

# DNS Forwarding på Ubuntu.

Vi skal opsætte vores router til at svare på DNS, så vi ikke behøver at vælge eksterne DNS adresser (Som 8.8.8.8) Det findes selvfølgelig flere løsninger til dette. Jeg vil bruge det software der hedder bind9. Lad os starte med at installere softwaren:

```
sudo apt install bind9
```

Resultat(Der kommer en masse tekst, her er kun gengivet en del af det):

```
dtmek@router:~$ sudo apt install bind9
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bind9-utils dns-root-data
Suggested packages:
  bind-doc ufw
The following NEW packages will be installed:
  bind9 bind9-utils dns-root-data
0 upgraded, 3 newly installed, 0 to remove and 1 not upgraded.
Need to get 419 kB of archives.
After this operation, 1,624 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://dk.archive.ubuntu.com/ubuntu noble-updates/main amd64 bind9-utils amd64 1:9.18.30-0ubuntu0.24.04.2 [159 kB]
Get:2 http://dk.archive.ubuntu.com/ubuntu noble-updates/main amd64 dns-root-data all 2024071801-ubuntu0.24.04.1 [5,918 B]
Get:3 http://dk.archive.ubuntu.com/ubuntu noble-updates/main amd64 bind9 amd64 1:9.18.30-0ubuntu0.24.04.2 [254 kB]
Fetched 419 kB in 1s (789 kB/s)
Selecting previously unselected package bind9-utils.
(Reading database ... 123456789 files and directories currently installed.)
Preparing to unpack .../bind9-utils_1%3A9.18.30-0ubuntu0.24.04.2_amd64.deb ...
Unpacking bind9-utils (1:9.18.30-0ubuntu0.24.04.2) ...
Preparing to unpack .../dns-root-data_2024071801-ubuntu0.24.04.1_all.deb ...
Unpacking dns-root-data (2024071801-ubuntu0.24.04.1) ...
Preparing to unpack .../bind9_1%3A9.18.30-0ubuntu0.24.04.2_amd64.deb ...
Unpacking bind9 (1:9.18.30-0ubuntu0.24.04.2) ...
Setting up bind9-utils (1:9.18.30-0ubuntu0.24.04.2) ...
Setting up dns-root-data (2024071801-ubuntu0.24.04.1) ...
Setting up bind9 (1:9.18.30-0ubuntu0.24.04.2) ...
```

Der skal også laves en ændring i en konfigurationfil, det gør vi med:

```
sudo nano /etc/bind/named.conf.options
```

Slet alle linjer, og indsæt følgende:

```
options {
    directory "/var/cache/bind";
    forwarders {
        8.8.8.8;
    };
    dnssec-validation auto;
    listen-on-v6 { any; };
    recursion yes;
    listen-on port 53 {192.168.150.1;};
    allow-query {any;};
};
```

Husk at redigere linjen: `listen-on port 53 {192.168.150.1;};` Så den passer med dit netværk. Og vi bruger Google DNS som forward DNS (8.8.8.8)

For at gemme ændringer trykkes der CTRL+S og så CTRL+X, og man er tilbage i prompten.

Så skal vi selvfølgelig også genstarte vores DNS service med kommandoen:

```
sudo systemctl restart bind9
```

Resultat:

```
dtmek@router:~$ sudo systemctl restart bind9
dtmek@router:~$
```

Lad os se om servicen er aktiv med kommandoen:

```
systemctl status bind9
```

Resultat (Hvis der står "active (running)" ved pilen, så er servicen aktiv.

```
dtmek@router:~$ systemctl status bind9
● named.service - BIND Domain Name Server
   Loaded: loaded (/usr/lib/systemd/system/named.service; enabled; preset: enabled)
   Active: active (running) since Thu 2025-04-03 08:49:15 UTC; 1min 5s ago
     Docs: man:named(8)
    Main PID: 2033 (named)
      Status: "running"
        Tasks: 14 (limit: 4609)
       Memory: 6.5M (peak: 7.5M)
          CPU: 41ms
    CGroup: /system.slice/named.service
            └─2033 /usr/sbin/named -f -u bind

Apr 03 08:49:15 router named[2033]: network unreachable resolving './NS/IN': 2001:dc3::3#53
Apr 03 08:49:15 router named[2033]: network unreachable resolving './NS/IN': 2001:7fd::1#53
Apr 03 08:49:15 router named[2033]: network unreachable resolving './NS/IN': 2001:500:1::53#53
Apr 03 08:49:15 router named[2033]: network unreachable resolving './NS/IN': 2001:500:2f::f#53
Apr 03 08:49:15 router named[2033]: network unreachable resolving './NS/IN': 2001:7fe::53#53
Apr 03 08:49:15 router named[2033]: network unreachable resolving './NS/IN': 2001:503:c27::2:30#53
Apr 03 08:49:15 router named[2033]: network unreachable resolving './NS/IN': 2001:500:a8::e#53
Apr 03 08:49:15 router named[2033]: network unreachable resolving './NS/IN': 2001:500:2d::d#53
Apr 03 08:49:15 router named[2033]: managed-keys-zone: Key 20326 for zone . is now trusted (acceptance timer complete)
Apr 03 08:49:15 router named[2033]: managed-keys-zone: Key 38696 for zone . is now trusted (acceptance timer complete)
dtmek@router:~$
```

Lad os nu se om DNS virker på vores lokale router. Det kan vi køre ved at lave et opslag med kommandoen nslookup. Husk at rette IP adresse til for dit netværk (Fremhævet):

```
nslookup tv2.dk 192.168.150.1
```

Resultat:

```
dtmek@router:~$ nslookup tv2.dk 192.168.150.1
Server:      192.168.150.1
Address:     192.168.150.1#53

Non-authoritative answer:
Name:   tv2.dk
Address: 199.232.41.91
dtmek@router:~$
```

Her virker DNS, da vi får IP adressen på tv2.dk.

Nu er det jo lige det at vi ikke tildeler vores router som DNS via DHCP, så det må vi lige ændre. Rediger konfigurationen for vores DHCP server, med følgende kommando:

```
sudo nano /etc/dhcp/dhcpd.conf
```

I den fil, ret linjen `option domain-name-servers 8.8.8.8;` til IP adressen på vores routers interne (eller grønne) interface (Ved Pilen):

```
subnet 192.168.150.0 netmask 255.255.255.0 {
    range 192.168.150.10 192.168.150.50;
    option routers 192.168.150.1;
    option domain-name-servers 192.168.150.1;
}
```

For at gemme ændringer trykkes der CTRL+S og så CTRL+X, og man er tilbage i prompten.

Og som altid efter vi har pillet ved en konfigurationsfil, skal vi lige genstarte vores service:

```
sudo systemctl restart isc-dhcp-server
```

Resultat:

```
dtmek@router:~$ sudo systemctl restart isc-dhcp-server
dtmek@router:~$
```

Så genstart din GUI computer der sidder på det lukkede netværk, og se om det hele virker efter genstart. Og kontroller at din DNS server er skiftet. Her er hvordan du kan se det på en debian baseret Ubuntu (Husk at tilrette Netværks interface til din computer (Fremhævet)):

```
nmcli device show ens18 | grep IP4.DNS
```

Resultat:

```
dtmek@grafisk:~$ nmcli device show ens18 | grep IP4.DNS
IP4.DNS[1]: 192.168.150.1
dtmek@grafisk:~$
```

I Windows skriver man i en cmd:

```
ipconfig /all
```

Resultat (Se ved pilen)

```
C:\Users\dtmek>ipconfig /all

Windows IP Configuration

Host Name . . . . . : guiwin
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Ethernet:

Connection-specific DNS Suffix . :
Description . . . . . : Intel(R) 82574L Gigabit Network Connection
Physical Address. . . . . : BC-24-11-F9-C1-5C
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::247b:3493:4b27:f6e3%6(Preferred)
IPv4 Address. . . . . : 192.168.150.11(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Thursday, 3 April 2025 11.31.13
Lease Expires . . . . . : Thursday, 3 April 2025 23.31.12
Default Gateway . . . . . : 192.168.150.1
DHCP Server . . . . . : 192.168.150.1
DHCPv6 IAID . . . . . : 247211025
DHCPv6 Client DUID. . . . . : 00-01-00-01-2F-F0-8A-9C-BC-24-11-F9-C1-5C
DNS Servers . . . . . : 192.168.150.1
NetBIOS over Tcpip. . . . . : Enabled
```

Så er vores Router også DNS forvander server.

