

GNU/Linux experience

GNU/Linux experience

- Linux distros typically revolve around free software
- Imagine an OS that doesn't force you to update and doesn't take telemetry
- smol as you want
- Lots of software also have Linux versions

GNU/Linux experience

- GNU/Linux offers a very large degree of freedom in setting up your system
- **You** are in control of your computer
- Lots of free alternatives to commonly used software
 - **Office applications:** LibreOffice
 - **Note taking:** Xournal++
 - **Video editing:** Kdenlive
 - **Photo processing:** darktable
 - **Art:** GIMP, Krita, Inkscape
 - [Fun list \(it's for Arch, but gives a sense of what's there\).](#)

Linux isn't just terminals (demo)

Building your own environment

- A Linux distribution encompasses a software collection, the Linux kernel, and a particular philosophy
- Many distributions come with a lot of stuff and a particular look a feel, but you still have the ability to radically change how they look and operate

What's most evident is the graphical user interface (GUI); here's some vocab

- **Display server:** software that handles the graphics for various client applications
 - e.g. X11, Wayland
- **Window manager:** software that manages control and appearance of windows
 - e.g. awesome, i3, xmonad
- **File manager:** software that presents an interface for managing files
 - e.g. Nautilus, Dolphin
- **Desktop environment:** an all-in-one integrated environment that presents a full desktop experience, integrating a window manager, toolbars, file manager, network management, web browsing, etc.
 - e.g. GNOME, KDE Plasma, Xfce, LXQt

Putting it together from the ground up

- I'll be using virtual machines to illustrate the OS installation process
- Virtual machines (in this context) are emulated computer systems
 - You have virtual CPUs and virtual storage and virtual monitors for your virtual machine
 - You can install operating systems on them and treat them like any other computer
 - Fun fact: the course server is running on a virtual machine
- I'll first install Ubuntu Linux on a VM to illustrate the typical Linux installation process
- I'll then install Arch Linux on a VM to illustrate putting together a personalized setup piece by piece
 - It's relatively quick to install since it doesn't install much in the beginning
 - While I stan Arch, there's nothing wrong about other distros

Putting it together from the ground up

- Installation media
- Setting up a VirtualBox VM
- OS installation
 - Ubuntu
 - Arch
- OS setup and customization

Random other things

My personal dev environment

- What you've seen during class is Linux running directly off of my laptop
 - No virtual machine here, not even dual booted
- OS: (btw i use) **Arch Linux**
- Terminal emulator: **Alacritty**
 - Former rxvt-unicode user until I learned how bad its font handling was
- Shell: **Zsh**
- Window manager: **i3-gaps**
- Compositor: **picom**
 - Does window transparency effects
- Notification server: **dunst**
 - Displays notifications

Random other things

My personal dev environment

- Editor: **Vim**
- System monitoring: **htop**
- Other tools:
 - **tmux** (terminal multiplexer)
 - **cscope** (code navigation tool)
 - **ncdu** (ncurses disk usage)
 - **Xournal++** (note taking)

Questions?