```
ubuntu:~$ cat /etc/resolv.conf
# This is /run/systemd/resolve/resolv.conf managed by man:systemd-resolved(8).
# Do not edit.
#
# This file might be symlinked as /etc/resolv.conf. If you're looking at
# /etc/resolv.conf and seeing this text, you have followed the symlink.
#
# This is a dynamic resolv.conf file for connecting local clients directly to
# all known uplink DNS servers. This file lists all configured search domains.
#
# Third party programs should typically not access this file directly, but only
# through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a
# different way, replace this symlink by a static file or a different symlink.
#
# See man:systemd-resolved.service(8) for details about the supported modes of
# operation for /etc/resolv.conf.

nameserver 8.8.8.8
nameserver 1.1.1.1
search .
ubuntu:~$ nslookup internal.example.com
Server:         8.8.8.8
Address:        8.8.8.8#53

** server can't find internal.example.com: NXDOMAIN

ubuntu:~$ nslookup internal.example.com 8.8.8.8
Server:         8.8.8.8
Address:        8.8.8.8#53

** server can't find internal.example.com: NXDOMAIN

ubuntu:~$ sudo vi /etc/hosts
ubuntu:~$
```

```
127.0.0.1 localhost

# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
ff02::3 ip6-allhosts
127.0.0.1 ubuntu
127.0.0.1 host01
192.168.1.100    internal.example.com
~
```

Potential Causes:

1. DNS Misconfiguration:

Wrong DNS server configured.

Internal DNS server down or not reachable.

DNS record for internal.example.com missing or incorrect.

2. Network Issues:

Firewall blocking DNS or HTTP(S) traffic.

Incorrect routing (network path to server broken).

IP address conflict or server unreachable.

3. Service-Side Issues:

Web server (nginx/apache) is running but on the wrong IP or port.

Web server not listening on port 80/443.

SSL/TLS configuration issues if using HTTPS.

4. Local Client Issues:

Cached wrong DNS record.

Wrong /etc/hosts entry.

Misconfigured network interface on client machine.

```
ubuntu:~$ nslookup internal.example.com 8.8.8.8
Server:         8.8.8.8
Address:        8.8.8.8#53

** server can't find internal.example.com: NXDOMAIN

ubuntu:~$ sudo vi /etc/hosts
ubuntu:~$ ping internal.example.com
PING internal.example.com (192.168.1.100) 56(84) bytes of data.
^Z
[1]+  Stopped                 ping internal.example.com
ubuntu:~$ curl -I http://internal.example.com
^Z
[2]+  Stopped                 curl -I http://internal.example.com
ubuntu:~$ telnet internal.example.com 80
Trying 192.168.1.100...
```

```
ubuntu:~$ systemd-resolve --status
systemd-resolve: command not found
ubuntu:~$ resolvectl status
Global
         Protocols: -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported
  resolv.conf mode: uplink

Link 2 (enp1s0)
    Current Scopes: DNS
         Protocols: +DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported
       DNS Servers: 8.8.8.8 1.1.1.1

Link 3 (docker0)
    Current Scopes: none
         Protocols: -DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported
ubuntu:~$ systemctl status systemd-resolved
● systemd-resolved.service - Network Name Resolution
     Loaded: loaded (/usr/lib/systemd/system/systemd-resolved.service; enabled; preset: enabled)
     Active: active (running) since Mon 2025-04-28 15:58:23 UTC; 38min ago
       Docs: man:systemd-resolved.service(8)
             man:org.freedesktop.resolve1(5)
             https://www.freedesktop.org/wiki/Software/systemd/writing-network-configuration-managers
             https://www.freedesktop.org/wiki/Software/systemd/writing-resolver-clients
   Main PID: 1198 (systemd-resolve)
     Status: "Processing requests..."
      Tasks: 1 (limit: 2320)
     Memory: 2.6M (peak: 2.9M)
        CPU: 105ms
     CGroup: /system.slice/systemd-resolved.service
             └─1198 /usr/lib/systemd/systemd-resolved

Apr 28 15:58:23 ubuntu systemd[1]: Starting systemd-resolved.service - Network Name Resolution...
Apr 28 15:58:23 ubuntu systemd-resolved[1198]: Positive Trust Anchors:
Apr 28 15:58:23 ubuntu systemd-resolved[1198]: . IN DS 20326 8 2 e06d44b80b8f1d39a95c0b0d7c65d08458e880409bbc683457104237c7f8ec8d
Apr 28 15:58:23 ubuntu systemd-resolved[1198]: Negative trust anchors: home.arpa 10.in-addr.arpa 16.172.in-addr.arpa 17.172.in-addr.arpa 18.172.
```

```
ubuntu:~$ sudo systemctl enable --now systemd-resolved
ubuntu:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
       valid_lft forever preferred_lft forever
2: enp1s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 52:54:00:d3:bc:69 brd ff:ff:ff:ff:ff:ff
    inet 172.30.1.2/24 brd 172.30.1.255 scope global dynamic noprefixroute enp1s0
       valid_lft 86311188sec preferred_lft 75521988sec
    inet6 fe80::63f8:2e78:b9f:238e/64 scope link
       valid_lft forever preferred_lft forever
3: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1454 qdisc noqueue state DOWN group default
    link/ether 02:42:50:2e:ba:2c brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
       valid_lft forever preferred_lft forever
```

```
ubuntu:~$ sudo resolvectl dns enp1s0 8.8.8.8 1.1.1.1
ubuntu:~$ resolvectl status enp1s0
Link 2 (enp1s0)
    Current Scopes: DNS
         Protocols: +DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported
       DNS Servers: 8.8.8.8 1.1.1.1
        DNS Domain: runtime-7d542278ef81.svc.cluster.local svc.cluster.local cluster.local
ubuntu:~$ resolvectl status
Global
         Protocols: -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported
  resolv.conf mode: uplink

Link 2 (enp1s0)
    Current Scopes: DNS
         Protocols: +DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported
       DNS Servers: 8.8.8.8 1.1.1.1
        DNS Domain: runtime-7d542278ef81.svc.cluster.local svc.cluster.local cluster.local

Link 3 (docker0)
    Current Scopes: none
         Protocols: -DefaultRoute -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported
ubuntu:~$ dig internal.example.com

; <<>> DiG 9.18.30-0ubuntu0.24.04.1-Ubuntu <<>> internal.example.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 45291
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; QUESTION SECTION:
;internal.example.com.            IN      A

;; AUTHORITY SECTION:
```

```
ubuntu:~$ dig internal.example.com

; <<>> DiG 9.18.30-0ubuntu0.24.04.1-Ubuntu <<>> internal.example.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 55659
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; QUESTION SECTION:
;internal.example.com.            IN      A

;; AUTHORITY SECTION:
example.com.           1630    IN      SOA     ns.icann.org. noc.dns.icann.org. 2025011626 7200 3600 1209600 3600

;; Query time: 19 msec
;; SERVER: 8.8.8.8#53(8.8.8.8) (UDP)
;; WHEN: Mon Apr 28 16:48:36 UTC 2025
;; MSG SIZE  rcvd: 105

ubuntu:~$ 
```