

DHCP-Server installieren und konfigurieren

Paketliste aktualisieren und DHCP-Server installieren

```
sudo apt update
sudo apt upgrade
sudo apt install isc-dhcp-server -y
```

```
Password:
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-53-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Di 11. Feb 07:17:53 UTC 2025

System load:  3.39          Processes:    158
Usage of /:   25.2% of 24.9GB Users logged in:  0
Memory usage: 2%           IPv4 address for enp0s3: 10.0.2.15
Swap usage:   0%

Erweiterte Sicherheitswartung (ESM) für Applications ist nicht aktiviert.
131 Aktualisierungen können sofort angewendet werden.
Zum Anzeigen dieser zusätzlichen Aktualisierungen bitte »apt list --upgradable« ausführen

Aktivieren Sie ESM Apps, um zusätzliche zukünftige Sicherheitsupdates zu erhalten.
Siehe https://ubuntu.com/esm oder führen Sie aus: sudo pro status

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

administrator@marcoserver:~$ sudo apt update
[sudo] password for administrator:
OK:1 http://at.archive.ubuntu.com/ubuntu noble InRelease
OK:2 http://at.archive.ubuntu.com/ubuntu noble-updates InRelease
OK:3 http://at.archive.ubuntu.com/ubuntu noble-backports InRelease
OK:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Holen:5 http://at.archive.ubuntu.com/ubuntu noble/main Translation-de [504 kB]
Holen:6 http://at.archive.ubuntu.com/ubuntu noble/restricted Translation-de [3.996 B]
Holen:7 http://at.archive.ubuntu.com/ubuntu noble/universe Translation-de [2.635 kB]
Holen:8 http://at.archive.ubuntu.com/ubuntu noble/multiverse Translation-de [105 kB]
Es wurden 3.300 kB in 1 s geholt (2.336 kB/s).
Paketlisten werden gelesen... Fertig
Abhängigkeitsbaum wird aufgebaut... Fertig
Statusinformationen werden eingelesen... Fertig
Aktualisierung für 127 Pakete verfügbar. Führen Sie »apt list --upgradable« aus, um sie anzuzeigen.
administrator@marcoserver:~$ sudo apt install isc-dhcp-server -y
```

Netzwerkschnittstelle für DHCP konfigurieren

Finde den Namen deiner Netzwerkschnittstelle mit: `ip -a`

Unsere Netzwerkschnittstelle ist `enp0s3`

```
administrator@marcoserver:~$ 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: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 08:00:27:7f:04:c4 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.67/24 metric 100 brd 192.168.1.255 scope global dynamic enp0s3
        valid_lft 86152sec preferred_lft 86152sec
    inet6 fe80::a00:27ff:fe7f:4c4/64 scope link
        valid_lft forever preferred_lft forever
administrator@marcoserver:~$
```

Nun öffne die Konfigurationsdatei: `sudo nano /etc/default/isc-dhcp-server`

Finde die Zeile: `INTERFACESv4=""`

Änderung der Zeile auf: `INTERFACESv4="enp0s3"`

```

GNU nano 7.2 /etc/default/isc-dhcp-server
# Defaults for isc-dhcp-server (sourced by /etc/init.d/isc-dhcp-server)

# Path to dhcpd's config file (default: /etc/dhcp/dhcpd.conf).
#DHCPDv4_CONF=/etc/dhcp/dhcpd.conf
#DHCPDv6_CONF=/etc/dhcp/dhcpd6.conf

# Path to dhcpd's PID file (default: /var/run/dhcpd.pid).
#DHCPDv4_PID=/var/run/dhcpd.pid
#DHCPDv6_PID=/var/run/dhcpd6.pid

# Additional options to start dhcpd with.
# Don't use options -cf or -pf here; use DHCPD_CONF/ DHCPD_PID instead
#OPTIONS=""

# On what interfaces should the DHCP server (dhcpd) serve DHCP requests?
# Separate multiple interfaces with spaces, e.g. "eth0 eth1".
INTERFACESv4="enp0s3"
INTERFACESv6=""

```

DHCP-Bereich konfigurieren

sudo nano /etc/dhcp/dhcpd.conf

Die Datei auf folgendes ändern:

```

# dhcpd.conf
#
# Sample configuration file for ISC dhcpd
#
# Attention: If /etc/ltsdp/dhcpd.conf exists, that will be used as
# configuration file instead of this file.
#
# option definitions common to all supported networks...

default-lease-time 600;
max-lease-time 7200;

# The ddns-updates-style parameter controls whether or not the server will
# attempt to do a DNS update when a lease is confirmed. We default to the
# behavior of the version 2 packages ('none', since DHCP v2 didn't
# have support for DDNS.)
ddns-update-style none;

# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.
#authoritative;

# Use this to send dhcp log messages to a different log file (you also
# have to hack syslog.conf to complete the redirection).
#log-facility local7;

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.

subnet 192.168.1.0 netmask 255.255.255.0 {
    range 192.168.1.200 192.168.1.222;
    option routers 192.168.1.1;
    option domain-name-servers 192.168.1.1, 192.168.1.2;
    option domain-name "mydomain.example";
}

# This is a very basic subnet declaration.

#subnet 10.254.239.0 netmask 255.255.255.224 {
#    range 10.254.239.10 10.254.239.20;
#    option routers rtr-239-0-1.example.org, rtr-239-0-2.example.org;
#}

# This declaration allows BOOTP clients to get dynamic addresses,

```

Feste IP-Adresse für ein Gerät (MAC-Adresse):

In der dhcp.conf diese Werte am Ende in die Tabelle eingeben

```
#}

#shared-network 224-29 {
#  subnet 10.17.224.0 netmask 255.255.255.0 {
#    option routers rtr-224.example.org;
#  }
#  subnet 10.0.29.0 netmask 255.255.255.0 {
#    option routers rtr-29.example.org;
#  }
#  pool {
#    allow members of "foo";
#    range 10.17.224.10 10.17.224.250;
#  }
#  pool {
#    deny members of "foo";
#    range 10.0.29.10 10.0.29.230;
#  }
#}

host MeinClient {
hardware ethernet 00:1A:2B:3C:4D:5E;
fixed-address 192.168.1.150;
}

administrator@marcoserver:~$ sudo systemctl status isc-dhcp-server
```

DHCP-Server neu starten und Status abrufen:

sudo systemctl restart isc-dhcp-server

sudo systemctl status isc-dhcp-server

```
administrator@marcoserver:~$ sudo systemctl status isc-dhcp-server
• isc-dhcp-server.service - ISC DHCP IPv4 server
   Loaded: loaded (/usr/lib/systemd/system/isc-dhcp-server.service; enabled; preset: enabled)
   Active: active (running) since Tue 2025-02-11 08:06:01 UTC; 2h 5min ago
     Docs: man:dhcpd(8)
    Main PID: 1198 (dhcpd)
      Tasks: 1 (limit: 8831)
     Memory: 4.1M (peak: 4.6M)
        CPU: 87ms
    CGroup: /system.slice/isc-dhcp-server.service
            └─1198 dhcpd -user dhcpd -group dhcpd -f -4 -pf /run/dhcp-server/dhcpd.pid -cf /etc/dhcp/dhcpd.conf enp0s3

Feb 11 09:33:55 marcoserver dhcpd[1198]: DHCPREQUEST for 192.168.1.4 from c2:7d:11:7f:d3:8d via enp0s3: unknown lease 192.168.1.4.
Feb 11 09:33:56 marcoserver dhcpd[1198]: DHCPREQUEST for 192.168.1.4 from c2:7d:11:7f:d3:8d via enp0s3: unknown lease 192.168.1.4.
Feb 11 09:37:53 marcoserver dhcpd[1198]: DHCPREQUEST for 192.168.1.5 from f6:61:13:c0:63:6b via enp0s3: unknown lease 192.168.1.5.
Feb 11 09:56:33 marcoserver dhcpd[1198]: DHCPDISCOVER from 4e:76:17:f6:35:20 via enp0s3
Feb 11 09:56:35 marcoserver dhcpd[1198]: DHCPDISCOVER on 192.168.1.206 to 4e:76:17:f6:35:20 via enp0s3
Feb 11 09:56:36 marcoserver dhcpd[1198]: DHCPREQUEST for 192.168.1.206 (192.168.1.66) from 4e:76:17:f6:35:20 via enp0s3
Feb 11 09:56:36 marcoserver dhcpd[1198]: DHCPACK on 192.168.1.206 to 4e:76:17:f6:35:20 via enp0s3
Feb 11 09:57:24 marcoserver dhcpd[1198]: DHCPDISCOVER from 44:39:c4:50:45:35 via enp0s3
Feb 11 09:57:25 marcoserver dhcpd[1198]: DHCPREQUEST for 192.168.1.26 (192.168.1.1) from 44:39:c4:50:45:35 via enp0s3: unknown lease 192.168.1.26.
Feb 11 09:57:25 marcoserver dhcpd[1198]: DHCPDISCOVER on 192.168.1.207 to 44:39:c4:50:45:35 (DESKTOP-PRVB4FG) via enp0s3
administrator@marcoserver:~$
```

Nginx-Webserver installieren und konfigurieren

Nginx installieren

```
Sudo apt update  
sudo apt upgrade  
sudo apt install nginx -y
```

Firewall anpassen

```
sudo ufw allow 'Nginx HTTP'
```

Standardseite bearbeiten

```
sudo nano /var/www/html/index.html
```

Änderung des Inhalts auf:

```
<!DOCTYPE html>  
<html>  
<head>  
  <title>Meine neue Startseite</title>  
</head>  
<body>  
  <h1>Willkommen auf meinem Nginx-Server!</h1>  
</body>  
</html>
```

Nginx neu starten

```
sudo systemctl restart nginx
```

Jetzt kann die Seite im Browser über die IP des Servers aufgerufen werden:



Willkommen auf meinem Nginx-Server!

PostgreSQL installieren und eine Datenbank erstellen

PostgreSQL installieren

```
sudo apt update
sudo apt install postgresql postgresql-contrib-y
sudo apt upgrade
```

PostgreSQL-Dienst starten

```
sudo systemctl start postgresql
sudo systemctl enable postgresql
```

In die PostgreSQL-Konsole wechseln

```
sudo -i -u postgres
psql
```

Neue Datenbank erstellen

```
CREATE DATABASE meine_datenbank;
```

Neuen Benutzer erstellen

```
CREATE USER administrator WITH ENCRYPTED PASSWORD '11223';
```

Benutzer Berechtigungen für die Datenbank geben

```
GRANT ALL PRIVILEGES ON DATABASE meine_datenbank TO administrator;
```

PostgreSQL verlassen

```
exit
```

Überprüfung

```
psql -U administrator -d meine_datenbank -h localhost -W
```

```
administrator@marcoserver:~$
administrator@marcoserver:~$ psql -U administrator -d meine_datenbank -h localhost -W
Password:
psql (16.6 (Ubuntu 16.6-0ubuntu0.24.04.1))
SSL connection (protocol: TLSv1.3, cipher: TLS_AES_256_GCM_SHA384, compression: off)
Type "help" for help.

meine_datenbank=>
```

