Cours de MICROINFORMATIQUE
Section de Microtechnique
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Practical Exercises

ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

E-Puck2 environment installation	
Title:	Installation of the e-puck2 environment
Duration:	5-20 min

1 Introduction

Some programs are needed to program the e-puck2.

1. Eclipse_e-puck2 is a distribution of Eclipse IDE for C/C++ Developers specially modified to edit and compile e-puck2's projects out of the box. It doesn't require to be installed and everything needed is located in the package given.

   The only dependency needed to be able to run Eclipse is Java.

2. Drivers must also be installed for Windows older than Windows 10.

2 Installation for Windows

2.1 Java 32bits

This section can be ignored if Java 32bits is already installed on your computer.

1. Go to https://www.java.com/en/download/manual.jsp and download "Windows offline" This is the 32bits version of Java.
2. Run the downloaded installer and follow its intructions to proceed with the installation of Java 32bits.
3. Close the internet browser if it opened at the end of the installation.

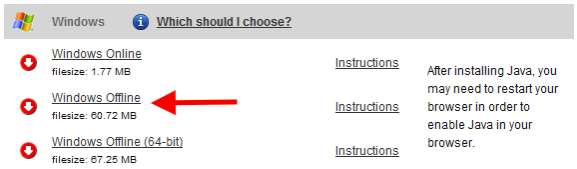


Figure 1: Java download page

2.2 Eclipse_e-puck2

1. Go to the moodle of the course (Microinformatique) and download the Eclipse_e-puck2 package for windows.
2. Unzip the downloaded file to the location you want (can take time).

   It is strongly recommanded for better performance and less exctraction time to use 7Zip. You can download it on http://www.7-zip.org.

3. You can now run the Eclipse_e-puck2.exe to launch Eclipse.
4. You can create a shortcut to Eclipse_e-puck2.exe and place it anywhere if you want.

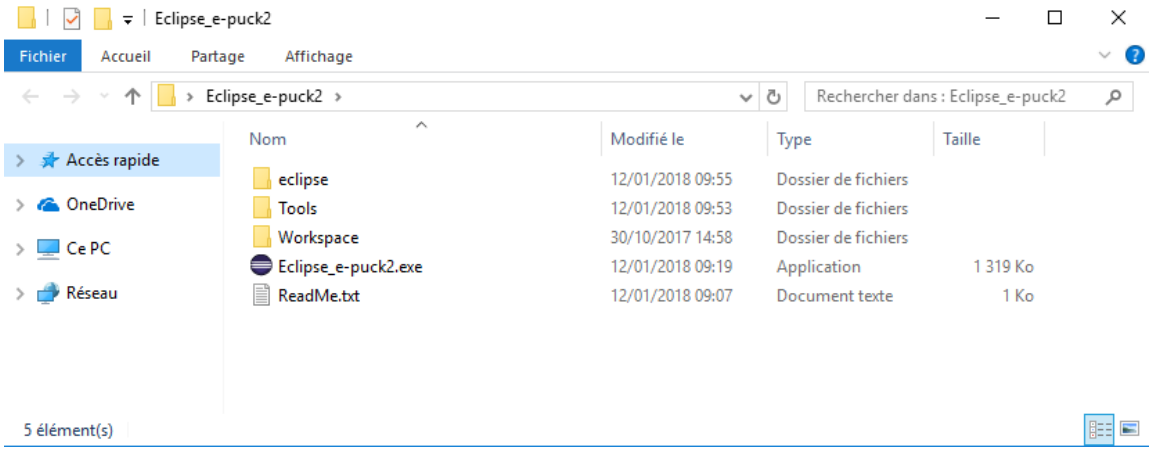


Figure 2: Eclipse_e-puck2 folder obtained after extraction

Important things to avoid :

1. The path to the Eclipse_e-puck2 folder must contain zero space.

   Example :

   C:\epfl_stuff\Eclipse_e-puck2 OK

   C:\epfl stuff\Eclipse_e-puck2 NOT OK

2. The file's structure in the Eclipse_e-puck2 folder must remains the same. It means no file inside this folder must be moved to another place.

2.3 Drivers

This part concerns only the users of a Windows version older than Windows 10. The drivers are automatically installed with Windows 10.

1. Open zadig-2.3.exe located in the `Eclipse_e-puck2\Tools\` you installed before.
2. Connect the e-puck2 with the USB cable and turn it on. Three unknown devices must have appeared in the device list of the program, namely **e-puck2 STM32F407**, **e-puck2 GDB Server (Interface 0)** and **e-puck2 Serial Monitor (Interface 2)**.
3. For each of the three devices mentioned above, select the **USB Serial (CDC)** driver and click on the "Install Driver" button to install it. Accept the different prompts which may appear during the process. After that you can simply quit the program and the drivers are installed. These steps are illustrated on Figure 3 below.

   Note : The drivers installed are located in `C:\Users\"your_user_name"\usb_driver`

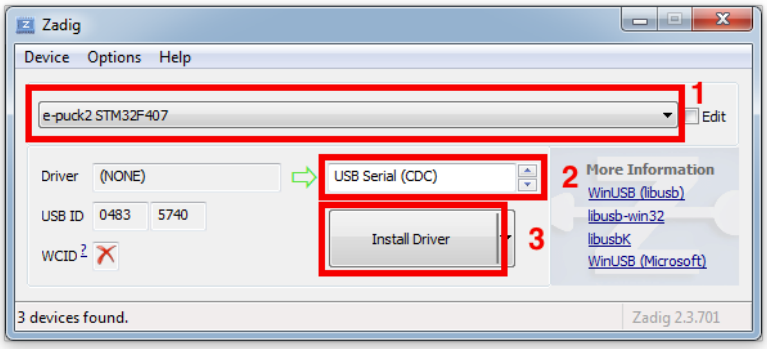


Figure 3: Example of driver installation for **e-puck2 STM32F407**

3 Installation for Linux

3.1 Java

This section can be ignored if Java is already installed on your computer.

1. Type the following commands in a terminal session to install Java SDK

```
$ sudo add-apt-repository ppa:openjdk-r/ppa
$ sudo apt-get update
$ sudo apt-get install openjdk-8-jre
```

3.2 Eclipse_e-puck2

1. Go to the moodle of the course (Microinformatique) and download the Eclipse_e-puck2 package for Linux. Pay attention to the 32bits or 64bits version.
2. Extract the downloaded file to the location you want (can take time).
3. You can now run the Eclipse_e-puck2 executable to launch Eclipse.

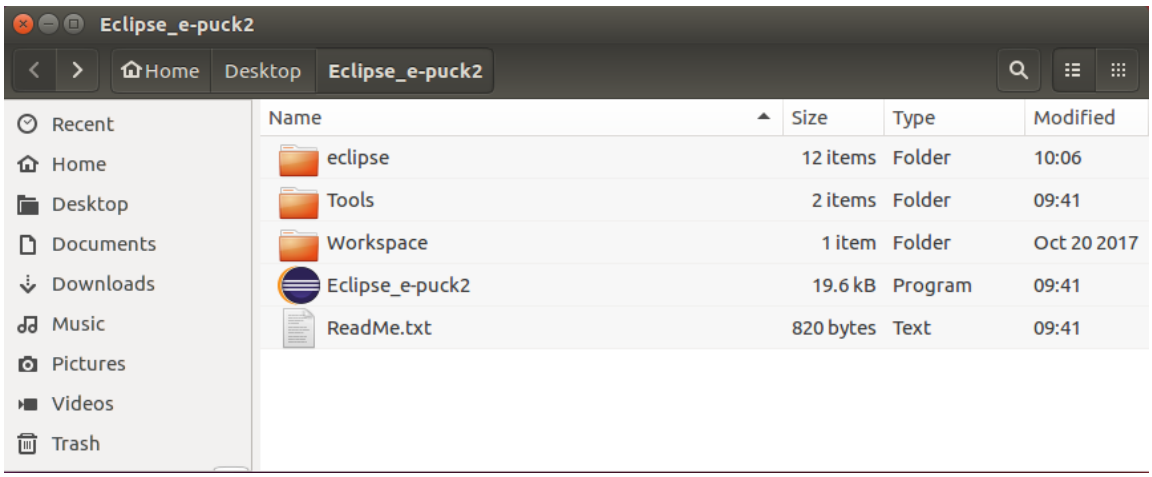


Figure 4: Eclipse_e-puck2 folder obtained after extraction

Note : The icon of the Eclipse_e-puck2 executable will appear after the first launch of the program.

Important things to avoid :

1. You can not create a Link to the Eclipse_e-puck2 executable because otherwise the program will think its location is where the Link is and it will not find the ressources located in the Eclipse_e-puck2 folder.

2. The path to the Eclipse_e-puck2 folder must contain zero space.

   Example :

   /home/student/epfl_stuff/Eclipse_e-puck2 OK

   /home/student/epfl stuff/Eclipse_e-puck2 NOT OK

3. The file's structure in the Eclipse_e-puck2 folder must remains the same. It means no file inside this folder must be moved to another place.

3.3 Serial Port

In order to let Eclipse, or any program ran by you to access the serial ports, a little configuration is needed.

Type the following command in a terminal session. Once done, you need to log off to let the change take effect.

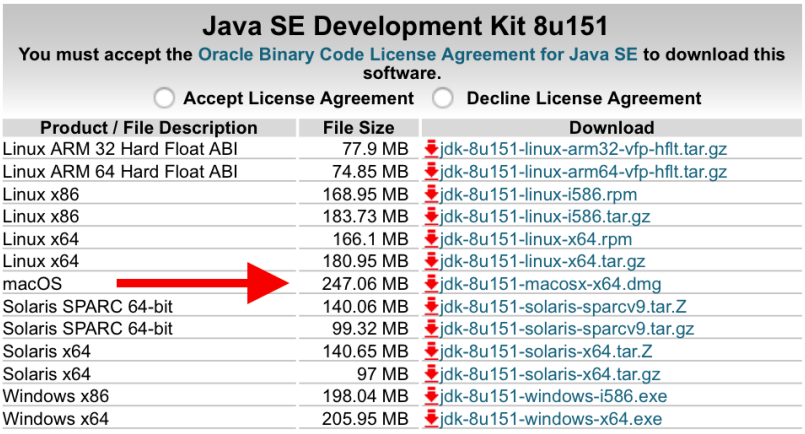
```
$ sudo adduser $USER dialout
```

4 Installation for Mac

4.1 Java

This section can be ignored if Java is already installed on your computer.

1. Go to http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html and download the Mac OS X Java 8 SE Development Kit. It is the .dgm file **without** the Demos and Samples. For example : jdk-8uXXX-macosx-x64.dmg
2. Open the .dmg file downloaded, run the installer and follow the instructions to proceed with the installation of Java SDK.



Java SE Development Kit 8u151

You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

Accept License Agreement Decline License Agreement

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	77.9 MB	jdk-8u151-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float ABI	74.85 MB	jdk-8u151-linux-arm64-vfp-hflt.tar.gz
Linux x86	168.95 MB	jdk-8u151-linux-i586.rpm
Linux x86	183.73 MB	jdk-8u151-linux-i586.tar.gz
Linux x64	166.1 MB	jdk-8u151-linux-x64.rpm
Linux x64	180.95 MB	jdk-8u151-linux-x64.tar.gz
macOS	247.06 MB	jdk-8u151-macosx-x64.dmg
Solaris SPARC 64-bit	140.06 MB	jdk-8u151-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	99.32 MB	jdk-8u151-solaris-sparcv9.tar.gz
Solaris x64	140.65 MB	jdk-8u151-solaris-x64.tar.Z
Solaris x64	97 MB	jdk-8u151-solaris-x64.tar.gz
Windows x86	198.04 MB	jdk-8u151-windows-i586.exe
Windows x64	205.95 MB	jdk-8u151-windows-x64.exe

Figure 5: Java download page

4.2 Eclipse_e-puck2

1. Go to the moodle of the course (Microinformatique) and download the Eclipse_e-puck2 package for Mac.
2. Open the .dmg file downloaded and DragAndDrop the Eclipse_e-puck2.app into the Applications folder

   Note : You can place the Eclipse_e-puck2.app anywhere, as long a the full path to it doesn't contain any space, if you don't want it to be in Applications.
3. You can create an Alias to Eclipse_e-puck2.app and place it anywhere if you want.

4.3 First launch and Gatekeeper

It's very likely that Gatekeeper (one of the protectons of Mac OS) will prevent you to launch Eclipse_e-puck2.app because it isn't signed from a known developper.

If you can't run the program because of a warning of the system. Press OK and try to launch it by right clicking on it and choosing "open" in the contextual menu (may be slow to open the first time).

If « Unable to open "Eclipse_e-puck2.app" because this app comes from an unidentified developer. »

or if « "Eclipse.app" is corrupted and can not be opened. You should place this item in the Trash. »

appears after executing the app the first time, it is needed to disable temporarily Gatekeeper.

To do so :

1. Go to System Preferences->security and privacy->General and authorize downloaded application from **Anywhere**.

   If you are on Mac OS Sierra or greater (greater or equal to Mac OS 10.12), you must type the following command on the terminal to make the option above appear.

```
$ sudo spctl --master-disable
```

2. Now you can try to run the application and it should work.

3. If Eclipse opened successfully, it is time to reactivate Gatekeeper. Simply set back the setting of gatekeeper.

   For the ones who needed to type a command to disable Gatekeeper, here is the command to reactivate it.

```
sudo spctl --master-enable
```

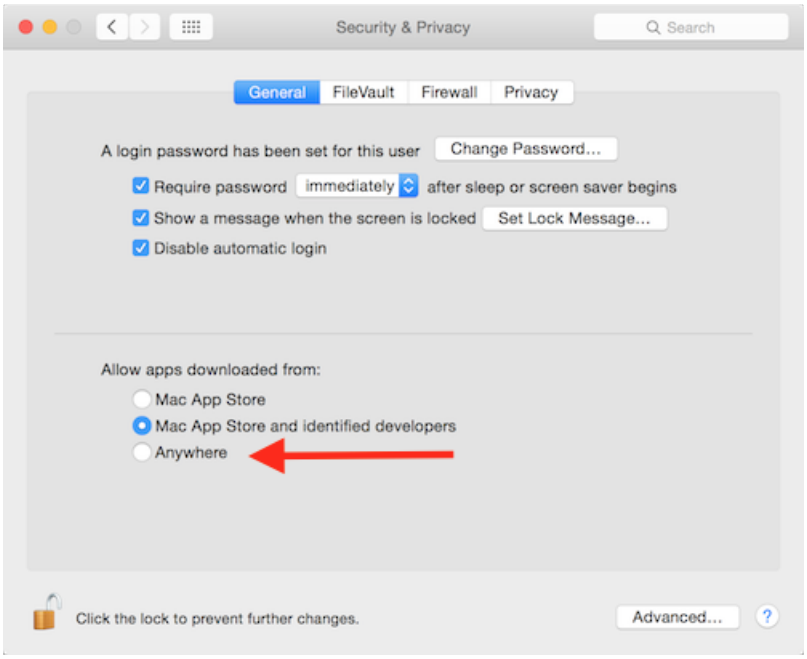


Figure 6: Security settings of Mac OS

This procedure is only needed the first time. After that Gatekeeper will remember your choice to let run this application and will not bother you anymore, as long as you use this application. If you re-download it, you will have to redo the procedure for Gatekeeper.

Important things to avoid :

1. The path to the Eclipse_e-puck2.app must contain zero space.

   Example :

   /home/student/epfl_stuff/Eclipse_e-puck2 OK

   /home/student/epfl stuff/Eclipse_e-puck2 NOT OK

2. The file's structure in the Eclipse_e-puck2.app must remains the same. It means no file inside this app must be moved to another place.