**EXPERIMENT 9**

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**SUBJECT:** Computer Network (CN) **YEAR:** TECO

**AIM :**

Configuring IP addressing using Cisco Packet Tracer.

**THEORY :**

Cisco Packet Tracer is a cross-platform visual simulation tool developed by

Cisco Systems, primarily designed for educational purposes to help students learn

fundamental networking concepts, especially for CCNA certification. It allows users to

create, configure, and simulate modern computer networks using a drag-and-drop

interface to add devices like routers, switches, and computers.

With support for basic routing protocols such as RIP, OSPF, EIGRP, and BGP, Packet Tracer simulates network topologies and device interactions. Although it offers a limited

command set compared to actual Cisco IOS hardware, it is an effective learning tool for

understanding abstract networking protocols and concepts.

Packet Tracer also supports collaboration by allowing multiple users to connect

topologies over a network. Its limitations make it unsuitable for production networks but

highly useful for network experimentation, teaching, and learning in educational

settings, especially for designing complex and large networks that would be costly to

implement physically.

In addition to desktop platforms (Windows, Linux, macOS), the tool is also available for

mobile devices (Android, iOS), extending its accessibility for learners.

How to Give a Static IP to Devices in CISCO PACKET TRACER

**Step 1 :-**

First we will place a router, two switches and two laptops for demonstrative

purposes. You have to drag and drop the suitable device from the bottom menu

**Step 2 :-**

Then we will connect them using straight cable because they are different layer

devices. It does not matter much the port in which the devices connect but it must

be Ethernet.

**Step 3 :-**

First enter the R1 router, we will configure the IP addresses of the router

interfaces in two different ways.

**Step 4 :-**

The first form is through the config menu, so we are located in the tab

where it says Fast Ethernet 0/0.

**Step 5 :-**

Click on the On box, which is located in the upper right corner to turn on the

interface, then proceed to place an IP address (for example we will use the

address 10.0.0.1) and place in the Subnet Mask 255.255. 255.0 to be an address

that allows a maximum of 254 users (/ 24).

**Step 6 :-**

The second way to enter a static IP address is through CLI, this is the most efficient way

to program the computers in CISCO PACKET TRACER becauseIt is the most accurate

way of working in real equipment.To do this, enter the global user mode and place the

following commands:

Interface fastethernet 0/0

Ip address 10.0.0.1 255.255.255.0

No shutdown

With the command "Interface fastethernet 0/0" we enter the interface Fa 0/0 of our

router, giving us access to be able to configure it. The "Ip address" command allows us

to configure an IP address to the interface and a Subnet Mask Followed by "10.0.0.1

255.255.255.0" which is the IP address and the Subnet Mask.

**Step 7 :-**

We will configure the second terminal of the Router using the second form for

convenience. It should be mentioned that this must be in a network completely

different from the network of the first interface, it is also advisable to save the

configuration after enabling the interfaces, for this we will use the "do write

memory" command in the global configuration.

**Step 8 :-**

Now we will have enabled the two interfaces of the router, but the laptops will

not have communication because we have not added them to a network, for

then we proceed to enter the laptops to manually configure the IP address.

**Step 9 :-**

Enter the Desktop menu.

**Step 10 :-**

Enter the IP Configuration menu.

**Step 11 :-**

We must verify that the Static option is selected, then proceed to enter the IP

address, Subnet Mask and Default Gateway. We can optionally add a DNS

address but for demonstrative reasons we will ignore this section. It should be

noted that the Default Gateway must be identical to the address of the Router

interface and that the IP address and Subnet Mask must match.

**Step 12 :-**

Now we can close this window and configure the other laptop in the same way.

**Step 13 :-**

Now we must check the connectivity, for this we will ping from one laptop to

the other. To ping we must enter a laptop, enter the Desktop menu and select the

option of Command Prompt.

**Step 14 :-**

We will write the command "ping 10.0.1.2" (this must be done on the laptop

with IP address 10.0.0.2) and we must receive 4 connectivity messages. It is

worth mentioning that if we did not receive the 4 complete messages at first, it

sometimes takes a while for the computers to adopt the configuration, so it is

advisable to retype the command.