

# 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



# 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.

# What will we do today?

- ~~Recap~~
- ~~Software / package management~~
- ~~Locale configuration~~
- ~~Configuring logging services~~
- Kahoot quiz
- Closing: homework and Q&A

# Closing



# Homework

- Reading:
  - Chapter 10 (re-read)
  - Chapter 15
  - Chapter 16
- 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*.
  - Reconfigure VM 1 to also send its logs to VM 2.
    - This should use *rsyslog*, not SCP. ;)
  - [Here's a walkthrough on how to build this.](#)

# Homework

- Assignment 2:
  - Use your Ubuntu VM.
  - Go to [the VirtualBox downloads page](#).
  - Read the "*Debian-based Linux distributions*" section.
  - Setup the Virtualbox APT repository.
  - Prove that "*apt search*" finds three options to install.



# 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](#)