

VIT-AP UNIVERSITY, ANDHRA PRADESH

Lab Sheet I3- Design and configure a network using DHCP and DNS Protocol.

Academic year: 2020-2021

Branch/ Class: B.Tech/M.Tech

Semester: Winter

Date: 22/5/2021

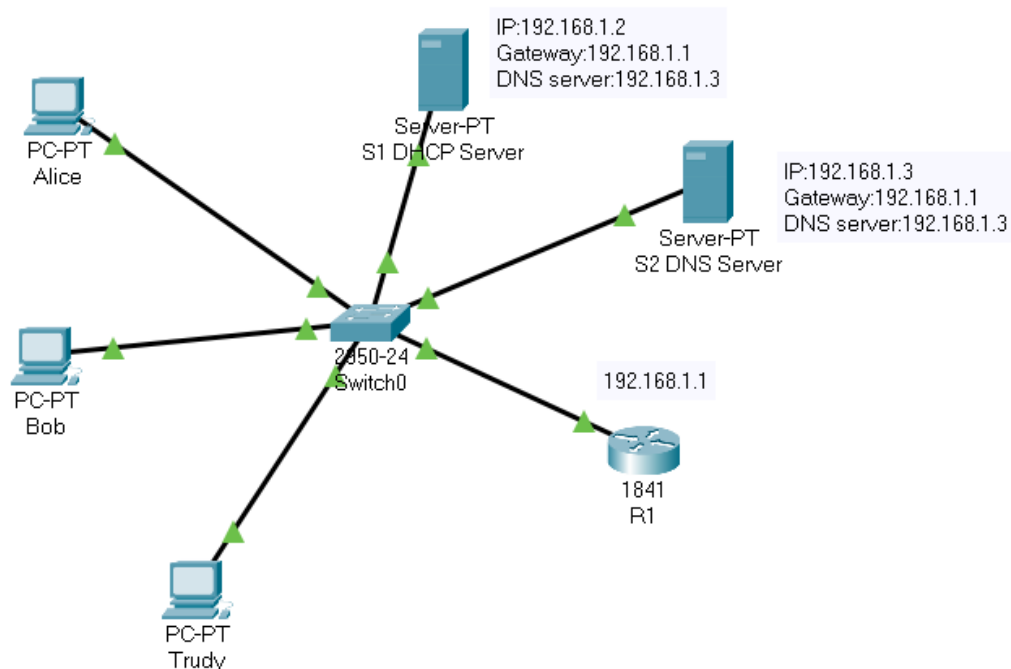
Faculty Name: Dr.HUSSAIN SYED

School: SCOPE

Student name: Hariprasad K K

Reg. no.: 19BCE7079

Design and configure a network using DHCP and DNS Protocol.



Objectives:

1. Take 3-pc's,2-server's,1-switch,1-router and connect them using required cables
2. Assign the ip address to router and servers.
3. Now configure server1 to DHCP and set the serverpool.
4. Now configure server2 to DNS
5. It automatically allocates ip addresses to all pc's
6. Check if the requests are recieved by the server

Addressing Table:

Device	IP Address	Subnet Mask
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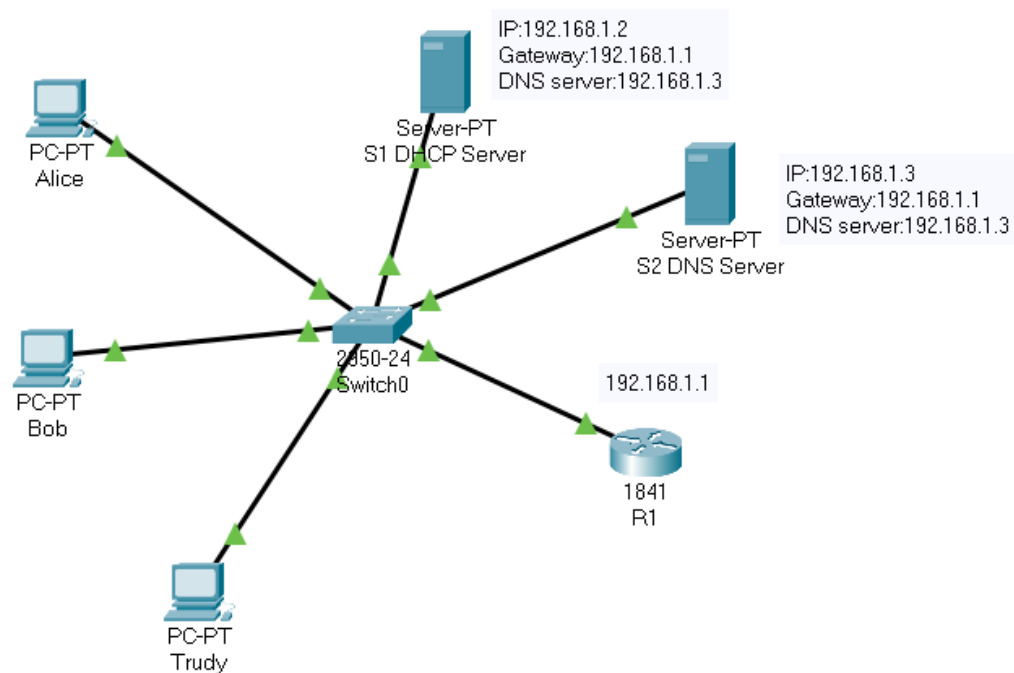
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PC1		
PC2		
PC3		
DNS Server	192.168.1.3	255.255.255.0
DHCP Server	192.168.1.2	255.255.255.0
Router	192.168.1.1	255.255.255.0

Configuration:



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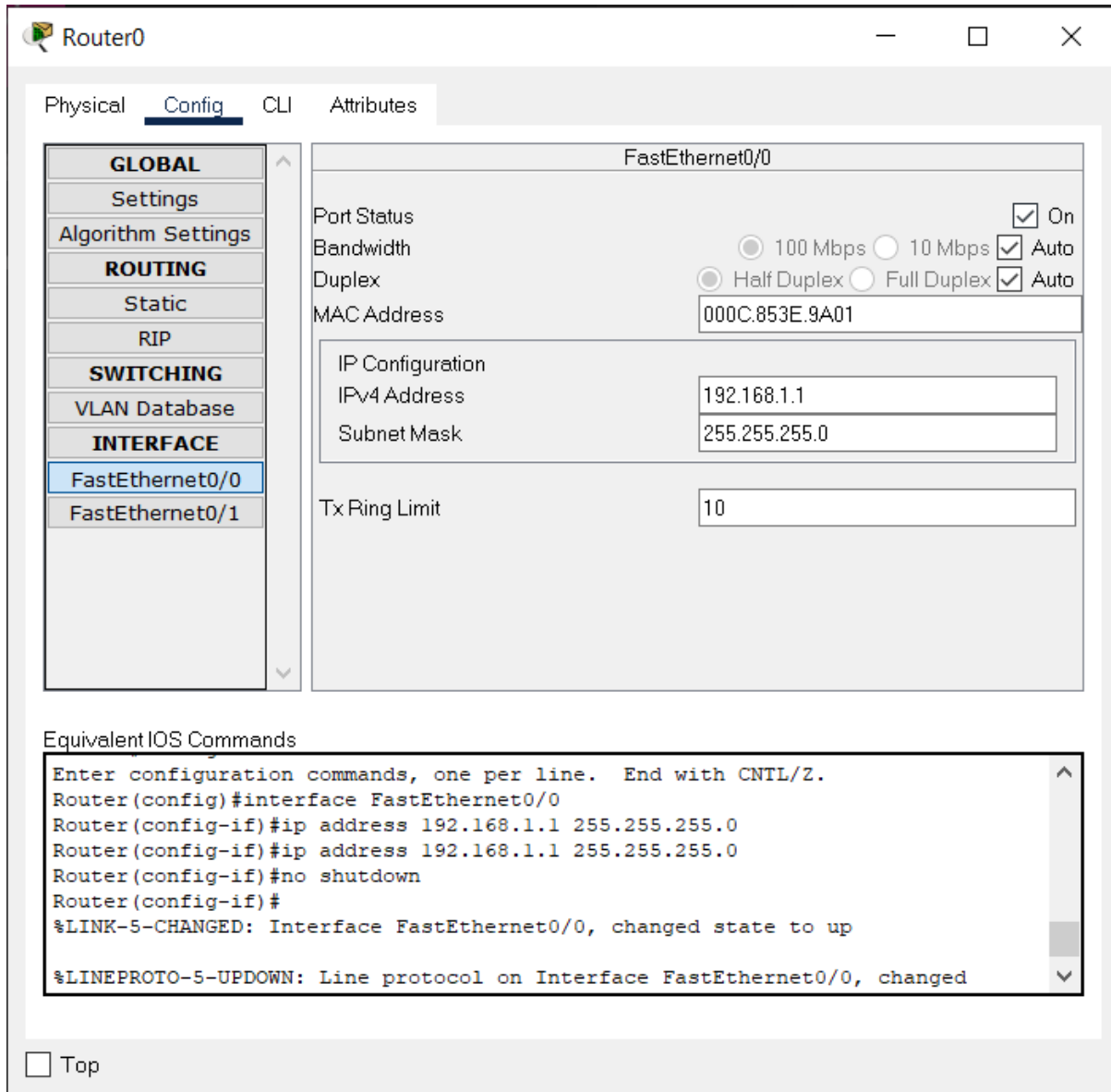
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Router0

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

FastEthernet0/0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☒ Half Duplex ☐ Full Duplex ☒ Auto

MAC Address 000C.853E.9A01

IP Configuration

IPv4 Address 192.168.1.1

Subnet Mask 255.255.255.0

Tx Ring Limit 10

Equivalent IOS Commands

```
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed
```

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 S2 DNS Server

Physical

Config

Services

Desktop

Programming

Attributes

IP Configuration

IP Configuration

☐ DHCP

☒ Static

IPv4 Address

192.168.1.3

Subnet Mask

255.255.255.0

Default Gateway

192.168.1.1

DNS Server

192.168.1.3

☐ Automatic

☒ Static

IPv6 Address

 /

Link Local Address

FE80::203:E4FF:FEA0:4DB1

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication

MD5

Username

Password

☐ Top

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The screenshot shows the 'S1 DHCP Server' configuration window with the 'Desktop' tab selected. The window has a title bar with standard Windows controls. Below the title bar is a tabbed interface with 'Physical', 'Config', 'Services', 'Desktop' (selected), 'Programming', and 'Attributes'. The 'Desktop' tab contains three main sections: 'IP Configuration', 'IPv6 Configuration', and '802.1X'. The 'IP Configuration' section has a blue header bar and a close button. It contains two radio buttons: 'DHCP' (unselected) and 'Static' (selected). Below these are text fields for 'IPv4 Address' (192.168.1.2), 'Subnet Mask' (255.255.255.0), 'Default Gateway' (192.168.1.1), and 'DNS Server' (192.168.1.3). The 'IPv6 Configuration' section also has 'Automatic' (unselected) and 'Static' (selected) radio buttons, followed by text fields for 'IPv6 Address' (empty), 'Link Local Address' (FE80::230:A3FF:FE93:758E), 'Default Gateway' (empty), and 'DNS Server' (empty). The '802.1X' section has a checkbox for 'Use 802.1X Security' (unchecked), a dropdown menu for 'Authentication' (MD5), and text fields for 'Username' and 'Password' (both empty). At the bottom left of the window is a 'Top' button.

S1 DHCP Server

Physical Config Services **Desktop** Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.2

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 192.168.1.3

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::230:A3FF:FE93:758E

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

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S1 DHCP Server

Physical

Config

Services

Desktop

Programming

Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

DHCP

Interface

FastEthernet0

 Service ☐ On ☒ Off

Pool Name

serverPool

Default Gateway

192.168.1.1

DNS Server

192.168.1.3

Start IP Address :

192

168

1

4

Subnet Mask:

255

255

0

0

Maximum Number of Users :

255

TFTP Server:

0.0.0.0

WLC Address:

0.0.0.0

Add

Save

Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max Users	TFTP Server	WLC Address
serverPool	192.168.1.1	192.168.1.3	192.168.1.4	255.255.0.0	255	0.0.0.0	0.0.0.0

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S2 DNS Server

Physical Config **Services** Desktop Programming Attributes

Minimize

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS**
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DNS

DNS Service ☒ On ☐ Off

Resource Records

Name Type **A Record** ▼

Address

Add Save Remove

No.	Name	Type	Detail
0	cisco.com	A Record	192.168.1.3
1	vitap.ac.in	A Record	192.168.1.2

DNS Cache

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The screenshot shows the Alice network configuration window with the 'Desktop' tab selected. The 'IP Configuration' section is active, showing settings for the 'FastEthernet0' interface. The 'DHCP' radio button is selected, and a message 'DHCP request successful.' is displayed. The IPv4 configuration fields are filled with the following values:

Field	Value
IPv4 Address	192.168.1.4
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS Server	192.168.1.3

The 'IPv6 Configuration' section shows the 'Static' radio button selected. The IPv6 configuration fields are empty, except for the 'Link Local Address' which is filled with 'FE80::260:70FF:FE25:C42B'.

The '802.1X' section shows the 'Use 802.1X Security' checkbox unchecked. The 'Authentication' dropdown is set to 'MD5'. The 'Username' and 'Password' fields are empty.

At the bottom left, there is a 'Top' button.

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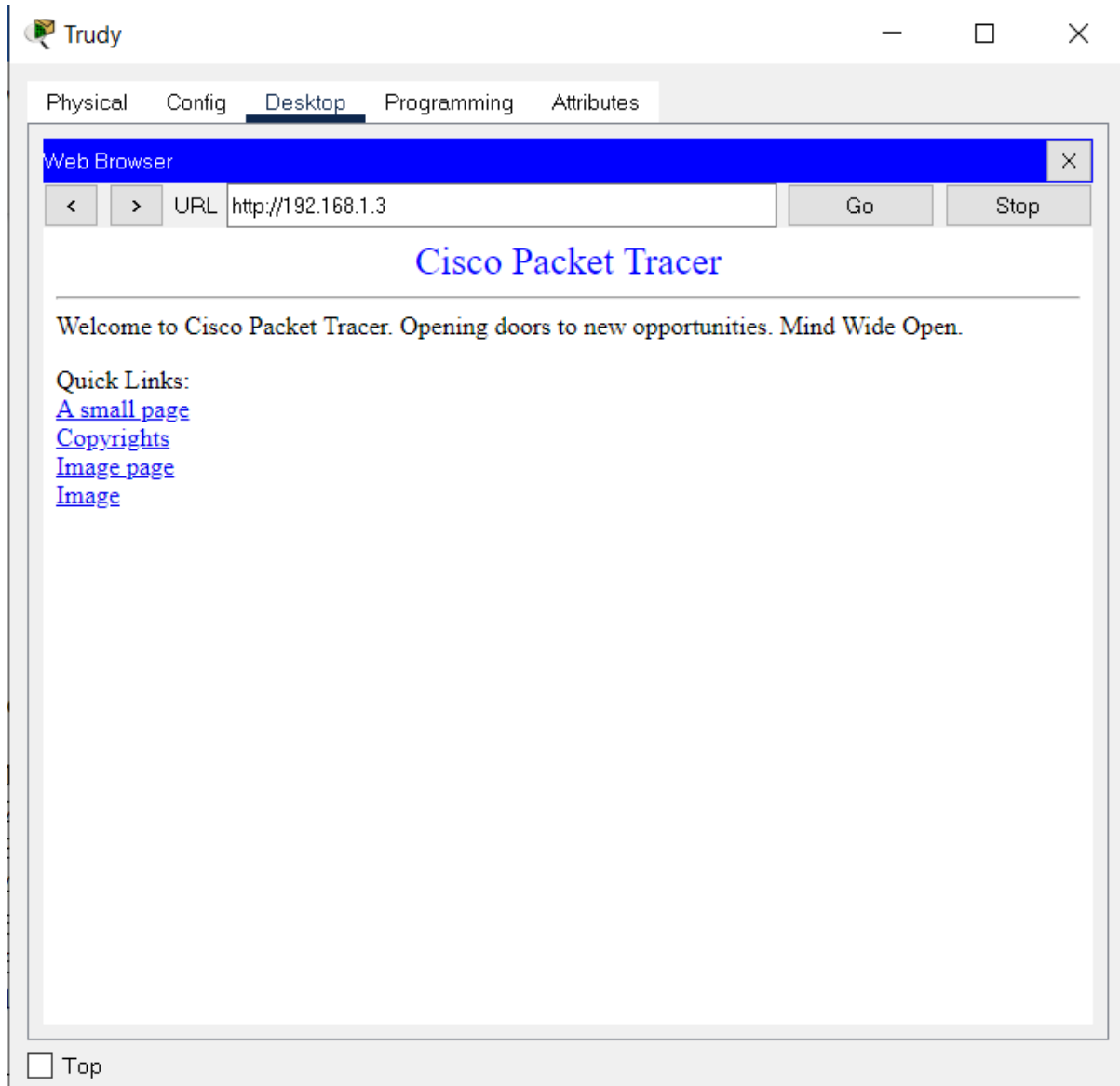
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