EX.NO :04	Investigation of LAN – HTTP, DNS, DHCP, TELNET	REG.NO: URK22AI1004
DATE:16 -08 -2023		

AIM

To design a network topology to perform the initial router configurations required for connectivity by using static IP addresses. To configure DNS and investigate the working of DNS and HTTP. Dynamically obtain IP addresses using DHCP protocol and configure VTYto remotely access the router from PC using TELNET.

DESCRIPTION

HTTP: Hypertext Transfer Protocol, is a versatile and stateless communication protocol that can be extended for various purposes through the addition of custom request methods, error codes, and headers. It operates over the TCP/IP framework and serves as the backbone for transmitting data across the World Wide Web.

DNS: Domain Name System, functions as the internet's name service, converting user-friendly domain names into numerical Internet Protocol (IP) addresses.

DHCP: Dynamic Host Configuration Protocol, operates as a client/server protocol, automating the assignment of an Internet Protocol (IP) address and distributing other essential configuration details like subnet masks and default gateways to IP hosts.

TELNET: Telnet serves as a network protocol employed for virtual computer access, facilitating a two-way, text-based communication channel between machines. It operates on the User Command Transmission Control Protocol/Internet Protocol (TCP/IP) networking standard for establishing remote sessions.

PROCEDURE (DNS)

1. Click ‘Services’ in Server
2. Select ‘DNS’ from the panel
3. Give a name (www.colab.edu) and IP address of the server
4. Click ‘add’
5. Put the DNS address in the IP configuration tab of the end device
6. To access it ,click on ‘web browser’ on any end device and type the name assigned in the URL

PROCEDURE (DHCP)

1. Click ‘DHCP’ from the ‘Services’ In ‘Server’
2. Enable it
3. Give its default gateway
4. Give the DNS Server address of the DNS server
5. Give range and click ‘add’
6. To access it click on any end devices
7. In IP configuration enable DHCP

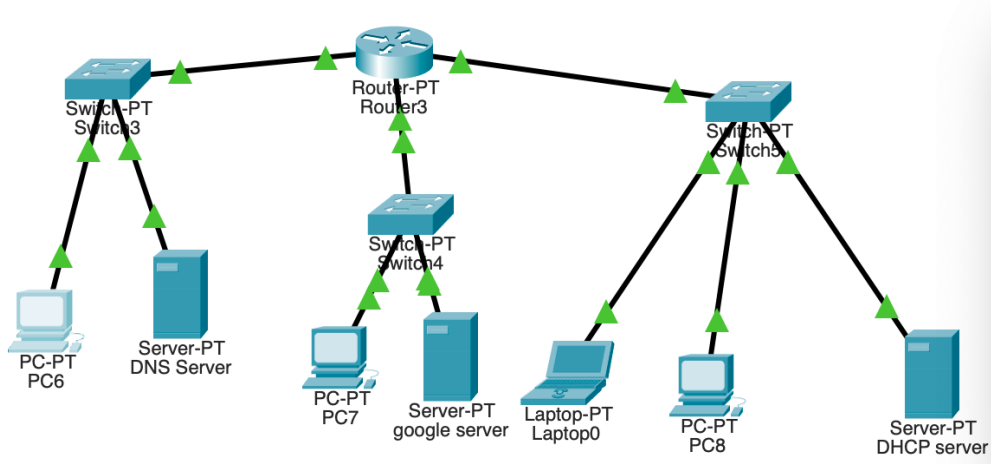
PROCEDURE (TELNET)

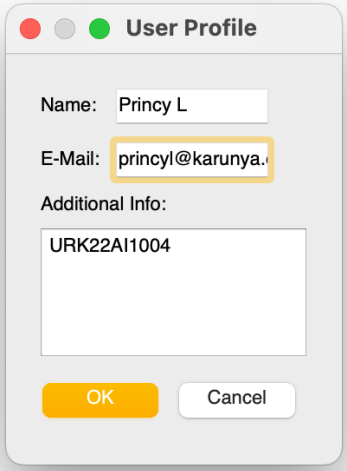
1. In the CLI of the router give the commands
2. Assign router password
3. Assign vty passwords
4. Open command prompt of the remote end device
5. Type telnet and gateway address of the router
6. Type the password and you can access the router via the remote end devices

TELENT COMANDS

Router(config)# en password 1606
Router(config)#exit
Router(config)#line vty 04
Router(config)#password 16062005
Router(config)#login

TOPOLOGY DIAGRAM



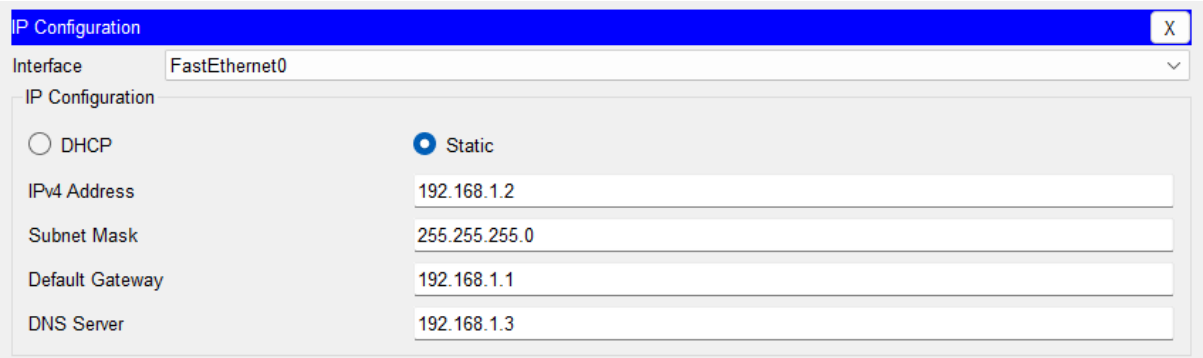


ADDRESSING TABLE

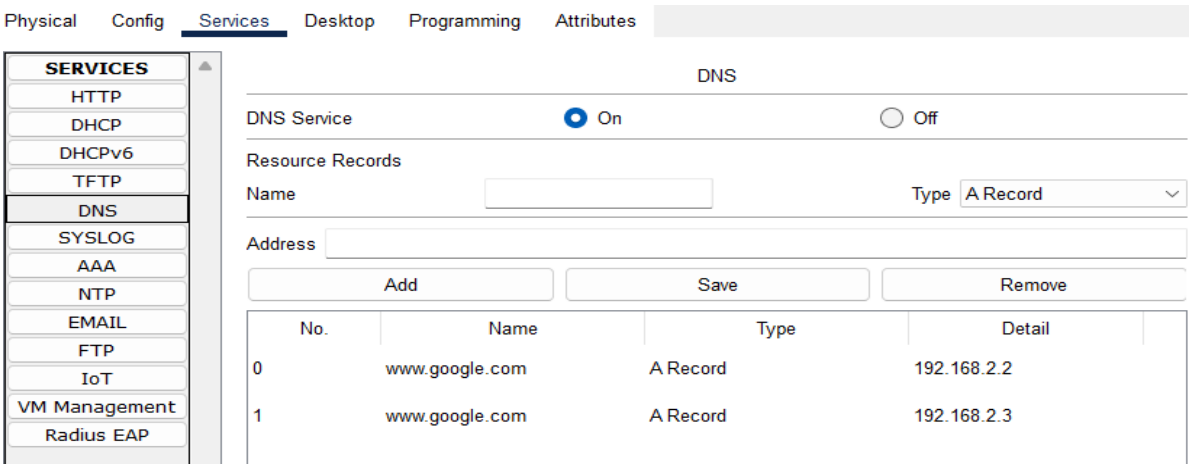
Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	Fa0/0	192.168.1.1	255.255.255.0	NA
	Fa1/0	192.168.2.1	255.255.255.0	NA
	Fa6/0	192.168.3.1	255.255.255.0	NA
PC1	NIC	192.168.1.2	255.255.255.0	192.168.1.1
Server	vty	192.168.1.3	255.255.255.0	192.168.1.1
PC2	NIC	192.168.2.2	255.255.255.0	192.168.2.1
Server 2	vty	192.168.2.3	255.255.255.0	192.168.2.1
PC3	NIC	192.168.3.2	255.255.255.0	192.168.3.1
Lap	NIC	192.168.3.3	255.255.255.0	192.168.3.1

OUTPUT

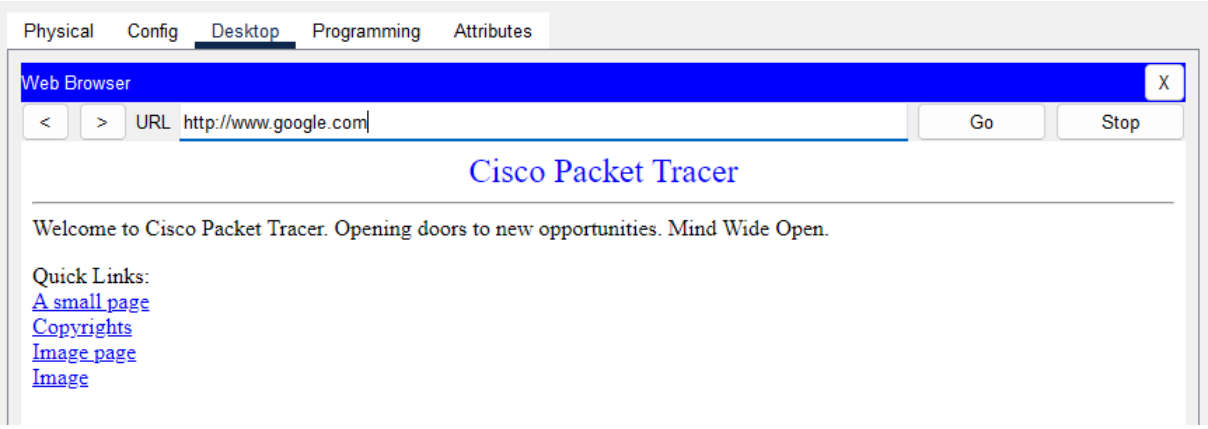
Screenshot of static IP address for any 1 PC



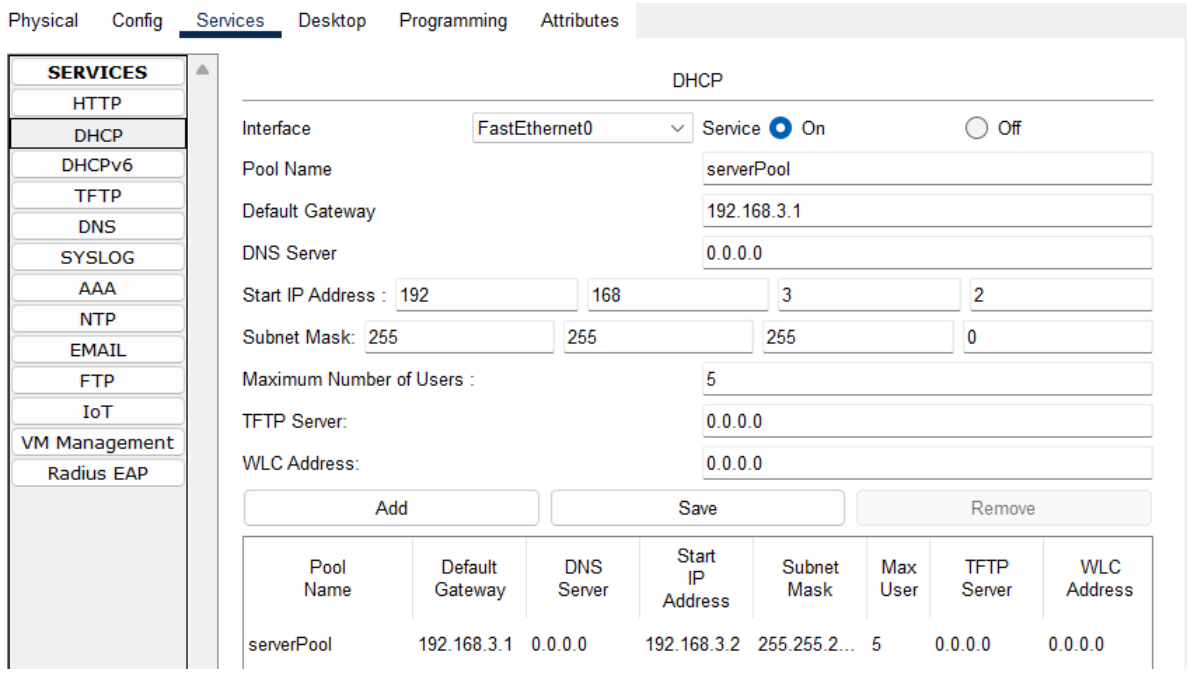
Screenshot of DNS settings



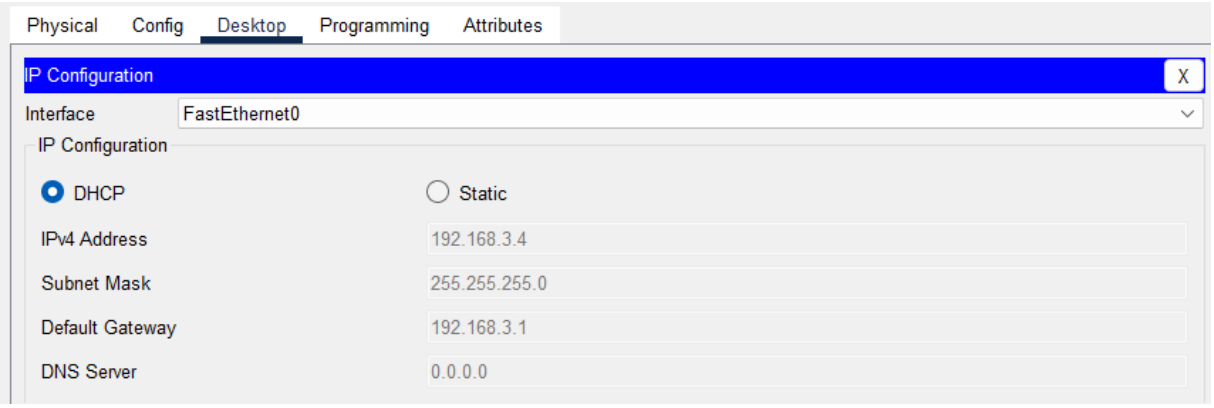
Screenshot of access to Web server



Screenshot of DHCP settings



Screenshot of DHCP IP address for any 1 PC



Screenshot of running-config file with VTY

```
Router(config-if)#exit
Router(config)#line vty 0 4
Router(config-line)#login local
Router(config-line)#user keba password 123
Router(config)#exit
Router#
```

Screenshot of successful ping from 1 PC to any 1 remote host.

Screenshot of successful TELNET access (from CMD)

```
C:\>telnet 192.168.1.1
Trying 192.168.1.1...Open

Username:Princy
Password:
Router>
```

Screenshot of Routing Table of router

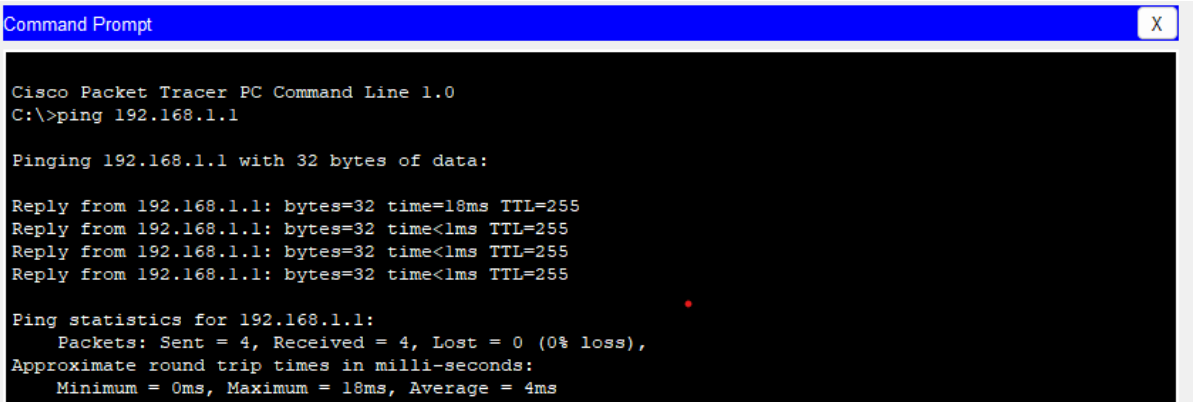
```
Router#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0
L       192.168.1.1/32 is directly connected, GigabitEthernet0/0

Router#
```

Screenshot of successful ping from 1 PC to any 1 remote host.



RESULT:

The required configuration of DNS and investigate the working of DNS and HTTP with the help of above mentioned steps and method.