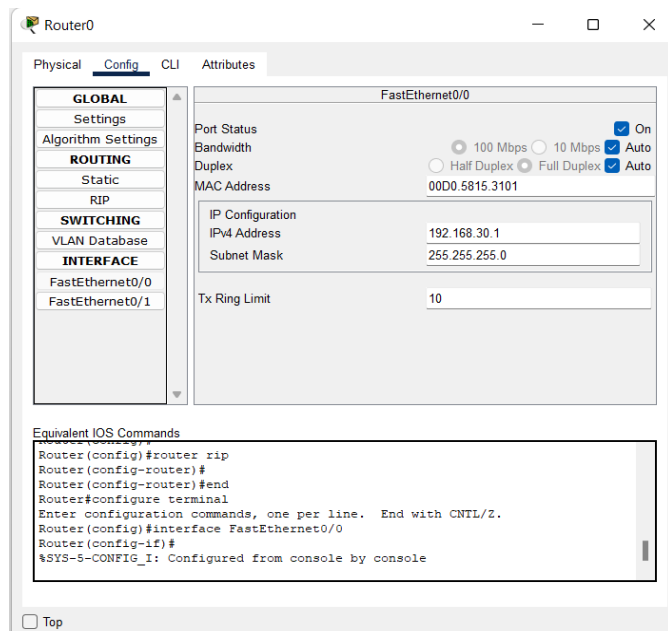
For PCs:

PCs connected to Router 0

- Double click on the PC and go to desktop and then IP Configuration.
- Set the IP Address as 192.168.10.2 and The Default Gateway as 192.168.10.1.
- Close the window.
- Repeat the same step for the next PC and Set the IP Address as 192.168.10.3 and Gateway as 192.168.10.1.

PCs connected to Router 1

- Double click on the PC and go to desktop and then IP Configuration.
- Set the IP Address as 192.168.20.2 and The Default Gateway as 192.168.20.1.
- Close the window.
- Repeat the same step for the next PC and Set the IP Address as 192.168.20.3 and Gateway as 192.168.20.1.

To test for proper configuration:

- Double click on any of the PC and go to desktop.
- Open Command prompt.
- Ping any other PC in the Network. If the configuration is successful reply will be received else the request will be timed out.

Basic Routing:

To create a static routing configuration two PCs are connected to a switch and the switch is connected to a Router this router is connected to a Switch that is connected to two PCs as shown in the figure below:
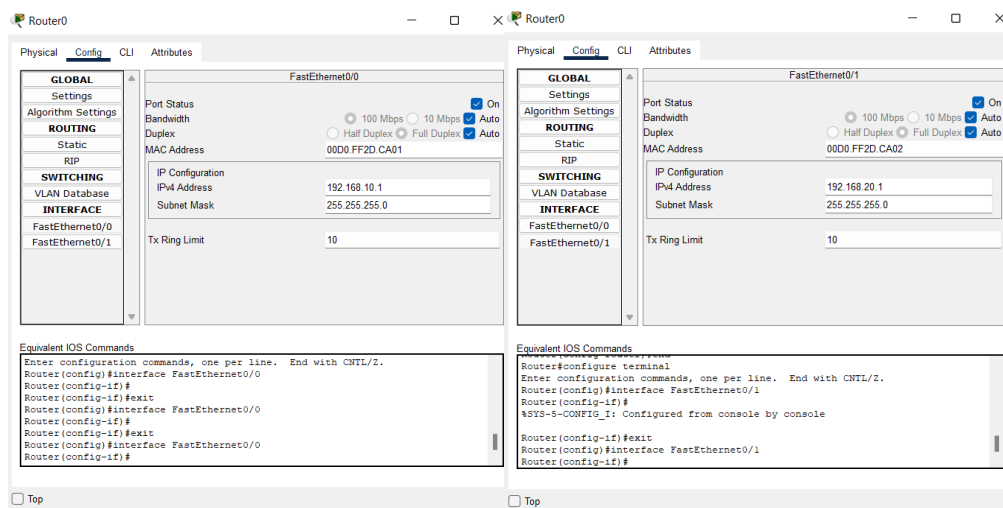

Configuration:

Connect the PCs to the Switch using Fast Ethernet then connect the Switch to a Router then mirror the connection.

For Routers:

- Double click on the router and go to config and then interface.
- In Fast Ethernet 0/0, Set the port status to on and set the IP Address as 192.168.10.1.
- In Fast Ethernet 0/1, Set the port status to on and set the IP Address as 192.168.20.1.
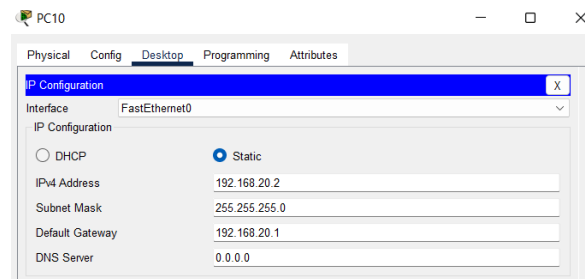- Close the window.

For PCs:

PCs connected to Router Fast Ethernet 0/0

- Double click on the PC and go to desktop and then IP Configuration.
- Set the IP Address as 192.168.10.2 and The Default Gateway as 192.168.10.1.
- Close the window.
- Repeat the same step for the next PC and Set the IP Address as 192.168.10.3 and Gateway as 192.168.10.1.
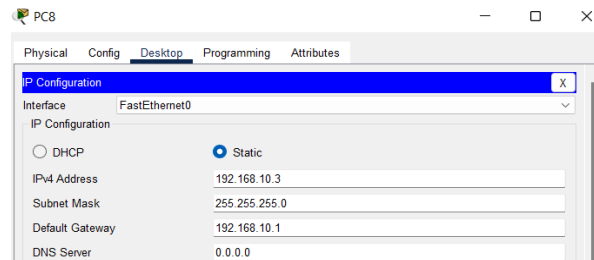
PCs connected to Router Fast Ethernet 0/1

- Double click on the PC and go to desktop and then IP Configuration.
- Set the IP Address as 192.168.20.2 and The Default Gateway as 192.168.20.1.
- Close the window.
- Repeat the same step for the next PC and Set the IP Address as 192.168.20.3 and Gateway as 192.168.20.1.

To test for proper configuration:

- Double click on any of the PC and go to desktop.
- Open Command prompt.
- Ping any other PC in the Network. If the configuration is successful reply will be received else the request will be timed out.