

How to Configure DNS Settings Using resolv.conf in Linux

The resolv.conf file is a critical configuration file in Linux systems used for DNS resolution. This file specifies the DNS servers that the system should query to resolve domain names into IP addresses. Proper configuration of resolv.conf is essential for network connectivity and the performance of applications that rely on DNS lookups. This article will guide you through the process of configuring the resolv.conf file, explain its structure, and provide practical examples to help you manage DNS settings effectively.

Examples:

1. **Basic Structure of resolv.conf:** The resolv.conf file is typically located at /etc/resolv.conf. A basic resolv.conf file might look like this:

```
nameserver 8.8.8.8
nameserver 8.8.4.4
search example.com
```

- nameserver: Specifies the IP address of a DNS server.
- search: Appends the specified domain to single-label queries.

2. **Editing resolv.conf:** To edit the resolv.conf file, you can use any text editor, such as nano or vim. For example, using nano:

```
sudo nano /etc/resolv.conf
```

Add or modify the nameserver entries as needed. For example:

```
nameserver 1.1.1.1
nameserver 1.0.0.1
```

3. **Preventing Overwrites:** Some systems and network managers (like NetworkManager or systemd-resolved) might overwrite the resolv.conf file. To prevent this, you can make the file immutable:

```
sudo chattr +i /etc/resolv.conf
```

To remove the immutable flag, use:

```
sudo chattr -i /etc/resolv.conf
```

4. **Using resolvectl with systemd-resolved:** If your system uses systemd-resolved, you can manage DNS settings using resolvectl. For example, to set DNS servers:

```
sudo resolvectl dns eth0 1.1.1.1 1.0.0.1
```

To view the current DNS settings:

```
resolvectl status
```

5. **Testing DNS Configuration:** After updating your DNS settings, you can test them using tools like dig or nslookup. For example:

```
dig google.com  
nslookup google.com
```