

## Tips for Running LightSIDE on Mac

1. **Install Java 8** (also called "Java 1.8"). **You must use Java 8 for LightSIDE.** If you will have multiple versions of Java, after you install Java 8 you can manage your Java versions using a tool like jEnv, for which instructions are provided on page 3. Alternatively, it is simpler to remove other Java versions from your system.
  - a. Determine whether your Mac has an Intel (x64) processor or a (newer) M1 (ARM) processor: Click on the Apple menu in the upper left corner of your screen, select "About this Mac," and check the processor specification.
  - b. If you have an **Intel processor**:
    - i. Most users can install Java 8 using Homebrew as follows:
      1. If you don't have the Homebrew package manager installed, install it as follows:
        - a. Open a terminal window.
        - b. Enter the following command:

```
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install.sh)"
```
        - c. Follow the prompts.
      2. Install Java 8:
        - a. Open a terminal window.
        - b. Enter the following command:

```
brew install --cask temurin8
```
        - c. Follow any prompts.
    - ii. If you cannot use Homebrew due to regional web restrictions, you can install Java 8 from Oracle using the "macOS," "x64 DMG Installer" link at this address: <https://www.oracle.com/java/technologies/javase/javase-jdk8-downloads.html>

***If you have an M1 processor, see page 2 for Java 8 installation instructions***

### ***After Java 8 installation:***

- *If you have more than one Java, see page 3 for jEnv instructions.*
- *See page 4 for instructions on running LightSIDE*

c. If you have an **M1 processor**:

- i. At <https://www.azul.com/downloads/?version=java-8-lts&os=macos&architecture=arm-64-bit&package=jdk>, download Java 8 by selecting "Choose Your Download" and selecting
  - Java Version: *Java 8 (LTS)*
  - Operating System: *macOS*
  - Architecture: *ARM 64-bit*
  - Java Package: *JDK*
- ii. If you downloaded the file using Safari, it may automatically unpack it for you. Otherwise, double-click the file to unpack it.
- iii. Move the unpacked directory (with all subdirectories and files) to where you would like to install it. This is your **installation directory**. E.g., */Applications/zulu8.60.0.21-ca-jdk8.0.322-macosx\_aarch64*.
- iv. **Only if you will not have more than one Java**: This instruction assumes you are using Z-shell, which is the default shell on newer Macs (your terminal window likely includes "zsh" in the top ribbon). Instructions for other shells like Bash are similar.
  1. Add the following lines to the bottom of the .zshrc file in your home directory – e.g., */Users/yourID/.zshrc*. If there is no .zshrc file there, create one.

```
export PATH="<installation directory>/bin:$PATH"
```

    - e.g., *export PATH="/Applications/zulu8.60.0.21-ca-jdk8.0.322-macosx\_aarch64/bin:\$PATH"*

```
export JAVA_HOME=<installation directory>/Contents/Home
```

    - e.g., *export JAVA\_HOME=/Applications/zulu8.60.0.21-ca-jdk8.0.322-macosx\_aarch64/Contents/Home*
  2. Restart your terminal.

**After Java 8 installation:**

- If you have more than one Java, see page 3 for **jEnv** instructions.
- See page 4 for instructions on running *LightSIDE*

## 2. If you have more than one Java, you can manage them by installing and using jEnv.

### a. Install jEnv

- i. Most users can install jEnv using Homebrew as follows:
  1. If you don't have the Homebrew package manager installed, install it as follows:
    - a. Open a terminal window.
    - b. Enter the following command:

```
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install.sh)"
```
    - c. Follow the prompts.
  2. Install jEnv
    - a. Open a terminal window.
    - b. Enter the following commands:

```
brew install jenv
```
    - c. Follow any prompts.
- ii. If you cannot use Homebrew due to regional web restrictions, you can install jEnv by following the alternative instructions at this address:  
<https://github.com/jenv/jenv>.
- iii. After jEnv is installed, enter the command `jenv enable-plugin export`

### b. Use jEnv

- i. Add Java versions to jEnv: Add the .../Contents/Home directories of your Java versions to jEnv. E.g.:
  - `jenv add /Library/Java/JavaVirtualMachines/adoptopenjdk-8.jdk/Contents/Home`
  - `jenv add /Applications/zulu8.60.0.21-ca-jdk8.0.322-macosx_aarch64/zulu-8.jdk/Contents/Home`
- ii. Use a Java version 8 in for LightSIDE:
  1. Navigate to the directory where LightSIDE is installed.
  2. List Java versions that are managed by jEnv: `jenv versions`  
Sample result  
system  
\* 17.0.2  
openjdk64-1.8.0.322
  3. Select a Java 8 version to use in the current directory. E.g.:  
`jenv local openjdk64-1.8.0.322`

***See page 4 for instructions on running LightSIDE***

### 3. Run LightSIDE.

**Finder method** – If this method doesn't work for you, try the Terminal Method below.

- a. Open a Finder window.
- b. Navigate to the directory where LightSIDE is installed – the same directory that this document is in. E.g., Applications/lightside.
- c. Right-click on file LightSIDE.command. LightSIDE is not registered with Apple, so you may get a message that it is from an unidentified developer.
- d. Select "Open" from the shortcut menu.
- e. Click "Open".

#### **Terminal Method**

- a. In a terminal window, navigate to the directory where LightSIDE was downloaded (or if you moved it, where it is installed) – the same directory that this document is in. E.g.: `cd ~/Applications/lightside`
- b. If you have more than one version of Java and if you are using jEnv to manage them (see page 3), the following is required only once per directory.

1. Navigate to the directory where LightSIDE is installed.
2. List Java versions that are managed by jEnv: `jenv versions`

##### Sample result

```
system
* 17.0.2
openjdk64-1.8.0.322
```

3. Select a Java 8 version to use in the current directory. E.g.:

```
jenv local openjdk64-1.8.0.322
```

- c. Enter: `./LightSIDE.command`. (Include the period "." at the beginning of the command.)
- d. If you get a "operation not permitted" response, you may have to give your terminal "Full Disk Access":
  1. Make sure your username has administrative privileges on your computer.
  2. Select System Preferences => Security & Privacy => Privacy Tab
  3. Select "Full Disk Access" on the left, then select "Terminal" and any other applications that should have full disk access on the right. You will have to restart the application(s) (e.g., restart Terminal) for full disk access to take effect.