VE482 — Introduction to Operating Systems

Lab 2

Manuel — UM-JI (Fall 2020)

Goals of the lab

- Install Minix 3
- Servers: use of git and ssh
- Prepare for project 1

1 Minix 3

Install Minix 3 in a virtual machine. For more details and resources, refer to the document *Introduction to Minix 3* available in the extra folder on Canvas.

- In Minix 3, how to manage software, i.e. install, remove, update, etc.?
- What is the purpose of the commands `ifconfig`, `adduser`, and `passwd`?

2 Working on a remote server

As system administrators seldom have a physical access to their servers they remotely connect using a tool called Secure SHell (SSH). It allows them to log into a remote server and launch a regular shell, while keeping all the network traffic encrypted.

- Setup an SSH server on Minix 3. From Linux (using `ssh`) or Windows (using Putty) log into Minix 3. Note: the network need to be properly setup on the Virtual Machine (VM).
- What is the default SSH port? Change this port for port 2222. Log into Minix 3 using this new SSH server setup.
- List and explain the role of each the file in the `$HOME/.ssh` directory. In `$HOME/.ssh/config`, create an entry for Minix 3.
- Briefly explain how key-only authentication works in SSH. Generate a key-pair on the host system and use it to log into Minix 3 without a password.
- On Canvas, submit your public key in a *separate file*. Name it "student-id.pub", e.g. "5143709219.pub". This public key will be used to grant you access to the VE482 course server. Note: always remember that the private keys should remain *private*, and as such should never be disclosed.

3 Basic git

Git is a very power version control system initially introduced to help in the development of the Linux kernel around 2005. It has since then become a widely used tool omnipresent in industry. It is therefore of a vital importance to be proficient at it in order to better prepare for your future career and create more internship opportunities.

- Setup git on your computer, we will use it for the rest of the semester.
- Search the use of the following `git` commands:

– `help`	– `branch`	– `merge`	– `tag`	– `commit`
– `init`	– `push`	– `add`	– `log`	– `clone`
– `checkout`	– `pull`	– `diff`	– `fetch`	– `reset`

- Setup your `git` repository on the VE482 server.

Follow and reproduce on your personal repository the demo from the TAs showing a common git workflow.

4 Project 1: presentations (part 1)

To ensure a more synthesized support during project 1, presentations are split into two parts. Topics are available on Canvas and their selection is on a first come first served basis.

Please well prepare your presentation and ask questions on others' research. This should greatly help in the development of your `mumsh`. Be careful, mum might be listening!