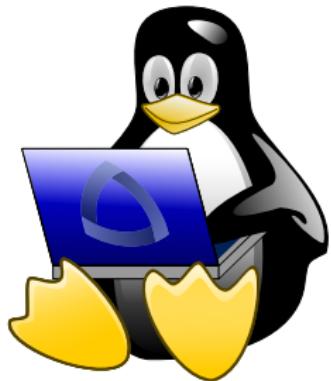


Penguinitis

aka Why we're addicted to Linux

Jack Rosenthal

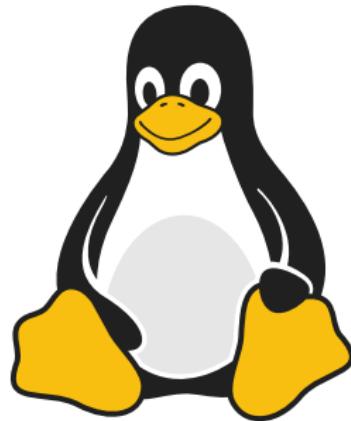
September 1, 2016



Colorado School of Mines
Linux Users Group

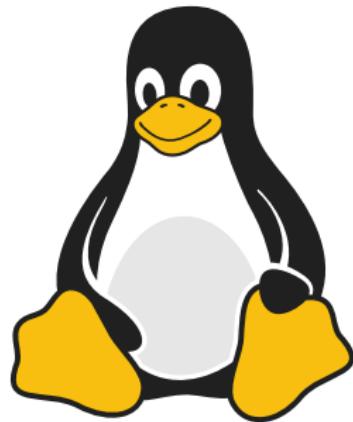
What is Linux?

- Linux is an UNIX-like **operating system kernel**, meaning it only provides the core components of the OS
- Linux is free and open source software written by developers across the world
- Linux can be used as a desktop OS, on servers, and Linux even powers Android
- Linux distributions (*distros*) are complete operating systems created by bundling Linux with other software



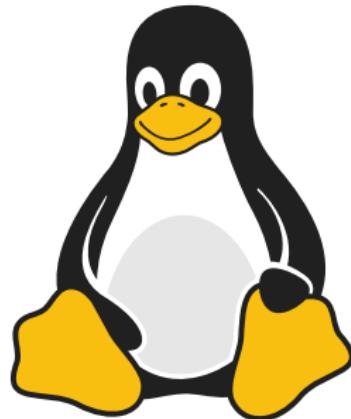
What is Linux?

- Linux is an UNIX-like **operating system kernel**, meaning it only provides the core components of the OS
- Linux is free and open source software written by developers across the world
- Linux can be used as a desktop OS, on servers, and Linux even powers Android
- Linux distributions (*distros*) are complete operating systems created by bundling Linux with other software



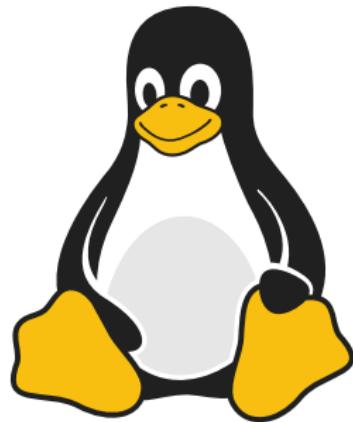
What is Linux?

- Linux is an UNIX-like **operating system kernel**, meaning it only provides the core components of the OS
- Linux is free and open source software written by developers across the world
- Linux can be used as a desktop OS, on servers, and Linux even powers Android
- Linux distributions (*distros*) are complete operating systems created by bundling Linux with other software



What is Linux?

- Linux is an UNIX-like **operating system kernel**, meaning it only provides the core components of the OS
- Linux is free and open source software written by developers across the world
- Linux can be used as a desktop OS, on servers, and Linux even powers Android
- Linux distributions (*distros*) are complete operating systems created by bundling Linux with other software



Who develops Linux?



Linus Torvalds (pictured above) started the Linux project, and although he has only written 2% of the code, he has written the most of anyone alone.

The UNIX Philosophy

UNIX-like operating systems have been traditionally *written by programmers, made for programmers*. This means it is easy to programmatically work on data.



- 1 Write programs which do one thing, and one thing well
- 2 The output of a program should become the input of another

The UNIX Philosophy

UNIX-like operating systems have been traditionally *written by programmers, made for programmers*. This means it is easy to programmatically work on data.



- 1 Write programs which do one thing, and one thing well
- 2 The output of a program should become the input of another

Download a file from a URL and write to terminal

```
curl http://site/d.img.gz
```

The UNIX Philosophy

UNIX-like operating systems have been traditionally *written by programmers, made for programmers*. This means it is easy to programmatically work on data.



- 1 Write programs which do one thing, and one thing well
- 2 The output of a program should become the input of another

Download a file from a URL while uncompressing it

```
curl http://site/d.img.gz | zcat
```

The UNIX Philosophy

UNIX-like operating systems have been traditionally *written by programmers, made for programmers*. This means it is easy to programmatically work on data.



- 1 Write programs which do one thing, and one thing well
- 2 The output of a program should become the input of another

Do all that while writing to a disk

```
curl http://site/d.img.gz | zcat | dd of=/dev/sdb
```

Package Management



The Windows Way

- Users get software by visiting a website and downloading the installer program
- Developers have to write update managers
- Developers have to write an uninstaller program
- Dependency resolution is done by sketchy hacks in the installer program

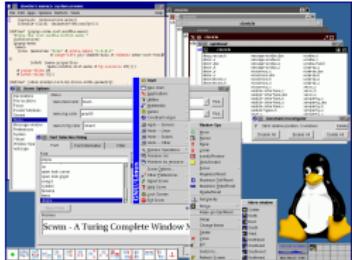
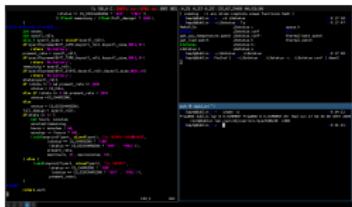
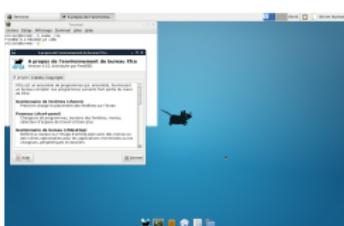
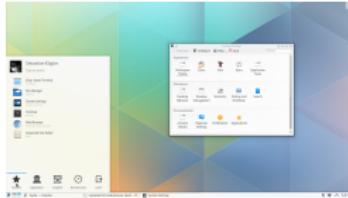


The Linux Way

- Distributions include a **package manager**, a program which is responsible for:
 - software installation
 - dependency resolution
 - software updates
 - software removal

Linux is Ultra Customizable

Because Linux is just a kernel, so many software packages exist to run on top of it. You get the choice of these packages to make the desktop just how you like it.



- Started in 1993, an old, yet reliable, distribution
- Installation images with GNOME, Cinnamon, KDE, LXDE, MATE, and XFCE
- Features the apt package manager



debian

- Started in 1993, an old, yet reliable, distribution
- Installation images with GNOME, Cinnamon, KDE, LXDE, MATE, and XFCE
- Features the apt package manager



debian

The word "debian" is written in a bold, black, sans-serif font. The letter "i" has a small red diamond at its top.

- Started in 1993, an old, yet reliable, distribution
- Installation images with GNOME, Cinnamon, KDE, LXDE, MATE, and XFCE
- Features the apt package manager



debian

The word "debian" is written in a bold, black, sans-serif font. The letter "i" has a small red diamond at its top.



- A Debian based distribution started in 2004
- Many flavors including Kubuntu, Lubuntu, Xubuntu, Ubuntu GNOME and more
- Very popular and has a large community
- Features the apt package manager, as well as a “Software Manager” GUI





- A Debian based distribution started in 2004
- Many flavors including Kubuntu, Lubuntu, Xubuntu, Ubuntu GNOME and more
- Very popular and has a large community
- Features the apt package manager, as well as a “Software Manager” GUI





- A Debian based distribution started in 2004
- Many flavors including Kubuntu, Lubuntu, Xubuntu, Ubuntu GNOME and more
- Very popular and has a large community
- Features the apt package manager, as well as a “Software Manager” GUI



- A Debian based distribution started in 2004
- Many flavors including Kubuntu, Lubuntu, Xubuntu, Ubuntu GNOME and more
- Very popular and has a large community
- Features the apt package manager, as well as a “Software Manager” GUI





- A Ubuntu based distribution started in 2006
- Comes with an interface that may be very familiar to previous users of Microsoft Windows, and because of this, many people call it beginner friendly
- Basically another Ubuntu





- A Ubuntu based distribution started in 2006
- Comes with an interface that may be very familiar to previous users of Microsoft Windows, and because of this, many people call it beginner friendly
- Basically another Ubuntu





- A Ubuntu based distribution started in 2006
- Comes with an interface that may be very familiar to previous users of Microsoft Windows, and because of this, many people call it beginner friendly
- Basically another Ubuntu





- Started in 2003 after the discontinuation of Red Hat Linux
- Main distribution features GNOME, although there are *spins* of other desktop environments
- Includes power user tools like GNOME Boxes and Docker support out of the box
- Easy for beginners
- Features the excellent dnf package manager





- Started in 2003 after the discontinuation of Red Hat Linux
- Main distribution features GNOME, although there are *spins* of other desktop environments
- Includes power user tools like GNOME Boxes and Docker support out of the box
- Easy for beginners
- Features the excellent dnf package manager





- Started in 2003 after the discontinuation of Red Hat Linux
- Main distribution features GNOME, although there are *spins* of other desktop environments
- Includes power user tools like GNOME Boxes and Docker support out of the box
- Easy for beginners
- Features the excellent dnf package manager





- Started in 2003 after the discontinuation of Red Hat Linux
- Main distribution features GNOME, although there are *spins* of other desktop environments
- Includes power user tools like GNOME Boxes and Docker support out of the box
- Easy for beginners
- Features the excellent dnf package manager





- Started in 2003 after the discontinuation of Red Hat Linux
- Main distribution features GNOME, although there are *spins* of other desktop environments
- Includes power user tools like GNOME Boxes and Docker support out of the box
- Easy for beginners
- Features the excellent dnf package manager





- Started in 2002 and there hasn't been a new version released since
- I'm not joking... Arch Linux is a rolling release. Updating your system through `pacman` brings you to the latest
- Comes with basically nothing out of the box, it's up to you to install the software you want to use
- Software packages are usually bleeding edge
- Very helpful and kind community



- Started in 2002 and there hasn't been a new version released since
- I'm not joking... Arch Linux is a rolling release. Updating your system through `pacman` brings you to the latest
- Comes with basically nothing out of the box, it's up to you to install the software you want to use
- Software packages are usually bleeding edge
- Very helpful and kind community





- Started in 2002 and there hasn't been a new version released since
- I'm not joking... Arch Linux is a rolling release. Updating your system through pacman brings you to the latest
- Comes with basically nothing out of the box, it's up to you to install the software you want to use
- Software packages are usually bleeding edge
- Very helpful and kind community





- Started in 2002 and there hasn't been a new version released since
- I'm not joking... Arch Linux is a rolling release. Updating your system through pacman brings you to the latest
- Comes with basically nothing out of the box, it's up to you to install the software you want to use
- Software packages are usually bleeding edge
- Very helpful and kind community





- Started in 2002 and there hasn't been a new version released since
- I'm not joking... Arch Linux is a rolling release. Updating your system through pacman brings you to the latest
- Comes with basically nothing out of the box, it's up to you to install the software you want to use
- Software packages are usually bleeding edge
- Very helpful and kind community



Choosing a Distro

- Do your own research to see which distro appeals to you the most
- You may have to install a few different distros and try them out
- Most Linux distros have a *Live CD* image that allows you to try the full desktop from a CD or USB drive before installing



Choosing a Distro

- Do your own research to see which distro appeals to you the most
- You may have to install a few different distros and try them out
- Most Linux distros have a *Live CD* image that allows you to try the full desktop from a CD or USB drive before installing



Choosing a Distro

- Do your own research to see which distro appeals to you the most
- You may have to install a few different distros and try them out
- Most Linux distros have a *Live CD* image that allows you to try the full desktop from a CD or USB drive before installing



So do you have Penguinitis?

