

# Linux Intro and Field Survival Guide

Jeff & Fed, May 19<sup>th</sup>, 2017

# But first

- Ending our Statistics theme...
- Discussion from May 5: <http://wiki.ubc.ca/Sandbox:NINC>
- If you have something to add/change please go ahead! Should just need your CWL to log in.
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- I thought we could next transition to a scientific computing theme.
- Suggested topics:
- 2017-05-19: Linux (today)
- 2017-05-26: Using the shell (requested topic from survey, SWC)
- 2017-06-02: GPU computing (? hopefully)
- 2017-06-09: High performance computing (Introduce cluster)

# What is linux?

- Computer OS.
- A viable alternative to windows & macOS
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- Usual icon is a penguin. Sorry about his foot.



# Who is using linux regularly?

- Which distribution?
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- Discuss...
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- In murphy lab: ubuntu, mint, raspbian (for raspberry pi)
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# Won't it be difficult to set up?

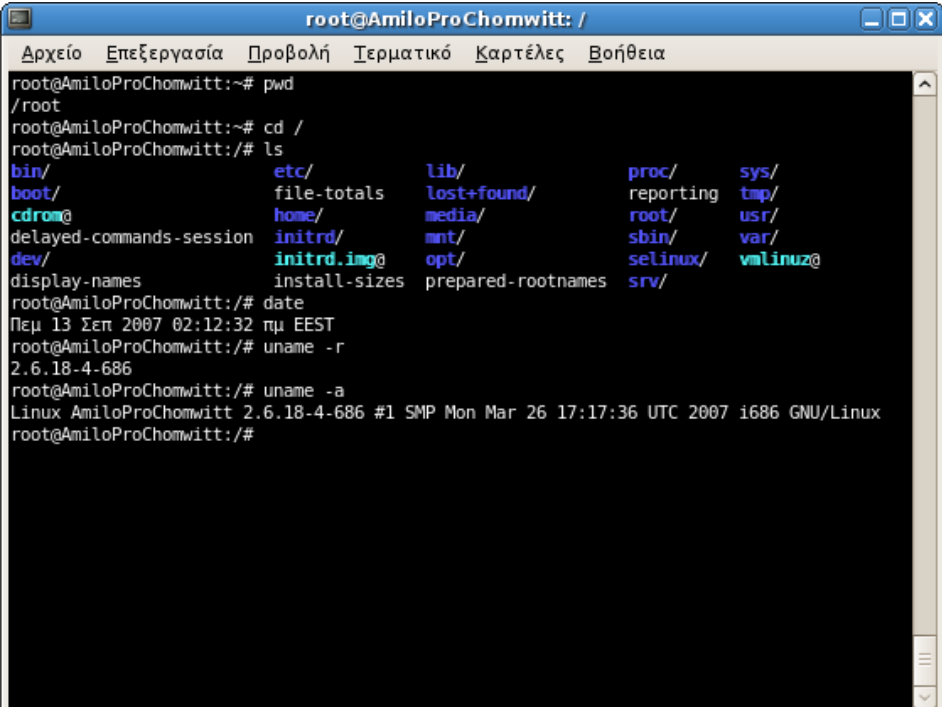
- No, not really.
- 
- In fact, if the lab buys a new PC, you can turn it over to MedIT.
- They will install a dual boot system for you with UBC licensed software like MS Office and matlab (linux and windows).

# Why do we like it?

- Oriented toward:
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- 1. open source software
- 2. Programming/coding (data analysis)
- 3. Interacting with networked computers.

# So how do we get started?

- Most things will be familiar, web browser, office tools, mendeley, matlab, ...
- However, to function in linux it is good to have familiarity with the terminal.



```
root@AmiloProChomwitt: /
Αρχείο Επεξεργασία Προβολή Γερματικό Καρτέλες Βοήθεια
root@AmiloProChomwitt:~# pwd
/root
root@AmiloProChomwitt:~# cd /
root@AmiloProChomwitt:~# ls
bin/          etc/          lib/          proc/         sys/
boot/         file-totals  lost+found/   reporting    tmp/
cdrom@        home/        media/        root/         usr/
delayed-commands-session  initrd/      mnt/          sbin/         var/
dev/          initrd.img@  opt/          selinux/      vmlinuz@
display-names  install-sizes  prepared-rootnames  srv/
root@AmiloProChomwitt:~# date
Πεμ 13 Σεπ 2007 02:12:32 πμ EEST
root@AmiloProChomwitt:~# uname -r
2.6.18-4-686
root@AmiloProChomwitt:~# uname -a
Linux AmiloProChomwitt 2.6.18-4-686 #1 SMP Mon Mar 26 17:17:36 UTC 2007 1686 GNU/Linux
root@AmiloProChomwitt:~#
```

# 1. Installing (open source/free) software with the terminal

- Do an example of `sudo apt-get install ...`
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- With imageJ? pi
- With mendeley desktop? Laptop
- With filezilla, we will get to this in 3.3
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## 2. Programming/coding (data analysis)

- Do an example of a simple python program with nano?
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- And running it on the command line

# 3.1 Interacting with networked computers (ssh)

- Log in to pi in the ARU?
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## 3.2 Interacting with networked computers (ssh with GUI)

- Log in to pi in ARU.
- Load programs which show up on your desktop
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## 3.3 Interacting with networked computers (scp/sftp)

- Moving your files around?
- Scp (if you know where your files are)
- Filezilla (if you need to browse)

## 3.4 Interacting with networked computers (jupyter notebook server)

- Show our data live update jupyter notebook

Feel free to experiment with the  
raspberry pis!

# Next time...

- More on the terminal and using the shell to automate tasks.
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- We will work through the software carpentry lesson on this.
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- Go for it now if there is time:
- <http://swcarpentry.github.io/shell-novice/>