Linux DNS Setup –Step-by-Step

# 1. What is DNS?

DNS (Domain Name System) is a service that translates human-friendly domain names (e.g., www.example.com) into machine-readable IP addresses (e.g., 192.168.0.1).  
Examples:  
- www.google.com → 192.168.0.1  
- www.example.com → 192.168.0.2

# 2. Web Server Setup (Apache)

## Installation (CentOS / RedHat)

Run the following commands:

sudo yum install httpd  
systemctl start httpd  
systemctl stop httpd  
systemctl status httpd

## Enable Service in Firewall

firewall-cmd --add-service=http --permanent  
firewall-cmd --reload

## Configuration Files

- Default web page: /var/www/html/index.html  
- Apache configuration file: /etc/httpd/conf/httpd.conf

# 3. DNS Server Setup (BIND)

## Installation

Run the following commands:

sudo yum install bind bind-utils  
systemctl start named  
systemctl stop named  
systemctl status named

## Enable Service in Firewall

firewall-cmd --add-service=dns --permanent  
firewall-cmd --reload

## Important Configuration Files

- Main configuration file: /etc/named.conf  
- Zone files directory: /var/named

# 4. DNS Record Types

- A Record → Maps a hostname to an IP address  
- PTR Record → Maps an IP address to a hostname (Reverse lookup)  
- CNAME Record → Maps one hostname to another hostname

# 5. Zone Files

- Forward Zone → Resolves a domain name to an IP address  
- Reverse Zone → Resolves an IP address to a domain name

# 6. DNS Client Configuration

## Windows

1. Open Control Panel → Network and Internet → Network and Sharing Center  
2. Click on 'Change adapter settings'  
3. Right-click the network connection → Properties → Select IPv4/IPv6 → Properties  
4. Enter the preferred DNS server address

## macOS

1. Open System Preferences → Network  
2. Select your active network interface → Click 'Advanced'  
3. Navigate to the DNS tab and add the DNS server address

## Linux

- Option 1: Edit /etc/resolv.conf directly to add the DNS server  
- Option 2: Use NetworkManager or other network configuration tools to set DNS servers