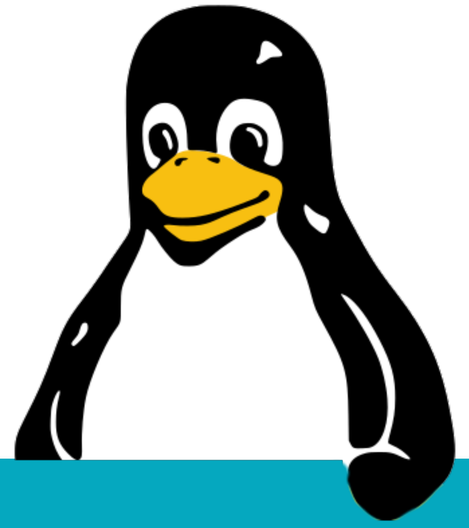
Linux, day 6



Objectives covered

Objective	Summary	Book
1.4	System services	6
1.5	Interface management, name resolution	7

LAB: Linux networking

Assignment

- Add a second NIC to your VM (in Virtualbox).
  - You can put it in the NAT network.

- Configure the new NIC to have a static IP.
  - On Fedora use *nmtui*.
  - On Ubuntu use Netplan (this is harder!).

Assignment

- After rebooting, check the name of the new NIC.
  - *dmesg | grep -i enp0*
  - *nmcli dev stat*
  - This should show your first and second NICs.

- If the original was *enp0s2*,
  - The new one is probably *enp0s3*.

Solution for RHEL

- *sudo nmcli device set enp0s3 managed yes*
- *sudo nmtui*
  - Check if there's a new connection.
  - Edit this new connection.
  - Change the IPv4 settings, set IP and router.

Solution for Ubuntu

- You may need to install something:
  - *sudo apt install -y openvswitch-switch*
  - *sudo systemctl status ovsdb-server*

Solution for Ubuntu

- Create or edit: */etc/netplan/10-set-managed*

```
network:
  ethernets:
    enp0s3:
      dhcp4: false
      addresses:
        - 10.0.2.100/24
      gateway4: 10.0.2.1
```

Solution for Ubuntu

- *Run:*
  - *sudo chmod 600 /etc/netplan/10**
  - *sudo netplan try*
  - *ip addr*

- If they're okay, run:
  - *sudo netplan generate; sudo netplan apply*

What if it doesn't work?

- There's a chance that "*ip addr*" shows no change.
  - The NIC will show "*NOCARRIER*".
  - That means you forgot to connect the NIC!

- In VirtualBox, verify that the NIC is connected,
  - To NAT Network "*NatNetwork*".

LAB: FTP Server

Assignment

- Install the "*vsftpd*" package on Ubuntu.
  - On Fedora WS, the firewall will block you.
- Check for the latest changes (*ls -lrt*) in:
  - */lib/systemd/system/*
  - */etc/systemd/system/*
  - */etc/systemd/system/multi-user.target.wants/*

Assignment

- Enable the *"vsftpd*" service.
- Again, check for the latest changes (*ls -lrt*) in:
  - */lib/systemd/system/*
  - */etc/systemd/system/*
  - */etc/systemd/system/multi-user.target.wants/*

Assignment

- Check the status of the "*vsftpd*" service.
- Start the "*vsftpd*" service.
- Check the status of the "*vsftpd*" service again.
  - Can you FTP into the server?
- Finally, disable and mask the "*vsftpd*" service.

LAB: NTP Client

Assignment

- Install, enable and run "*chrony*" on Ubuntu.
- Find Chrony's configuration file, read the settings.
- Can you confirm your time is synchronized?

Closing

Homework

- Reading:
  - Chapter 5.
  - Chapter 14.

Homework

- Go do:
  - On Ubuntu, setup a *httpd* webserver.
  - Create a simple "index.html" to serve up.
  - Make sure you can browse to the site:
    - Both from your Fedora VM
    - And from your laptop (setup a port forward!)

Reference materials

Resources

- ifconfig vs ip
- netplan vs networkmanager vs networkd
- Have a plan for netplan
- Bonding with NetworkManager
- Bonding with configuration files
- Bridged network connections

Resources

- Bug in Ubuntu and Network Manager
- Learning to love systemd
- SysVinit and systemd service mgt cheatsheet

Resources

- Does Not Compute:
  - Let's look at some big, expensive servers.
  - Let's check out a blade server (32 CPUs).
- Others:
  - Inside a Google data center
  - Rackmount server anatomy 101