

# Introduction to Linux

Aline Abler



# So you want to use Linux?

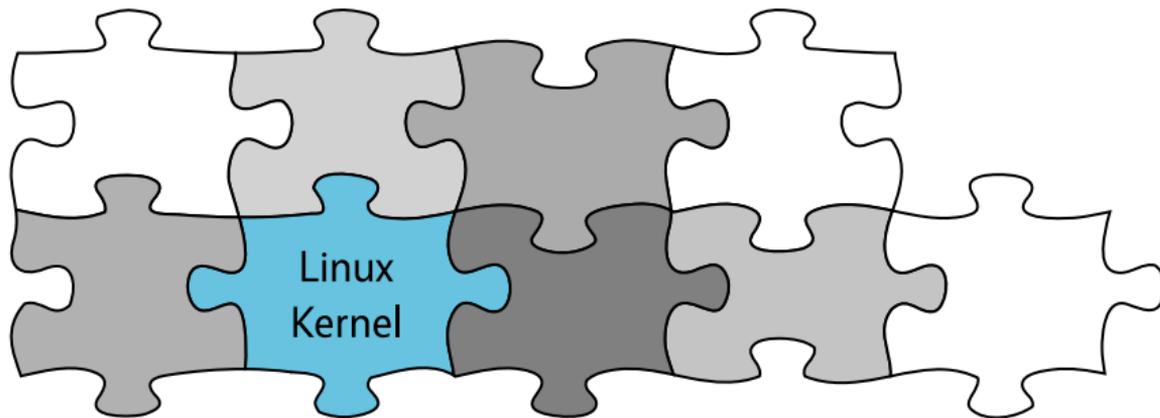




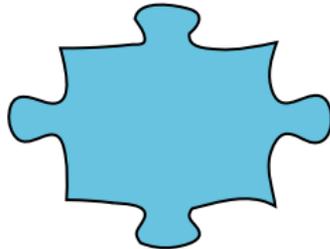


# Linux, what does it mean?

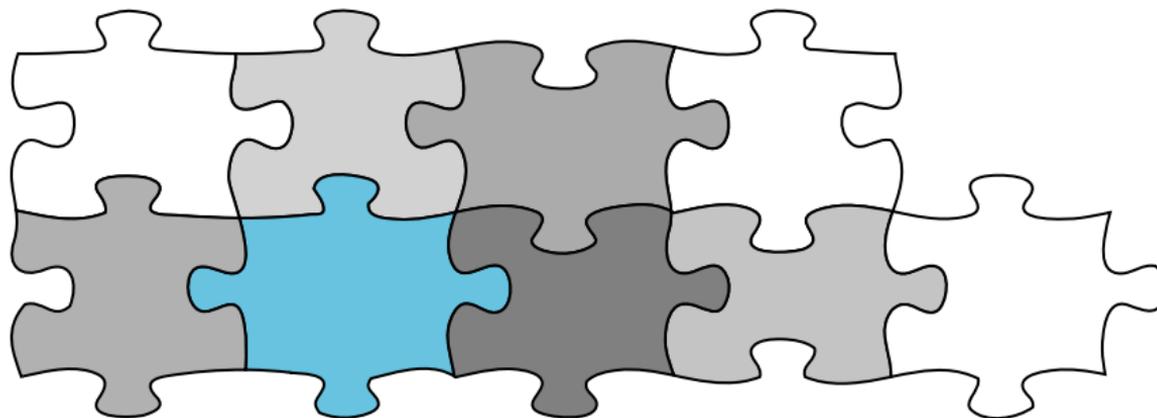
- ▶ A **Linux system** is a system that uses the Linux **Kernel**.



# Linux



# GNU/Linux





Linux, what's that?  
○○○○○○○

The pieces of a Linux system  
●○○○○○

Linux Concepts  
○○○○○○○○○

Distributions  
○○○○○○○○○○○

Desktop environments  
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Switching to Linux  
○○○○○○○○○○○

Epilogue  
○○



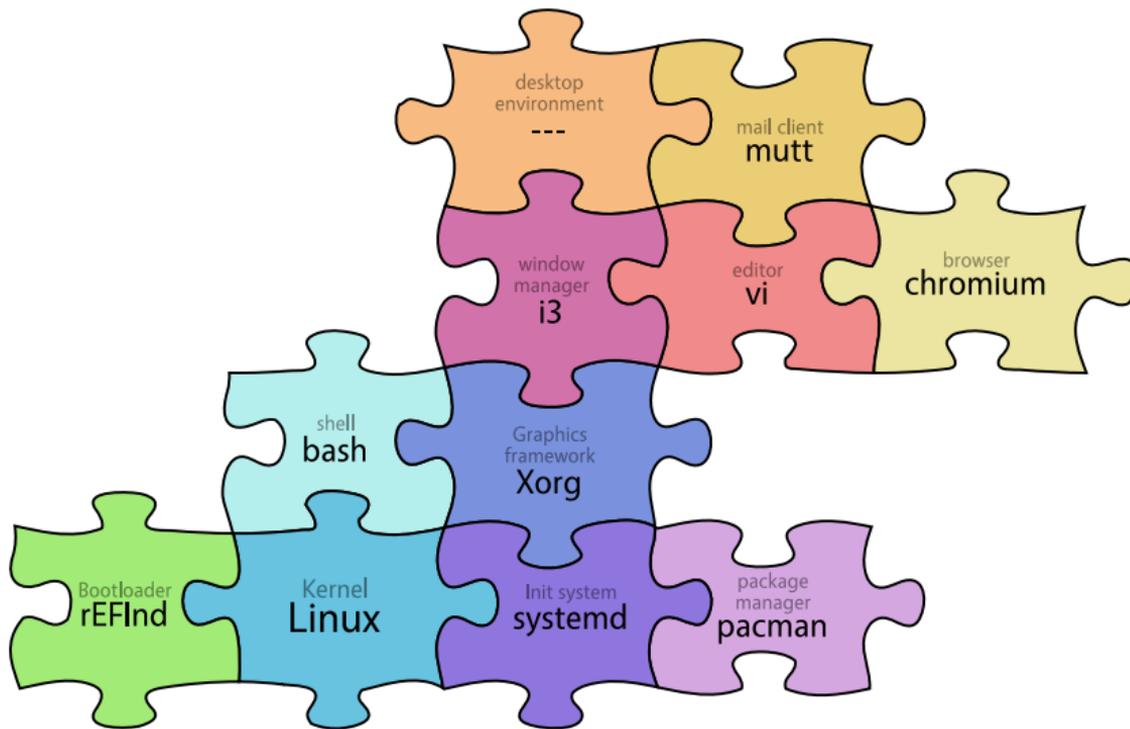
# System components

- ▶ **Kernel** the core of your OS that manages all other programs and your devices
- ▶ **Bootloader** a tiny program that runs first when you power your PC and takes care of starting up the kernel
- ▶ **Init system** a program that takes care of starting and stopping background tasks
- ▶ **Package manager** a program that allows you to install other programs
- ▶ **Graphics framework** a basic software that allows other programs to draw stuff on the screen
- ▶ **Shell** the program that powers the console

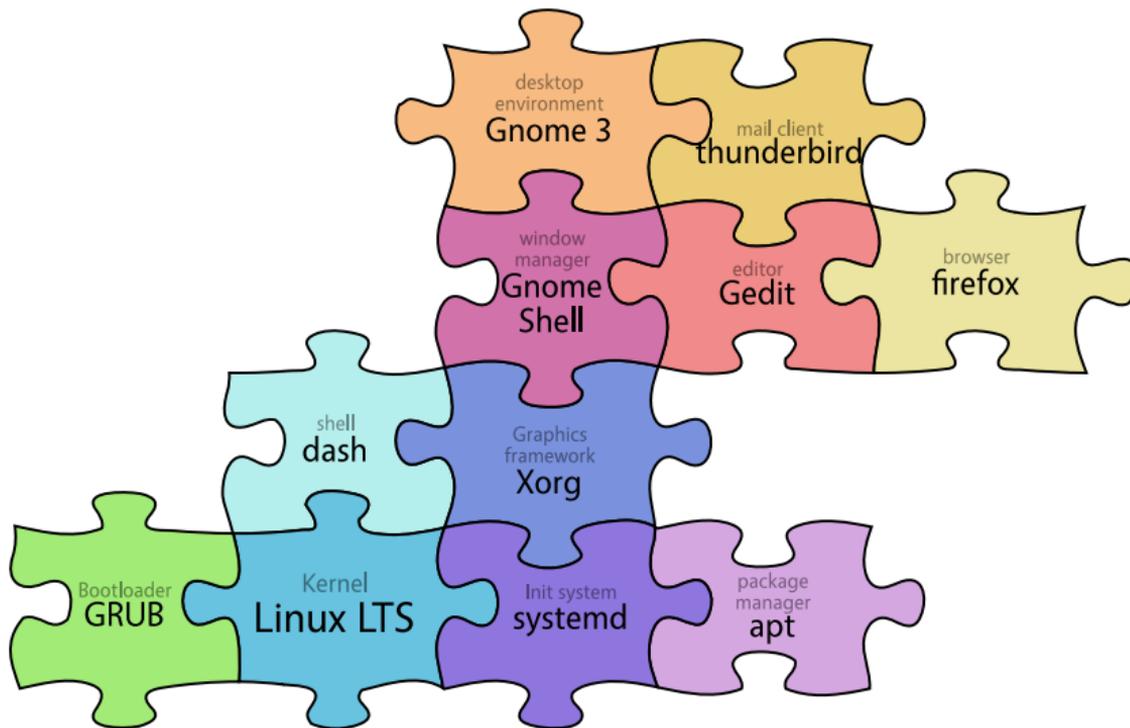
# System components you care about

- ▶ Desktop Environment and/or Window Manager
- ▶ Editor
- ▶ Browser
- ▶ Mail client

# My system

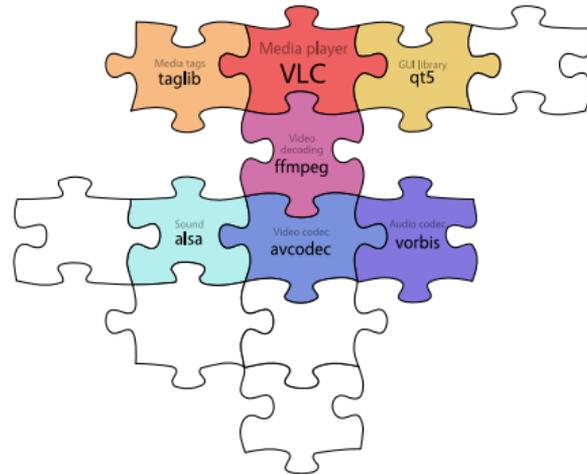


# Standard Ubuntu system



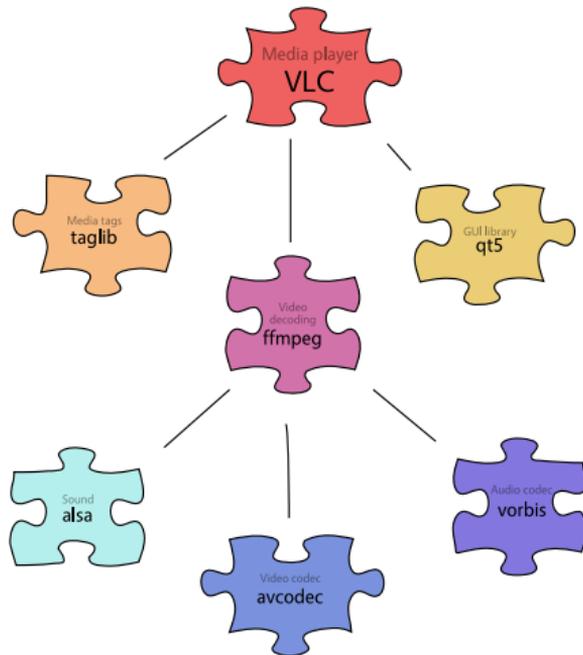


VS.





VS.





# The Unix Philosophy

**Do one thing, and do it right**

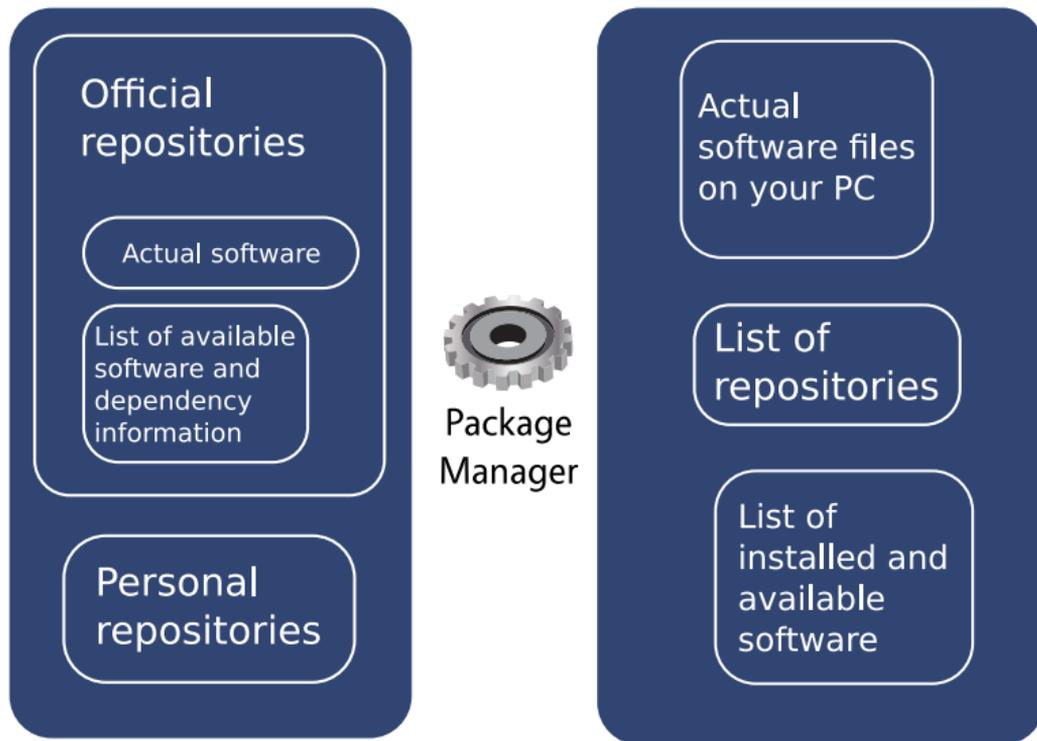




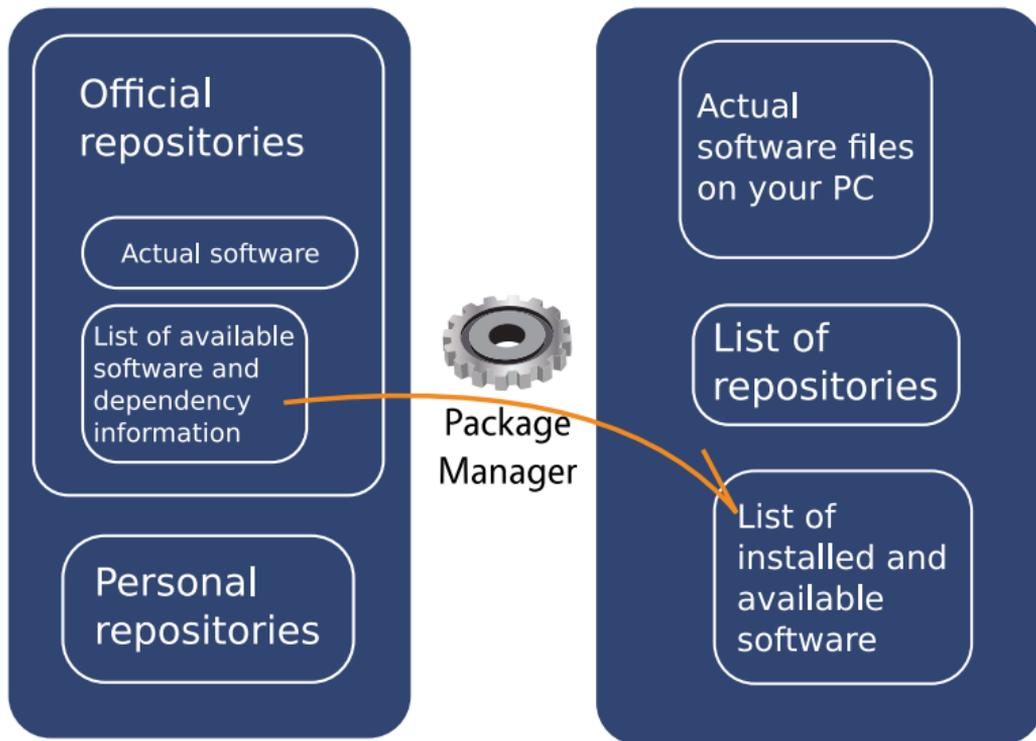
# Package Managers

- ▶ Your best friend when it comes to dependency management
- ▶ Installs and removes software
- ▶ Updates all your programs with one click

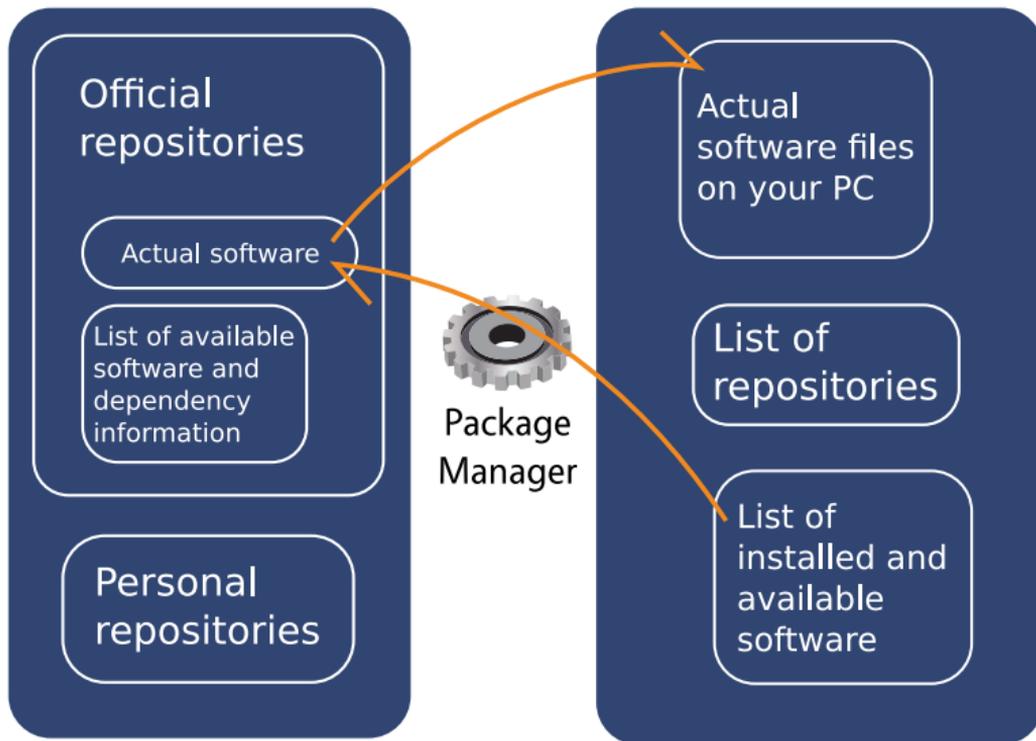
# Package Managers

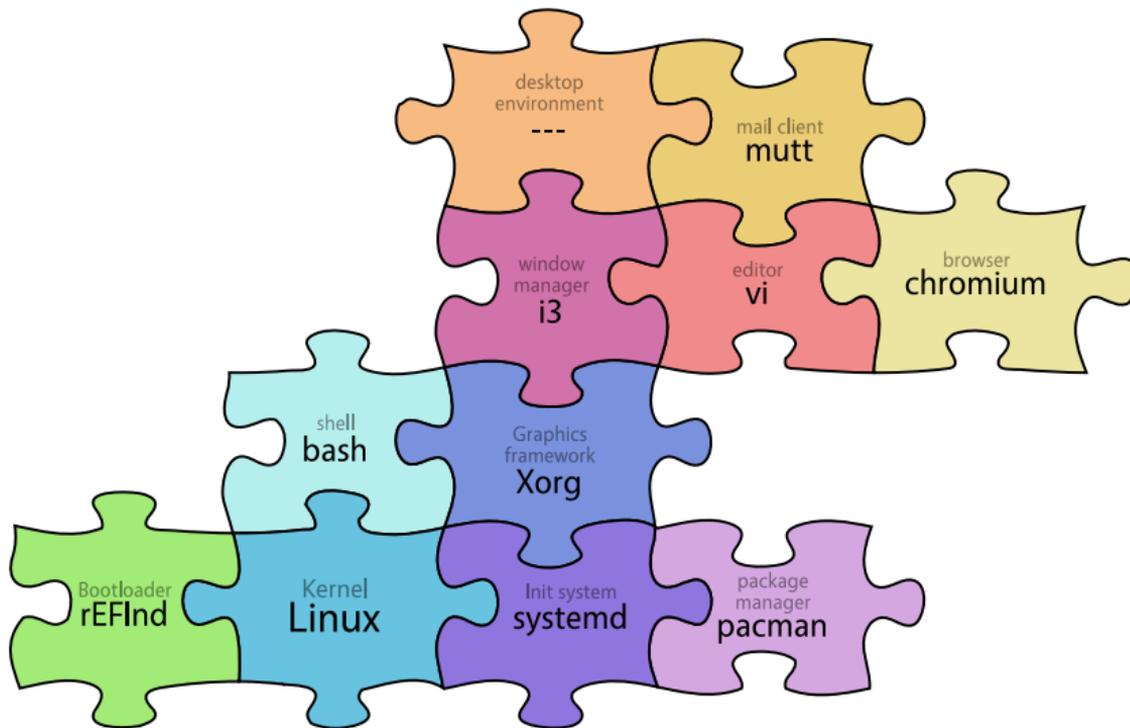


# Refresh



# Upgrade or Install





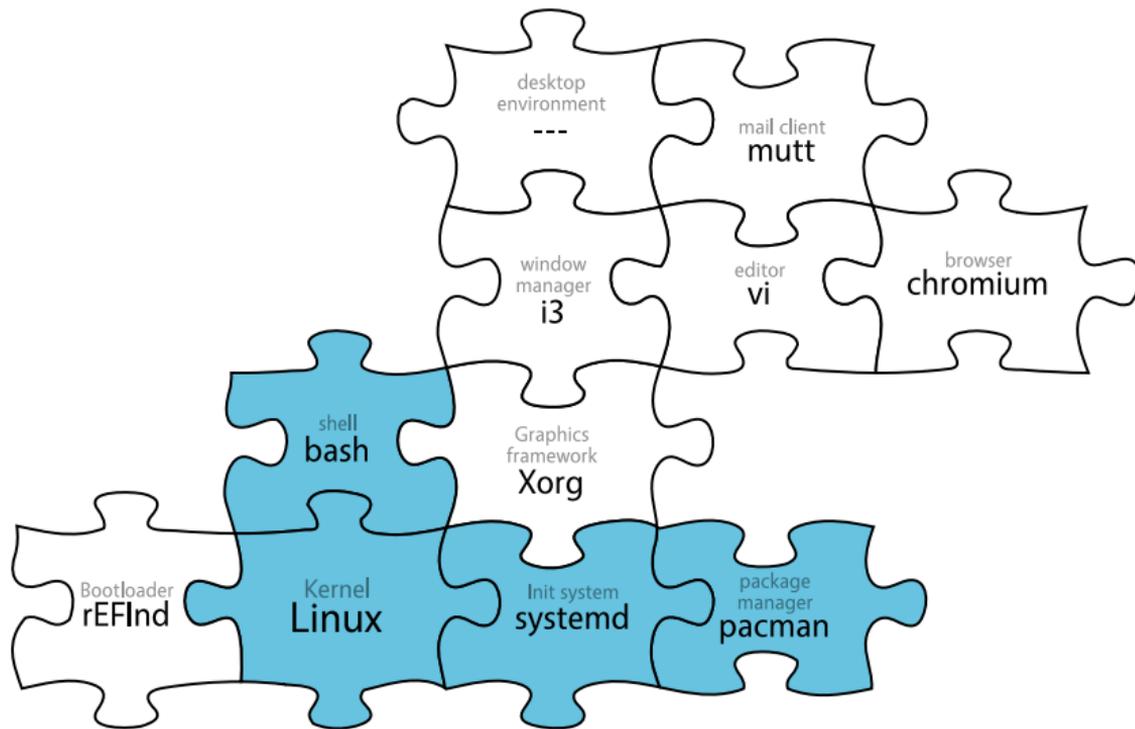
# CHOOSE ALL THE THINGS?



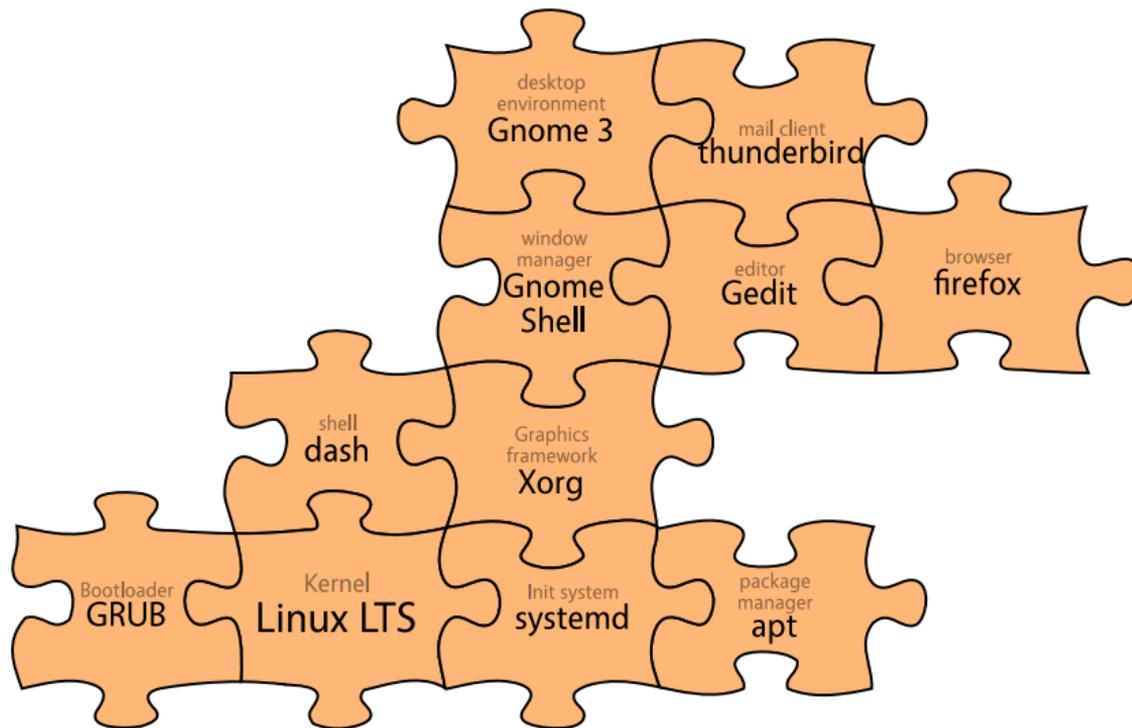
# Fear not!



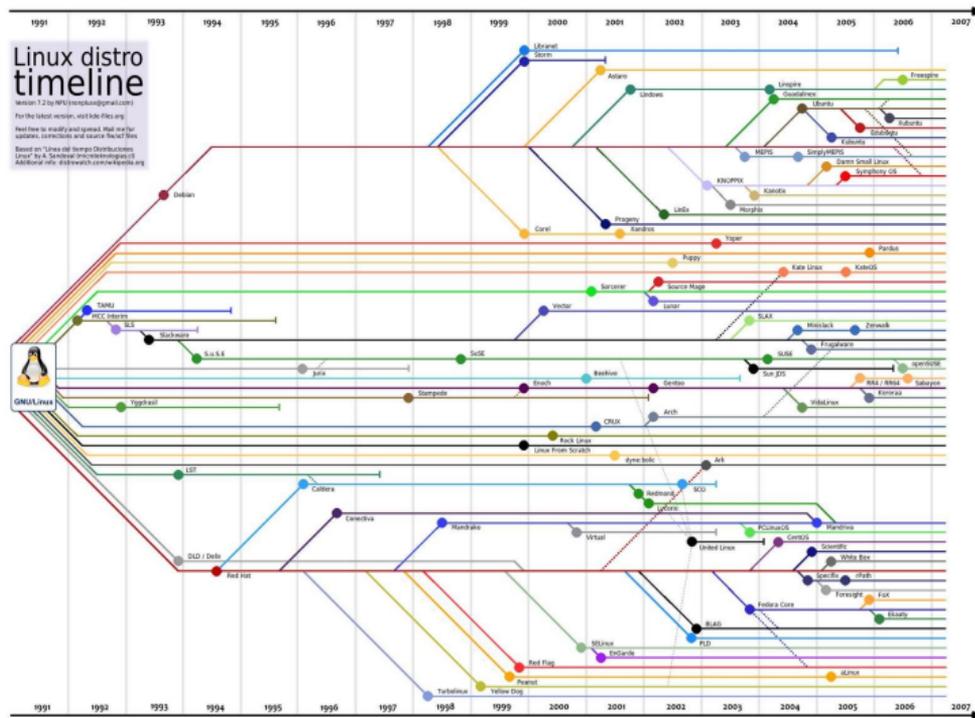
# My system (Arch Linux)



# Standard Ubuntu system



# Distributions



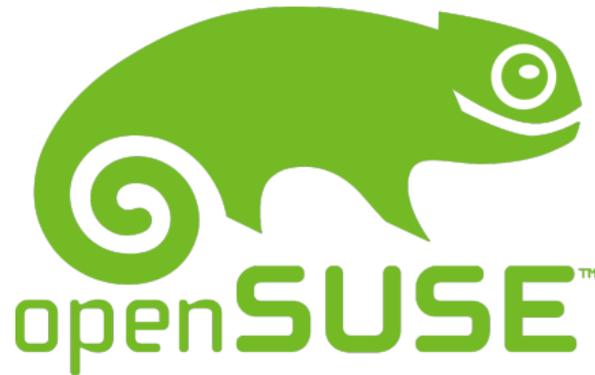
# Ubuntu (and forks)

- ▶ Simplicity and ease of use
- ▶ Provide a complete package that "just works"
- ▶ Polished experience



# OpenSUSE

- ▶ Customisability
- ▶ Provide a complete package that you can adapt to suit your needs
- ▶ Focus on free software



# Fedora

- ▶ Innovation and being on the leading edge
- ▶ Provide a complete package with all the most recent software
- ▶ Polished experience with just free software



# Outlook: Arch Linux

- ▶ Keeping to the bare minimum
- ▶ Provide just the basics, let the user choose all components
- ▶ Make a system that is truly yours

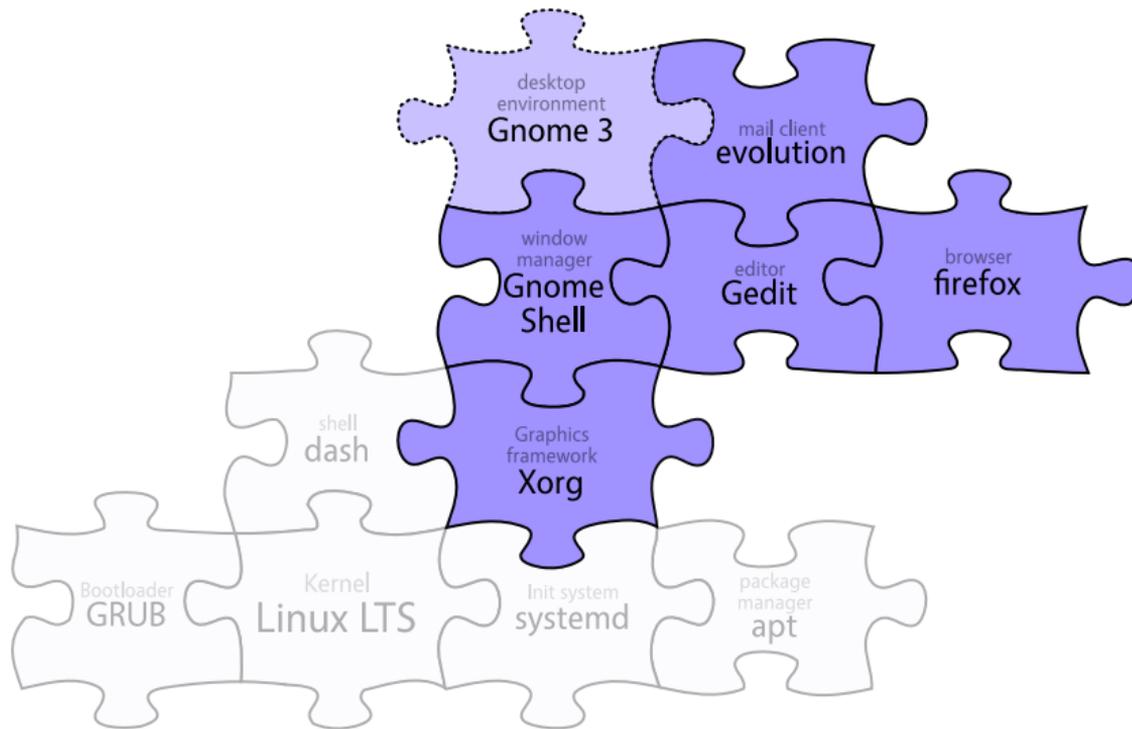


# Choose Your Distribution

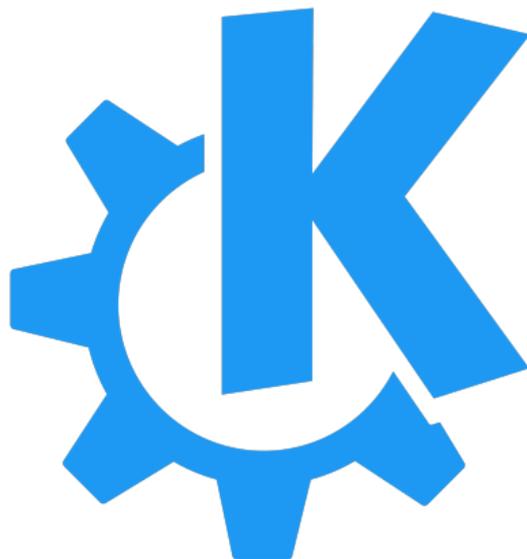
- ▶ They may have different puzzle pieces but there's also a big overlap
- ▶ Pick whichever sounds cool to you
- ▶ At the install event, we will help you with whichever choice you make

# Desktop Environments

# Puzzle time



# KDE



# KDE

- ▶ Rich in features
- ▶ Very customisable
- ▶ Similar to Windows UI

# Gnome



**GNOME**™

# Gnome

- ▶ Well put together, one experience
- ▶ Looks great
- ▶ Extendable through extensions but otherwise not very customisable

# XFCE



# XFCE

- ▶ Small and fast, good for older PCs
- ▶ Customisable
- ▶ Similar to Windows UI

# Tux won't break your existing OS





**openSUSE Leap 42.1**

**Advanced options for openSUSE Leap 42.1**

**KDE neon User Edition 5.7 (16.04) (on /dev/sdb11)**

**Advanced options for KDE neon User Edition 5.7 (16.04) (on /dev/sdb11)**

**Windows Boot Manager (on /dev/sdb2)**

**Ubuntu 16.04.1 LTS (16.04) (on /dev/sdb6)**

**Advanced options for Ubuntu 16.04.1 LTS (16.04) (on /dev/sdb6)**

**Linux Mint 18 Sarah (18) (on /dev/sdb8)**

**Advanced options for Linux Mint 18 Sarah (18) (on /dev/sdb8)**

**Android 6.0 rc2 (on /dev/sdb9)**

**RemixOS 3.0 (on /dev/sdb10)**

**Phoenix OS (on /dev/sda2)**

# Software

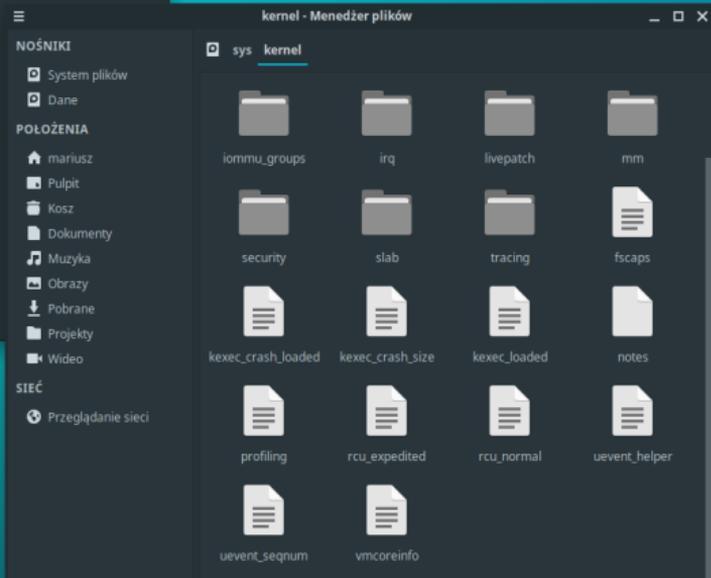
- ▶ Most popular programs have an alternative for Linux
- ▶ Check our website for a list of software alternatives on Linux  
[https://files.project21.ch/LinuxDays-Public/16HS\\_8\\_software.pdf](https://files.project21.ch/LinuxDays-Public/16HS_8_software.pdf)

# But now... why is Linux so cool?

```
Terminal
marlusz ~ - Projekty LLinux > curl -L https://git.io/unix && unane -orm && cd

UNIX IS VERY SIMPLE IT JUST NEEDS A
GENIUS TO UNDERSTAND ITS SIMPLICITY

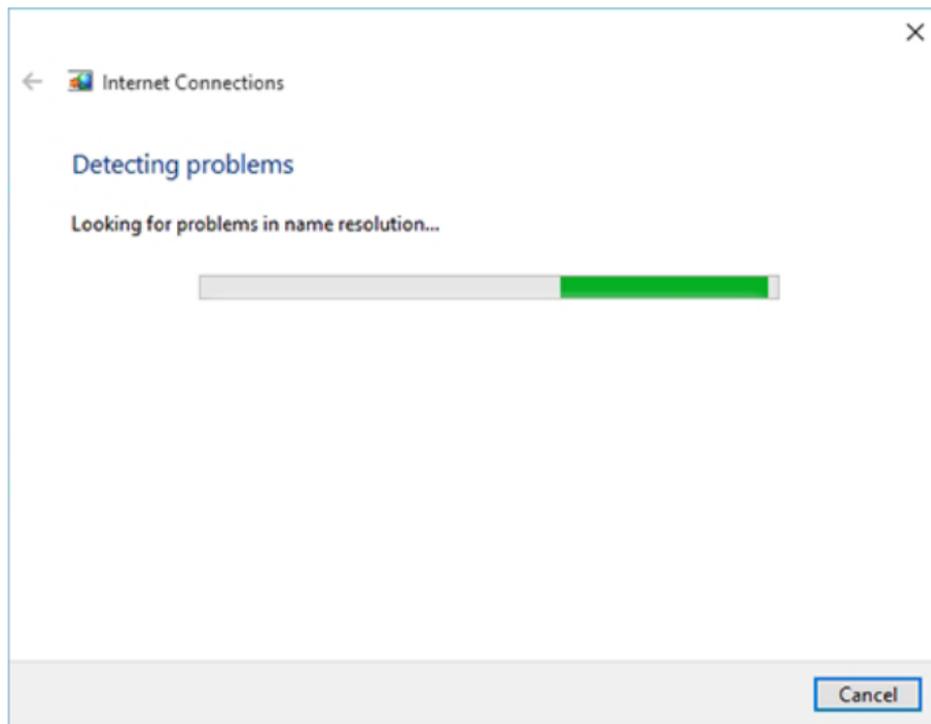
4.15.0-34-generic x86_64 GNU/Linux
marlusz ~ >
```



```
Terminal
marlusz@ubuntu /home/marlusz/Projekty/Neoclties/xubuntu-pl/porady
spass assets 3 custom-actions.html
xubuntu- forum 1 dysk-google.html
xubuntu- lrc 1 index.html
kontakt 1 jaka-wersja.html
newsy 1 nowe-dodatki.html
poblerz 1 nowe-okna.html
porady 14 odtwarzacze-muzyki.html
index.html 8.13 K screen-tearing.html
not_found.html 2.11 K sesja-live.html
style.css 11.5 K skroty-klawiaturowe.html
drwxrwxr-x 2 marlusz marlusz 14 2018-09-13 20:47 21.7K sun, 58.6G free 8/11 Bot
```



# Error messages



# Error messages

```
sandro@linux-gttg:~> chromium
```

```
If 'chromium' is not a typo you can use  
command-not-found to lookup the package  
that contains it, like this:
```

```
    cnf chromium
```

```
sandro@linux-gttg:~> cnf chromium
```

```
The program 'chromium' can be found  
in following packages:
```

```
[...]
```

```
Try installing with:
```

```
sudo zypper install chromium
```

# Community support instead of expensive hotlines

2015-08-24 16:50:12 #1

Hi there!  
Maybe I've done too much computer today, but I'm unable to enable pulseaudio on boot:

```
$ sudo systemctl enable pulseaudio.socket
Failed to execute operation: No such file or di
```

Any ideas?

bbs.archlinux.org

10' later

2015-08-24 (17:00:17) #2

A) Do you know why you want to do this? If not, don't. Pulseaudio is usually autostarted by your DE/volume manager of choice and there are a few caveats when starting it explicitly with systemctl (it can't use the session dbus unless you set it up which breaks a few things like jack-dbus-detect and programs relying on dbus pulse detection).

B) pulseaudio is a user service, the correct way to start/enable it is using

```
systemctl --user enable/start pulseaudio.servic
```

Additional reading  
<https://wiki.archlinux.org/index.php/Systemd/User>

# Do updates with ease

## We've got an update for you

Windows is a service and updates are a normal part of keeping it running smoothly. We need your help installing this one.

Ready? Restart now. Not ready? Pick a time that works for you.

Restart now

Pick a time

Snooze

# Use powerful tools

- ▶ With comparatively little effort, you can automate tedious tasks
- ▶ **Want to know more?** Visit our Console Toolkit courses and the Bash Workshop

# Don't be afraid, it's gonna be cool

## Next steps

- ▶ Try Linux on the demo laptops
- ▶ Ask us any questions
- ▶ Come to our Install Events please back up your data first
- ▶ Join our community
- ▶ Leave some feedback  
<https://feedback.thealternative.ch/>

# Course material

- ▶ These slides:  
[https://gitlab.ethz.ch/thealternative/courses/tree/master/intro\\_course](https://gitlab.ethz.ch/thealternative/courses/tree/master/intro_course)
- ▶ List of software alternatives on Linux  
[https://files.project21.ch/LinuxDays-Public/16HS\\_8\\_software.pdf](https://files.project21.ch/LinuxDays-Public/16HS_8_software.pdf)
- ▶ Theme by Christian Horea, CC BY