VIT-AP UNIVERSITY, ANDHRA PRADESH

Lab Sheet 13 : Configuring and analysis of DHCP and DNS using CISCO packet tracer.

Academic year: 2020-2021 **Branch/ Class:** B.Tech/M.Tech
Semester: Winter **Date:** 22/05/21
Faculty Name: Dr. HUSSAIN SYED **School:** SCOPE
Student name: THILAK S **Reg. no.:** 19BCD7097

https://www.youtube.com/watch?v=wtvJnPAYCHA

1. Let us design the network first with proper labels along with ip addresses and host address to the router and server only.

2. Configure S1 as the DHCP server. Go to the Config tab, select the DHCP button

3. Turn on the service by clicking the radio button.

4. Modify the existing serverPool to meet your requirements.

5. Gateway will be the Router IP address. i.e. 192.168.1.1

6. Assign the DNS Server address i.e. 192.168.1.3

7. Assign the start IP address as 192.168.1.4 as the three address are already been used for the router and two servers.

8. Assign the number of users you want to assign addresses. I've left it to the defaults.

9. Click the save button.

10. For every machine select the Desktop tab --> IP configuration --> From the two radio buttons select DHCP and wait for some time.

11. All the necessary details will be filled up via DHCP request. If you noticed, the gateway is the one which we have set up in the DHCP server and the DNS server address is also the one which was set up in the DHCP server.

12. From any of the machine select a browser and type in the IP address 192.168.1.2 thats of our DHCP server. As you can see we got a web page in the browser.

13. Now we would be assigning a domain name to this address and configure it in our DNS server.

14. For DNS move to the second server in the config tab select the DNS button.

13. Switch on the DNS service by clicking the radio button.

14. Add a domain name inside the record, type in the address and click add. Similarly I will assign another domain name to our DNS server.

15. To verify everything let us modify the HTML content that is being generated by selecting the HTTP button on both the server.

16. Test everything!

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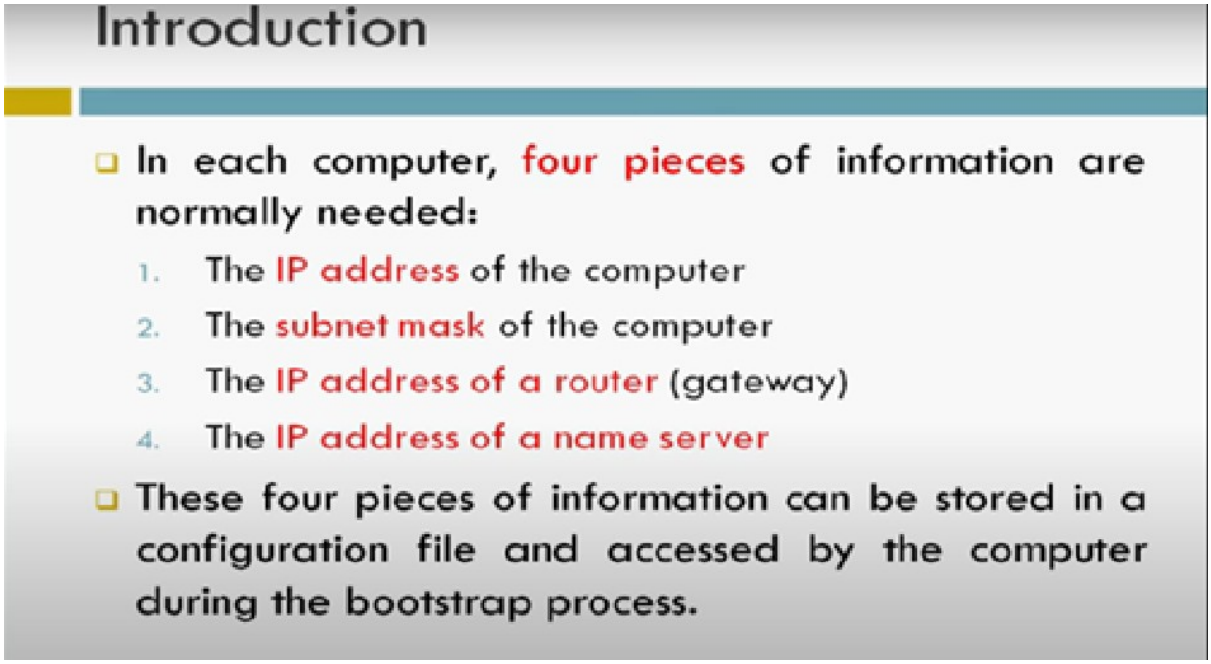

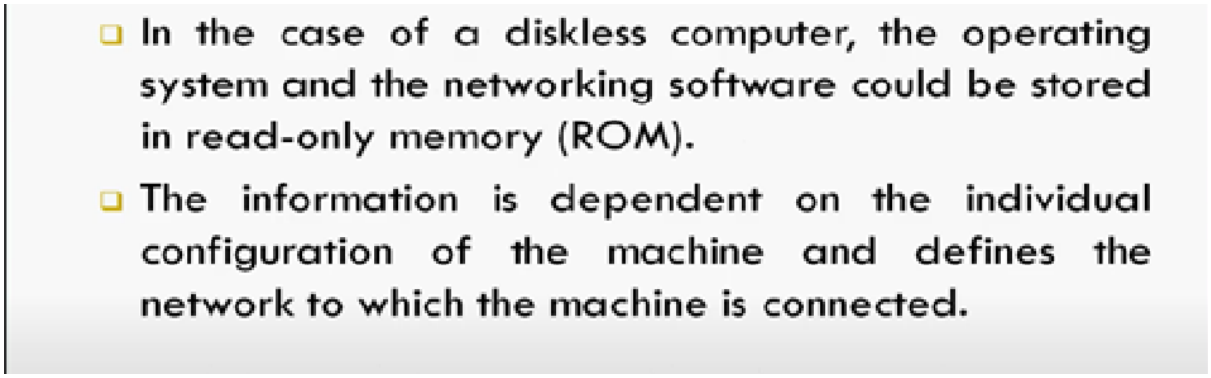

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DHCP

- The Dynamic Host Configuration Protocol (DHCP) is a client/server protocol designed to provide the four pieces of information for a diskless computer or a computer that is booted for the first time.
- DHCP is a successor to BOOTP and is backward compatible with it.

Static Address Allocation

- A DHCP server has a database that statically binds physical addresses to IP addresses. DHCP is thus backward compatible with the deprecated protocol BOOTP working in this way.

Dynamic Address Allocation

- DHCP has a second database with a pool of available IP addresses which makes DHCP dynamic.
- When a DHCP client requests a temporary IP address, the DHCP server goes to the pool of available (unused) IP addresses and assigns an IP address for a negotiable period of time.
- When a DHCP client sends a request to a DHCP server, the server first checks its static database.

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- If an entry with the requested physical address exists in the static database, the permanent IP address of the client is returned.
- On the other hand, if the entry does not exist in the static database, the server selects an IP address from the available pool, assigns the address to the client, and adds the entry to the dynamic database.

Need for DNS

- To identify an entity over a network, TCP/IP protocols use the IP address, which uniquely identifies the connection of a host to the Internet. However, people prefer to use names instead of numeric addresses.
- Therefore, we need a system that can map a name to an address or an address to a name.

DNS

- Domain Name System (DNS) is a client/server application program used to help other application programs. DNS is used to map a host name in the application layer to an IP address in the network layer.

Sample Output:

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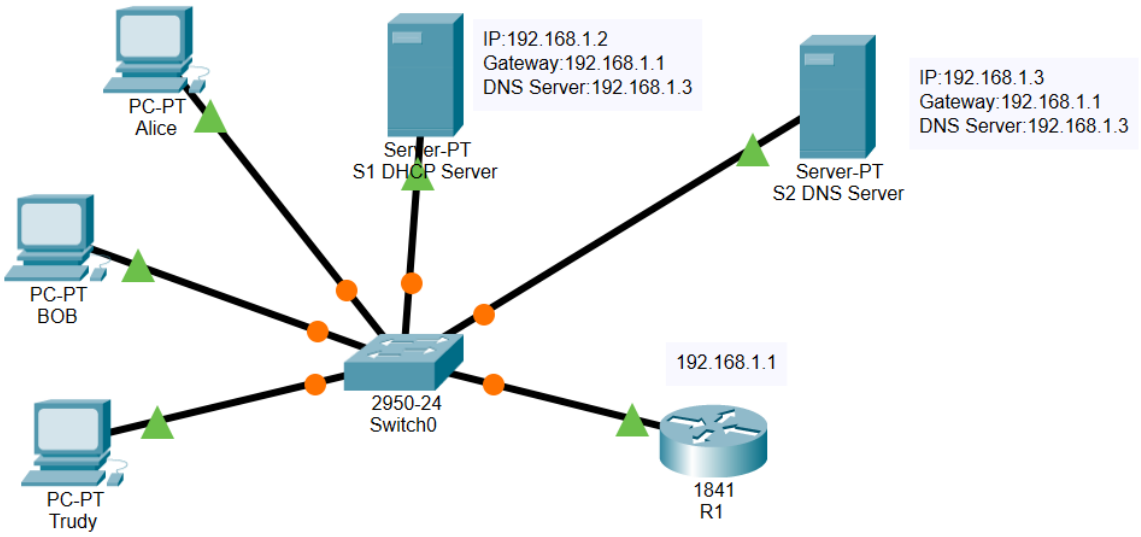

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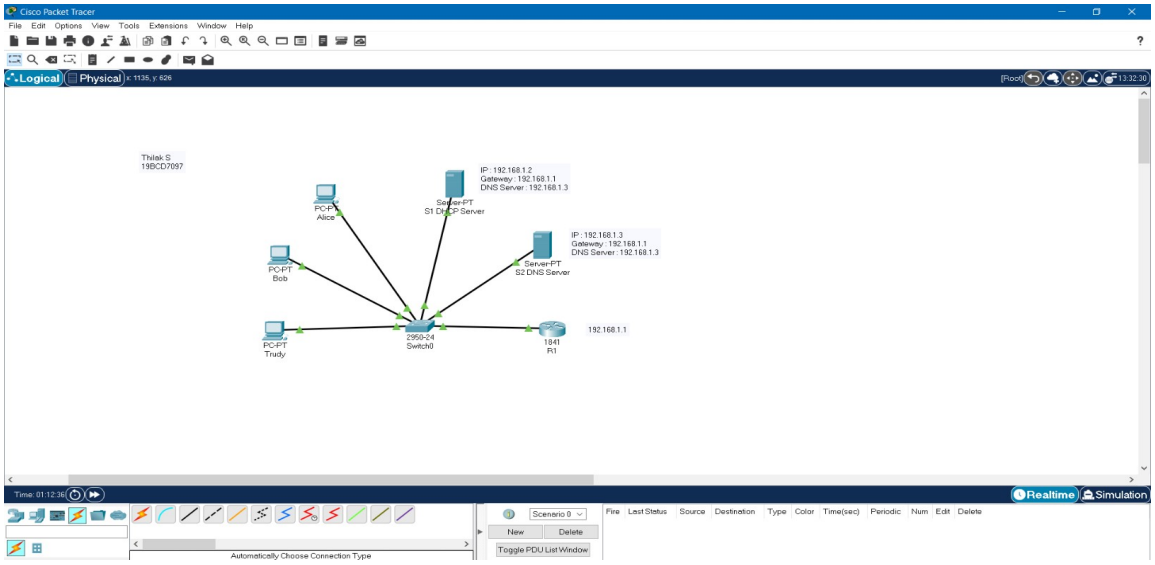
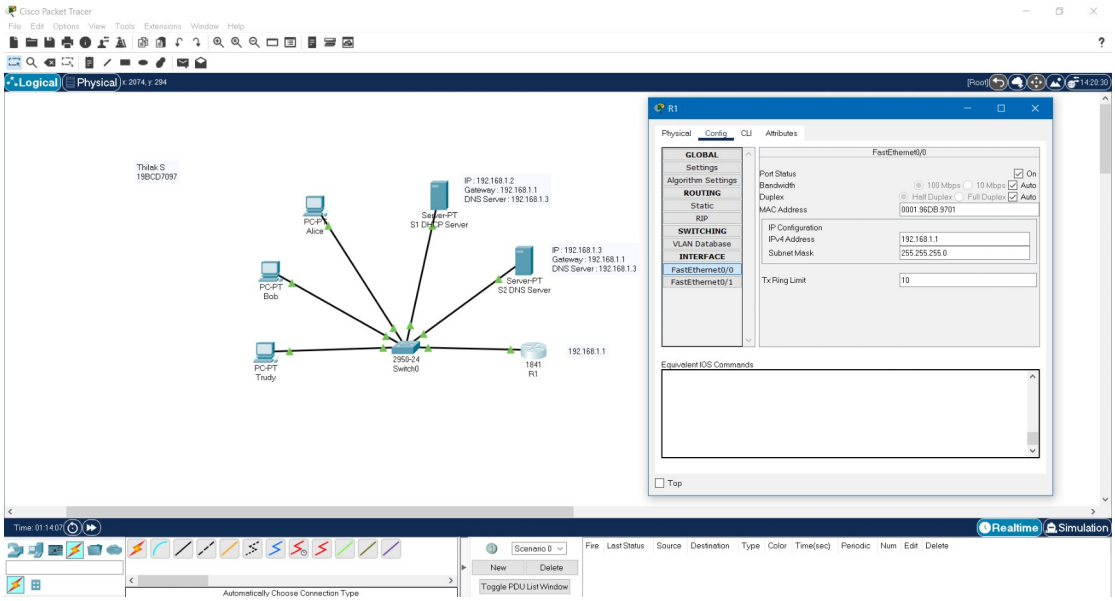
Configuration of DHCP & DNS :



Router Configuration :



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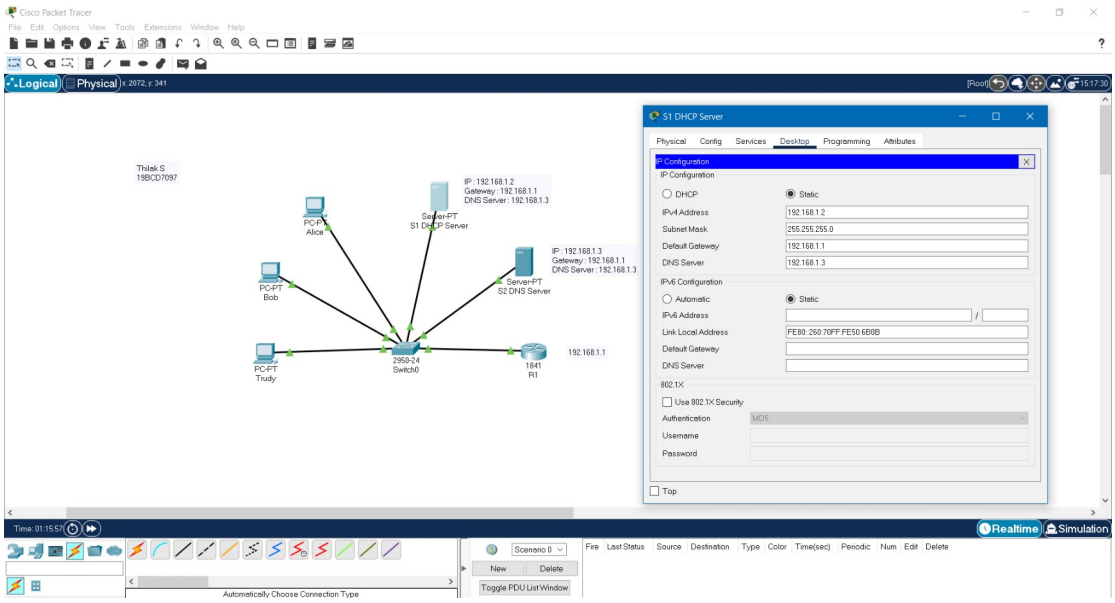
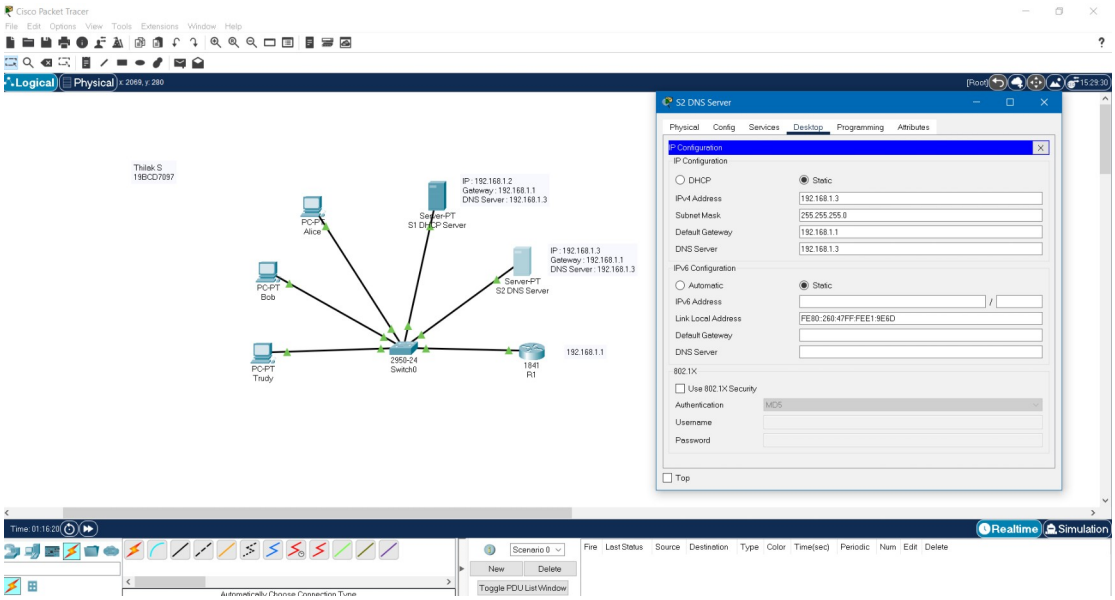
DHCP Server Configuration :



DNS Server Configuration :



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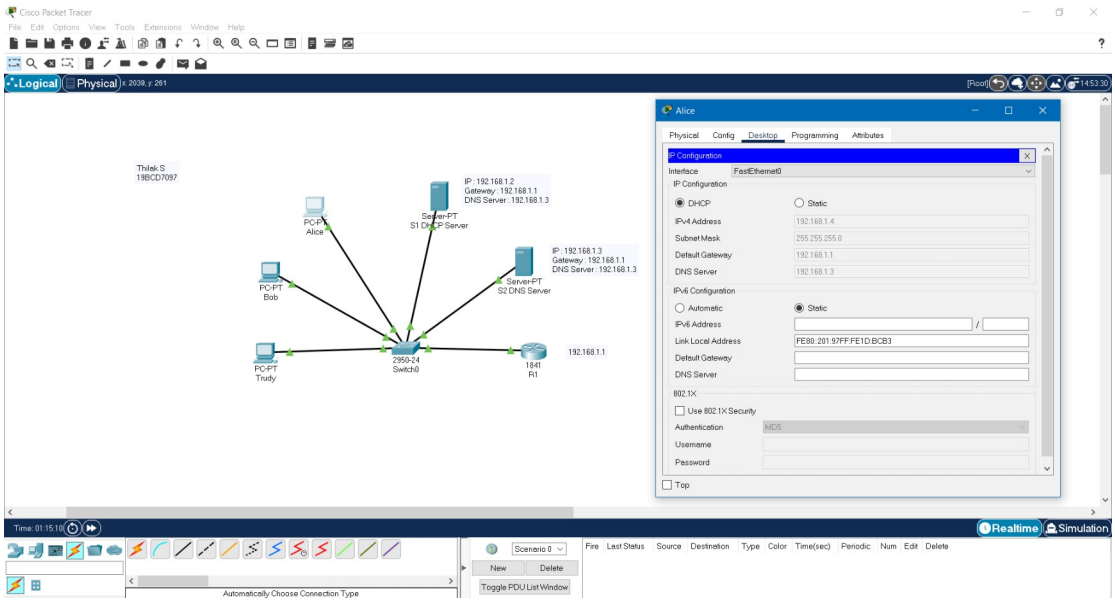
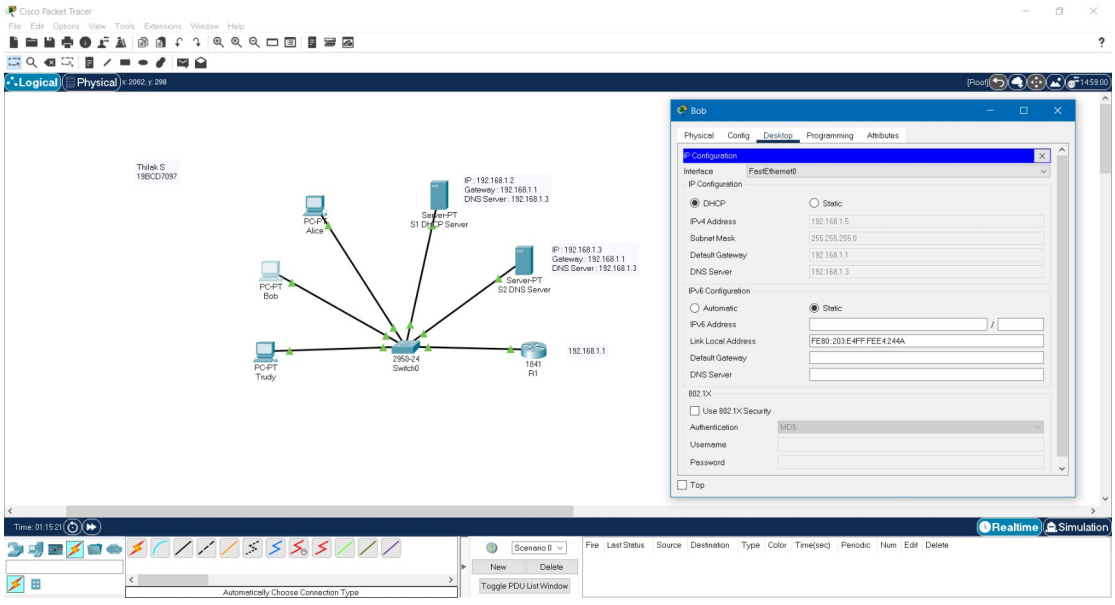
IP Configuration of PCs :





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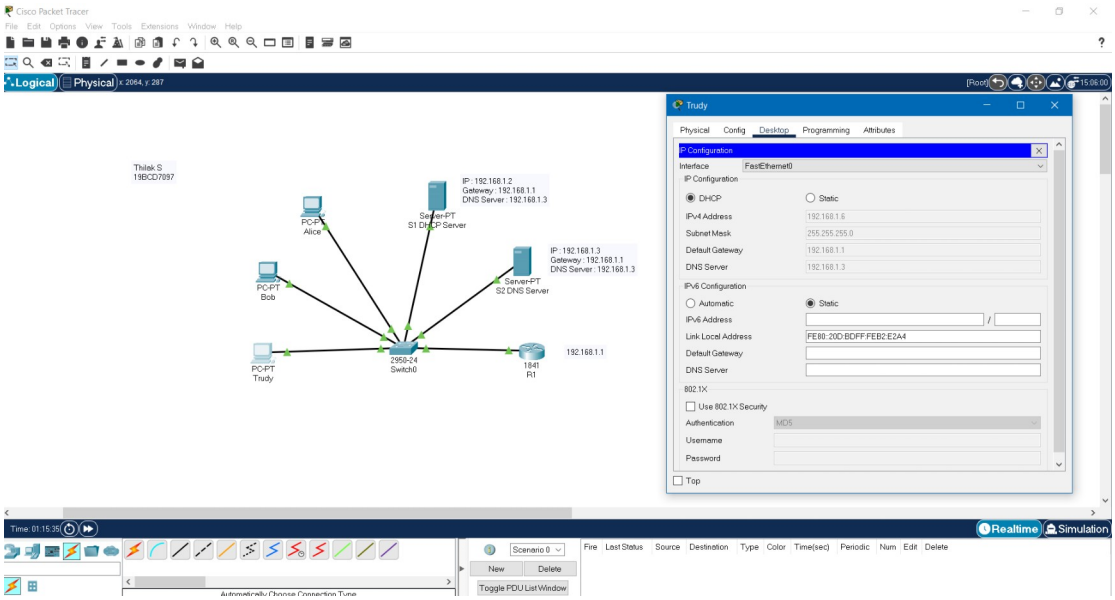
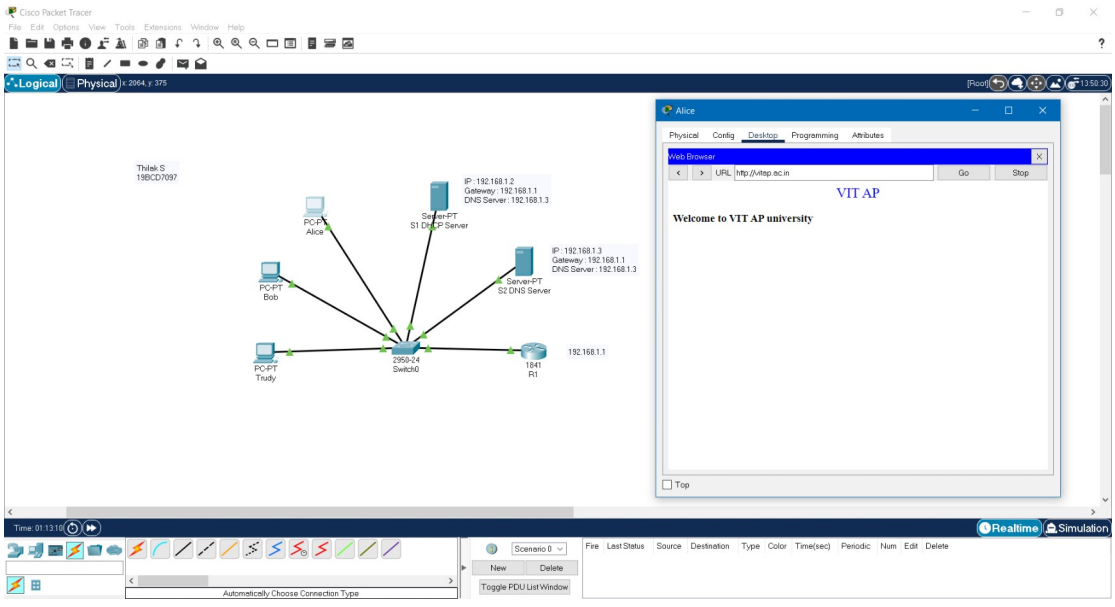


Server request from PCs :



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