

BEAGLE

Installation (Beagle 3 recommended)

Before Beagle, get JAVA

Beagle need at least JAVA 1.8 to run. If you are not sure whether you have JAVA on your machine or not, you may use **Internet Explorer** to open the “verify java” webpage (Google it). Install if necessary. Update is optional.

Get Beagle

Beagle 3 <https://faculty.washington.edu/browning/beagle/b3.html>

Beagle 4 <https://faculty.washington.edu/browning/beagle/beagle.html>

Download the .jar file, and put it under your working directory. There is no need for “installing Beagle”. We will run it from R.

Execution

In R, use the following code to execute Beagle:

```
system("beagle-jar C:/...../beagle.jar unphased=test.bgl missing=? out=test1" )
```

“...” is the working directory.

Trouble Shooting

1. If you have messages like “'java' is not recognized as an internal or external command, operable program or batch file.”, or “Error: could not open `C:\Program Files \Java \jre1.8.0_121 \lib \amd64 \jvm.cfg' ”. You should check if you have Java runtime environment installed properly:

For **Windows** users

- a.) First you should go to your command-line environment (press windows+r simultaneously, then press ‘OK’ after typing ‘cmd’ in the textfield). Then type command ‘java -version’ to check if you have the latest version of JRE, and if your system is able to locate it.
- b.) It should return a message like:

```
java version "1.8.0_121"  
Java(TM) SE Runtime Environment (build 1.8.0_121-b13)  
Java HotSpot(TM) 64-Bit Server VM (build 25.121-b13, mixed mode)
```
- c.) If not, you should reinstall JRE from <https://java.com/en/download/>, the website will direct you to download a proper installer.
- d.) If it still not work, you should edit your environment variable: PATH.

Your system will search for the executable files among those paths stored in the variable PATH whenever a command/function is called, such as Java, Python or R. Sometime your software doesn’t work well is simply because the installation path doesn’t exist in the PATH. All we need to do is to add the path into variable PATH.

- e.) In general, the executable Java should locate in the path: `C:\Program Files \Java \jre1.x.x_xxx\bin` or `C:\ProgramData\Oracle\Java\javapath`, it differs by cases. Copy the path to the clipboard.

f.) Open System in the control panel -> Advanced system settings -> Environment variables (in the tab 'Advanced') -> double click 'Path' variable in the 'System variables' section to add your Java path into the variable

g.) Done

For **Mac OS/Linux** users

a.) Search keyword "terminal" in your system, and open it.

b.) Type command 'java -version' to check if you have the latest version of JRE, and if your system is able to locate it.

c.) It should return a message like :

```
java version "1.8.0_121"  
Java(TM) SE Runtime Environment (build 1.8.0_121-b13)  
Java HotSpot(TM) 64-Bit Server VM (build 25.121-b13, mixed mode)
```

If it still not work, you should edit your environment variable: PATH.

d.) Type 'which java' in the terminal, then copy the path. Next type `PATH=$PATH:java>` (e.g. `'PATH=$PATH:/usr/bin'`) to add path to the variable.

e.) Done

2. If the message you have is like "unrecognized parameter: missing.

a.) You have to check the user manual carefully to have parameter values set properly. For example, in the version 4.1, parameter 'unphased' is no longer used in Beagle. It uses 'gl' or 'gt' instead.

b.) User manual:

3.3.2: https://faculty.washington.edu/browning/beagle/beagle_3.3.2_31Oct11.pdf

4.1: https://faculty.washington.edu/browning/beagle/beagle_4.1_21Jan17.pdf

Examples of Launching Beagle :

3.3.2: `java -Xmx2g -jar beagle.21Jan17.6cc.jar unphased=test.bgl missing=? out=beagle.out`

4.1: `java -Xss5m -Xmx2g -jar beagle.21Jan17.6cc.jar gl=test.bgl out=beagle.out`

Acknowledgement: thanks James Chen for drafting this Beagle help file.