

# DNS Troubleshooting

## 1. Verify DNS resolution:

Compare resolution from /etc/resolv.conf DNS vs. 8.8.8.8

```
ashgan@ashgan-VivoBook-ASUSLaptop-X415EP-X415EP:~/Desktop$ dig @8.8.8.8 internal.example.com
```

```
;; Query time: 120 msec
;; SERVER: 8.8.8.8#53(8.8.8.8) (UDP)
;; WHEN: Mon Apr 28 20:50:57 EEST 2025
;; MSG SIZE rcvd: 105
```

```
ashgan@ashgan-VivoBook-ASUSLaptop-X415EP-X415EP:~/Desktop$ dig internal.example.com
```

```
;; Query time: 155 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Mon Apr 28 20:49:59 EEST 2025
;; MSG SIZE rcvd: 105
```

## 2. Diagnose service reachability:

- ☒ Check if the web service is listening on port 80 or 443 by running command telnet on the server hosting the service.

```
Server lookup failure: /internal.wp.com:80, Name or service not known
ashgan@ashgan-VivoBook-ASUSLaptop-X415EP-X415EP:~/Desktop$ telnet https://internal.wp.com 443
Connect to https://internal.wp.com (127.0.0.1) port 443: Name or service not known
```

```
ashgan@ashgan-VivoBook-ASUSLaptop-X415EP-X415EP:~/Desktop$ telnet https://internal.wp.com 80
Connect to https://internal.wp.com (127.0.0.1) port 80: Name or service not known
```

## 3. Trace the issue, propose and apply fixes:

### 1. DNS resolution issues:

Incorrect DNS server or DNS server misconfiguration in /etc/resolv.conf.

Fixes:

- ☒ Ensure the DNS server is correctly listed in /etc/resolv.conf.
- ☒ Restart DNS service if necessary “sudo systemctl restart system-resolved” command.

```
ashgan@ashgan-VivoBook-ASUSLaptop-X415EP-X415EP:~/Desktop$ cat /etc/resolv.conf
```

```
nameserver 127.0.0.53
options edns0 trust-ad
search .
```

### 2. Web service issues:

Ensure the web service is up and running on the correct ports (80 or 443).

Fixes:

Restart the web service

```
ashgan@ashgan-VivoBook-ASUSLaptop-X415EP-X415EP:~/Desktop$ sudo systemctl restart nginx
```

3. Firewall Issues:

Ensure that the firewall is allowing traffic on ports 80 and 443.

Fixes:

```
ashgan@ashgan-VivoBook-ASUSLaptop-X415EP-X415EP:~/Desktop$ sudo ufw allow 80/tcp
Rules updated
Rules updated (v6)
ashgan@ashgan-VivoBook-ASUSLaptop-X415EP-X415EP:~/Desktop$ sudo ufw allow 443/tcp
```

4. Network Connectivity

Ensure the client systems can route to the DNS server and the web server IP.

Fixes:

```
ashgan@ashgan-VivoBook-ASUSLaptop-X415EP-X415EP:~/Desktop$ traceroute internal.example.com
```