

M2 intern at IPGG - UMR 168 - KEIL working team

PROCESS TO INSTALL ALL LIBRARIES:

A. Setup for the further installations.

- Launch cmd with admin user rights on your session (only if there isn't any other session available or pre-logged on this computer)

Be careful, if you launch with the admin rights, in the cmd you will arrive by default to

`C:\WINDOWS\system32>`

Instead of the current session folder. In the case you are logged in the Intern_Qdevbio session, it is important not to launch the cmd with the admin rights, so you arrive through the cmd to:

`C:\Users\Intern_Qdevbio>`

Which is the desired path for the python libraries/imagej/java/jython installations.

- Install the libraries with pip.

A.1 Easiest library installations.

Commands to run in the CMD to install the various libraries:

```
>>> pip install numpy
>>> pip install scipy
>>> pip install scikit-image
>>> pip install matplotlib
>>> pip install napari
>>> pip install imagej
```

A.2 More complex library installations.

BIOFORMATS LIBRARY

```
>>> pip install bioformats
```

If this error occurs:

error in PyVCF setup command: use_2to3 is invalid.

The version of the setup tool is too old, so type:

```
>>> pip install --upgrade setuptools==58
>>> pip install bioformats
```

PYTHON-BIOFORMATS LIBRARY

```
>>> pip install python-bioformats
```

If this error occurs:

RuntimeError: Failed to find the Java Development Kit. Please download and install the Oracle JDK 1.6 or later

Follow the steps of `jdk` installation below.

JDK LIBRARY

```
>>> pip install install-jdk
```

Verify the jdk library is correctly installed at this location / find the jdk folder:

```
C:\Users\Intern_Qdevbio\AppData\Local\Programs\Python\Python310\Lib\site-packages>
```

```
>>> pip install python-bioformats
```

WARNING: if there are some troubles with the jdk software version or location, download the software: <http://java.sun.com/javase/downloads/index.jsp>.

```
>>> pip install python-bioformats
```

Set JAVA_HOME:

- Right click "My Computer"
- Select "Properties"
- Go to "Advanced tab"
- Select "Environment Variables"
- Create the JAVA_HOME variable if it isn't already created
- Edit JAVA_HOME to point where the JDK software is located, here it is:

```
C:\Program Files\Java\jdk-17.0.2
```

```
>>> pip install python-bioformats
```

If this error occurs:

RuntimeError: Failed to find jar.exe in its usual location under the JDK (C:\Program Files\Java\jdk-17.0.2\bin\jar.exe)

The jdk software is installed in another folder than in the "Program Files".

- Relocate the jdk folder in the "Program Files" folder.
- Reset the JAVA_HOME to the right new location: "Program Files" folder.

```
>>> pip install python-bioformats
```

If this error occurs:

error: Microsoft Visual C++ 14.0 or greater is required. Get it with "Microsoft C++ Build Tools": <https://visualstudio.microsoft.com/visual-cpp-build-tools/>, download the "Visual Studio Build Tools" components for C++

- Download the Visual Studio Build Tools:

<https://visualstudio.microsoft.com/visual-cpp-build-tools/>

This internet link might help too:

https://exerror.com/error-microsoft-visual-c-14-0-is-required-get-it-with-microsoft-visual-c-build-tools/#google_vignette

- Reboot the computer to re-assign correctly all the addresses and folders for the C++ 14.0 version.

```
>>> pip install python-bioformats
```

JAVABRIDGE LIBRARY

It worked here for me but if there are some javabridge errors, these commands might work:

```
>>> pip install javabridge
>>> pip install python-javabridge
>>> pip install python-bioformats
```

JYTHON LIBRARY

- Install JAVA from the java website

Note: the java could be installed either on the other session folders or on the current one, it doesn't change for the global installation.

- Download the jython file with this link: <https://www.jython.org/download>
- Go to the location of the just-installed file (the .jar one)
- Open the .jar file with JAVA
- Check the "All" option for the installation type
- Select a folder in the current session:

C:\Users\Intern_Qdevbio\Desktop\Installation_Files_and_Processes\JYTHON_FOR_IMAGEJ_INSTALLATION_FOLDER

WILD SECTION PARTIALLY EXPLORED

IMAGEJ INSTALLATION

- Download the compressed file (name: ij153-win-java8) of ImageJ with this link:
<https://imagej.nih.gov/ij/download.html>

- Extract it in:

C:\Users\Intern_Qdevbio\Desktop\Installation_Files_and_Processes\IMAGEJ_FOLDER_INSTALLATION

This absolute path that I used for the installation will be called "C:\PATH_USED" for the following steps

Note: when extracting the compressed files, make sure you preserve folder information

Go back to jython installation now:

6. Download jython-21.class

internet link: <https://sourceforge.net/projects/jython/>

7. Go on the CMD window and start the installer by typing:
"C:\PATH_USED\ImageJ\jre\bin\java -cp . jython-21"

Note: Assure yourself that you are in the right folder where the jython file has been downloaded when typing the previous command.

WILD SECTION UNEXPLORED

8. Follow instructions and install Jython in 'C:\Jython21\'

9. Replace 'Target' property of ImageJ shortcut with this command:

"C:\Users\Intern_Qdevbio\Desktop\Installation_Files_and_Processes\IMAGEJ_FOLDER_INSTALLATION\ImageJ\jre\bin\javaw.exe -mx80m -cp ij.jar;jimi.jar;C:\Users\Intern_Qdevbio\Desktop\Installation_Files_and_Processes\JYTHON_FOR_IMAGEJ_INSTALLATION_FOLDER\jython.jar; ij.ImageJ"

10. Extract jython plugin by extracting jython_plugin.zip to "C:\ImageJ\plugins\Jython"
(Note: When extracting the zip files make sure you preserve folder information)

Add 'C:\ImageJ' and 'C:\Jython21' to system path

Extract this to 'C:\Jython21'. If asked, confirm replacing files

To test the installation, extract this to 'C:\ImageJ\plugins\Jython', then:

run ImageJ

select menu Plugins>Jython>Jython Editor

select menu File>Open and open 'C:\ImageJ\plugins\Jython\HelloWorld.py'

click Evaluate. You should see a dialog box saying 'Hello World!'

quit ImageJ

open command window and goto 'C:\ImageJ\plugins\Jython'

type 'jythonc _HelloWorld.py'

exit command window

run ImageJ
select menu Plugins>Compile and Run...
open 'C:\ImageJ\plugins\Jython_HelloWorld.java'
disregard the warning... you should see a dialog box saying 'Hello World!'
restart ImageJ select menu Plugins>Jython>HelloWorld... you should see a dialog box saying 'Hello World!' w/o warnings. Open 'C:\ImageJ\plugins\Jython\HelloWorld.py' in your favorite text editor to get a glimpse at how to write ImageJ plugins using Jython.

LAST SECTION TO ADD TO THE END OF THE README FILE

A.3 Verifying the installed libraries locations.

A.3.1 Pip list command.

>>> pip list

A.3.2 Manual search.

- Search on the C disk the presence of all the targeted library folders.
- Verify that all the files are only in this folder :

C:\Users\Intern_Qdevbio\AppData\Local\Programs\Python\Python310\Lib\site-packages

Otherwise,

- Remove all the folders containing the targeted library files that are present in other logged sessions, precisely all the other sessions in this folder:

C:\Users