



Hi-sAFE

An Agroforestry Model



Installation GUIDE

Version 4.4

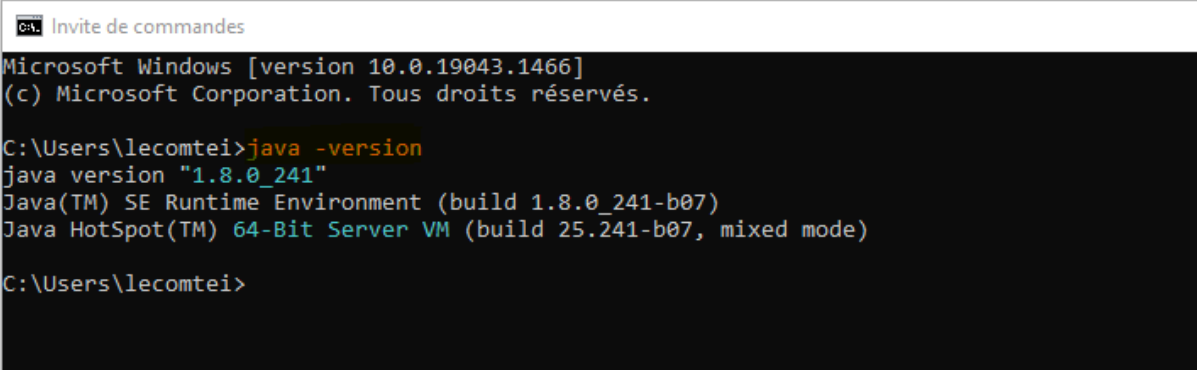
Isabelle LECOMTE

January 2026

Hi-sAFe is a model included in Capsis platform, there is no stand-alone version available. This documentation is related to Capsis installation from an installer, either downloaded from the Hi-sAFe download page or provided by a Hi-sAFe modeller. Hi-sAFe may be installed with the same installer on machines under Windows, Linux or Mac OS X. In case of trouble during the installation, have a look at the Capsis FAQ : <http://capsis.cirad.fr/capsis/documentation/faq>

1. Ensure java 1.8 for 64bit is installed on your computer

Capsis is developed for Java 1.8, if you have a more recent version, some problems can occur. To check the correct version of Java is installed and available, open a Terminal and check the answer to this command **java -version**



```
cal Invite de commandes
Microsoft Windows [version 10.0.19043.1466]
(c) Microsoft Corporation. Tous droits réservés.

C:\Users\lecomtei>java -version
java version "1.8.0_241"
Java(TM) SE Runtime Environment (build 1.8.0_241-b07)
Java HotSpot(TM) 64-Bit Server VM (build 25.241-b07, mixed mode)

C:\Users\lecomtei>
```

If java is not found on your system or the version is not 1.8.x, please download and install the correct version of java for your operating system, if you have a 64bit PC install a 64bit java version!

For Windows and Linux: install JRE from <https://www.java.com/fr/download/>

For Linux: install JRE from https://java.com/fr/download/help/linux_x64_install.html

For MacOS: install JRE from <https://www.java.com/en/download/apple.jsp>

2. Install from setup JAR file

The jar file contains only executable version of Hi-sAFe, there is no source code included.

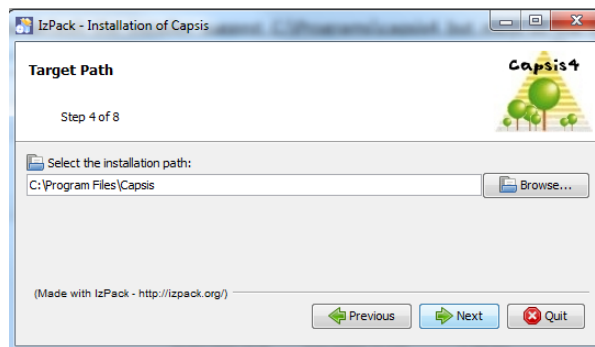
On Windows and Mac, run the installer (capsis-setup-4.4.X.jar) by double clicking on it and follow the install instructions.

```
#under Linux
cd directory-where-jar-is-located
java -jar capsis-setup-4.4.x.jar
```

Follow the installation instructions.



On step 4: Choose a target path

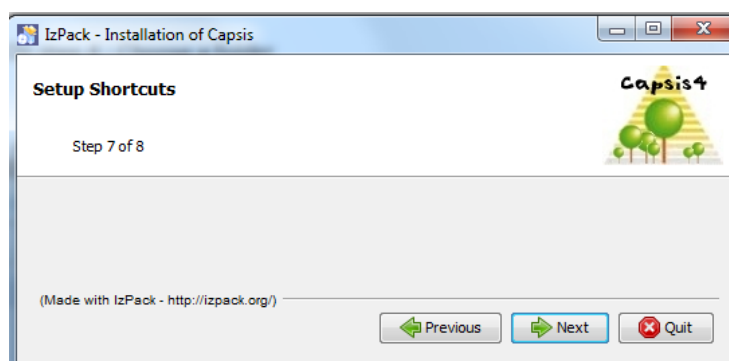


By default on a Windows operating system, the installer suggests C:\Program Files\Capsis but most of the time you will not have write privileges for this. Best advice is to create a new folder named **C:\ capsis4** or **D:\ capsis4**.

On Mac and Linux, such advice can be followed. Default installation paths are respectively /Applications/Capsis and /home/username/Capsis, but other directories can be chosen. Just make sure you have the right permissions on it.

The minimum required size is 160 Mo.

On step 7, desktop shortcuts will be created. Most of the time this step does not work and you will have to stop the installation here by closing the window. Installation is DONE!



3. Install from GITHUB source code

Capsis and Hi-sAFe are both under GNU licence. JAVA source code can be downloaded on the GitHub repository: <https://github.com/hisafe/hisafe>.

Capsis and Hi-sAFe source code has to be recompiled so you need to install JDK (Java Developer Kit) version 8.

<https://www.oracle.com/java/technologies/javase/javase8-archive-downloads.html>

```
#under windows
cd c:/Projects/capsis4
ant clean compile
```

```
#under Linux / Mac OS X
cd c:/Projects/capsis4
sudo apt-get install openjdk-8-jdk
sh ant clean compile
```

```
C:\Projets>cd capsis4
C:\Projets\capsis4>ant clean compile
Unable to locate tools.jar. Expected to find it in C:\Program Files\Java\jre1.8.0_241\lib\tools.jar
Buildfile: C:\Projets\capsis4\build.xml

clean:
[delete] Deleting directory C:\Projets\capsis4\class

copy-resources:
[mkdir] Created dir: C:\Projets\capsis4\class
[copy] Copying 4802 files to C:\Projets\capsis4\class
[copy] Copied 1893 empty directories to 780 empty directories under C:\Projets\capsis4\class

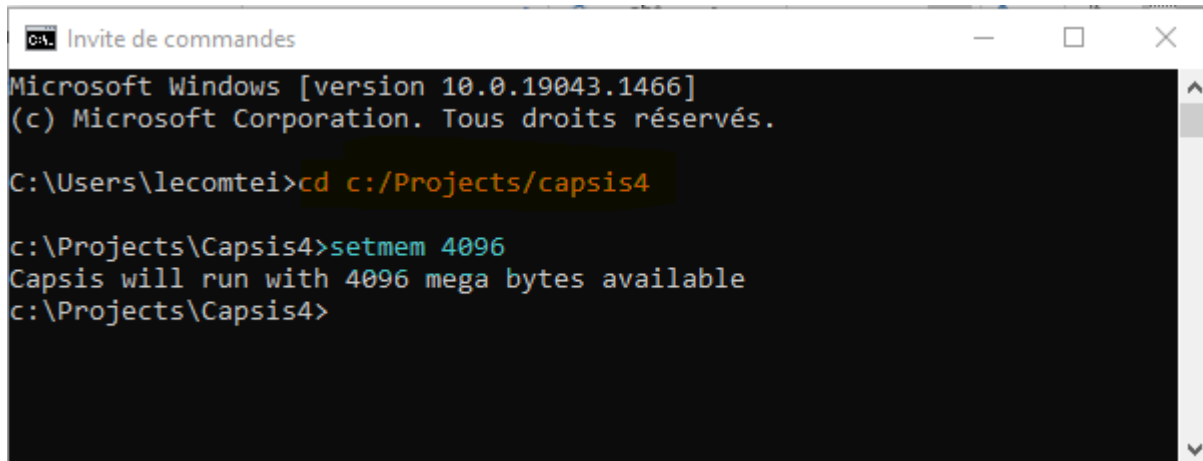
compile:
[javac] Compiling 9227 source files to C:\Projets\capsis4\class
[javac] Note: Some input files use or override a deprecated API.
[javac] Note: Recompile with -Xlint:deprecation for details.
[javac] Note: Some input files use unchecked or unsafe operations.
[javac] Note: Recompile with -Xlint:unchecked for details.

revision:
[java] PathManager installDir: C:\Projets\capsis4
[echo] Capsis revision 21699
[echo] os.name: Windows 10
[echo] os.arch: amd64
[echo] java.vm.name: Java HotSpot(TM) 64-Bit Server VM
[echo] java.version: 1.8.0_241
[echo] javac.version: javac 1.8.0_241

BUILD SUCCESSFUL
Total time: 1 minute 55 seconds
```

4. Increase Capsis running memory

- Open a windows terminal
- Go to the Capsis installation path with CD command
- Run the command SETMEM with the RAM you want to assign to the Capsis execution (1024 – 2048 – 4096 etc...)



```
Invite de commandes
Microsoft Windows [version 10.0.19043.1466]
(c) Microsoft Corporation. Tous droits réservés.

C:\Users\lecomtei>cd c:/Projects/capsis4

c:\Projects\Capsis4>setmem 4096
Capsis will run with 4096 mega bytes available
c:\Projects\Capsis4>
```

5. Run Hi-sAFe

To check Hi-sAFe is correctly installed, you can run a simple example provided with the model.

Open a terminal and execute the following commands:

```
#under windows
cd c:/Projects/capsis4
capsis -p script safe.pgms.ScriptGen C:/capsis4/data/safe/simSettings/exemple/exemple.sim
```

```
#under Linux / Mac OS X
cd c:/Projects/capsis4
sh capsis.sh -p script safe.pgms.ScriptGen C:/capsis4/data/safe/simSettings/exemple/exemple.sim
```

Replace Capsis4 by your own directory path

```
Sélection Invite de commandes - capsis -p script safe.pgms.ScriptGen C:/Projects/capsis4/data/safe/simSettings/exemple/exemple.sim
Microsoft Windows [version 10.0.19043.1466]
(c) Microsoft Corporation. Tous droits réservés.

C:\Users\lecomtei>cd c:/Projects/capsis4

c:\Projects\Capsis4>capsis -p script safe.pgms.ScriptGen C:/Projects/capsis4/data/safe/simSettings/exemple/exemple.sim
Script: splashscreen was deactivated
PathManager installDir: C:\Projects\Capsis4
Logger capsis writes in: C:\Projects\Capsis4\var\capsis.log
-> OS/JVM/memory: windows/64/4096m
Gestion mémoire (GC): PS Scavenge, PS MarkSweep
Capsis 4.2.6, (c) 2000-2020 F. de Coligny, N. Beudez, S. Dufour-Kowalski (INRAE-AMAP) and the Capsis modellers
Capsis comes with ABSOLUTELY NO WARRANTY
The core of the Capsis platform (packages capsis.*) is free software
and you are welcome to redistribute it under certain conditions.
Some components in other packages may not be free. See licence files.

Logger extensionManager writes in: C:\Projects\Capsis4\var\extensionManager.log
Capsis 4.2.6-16007 with pilot capsis.script.Pilot: correct boot at 14 Feb 2022 11:29:52 CET
Working dir: C:\Projects\Capsis4

Launching script safe.pgms.ScriptGen...
pldFileName=C:\Projects\capsis4\data\safe\simSettings\exemple\plot.pld
weatherFile=C:\Projects\capsis4\data\safe\simSettings\exemple\restincl_A3-1995-2035.wth
mainCropSpeciesFileName=C:\Projects\capsis4\data\safe\simSettings\exemple\cropSpecies\maize.plt
interCropSpeciesFileName=C:\Projects\capsis4\data\safe\simSettings\exemple\cropSpecies\baresoil.plt
***** Simulation 1

Step=1 JulianDay=1 Date=1/1/1997
Planting Tree ID=1
Step=2 JulianDay=2 Date=2/1/1997
Step=3 JulianDay=3 Date=3/1/1997
Step=4 JulianDay=4 Date=4/1/1997
Step=5 JulianDay=5 Date=5/1/1997
Step=6 JulianDay=6 Date=6/1/1997
Step=7 JulianDay=7 Date=7/1/1997
Step=8 JulianDay=8 Date=8/1/1997
Step=9 JulianDay=9 Date=9/1/1997
Step=10 JulianDay=10 Date=10/1/1997
```

6. Common issues

6.1 No installation rights

If you do not have administration rights to install new software on your computer, you have to ask your administration to grant you the rights to do it.

6.2 Wrong version of JAVA

Check you have the **64bit JRE** installed (not 32 bit)

Type java – version

The answer has to be

```
Microsoft Windows [version 10.0.19043.1466]
(c) Microsoft Corporation. Tous droits réservés.

C:\Users\lecomtei>java -version
java version "1.8.0_241"
Java(TM) SE Runtime Environment (build 1.8.0_241-b07)
Java HotSpot(TM) 64-Bit Server VM (build 25.241-b07, mixed mode)
```

6.3 Wrong path for running Hi-sAFe

```
Microsoft Windows [version 10.0.19043.1466]
(c) Microsoft Corporation. Tous droits réservés.

C:\Users\lecomtei>capsis -p script safe.pgms.ScriptGen D:/Simulations/exemple/exemple.sim
'capsis' n'est pas reconnu en tant que commande interne
ou externe, un programme exécutable ou un fichier de commandes.

C:\Users\lecomtei>
```

Go to the capsis4 folder installation folder before running Hi-sAFe

```
Invite de commandes

Microsoft Windows [version 10.0.19043.1466]
(c) Microsoft Corporation. Tous droits réservés.

C:\Users\lecomtei>cd c:/Projects/capsis4

c:\Projects\capsis4>capsis -p script safe.pgms.ScriptGen C:/Projets/capsis4/data/safe/simSettings/exemple/exemple.sim
Script: splashscreen was deactivated
PathManager installDir: C:\Projects\capsis4
Logger capsis writes in: C:\Projects\capsis4\var\capsis.log
-> OS/JVM/memory: windows/64/4096m
Gestion mémoire (GC): PS Scavenge, PS MarkSweep
Capsis 4.2.7, (c) 2000-2021 F. de Coligny, N. Beudez, S. Dufour-Kowalski (INRAE-AMAP) and the Capsis modellers
Capsis comes with ABSOLUTELY NO WARRANTY
The core of the Capsis platform (packages capsis.*) is free software
and you are welcome to redistribute it under certain conditions.
Some components in other packages may not be free. See licence files.

Logger extensionManager writes in: C:\Projects\capsis4\var\extensionManager.log
Capsis 4.2.7-18091 with pilot capsis.script.Pilot: correct boot at 14 Feb 2022 10:56:32 CET
Working dir: C:\Projects\capsis4

Launching script safe.pgms.ScriptGen...
pldFileName=C:\Projets\capsis4\data\safe\simSettings\exemple\AF.pld
C:\Projets\capsis4\data\safe\simSettings\exemple\treeSpecies\walnut-hybrid_V0.tree
C:\Projets\capsis4\data\safe\simSettings\exemple\treeSpecies\walnut-hybrid_V0.tree
exportFile=C:\Projets\capsis4\data\safe\simSettings\exemple\export.out
weatherFile=C:\Projets\capsis4\data\safe\simSettings\exemple\weather_1995_2035.wth
mainCropSpeciesFileName=C:\Projets\capsis4\data\safe\simSettings\exemple\cropSpecies\durum-wheat.plt
interCropSpeciesFileName=C:\Projets\capsis4\data\safe\simSettings\exemple\cropSpecies\baresoil.plt
***** Simulation 1

Step=1 JulianDay=185 Date=4/7/1995
```

6.4 Wrong simulation file name

```
Invite de commandes
C:\Users\lecomtei>cd c:/Projects/capsis4
c:\Projects\capsis4>capsis -p script safe.pgms.ScriptGen C:/Projects/capsis4/data/safe/simSettings/exemple/wrong-name.sim
Script: splashscreen was deactivated
PathManager installDir: C:\Projects\capsis4
Logger writes in: C:\Projects\capsis4\var\capsis.log
-> OS/JVM/memory: windows/64/4096m
Gestion mUmoire (GC): PS Scavenge, PS MarkSweep
Capsis 4.2.7, (c) 2000-2021 F. de Coligny, N. Beudez, S. Dufour-Kowalski (INRAE-AMAP) and the Capsis modellers
Capsis comes with ABSOLUTELY NO WARRANTY
The core of the Capsis platform (packages capsis.*) is free software
and you are welcome to redistribute it under certain conditions.
Some components in other packages may not be free. See licence files.

Logger extensionManager writes in: C:\Projects\capsis4\var\extensionManager.log
Capsis 4.2.7-18091 with pilot capsis.script.Pilot: correct boot at 14 Feb 2022 11:05:25 CET
Working dir: C:\Projects\capsis4

Launching script safe.pgms.ScriptGen...
java.lang.reflect.InvocationTargetException
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(Unknown Source)
    at sun.reflect.DelegatingMethodAccessorImpl.invoke(Unknown Source)
    at java.lang.reflect.Method.invoke(Unknown Source)
    at capsis.script.Pilot.runC4Script(Pilot.java:122)
    at capsis.script.Pilot.start(Pilot.java:111)
    at capsis.app.Starter.start(Starter.java:169)
    at capsis.app.Starter.main(Starter.java:197)
Caused by: java.lang.Exception: Wrong simulation file name: C:/Projects/capsis4/data/safe/simSettings/exemple/wrong-name.sim
    at safe.pgms.ScriptGen.<init>(ScriptGen.java:82)
    at safe.pgms.ScriptGen.main(ScriptGen.java:54)
    ... 8 more
c:\Projects\capsis4>
```

Check the path you type is the right one, the name of the folders and sim file are correctly spell, and that there is no white spaces or forbidden characters in the folder names and sim file names.

6.5 Missing parameter or initialization issue

```
Launching script safe.pgms.ScriptGen...
pldFileName=D:\Simulations\exemple/MC.pld
Missing plot parameters : latitude
null
STAND initialisation problem ... simulation is canceled !
C
```

```
Launching script safe.pgms.ScriptGen...
pldFileName=D:\Simulations\exemple/AF.pld
D:\Simulations\exemple\treeSpecies/walnut-hybrid_V1.tree
age=3
exportFile=D:\Simulations\exemple/export.out
weatherFile=D:\Simulations\exemple/weather-1994-2018.wth
mainCropSpeciesFileName=D:\Simulations\exemple/cropSpecies/durum-wheat.plt
interCropSpeciesFileName=D:\Simulations\exemple/cropSpecies/baresoil.plt
***** Simulation 1

Tree planting with no roots
null
Tree planting problem... simulation is canceled !
C
```

Correct the problem and run again

7. More documentation

For more documentation and information about Hi-sAFé:

<https://www1.montpellier.inra.fr/wp-inra/hi-safe/en/>

<https://github.com/hisafe/hisafe/tree/master/doc>