

Introduction to Linux

Aline Abler



So you want to use Linux?

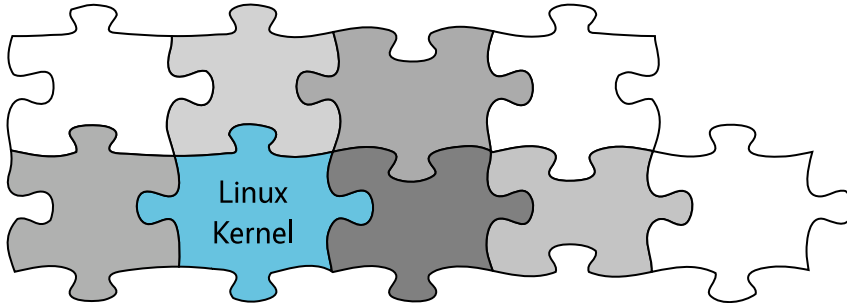




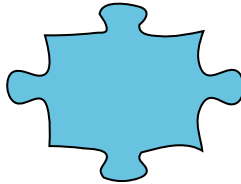


Linux, what does it mean?

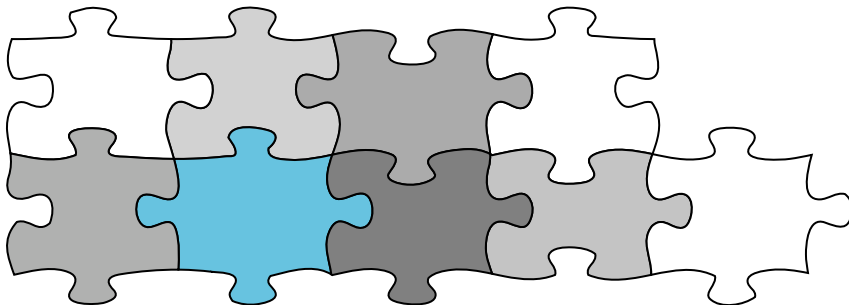
- ▶ A **Linux system** is a system that uses the Linux **Kernel**.



Linux



GNU/Linux



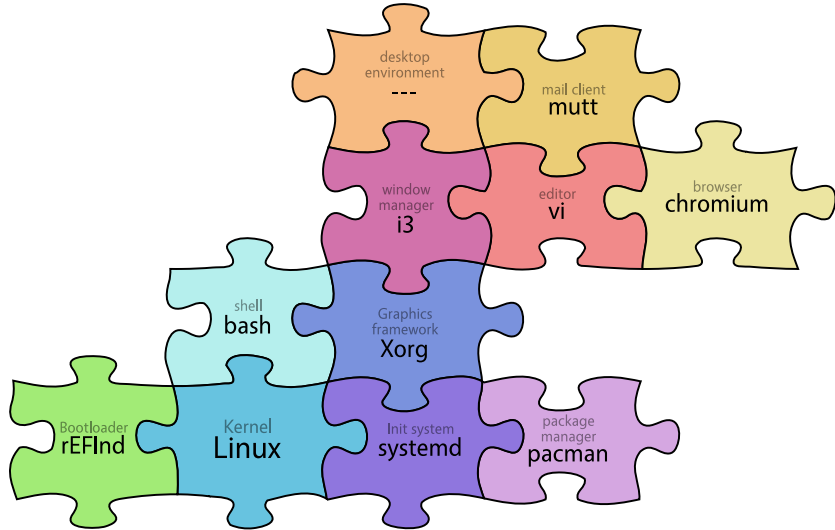
System components

- ▶ **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

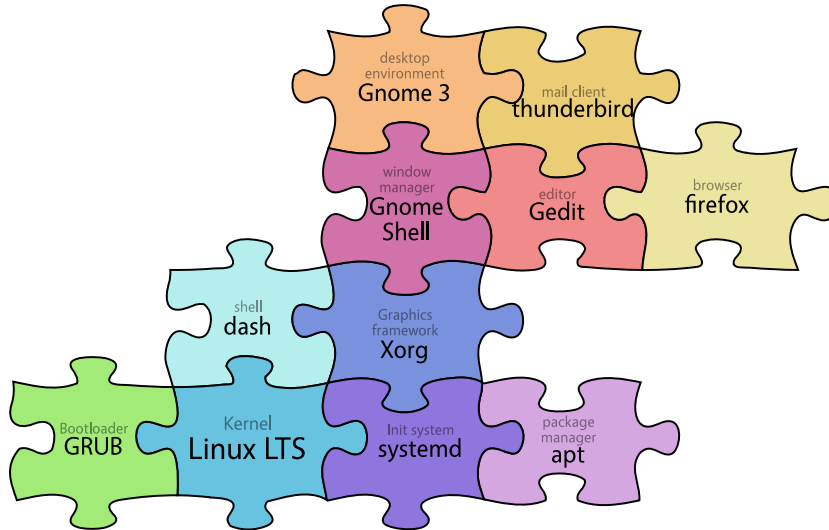
System components you care about

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

My system



Standard Ubuntu system



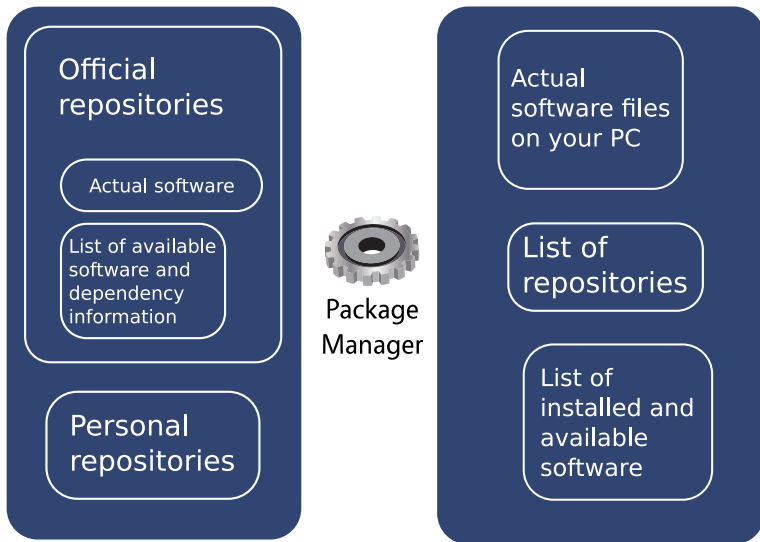
The Unix Philosophy

Do one thing, and do it right

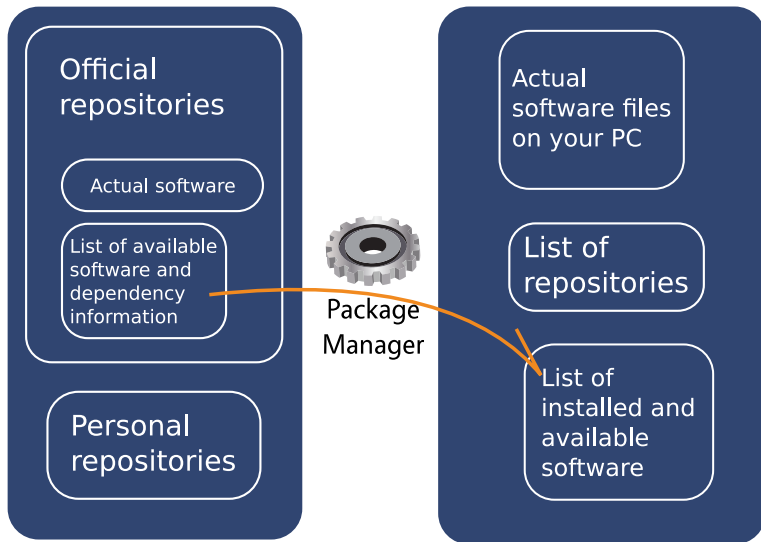
Package Managers

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

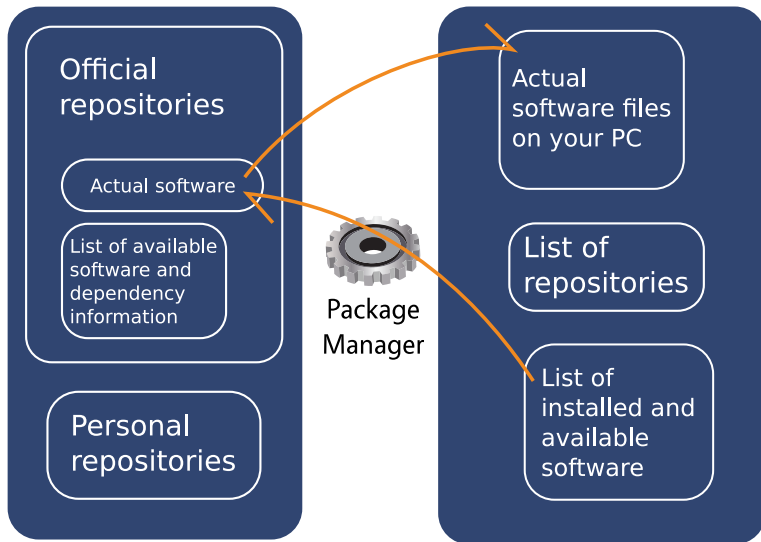
Package Managers



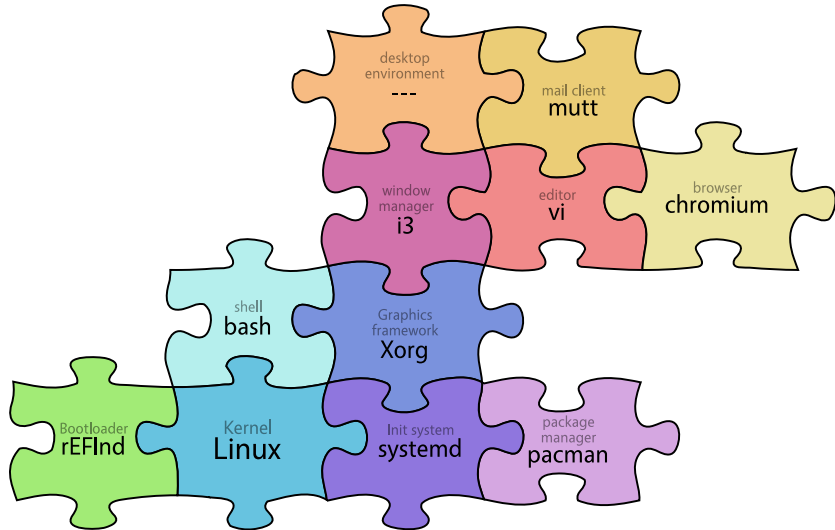
Refresh



Upgrade or Install



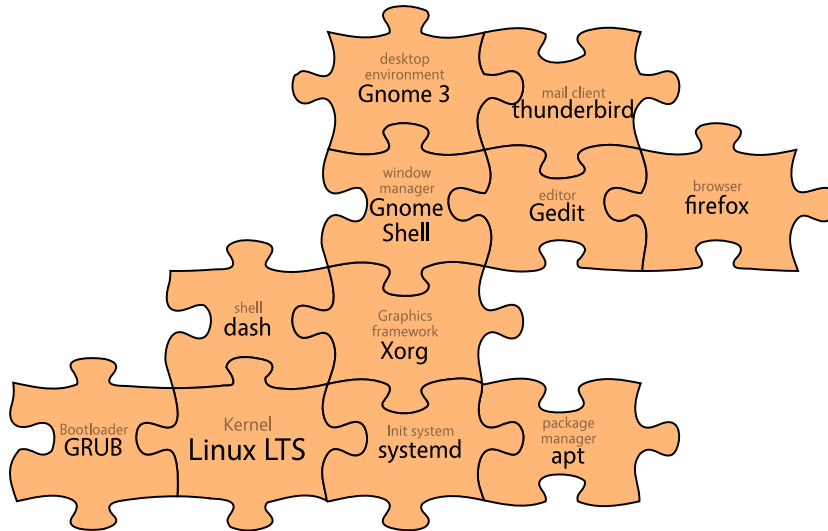
Too Many Options?



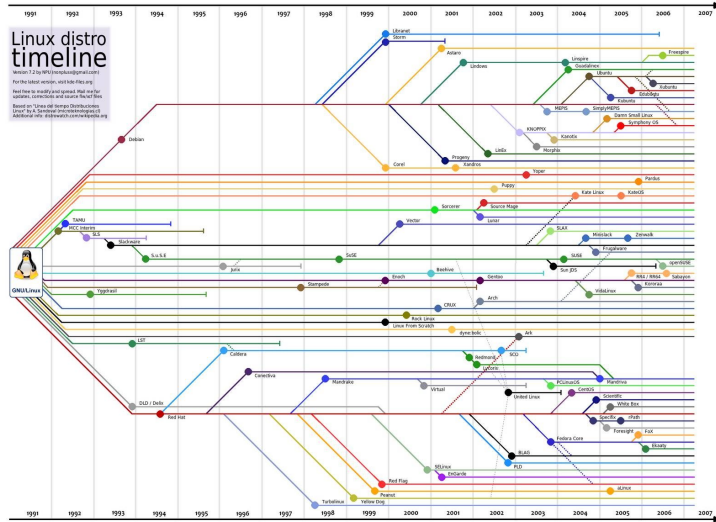
Fear not!



Standard Ubuntu system



Distributions



Ubuntu (and forks)

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

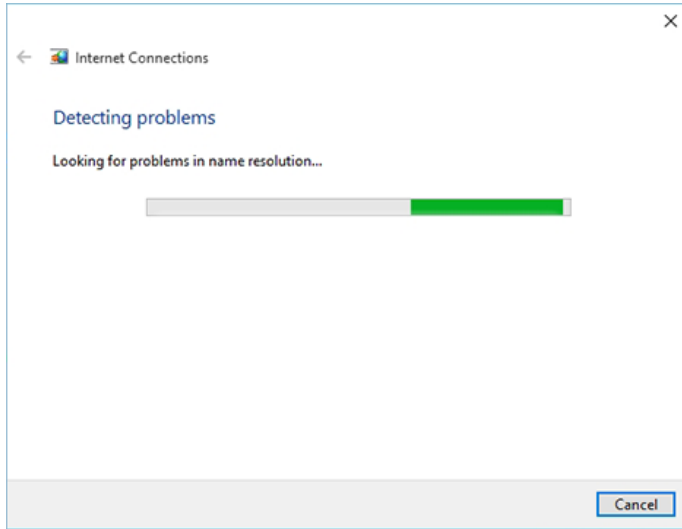


But now... why is Linux so cool?



▶ 01:06:03 PM

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

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

10' later

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

Now to practice

- ▶ Got to <https://cocalc.com/doc/terminal.html>
- ▶ Click Run Terminal Now
- ▶ Try out these top Linux commands
<https://www.hostinger.com/tutorials/linux-commands>

Expected output

```
~$ pwd
/home/user
~$ ls
'Welcome to CoCalc.term'
~$ echo "Hello World" > hello.txt
~$ ls
'Welcome to CoCalc.term'  hello.txt
~$ cat hello.txt
Hello World
~$ mkdir test_dir
~$ ls
'Welcome to CoCalc.term'  hello.txt  test_dir
~$ mv hello.txt test_dir/
~$ ls
'Welcome to CoCalc.term'  test_dir
~$ cd test_dir/
~/test_dir$ ls
hello.txt
~/test_dir$ cd
~$ ls
'Welcome to CoCalc.term'  test_dir
~$ rm test_dir/
bash: rm test_dir/: No such file or directory
~$ rm test_dir/
rm: cannot remove 'test_dir/': Is a directory
~$ rm -r test_dir/
~$ ls
'Welcome to CoCalc.term'
```