

Experiment No: 05

Experiment Name: DNS server configuration

Objective:

In this experiment we're going to simulate and evaluate the networking principle of DNS server. A DNS server is any computer registered to join the Domain Name System. A DNS server runs special-purpose networking software, features a public IP address, and contains a database of network names and addresses for other Internet hosts. We'll be using two DNS servers for two virtual websites and test the working principle

Design procedure:

Here a simple network connection using Routers , Switches and DNS servers:

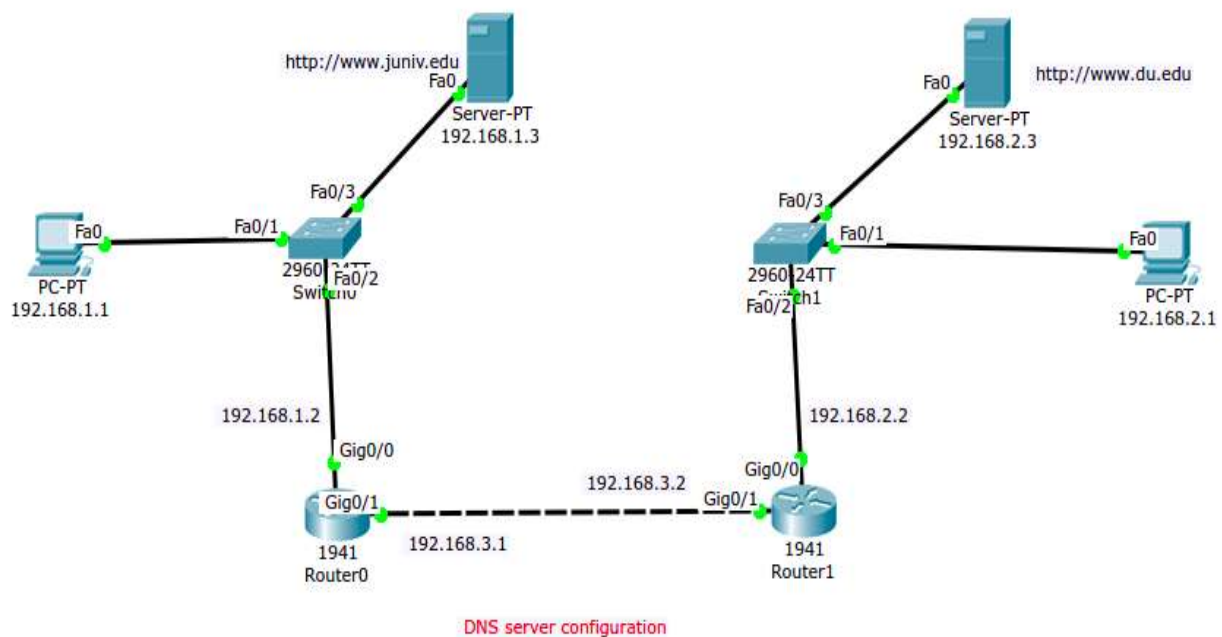


Illustration 1: DNS server connected to switch, connected via two routers.

The above figure shows the connection among PCs , switches, routers & DNS servers.

Details procedure of router, End Device configuration:

1. End Device IP address configure: These are sample configuration, not all end-device configuration have shown,

⑩ Device 1

192.168.1.1

Physical Config Desktop Attributes Software/Services

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 192.168.1.1

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.2

DNS Server 192.168.1.3

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::206:2AFF:FE9B:3B8A

IPv6 Gateway

IPv6 DNS Server

☐ Top

Illustration

2: Device 1 IP configuration

⑩ Device 2

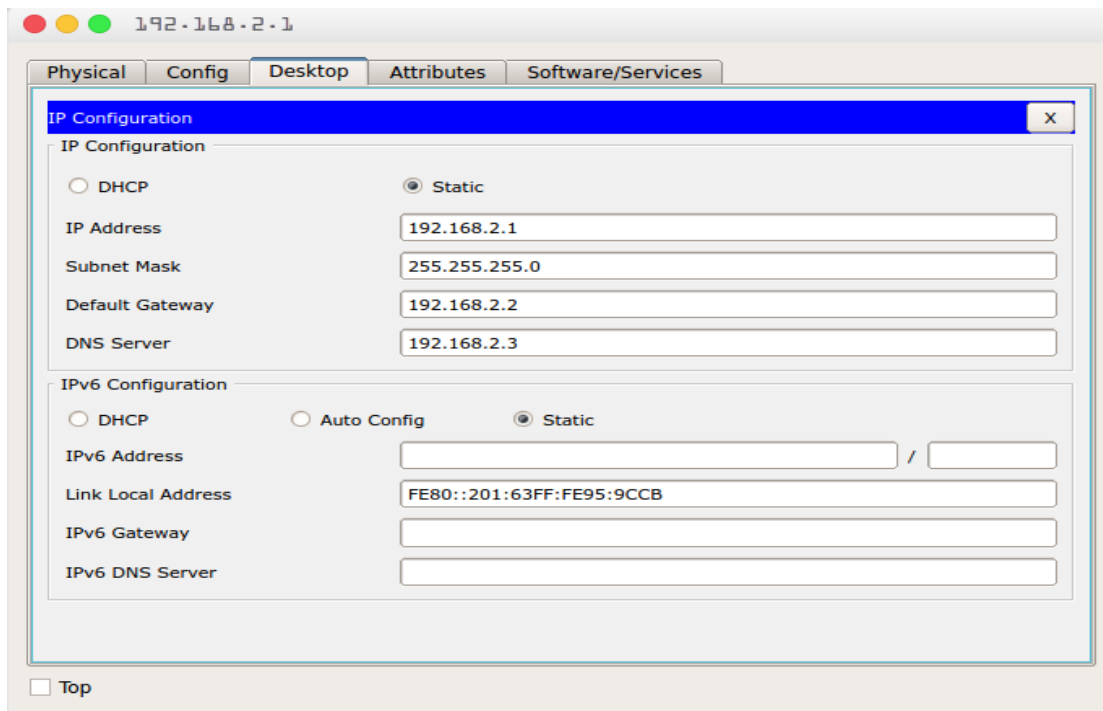


Illustration 3:

Device 2 IP configuration

2. Router configuration : Each Router requires two step to be fully functional, first step we assign IP-addresses relative to each router. The second step we setup the routing table:

⑩ **Router:1**

Router0

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/0

Port Status ☒ On

Bandwidth ☐ 1000 Mbps ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0000.0CA9.AB01

IP Configuration

IP Address 192.168.1.2

Subnet Mask 255.255.255.0

Tx Ring Limit 10

Equivalent IOS Commands

```
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
```

☐ Top

Illustration 4: Router-1

Configuration

Router:2

The screenshot shows a web-based configuration interface for a router named 'Router1'. The 'Config' tab is active, and the 'GigabitEthernet0/0' interface is selected. The configuration fields are as follows:

GigabitEthernet0/0	
Port Status	<input checked="" type="checkbox"/> On
Bandwidth	<input type="radio"/> 1000 Mbps <input checked="" type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto
Duplex	<input type="radio"/> Half Duplex <input checked="" type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto
MAC Address	0002.4A78.2501
IP Configuration	
IP Address	192.168.2.2
Subnet Mask	255.255.255.0
Tx Ring Limit	10

Below the configuration fields, there is a section titled 'Equivalent IOS Commands' which contains the following text:

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
```

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

Illustration 5: Router-2

Configuration

3. *DNS server configuration : We need to configure both of the DNS servers as follows*

⑩ *DNS Server 1:*

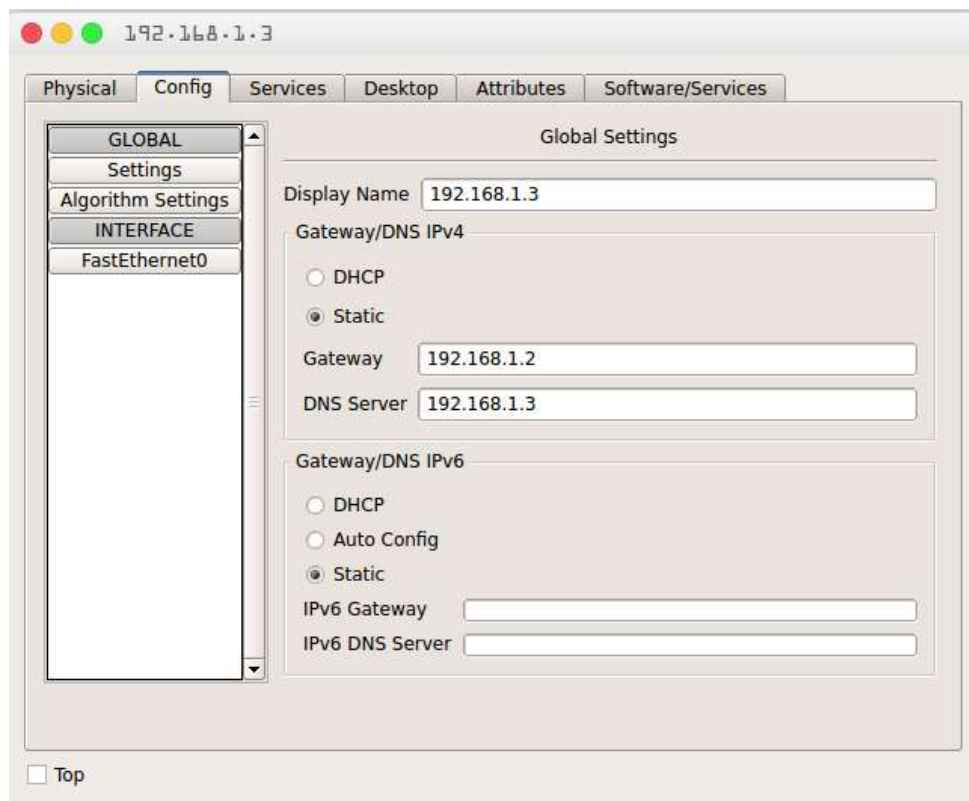


Illustration 6: DNS server-

1 IP configuration

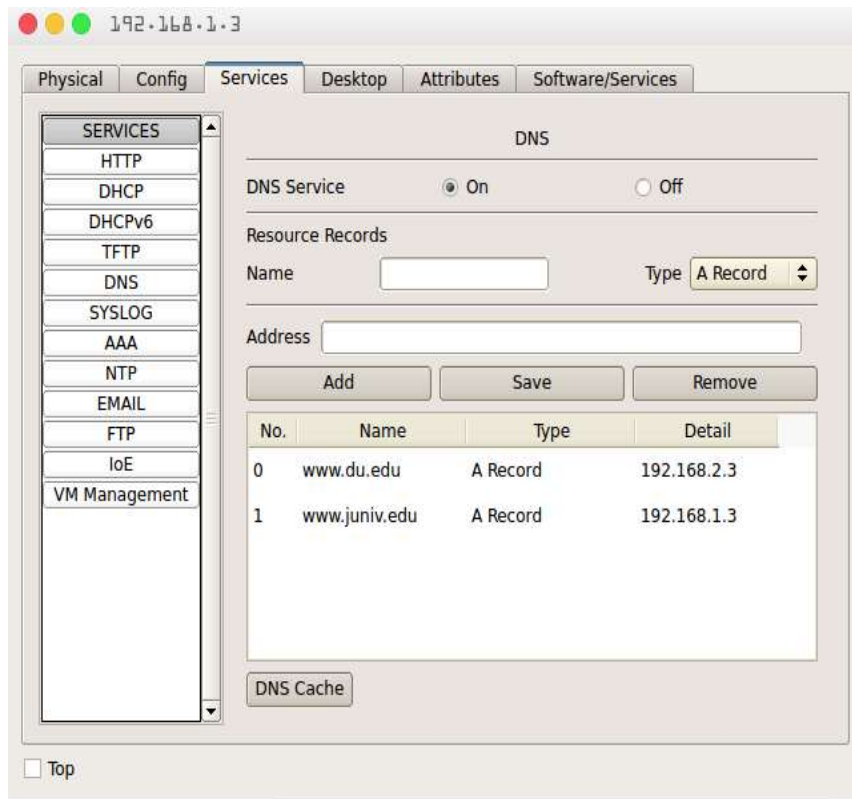


Illustration 7: DNS-1 Resource

Record Entry

⑩ DNS Server 2:

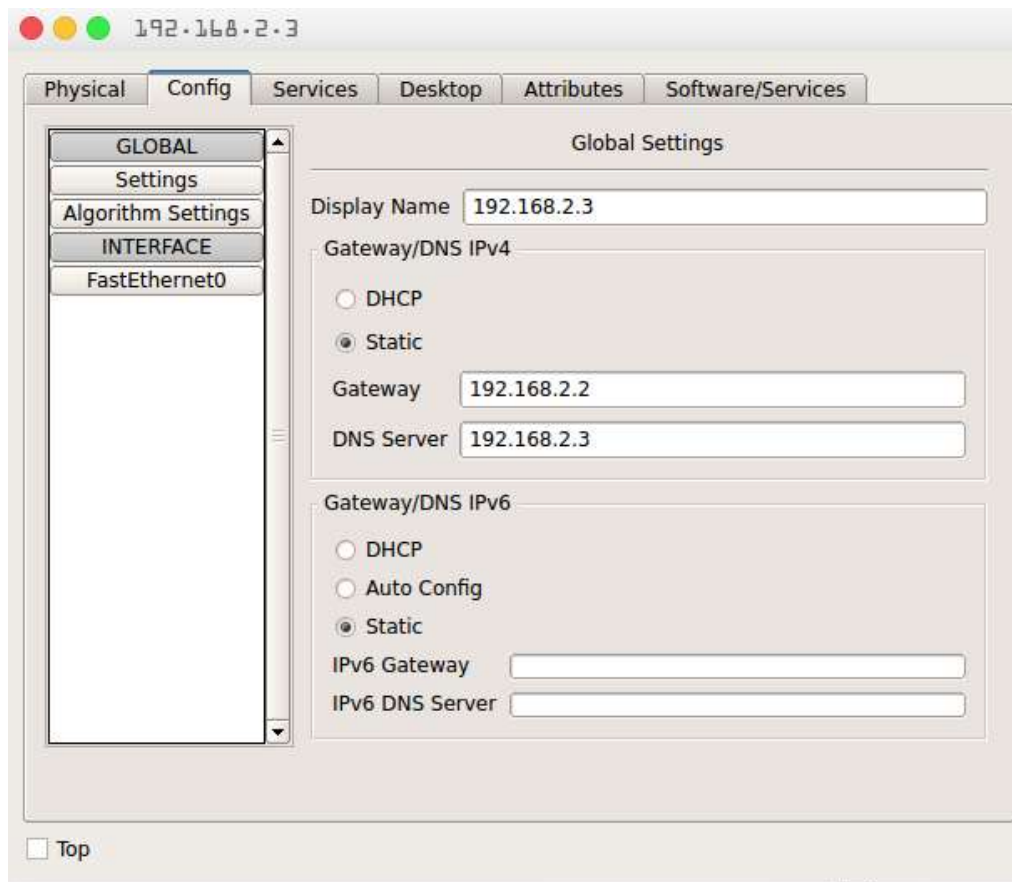


Illustration 8: DNS

server-2 IP configuration

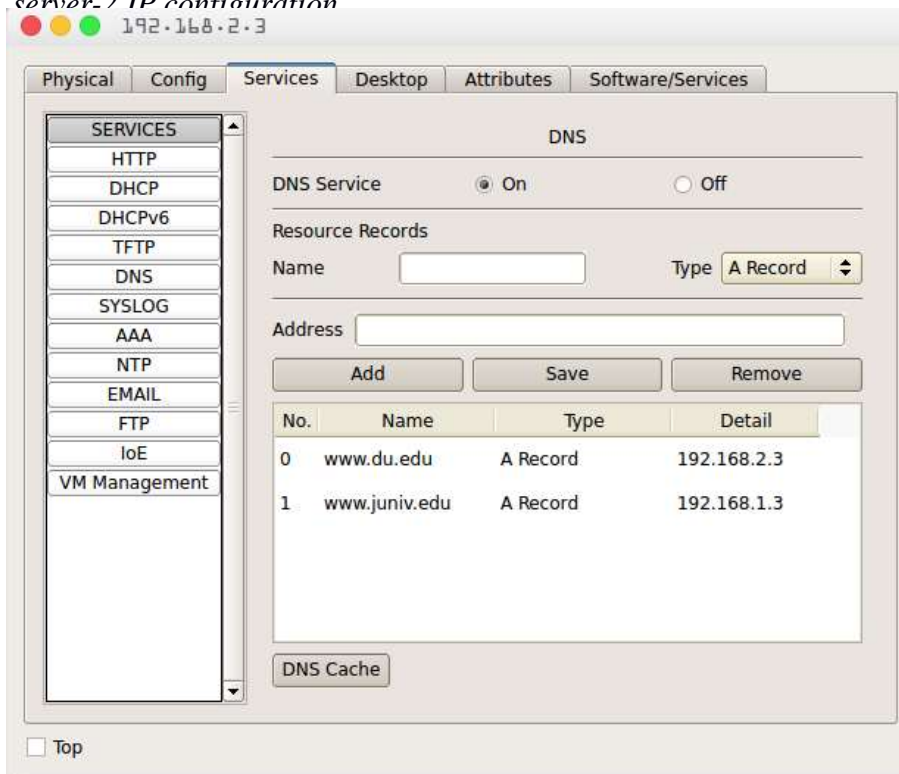


Illustration 9: DNS-2 Resource

Records Entry

Testing DNS Record: Visiting one of the websites from any PC will make sure the DNS service

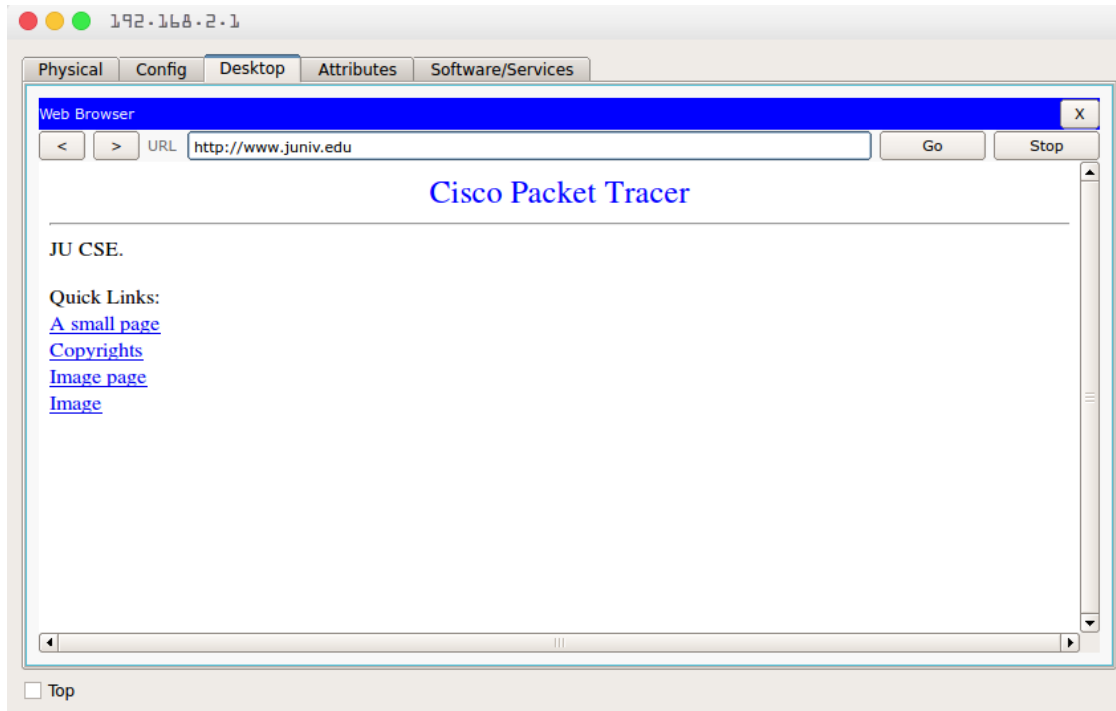
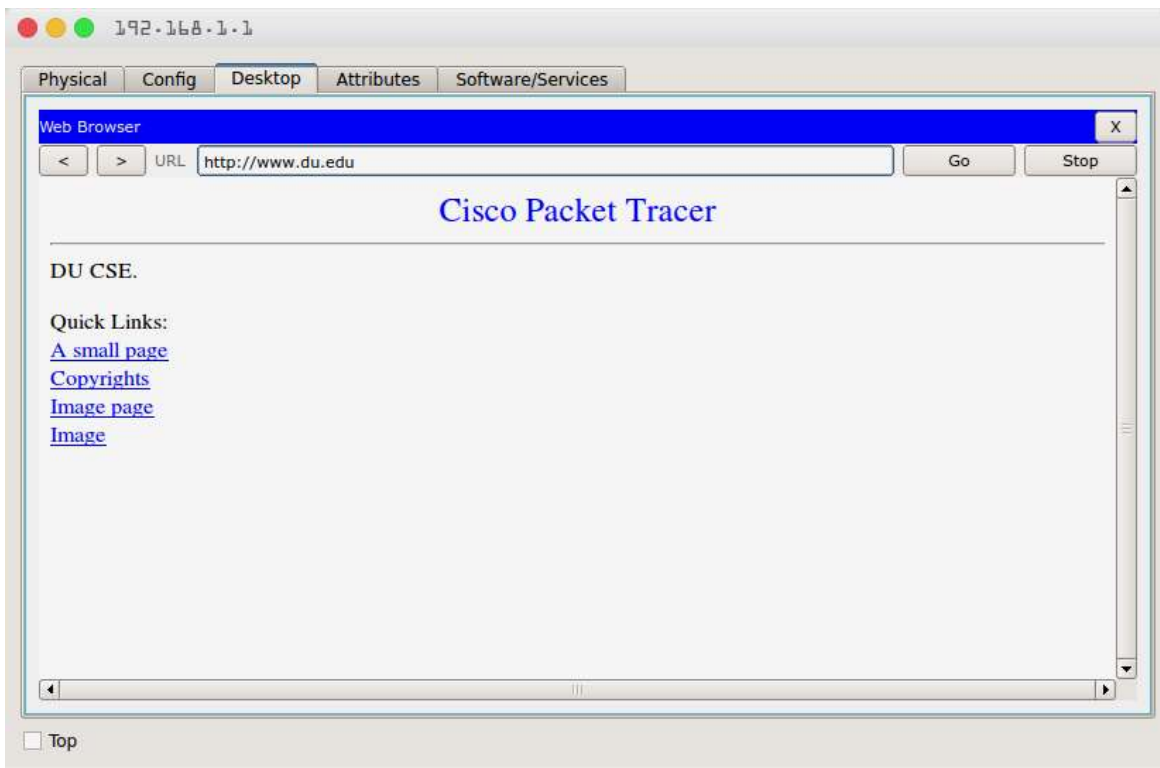


Illustration 10:

Browsing <http://www.juniv.edu> domain



Illustration

11: Browsing: <http://www.du.edu> domain