Tecnologías Multimedia - Study Guide - Milestone 0: OS (Operating System) Provisioning

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August 28, 2021

1. Description

The InterCom project [3] is a real-time application with a high computational (specially in terms of CPU) demand. It is written in Python [1], an interpreted languaje that has been ported almost to all the current OSs, including mobile devices.

This milestone (the installation of a dedicated Linux distribution for running InterCom) is optional, but it is highly recommend to do it because you'll receive technical support in a reasonable amount of time in the case you are in trouble. Futhermore, it is recommend to run InterCom in a Xubuntu 21.04 (Hirsute Hippo) [2], running natively (no virtualization). Xubuntu is fully functional (at least for developing our project) and demand a low amount of hardware resources.

The following "guide" helps you to install Xubuntu in an external USB drive, which must have at least 8GB of capacity (the minimal installation of Xubuntu needs about 5GB). You will need also a temporal external USB disk with at least 4GB to boot from it the installation Xubuntu image (or to burn an optical disk).

2. What do you have to do?

Supposing that you have decided to use Xubuntu in a USB disk, these are the steps you should perform (to install Xubuntu in a "hard" disk partition of your computer the instructions are almost the same):

1. Download the installation image from here.
2. "Burn" the 4GB USB drive with the image. Depending on your current OS, use the following instructions for Windows, OSX, Ubuntu (and derivatives), or the Linux console.
3. Boot the image. Most of PCs can choose the boot device by pressing the F12-key when the PC is booting. On a Mac, you need to keep pressed the alt-key when it is booting.
4. Select the option `Try Xubuntu without installing`.
5. When the OS is running, configure the network.
6. Insert now the (at least) 8GB USB drive where Xubuntu will be installed.

7. Select `Install Xubuntu 21.04 LTS`.

8. Select English as the language used during the installation and the installed system. This will help in the case you need to search information in the Internet, providing the error descriptions in English.

9. Select your keyboard layout (probably `Spanish`).

10. Open a terminal and write:

    ```
    df -h
    ```

    to see all the mounted disk partitions and their capacity. Notice that no partition of `/dev/sda` (the hard disk) should not be mounted (although you can do that, you don't need to mount any partition of the hard disk), the partition `/dev/sdb1` (with the Xubuntu image) should be mounted, and finally, if the first partition of the second external USB drive has been recognized by Thunar (the default file manager in Xubuntu), it should appear as `/dev/sdc1`. This partition should be unmounted to install on it Xubuntu. Anyway, if you continue with the installation process without unmounting it, the installer will

ask you to do it. In this description, it has been supposed that your computer only has one hard disk.

11. Choose `Download updates while installing Xubuntu` and `Install third-party software for graphics and Wi-Fi hardware and additional media formats`, in order to have access to the ultimate software available for Ubuntu (and derivatives).

12. Choose `Erase disk and install Xubuntu`. Ignore the Advanced features. Then, wait for a couple of minutes :-/

13. Select the drive corresponding to the >= 8GB USB drive (`/dev/sdc`). Don't choose `/dev/sda` (the main disk of your computer)! Again, Select `/dev/sdc`!!

14. At this point of the installation you should consider (depending on the amount of RAM memory installed in your computer and the size of the USB drive) to create an specific partition for doing swapping. The rule of the thumb is to create a partition with the same size that the RAM. However, probably you cannot do that in a 8GB USB drive

because at least 5GB are needed for a Xubuntu installation. Anyway, keep in mind that this step is optional because you can always perform swapping on a file (a process slightly slower than using the dedicated partition). Consider also that InterCom requires only some MB of memory for running and therefore, probably you are not going to need to swap any memory page at all. Said that, if you decide to create a specific swap partition, click on "advanced partitioning tool" and do the modifications you want.

15. Very important: check that the boot loader (GRUB) will be installed in `/dev/sdc1`.

16. Click on "Install Now". You'll read something similar to:

```
If you continue, the changes listed below will be written

WARNING: This will destroy all data on any partitions you

The partition tables of the following devices are changed:
```

```
 SCSI8 (0,0,0) (sdc)

The following partitions are going to be formatted:
 partition #1 of SCSI8 (0,0,0) (sdc) as ESP
 partition #2 of SCSI8 (0,0,0) (sdc) as ext4
```

17. Choose your time zone.
18. Configure you personal account (user and password), hostname and logging process.
19. Wait for the end of the installation and boot your new Xubuntu. Don't worry if grub labels Xubuntu as Ubuntu. This is normal.

3. Timming

You should reach this milestone at most in one week.

4. Deliverables

None.

5. Resources

[1] The Python Foundation. The Python Website.

[2] Canonical Ltd. xubuntu.

[3] The students of Tecnologías Multimedia at the UAL. The InterCom project.