



How to install JAVA JDK



The goal of this page is to describe the OpenJDK installation procedure on your STM32 MPU board and (native) desktop, in a Distribution Package environment. It is the "Open Standard Edition Java Development Kit" installation process. According to the OpenstLinux Weston software architecture, **XWayland** is used for all Java applications based on **X11**, which means **AWT /SWING** Java display/graphical applications. By default the Java Development Kit is installed on the rootfs partition of the target.



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1 Prerequisites

1.1 Hardware prerequisites

- STM32MP157x-DKx Discovery kit  Or aSTM32MP157x-EV1 Evaluation board 
- a keyboard and a mouse connected to the board

1.2 Software prerequisites

The STM32MP1 Distribution Package must be installed on your host. To do this, follow the procedure described in the [Install the STM32MP1 OpenSTLinux distribution](#) article.



The Host OS Ubuntu release 18.04 and next is required



2 The yoctoproject meta-java

JAVA for Linux-based embedded systems is available as metadata in the Yocto project.

- Clone the following git repository into [your STM32MP1 Distribution path]/layers

```
PC $>cd [your STM32MP1 Distribution path]/layers
PC $>git clone git://git.yoctoproject.org/meta-java
```

Depending on the Yocto release, select the right branch. (for example, branch dunfell for the ecosystem release v2.0.0)



The last commit tested is cf9604a4789801d9dfb0cb8ca134ff04b42ae161 : openjdk-8: remove -Werror

```
PC $>cd meta-java
PC $>git checkout remotes/origin/dunfell
```

You can see the list of available Yocto branches with the following command:

```
PC $>cd meta-java
PC $>git branch -a

master
remotes/origin/HEAD -> origin/master
remotes/origin/dora
remotes/origin/dunfell
remotes/origin/g0hlln/jdk14
remotes/origin/krogoth
remotes/origin/master
remotes/origin/master-next
remotes/origin/morty
remotes/origin/pyro
remotes/origin/rocko
remotes/origin/sumo
remotes/origin/thud
remotes/origin/warrior
remotes/origin/zeus
```

- If not already done, set up your build environment

```
PC $> cd [your STM32MP1 Distribution path]
PC $> source layers/meta-st/scripts/envsetup.sh
(Select for the DISTRO openstlinux-weston and for MACHINE stm32mp1)
```

- Add the meta layer in your Yocto environment

```
PC $> cd [your STM32MP1 Distribution path]/build-openstlinuxweston-stm32mp1
PC $> bitbake-layers add-layer [your STM32MP1 Distribution path]/meta-st/meta-java
```

- Define at least the following variables in your local.conf file



```
([your STM32MP1 Distribution path]/build-openstlinuxweston-stm32mp1/conf/local.conf)
```

```
#Possible provider: cacao-initial-native and jamvm-initial-native  
PREFERRED_PROVIDER_virtual/java-initial-native = "cacao-initial-native"
```

```
#Possible provider: cacao-native and jamvm-native  
PREFERRED_PROVIDER_virtual/java-native = "jamvm-native"
```

```
#Optional since there is only one provider for now  
PREFERRED_PROVIDER_virtual/javac-native = "ecj-bootstrap-native"
```

- Include in your image the **openjdk-8** component

```
PC $> cd [your STM32MP1 Distribution path]/meta-st/meta-st-openstlinux/recipes-st/images
```

- Edit the file `st-image-weston.bb` and add the following line under `CORE_IMAGE_EXTRA_INSTALL`

```
openjdk-8 \  
openjdk-8-demo \  

```

- Build the image

```
PC $> cd [your STM32MP1 Distribution path]/build-openstlinuxweston-stm32mp1  
PC $> bitbake st-image-weston
```



3 Compilation and execution of some JAVA demos

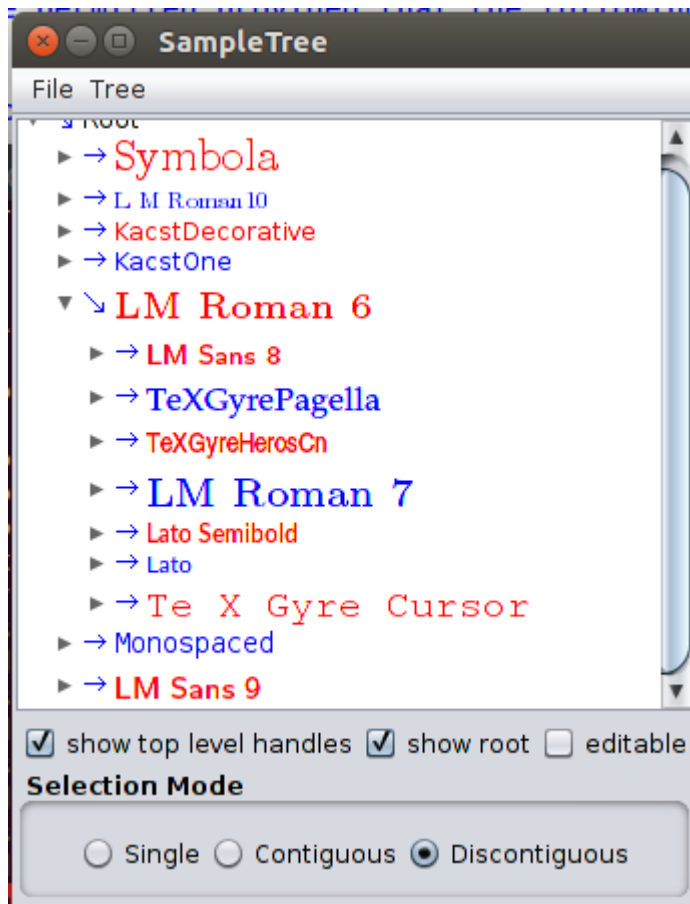
- **forkjoin** benchmark Java application

```
Board $> cd /usr/lib/jvm/openjdk-8/sample/forkjoin/mergesort
Board $> javac MergeDemo.java
Board $> java MergeDemo 200 100 3 1 1 3
Running with parameters: 200 100 3 1 1 3
Time in milliseconds. Y-axis: number of elements. X-axis parallelism used.
      1    2    3
200:  10    7    8
300:  17   12   12
400:  20   14   14
Total: 47   33   34
```

- **SampleTree** Java application

Read the README.txt file for details. To execute in a Linux Weston console on the board, with a keyboard and a mouse.

```
Board $> cd /usr/lib/jvm/openjdk-8/demo/jfc/SampleTree
Board $> java -jar SampleTree.jar
```





Microprocessor Unit

Operating System

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