

DNS and Hosts Resolution

DNS and Hosts Testing

```
dig domainname
```

dig from a specific DNS server

```
dig domainname @DNS_ServerIP
```

DNS and Host Resolution

/etc/resolv.conf

The /etc/resolv.conf file is used to configure DNS server that your server will use for DNS lookups.

Important Note; The below documentation is related to the /etc/resolve.conf file. This is not the primary file that Linux machines will use for the resolution configuration. Instead, this file is symlinked to /run/systemd/resolve/stub-resolve.conf which is referenced by systemd-resolved. The primary configuration file used by systemd-resolved is /run/systemd/resolve/resolve.conf, but stub-resolv.conf is also referenced. TLDR; /etc/resolve.conf is still used, but it's not the primary place referenced by systemd-resolved.

```
root@test:~# ls -l /etc/resolv.conf
lrwxrwxrwx 1 root root 39 Aug 10 2023 /etc/resolv.conf -> ../run/systemd/resolve/stub-
resolv.conf
```

The systemd-resolved service listens on port 53 locally: this port needs to be open in order for DNS resolution to function.

```
root@test:~# lsof -i:53
```

COMMAND	PID	USER	FD	TYPE	DEVICE	SIZE/OFF	NODE	NAME
systemd-r	127318	systemd-resolve	13u	IPv4	1028696	0t0	UDP	localhost:domain
systemd-r	127318	systemd-resolve	14u	IPv4	1028697	0t0	TCP	localhost:domain (LISTEN)

/etc/Resolve.conf config:

Below is a typical default configuration you might see on a Linux system:

```
# This file configures your system's DNS resolution.

nameserver 127.0.0.53 # Local DNS server (systemd-resolved)
options edns0 trust-ad # Enables EDNS for performance
search b4sed.xyz # Search domain to append to incomplete names
```

`nameserver` - specifies where the system looks for DNS resolution

`search` - This is the default search domain. For example, if a lookup is made to google, this option would append `.b4sed.xyz` to the end: `google.b4sed.xyz`

`options:`

`edns0` - enables a potentially performance-enhancing feature.

`trust-ad` - instructs your resolver to accept and potentially use the information in the Additional Records section without further verification.

View current DNS configuration:

```
resolvectl status
```

/etc/hosts

The `/etc/hosts` file can be thought of as essentially a local DNS configuration. This means that DNS entries can be mapped here, overwriting any DNS entries provided by an external service.

Entries into the `/etc/hosts` file can be formatted as follows:

```
IP domainname
```

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