

Building a DHCP Server

LPIC-2: Linux Engineer (202-450)

Objectives:

At the end of this episode, I will be able to:

1. Install and configure a DHCP server on Linux
2. Create and activate a DHCP address pool.

Additional resources used during the episode can be obtained using the download link on the overview episode.

• *dhcpcd*

- Managed by ISC
- The same people who manage BIND
- Standards based DHCP server
- Installed like most other services

1. `sudo apt-get install isc-dhcp-server`
2. `sudo systemctl enable --now isc-dhcp-server`

- NOTE: May fail to start prior to being configured
- NOTE: May not start if `/var/lib/dhcp/dhcpd.leases` does not already exist

• Getting Started

- There is an example file to help us get started
 - `/usr/share/doc/isc-dhcp-server/examples/dhcpd.conf.example`
 - It contains a lot more than we really need
- You have to create at least one range (scope)
- The IP range must overlap with an interface IP
 - `eth0` has `192.168.0.10`
 - Range is `192.168.0.100-150`
- If the range does not overlap, DHCP will not listen on that NIC

• Editing the Configuration

- `/etc/dhcp/dhcpd.conf`
- Delete the file and start clean
 - `sudo mv /etc/dhcp/dhcpd.conf /etc/dhcp/dhcpd.conf.bak`

• Enabling *dhcpcd*

- `systemctl enable --now isc-dhcp-server`
- `sudo ufw allow 67/udp`
- `sudo ufw allow bootps`

• Troubleshooting *dhcpcd*

- Config checker
 - `dhcpd configtest`
- The lease database
 - `/var/lib/dhcp/dhcpd.leases`
- The *systemd* journal
 - `journalctl -u isc-dhcp-server`
 - `journalctl -xeu isc-dhcp-server`

Sample Range

```
subnet 192.168.0.0 netmask 255.255.255.0 {  
    range 192.168.0.100 192.168.0.150;  
}
```

Sample Config File

```
default-lease-time 28800; # 8 Hours  
max-lease-time 86400; # 24 Hours  
subnet 172.16.0.0 netmask 255.255.255.0 {  
    option subnet-mask 255.255.255.0;  
    option routers 172.16.0.2;  
    option domain-search "lab.itpro.tv";  
    option domain-name-servers 8.8.8.8, 8.8.4.4;  
    range 172.16.0.100 172.16.0.150;  
}
```

```
sudoedit /etc/netplan/00-installer-config  
enps0s6  
    dhcp4: no  
    addresses: [172.16.1.51/24]
```