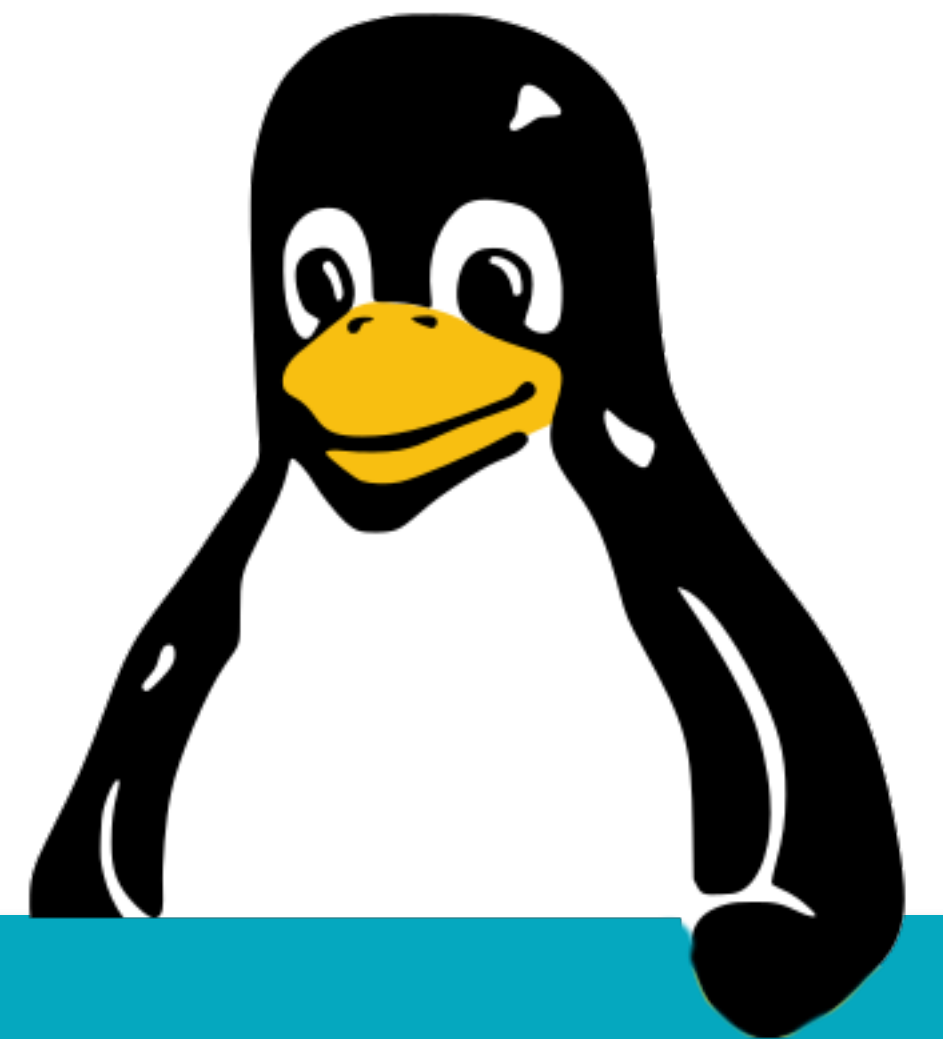


Linux, day 12

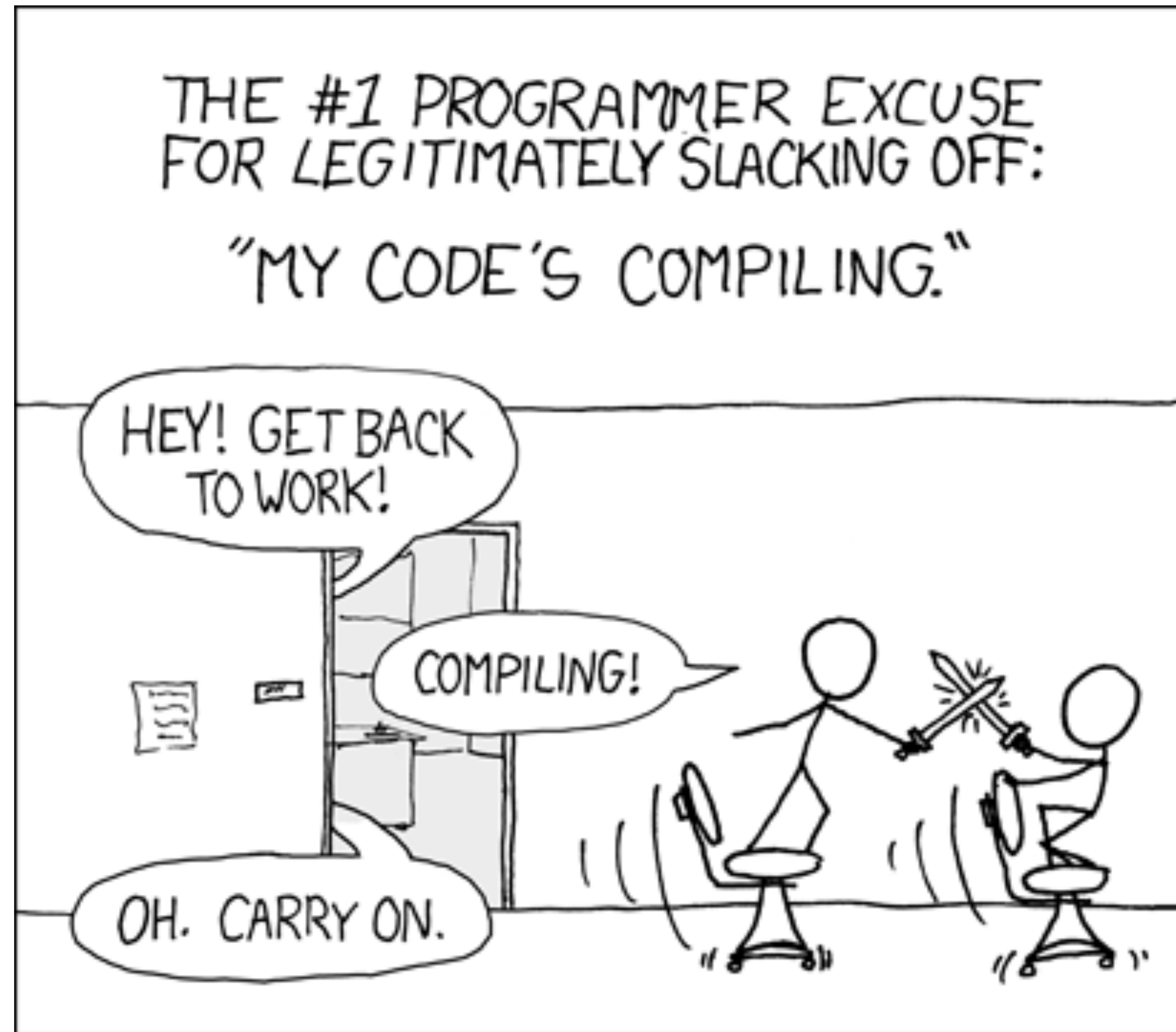


Objectives covered

Objective	Summary	Boek
1.1	Compiling software	13
1.6	Package management, updates	13
1.7	Localization	9
4.5	Logging, journald / systemd	6, 17

LAB: Managing software





See - [XKCD "Compiling"](#)

Let's build from source!

- NMap and NCat are beloved tools!
 - Most of us have them installed already.
 - But let's try build it from source!
- Instructions here -> <https://nmap.org/download.html>
 - Under "*source code distribution*".

Let's do this

```
$ sudo yum install -y flex bison make g++  
$ sudo yum install -y openssl-devel  
  
$ cd ~/Downloads  
$ wget https://nmap.org/dist/nmap-7.94.tar.bz2  
$ bzip2 -cd nmap-7.94.tar.bz2 | tar xvf -  
$ cd nmap-7.94
```

Let's do this - compiling

```
$ ./configure
```

```
$ make
```

```
#### Only do the next on your throw-away VM
```

```
$ sudo make install
```

This takes a lot of time

- We needed to get dependencies first.
- We downloaded NMap source using wget.
- The "*configure*" script sets up the *Makefile*.
- Using "*make*" we run the full compilation.
- End results are for example:
 - *~/Downloads/nmap-7.94/nmap*

The alternative?

- On Fedora:

```
$ cd ~/Downloads  
$ wget https://nmap.org/dist/nmap-7.94-1.x86_64.rpm  
$ sudo rpm -i ./nmap-7.94-1.x86_64.rpm
```

The alternative?

- On Fedora:

```
$ sudo yum install -y nmap
```

LAB: Managing locales



Assignment 1

- Make sure you have a test/dummy user on your VM.
 - I will simply re-use *dummy* from before.
 - Make sure this user has Bash as their shell!
- This account will be reconfigured to use:
 - Another locale and timezone.

Assignment 1

- Login to the *dummy* account and edit their *.bashrc*.
 - Set their timezone to Moscow.
 - Set their language and country,
 - To Russian and Russia, with charset "*koi8r*".
 - This is intentionally broken!
 - You will need to set *TZ*, *LANG*, *LC_ALL*, *LC_CTYPE*.

Assignment 1 - tips

- What you're looking for, is something like this:

```
export TZ=Asia/Tokyo
export LANG=ja_JP.eucjp
export LC_CTYPE=ja_JP.eucjp
export LC_ALL=ja_JP.eucjp
```

Assignment 1 - tips

- How to find settings for Russia?
 - *locale -a | grep -i ^ru*
 - *timedatectl list-timezones | grep -i Moscow*
- Try what happens if you don't use UTF-8!

Assignment 1 - Ubuntu

- Cannot find locales on Ubuntu?
 - *sudo vi /etc/locale.gen*
 - Uncomment the lines for ru_RU.koi8r
 - *sudo locale-gen*
- Now you should be able to switch locales.

Assignment 1

- Re-login as *dummy* (or reload their *.bashrc*).
- Go check what breaks!
- Run things like:
 - *date, ls -al, cat /etc/shadow*

Assignment 1

- If you're working on Fedora Workstation,
 - You may notice a lot of translations.
- *nmtui, error messages, vi* and more.

LAB: Logging services



Assignment 1

- [You could use the explanations here \[serverfault.com\]](https://serverfault.com).
- In one terminal, follow the journal logs.
- In another terminal send a message to journald.
 - Does it arrive in the other terminal?

Assignment 2

- Make a shell script, *~/check-root.sh*.
 - Check if the root user is active.
 - e.g. *"ps -fC bash | grep ^root"*
 - Yes, you will need to write a test with IF. :)
 - If root IS logged in, send a warning to *journald*.
- Use *cron* to run this script every minute.

Closing



Homework

- Reading:
 - Chapter 15, 448-463
- Practice exam
 - Link will be shared in Teams.

Homework

- Assignment 1:
 - You will need two VMs, both running *rsyslog*.
 - Verify that you can manually enter texts with *logger*.

Homework

- Assignment 2:
 - Reconfigure Fedora to also send its logs to Ubuntu.
 - This should use *rsyslog*.
 - [Here's a walkthrough on how to build this.](#)

Homework

- Assignment 3:
 - Use your Ubuntu VM.
 - Go to [the VirtualBox downloads page](#).
 - Read the "*Debian-based Linux distributions*" section.
 - Setup Ubuntu to use the Virtualbox APT repository.
 - Prove that "*apt search*" finds the official VirtualBox.

Reference materials



Resources

- [The evolution of package managers](#)
- [Compiling Netcat to run on Windows](#)
- [The absolute minimum \[you\] should know about \[character sets\].](#)
- [The ultimate guide \(unicode, utf-8, etc.\)](#)

Resources

- [Linux logging guide](#)
- [Rsyslog, journal or both?](#)
- [Logging with journald tutorial](#)
- [Guide to using Journalctl](#)