Tutorial 6: DNS Server Configuration

Abhishek M J - CS21B2018

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What is DNS?

DNS, or Domain Name System, is like the internet's phonebook. It converts user-friendly domain names (like www.example.com) into the actual IP addresses (like 192.168.1.1) that computers use to find each other and connect across the internet. This system helps us navigate the web by translating human-readable names into machine-readable addresses.

Network Setup

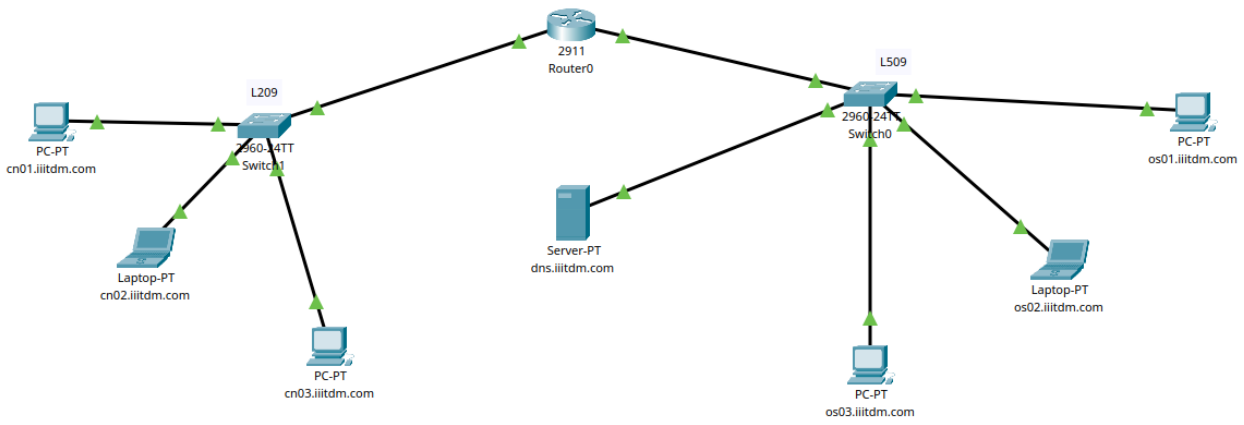

Figure 1: Network Setup

- **Router:** A router is used to connect 2 Different LAN Networks namely, *LAN L209* and *LAN L509*.
- **Switches:** A switch is used to connect the end devices inside each of the LANs.
- **End Devices:** 3 end devices (2 PCs, 1 Laptop) are connected in each of the LANs. Each end devices are configured with a static IP address, gateway of the router of their respective LAN. All devices's DNS is configured to be the DNS Server's IP address.
  - *LAN L209* is given a domain name of *cn**.iiitdm.com*
  - *LAN L509* is given a domain name of *os**.iiitdm.com*
- **Server:** A server is connected to *LAN L509* and is configured to act as a DNS Server.

No.	Name	Type	Detail
0	cn01.iiitdm.com	A Record	192.168.2.1
1	cn02.iiitdm.com	A Record	192.168.2.2
2	cn03.iiitdm.com	A Record	192.168.2.3
3	dns.iiitdm.com	A Record	192.168.5.200
4	os01.iiitdm.com	A Record	192.168.5.1
5	os02.iiitdm.com	A Record	192.168.5.2
6	os03.iiitdm.com	A Record	192.168.5.3

Testing DNS Server

- **Ping to DNS Server:**

```
C:\>ping dns.iiitdm.com

Pinging 192.168.5.200 with 32 bytes of data:

Reply from 192.168.5.200: bytes=32 time<1ms TTL=127
Reply from 192.168.5.200: bytes=32 time<1ms TTL=127
Reply from 192.168.5.200: bytes=32 time<1ms TTL=127
Reply from 192.168.5.200: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.5.200:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

- **Ping to L209:**

```
C:\>ping cn01.iiitdm.com

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time<1ms TTL=128
Reply from 192.168.2.1: bytes=32 time<1ms TTL=128
Reply from 192.168.2.1: bytes=32 time=3ms TTL=128
Reply from 192.168.2.1: bytes=32 time=4ms TTL=128

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 4ms, Average = 1ms
```

- **Ping to L509:**

```
C:\>ping os03.iiitdm.com

Pinging 192.168.5.3 with 32 bytes of data:

Reply from 192.168.5.3: bytes=32 time<1ms TTL=127
Reply from 192.168.5.3: bytes=32 time<1ms TTL=127
Reply from 192.168.5.3: bytes=32 time<1ms TTL=127
Reply from 192.168.5.3: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.5.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```