

Introduction to Linux

Nicolas König



So you want to use Linux?



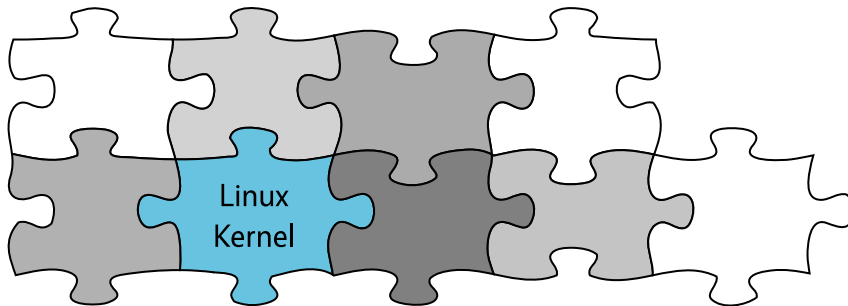




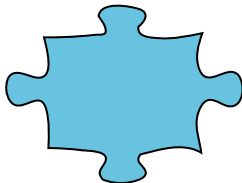


Linux, what does it mean?

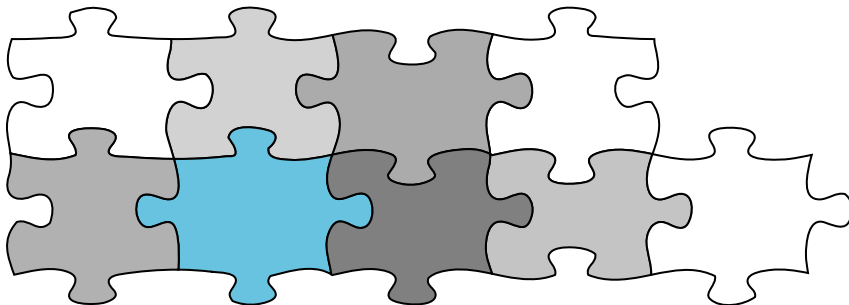
- ▶ A **Linux system** is a system that uses the Linux **Kernel**.



Linux



GNU/Linux





Linux, what's that?
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The pieces of a Linux system
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Linux Concepts
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Distributions
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Desktop environments
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Switching to Linux
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Epilogue
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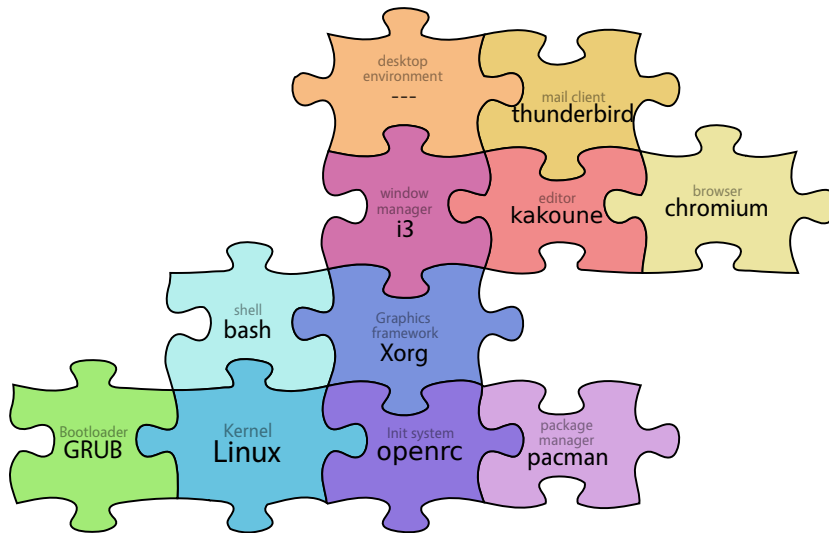
System components

- ▶ **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

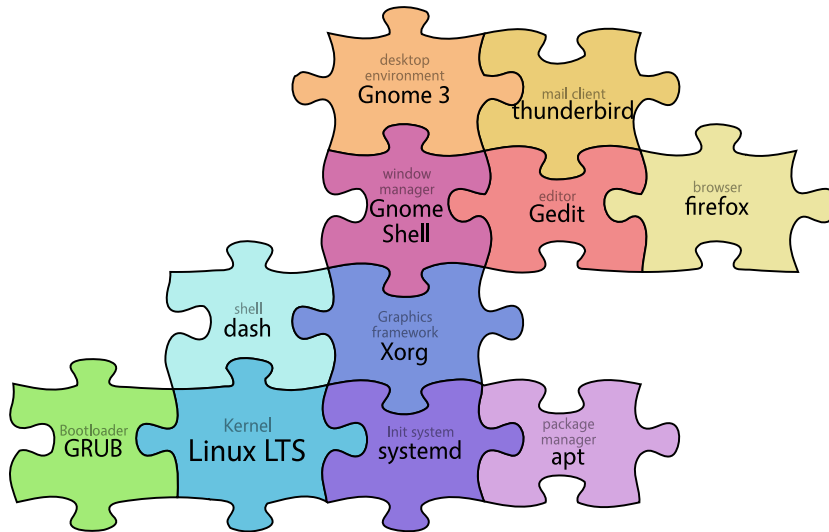
System components you care about

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

My system

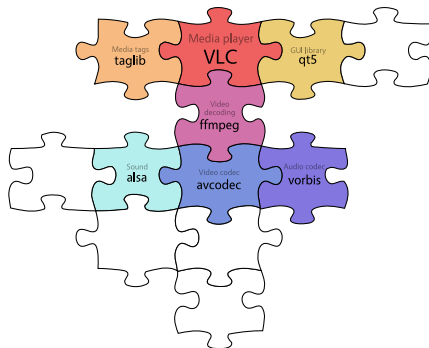


Standard Ubuntu system



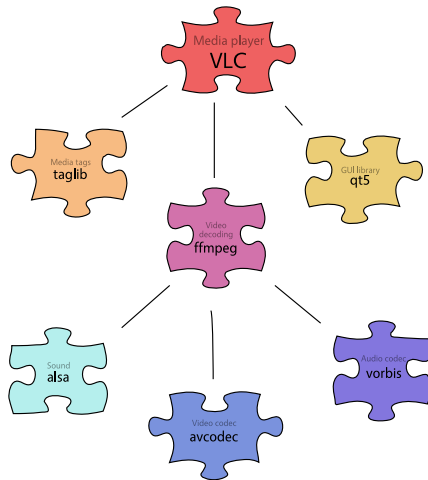


VS.





VS.





The Unix Philosophy

Do one thing, and do it right

Linux, what's that?
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The pieces of a Linux system
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Linux Concepts
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Distributions
oooooooooooo

Desktop environments
oooooooo

Switching to Linux
oooooooooooooooo

Epilogue
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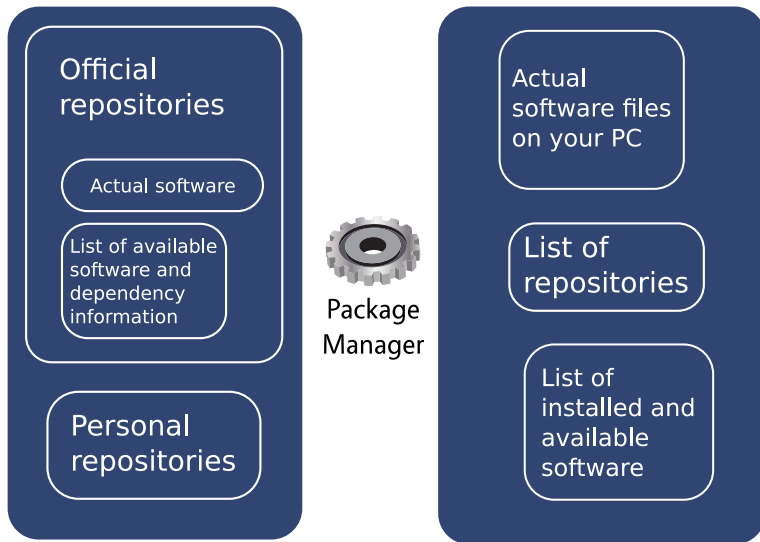




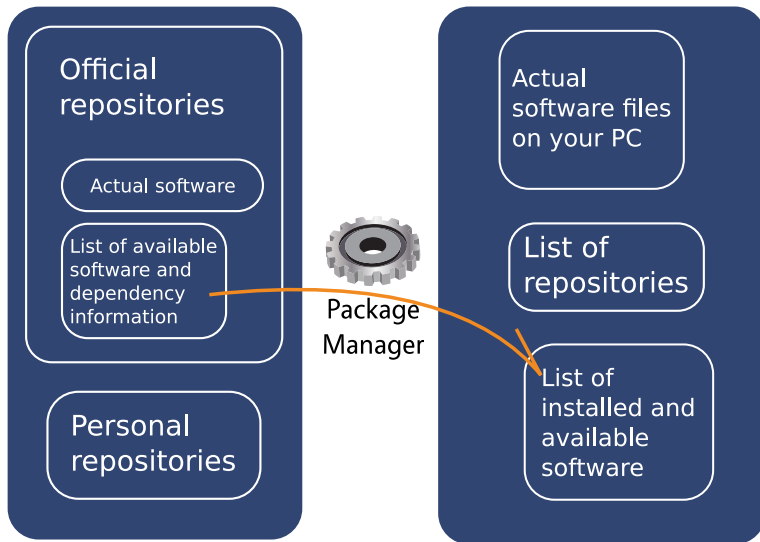
Package Managers

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

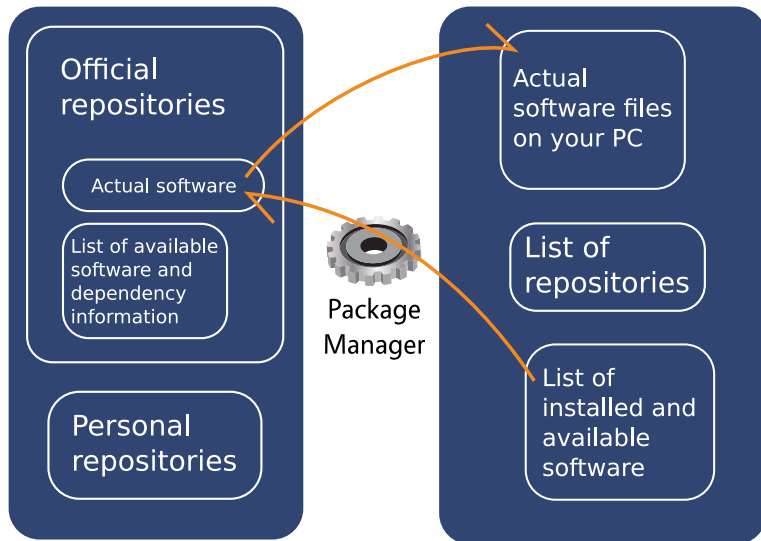
Package Managers

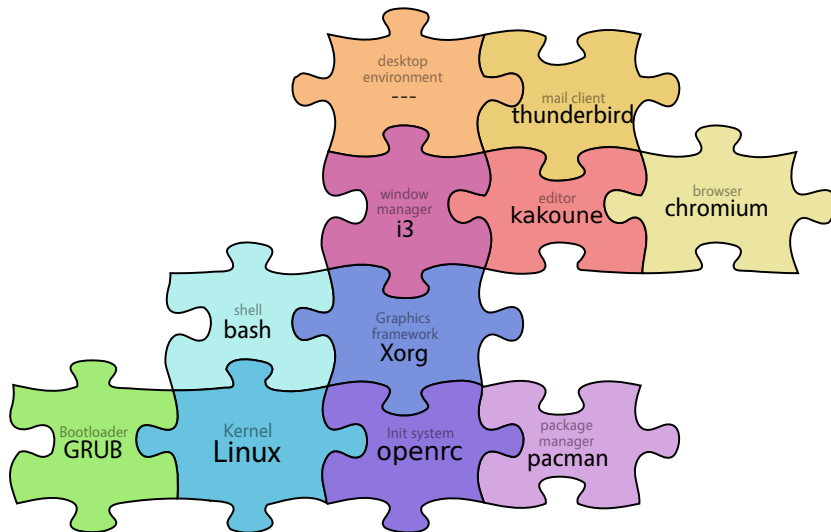


Refresh



Upgrade or Install



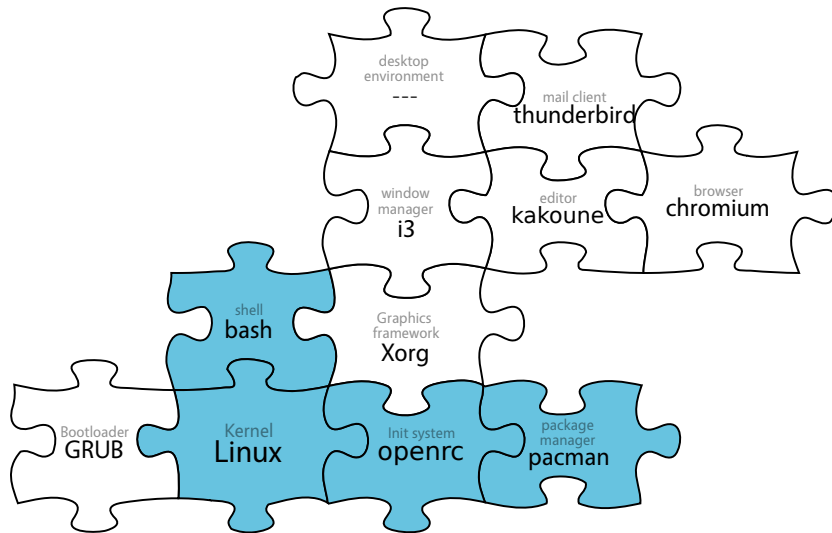


But how do I choose?

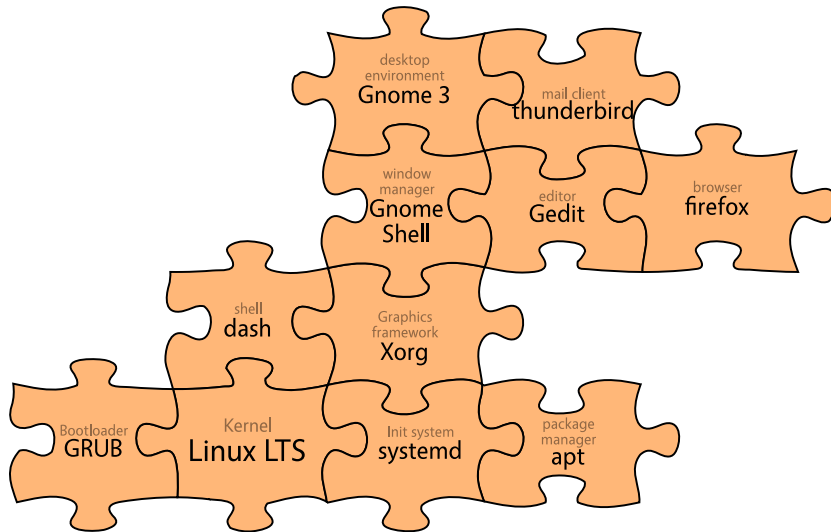
Fear not!



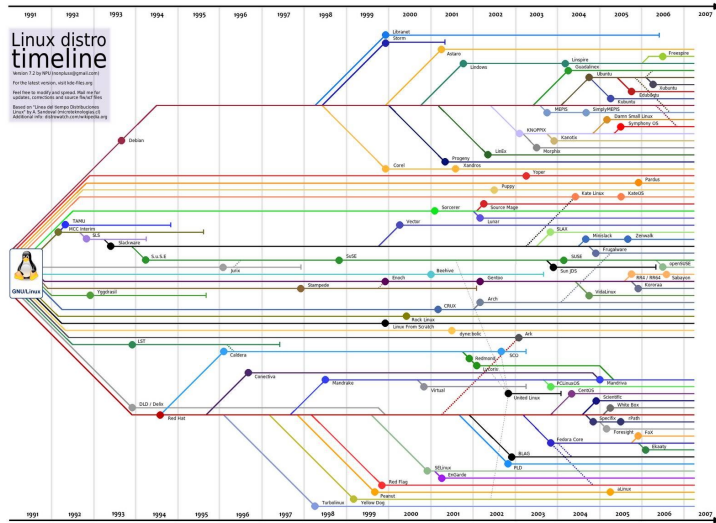
My system (Artix Linux)



Standard Ubuntu system



Distributions



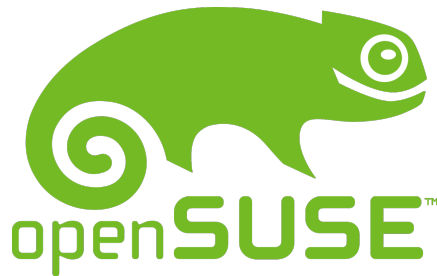
Ubuntu (and forks)

- ▶ 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

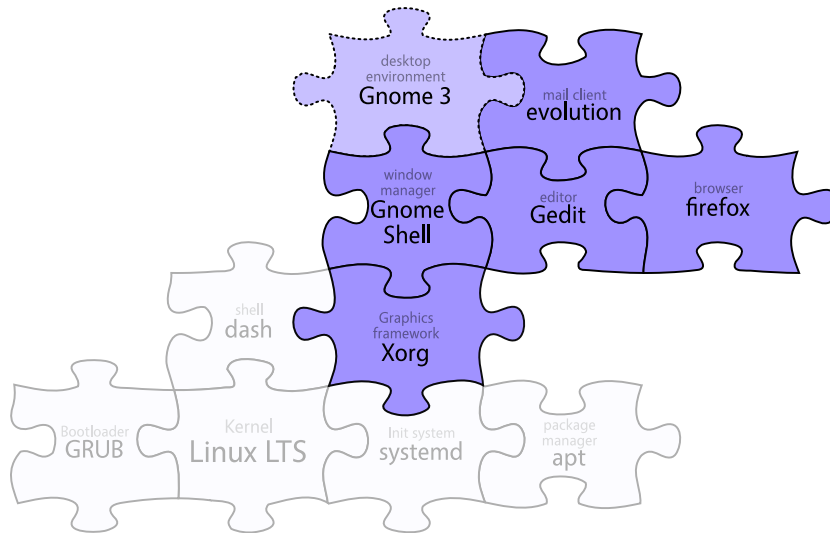


Choose Your Distribution

- ▶ They may have different puzzle pieces but there's also a big overlap
- ▶ Pick whichever sounds good to you
- ▶ If you want some help choosing, don't hesitate to ask us!

Desktop Environments

Puzzle time



KDE



KDE

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

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)

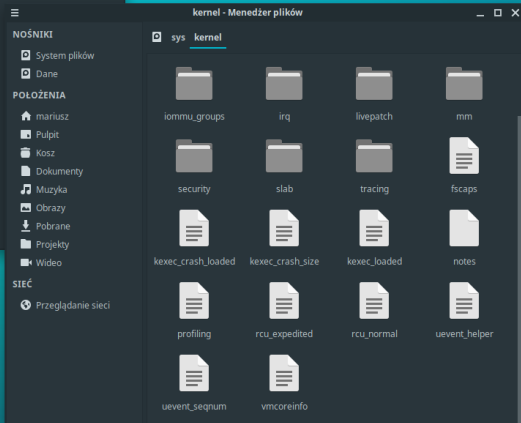
Phoenix OS (on /dev/sda2)

Software

- ▶ Most popular programs have an alternative for Linux
- ▶ Often they even run natively!

But now... why is Linux so cool?


```
Terminal
mariusz ~ - Projekty Linux $ curl -L https://git.io/unix && unane -orm && cd
<img alt="A colorful ASCII art of a penguin, likely Tux, rendered using various symbols and colors like red, green, blue, and yellow." data-bbox="150 150 350 450"/>
4.15.0-34-generic x86_64 GNU/Linux
mariusz ~ $
```



```
Terminal
mariusz@xubuntu: /home/mariusz/Projekty/Neocities/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
pobierz 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 mariusz mariusz 14 2018-09-13 20:47 21.7K sun, 58.6G free 8/11 Bot
```

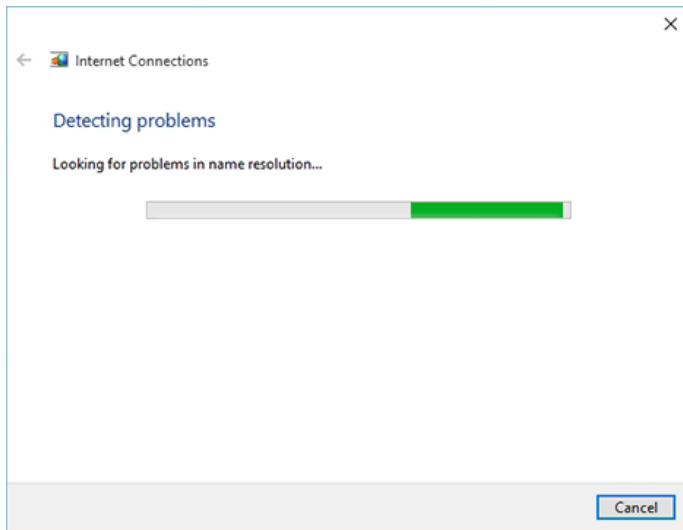


▶ 01:06:03 PM

Very Configurable Programs

If you don't like the way something works, you can just change it!

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.service
```

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 Linux Toolbox course!

Don't worry too much, it's fun!

Next steps

- ▶ Ask us any questions
- ▶ Come to our other talks
- ▶ Install Linux! please back up your data first
- ▶ Join our community
- ▶ Leave some feedback
<https://feedback.thealternative.ch/>

Other Courses

- ▶ Linux Toolbox: Friday, 16.04. 17:15-19:00
- ▶ Git: Monday, 19.04. 17:15-19:00
- ▶ How does Zoom Store Recordings: Friday, 23.04. 17:15-18:00
- ▶ A World without Intel: Wednesday, 28.04 17:15-19:00
- ▶ IT Project Management: Thursday, 29.04. 17:15-18:00
- ▶ PDF = PestesDateiFormat: Friday, 07.05. 17:15-18:00

Registration at thealternative.ch

Course material

- ▶ These slides:
https://gitlab.ethz.ch/thealternative/courses/tree/master/intro_course
- ▶ Theme by Christian Horea, CC BY