Tools installation for seasonal adjustment

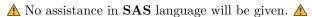
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Context

For seasonal adjustment we recommend using JDemetra+ algorithms

Thus, it is helpful to install the following tools:

• JDemetra+ Graphical User Interface (X13-Arima and Tramo-Seats)



Preliminary

On the computers without administrator rights (professional computer, for example), it is recommended to create a folder **Software** under C:\Users\...\Software or directly under C:\Users\Software where all software will be installed.

⚠ Warning: when we specify an **absolute** path for a software (JDemetra+, Java, ...) in a program, a shortcut, a variable, ..., it must be modified each time any root repository is moved.

1 Installation of JDemetra+

JDemetra+ is a collection of Java programs used for time series analysis and more specifically for seasonal adjustment. JDemetra+ is delivered in the form of an GUI (Graphical User Interface) but there is also a cruncher (executable).

1.1 Version of JDemetra+ and dependencies

JDemetra+ is downloadable from the github link of the application: https://github.com/jdemetra/jdemetra-app/releases.

The last release (v2.2.4) dates from January 31, 2023. It is the last stable version of JDemetra+. This version should be downloaded and must be used in production.

There is one more version of JDemetra+ which are only at a **test** stage:

• v3.0.2: the new JDemetra+ version with new features and a new GUI

JDemetra+ v2.2.4 require Java version ≥ 8 while v3.0.2 requires Java version ≥ 17 :

JDemetra+ version	Java version
v2.2.4	≥ 8
v3.0.2	≥ 17

In the following procedure, the installation processes of this 3 versions are the same. You just have to repeat them for each version you want to install.

1.2 Installation process

There are two possibilities for installing:

- Download and execute the .exe file which requires administrator rights
- Download and unzip the compressed folder .zip that allows to get a portable version of the software

⚠ Warning: for the second option, you need to **download** the compressed folder jdemetra+-2.2.4-bin.zip (for the version 2.2.4 for example) and **not** the folder Source code (zip).

The Software is in the folder \nbdemetra\bin\, these are the file nbdemetra.exe (version 32-bit) and nbdemetra64.exe (version 64-bit).

- i Advice: If you want to use several versions of JDemetra+ (v2.2.4, v3.0.0, ...), you can rename the unzipped folder in \nbdemetra-2.2.4\ and \nbdemetra-3.0.0\.
- i Remark: You can create shortcuts to the executable files if you want to launch them from another folder (Desktop, project folder...).

1.3 Installation of the cruncher

The cruncher (**JWSACruncher**) is a tool to update a workspace of JDemetra+ from the console, without opening JDemetra+ Graphical User Interface. The update of a workspace can then be done from another Software (**R** or **SAS** for example).

To use the cruncher, you have to:

• **Download** and **unzip** the file from the **latest stable** version v2.2.4 here https://github.com/jdeme tra/jwsacruncher/releases

If you want to install and use a portable Java version (See section Java installation), you have to modify some parameters to use the cruncher:

- In the unzipped folder, **open** (for example with Notepad++) the file jwsacruncher.bat present in the subfolder \bin\ (that is under jdemetra-cli-2.2.4\bin\ in the version 2.2.3 of the cruncher)
- Modify the value of the variable JAVACMD at the line 71 (currently JAVACMD=java) by the address towards the file java.exe of the portable version. Then, if JPortable is installed under C:\Users\Software, the new line is if "%JAVACMD%"=="" set JAVACMD="C:\\Users\\Software\\Java64\\bin\\java" (for Java 8).

2 Installation of Java

On Insee computers, Java is already installed in version 8. Then, there is no need to install a portable version to use JDemetra+ in version 2.2.4.

2.1 Java 8

To install Java 8, use the link https://portableapps.com/apps/utilities/java_portable. If you use the version 64-bit of JDemetra+, you should install the version jPortable 64-bit (at the bottom of the page).

2.2 Java 17

To install Java 17, you need to head over to https://www.oracle.com/java/technologies/javase/jdk17-archive-downloads.html.

- **Download** the version Compressed Archive of Windows (https://download.oracle.com/java/17/archive/jdk-17.0.4.1 windows-x64 bin.zip)
- Unzip the folder jdk-17.0.6 under C:\Users\Software (for example)

After a Java installation (in version 8, 17 or other), you need to:

- \mathbf{Modify} the environment variable PATH of Windows
- Modify the targets of JDemetra+ to set the localisation of the new Java versions.

For example, if you installed Java version 17 in order to use the JDemetra+ version 3.0.0. You should add the localisation of Java 17 to the shortcut of the executable using the option --jdkhome. The target of the shortcut becomes C:\Users\Software\nbdemetra-3.0.0\bin\nbdemetra64.exe --jdkhome "C:\Users\Software\Java17\jdk17"