



Install the SDK



Contents

1. Install the SDK	3
2. OpenSTLinux licenses	8



Install the SDK

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1 Overview

This stage explains how to install the SDK.

The SDK for OpenSTLinux distribution provides a stand-alone cross-development toolchain and libraries tailored to the contents of the specific image flashed in the board.

2 Host computer configuration

2.1 Install extra package

In order to do basic development tasks or basic cross-compilation, some extra Ubuntu packages should be installed:

```
PC $> sudo apt-get update
PC $> sudo apt-get install sed wget curl cvs subversion git-core coreutils unzip
texi2html texinfo docbook-utils gawk python-pysqlite2 diffstat help2man make gcc build-
essential g++ desktop-file-utils chrpath libxml2-utils xmlto docbook bsdmainutils
iputils-ping cpio python-wand python-pycryptopp python-crypto
PC $> sudo apt-get install libstdc++6-dev xterm corkscrew nfs-common nfs-kernel-server
device-tree-compiler mercurial u-boot-tools libarchive-zip-perl
PC $> sudo apt-get install ncurses-dev bc linux-headers-generic gcc-multilib
libncurses5-dev libncursesw5-dev lrzsz dos2unix lib32ncurses5 repo libssl-dev
PC $> sudo apt-get install default-jre
```

2.2 Additionnal configurations

- Allow up to 16 partitions per mmc

By default, on Linux system, a maximum of 8 partitions are allowed on mmc. All Packages (Starter Package, ...) need more than 10 partitons for the storage device. In order to extend the number of partitions per device to 16, the following options must be added to modprobe:

```
PC $> echo 'options mmc_block perdev_minors=16' > /tmp/mmc_block.conf
PC $> sudo mv /tmp/mmc_block.conf /etc/modprobe.d/mmc_block.conf
```



3 Download the SDK

The software package is provided AS IS, and by downloading it, you agree to be bound to the terms of the [software license agreement \(SLA\)](#). The detailed content licenses can be found [here](#).

3.1 For ecosystem release v1.2.0

- Download the [STM32MP15-Ecosystem-v1.2.0 Developer Package SDK](#) into the following directory: **\$HOME/STM32MPU_workspace/tmp**
- Uncompress the tarball file to get the SDK installation script

```
PC $> cd $HOME/STM32MPU_workspace/tmp
PC $> tar xvf en.SDK-x86_64-stm32mp1-openstlinux-20-02-19.tar.xz
```

3.2 For ecosystem release v1.1.0

- Download the [STM32MP15-Ecosystem-v1.1.0 Developer Package SDK](#) to the following directory: **\$HOME/STM32MPU_workspace/tmp**
- Uncompress the tarball file to get the SDK installation script

```
PC $> cd $HOME/STM32MPU_workspace/tmp
PC $> tar xvf en.SDK-x86_64-stm32mp1-openstlinux-4.19-thud-mp1-19-10-09.tar.xz
```

3.3 For ecosystem release v1.0.0

- Download the [STM32MP15-Ecosystem-v1.0.0 Developer Package SDK](#) to the following directory: **\$HOME/STM32MPU_workspace/tmp**
- Uncompress the tarball file to get the SDK installation script

```
PC $> cd $HOME/STM32MPU_workspace/tmp
PC $> tar xvf en.SDK-x86_64-stm32mp1-openstlinux-4.19-thud-mp1-19-02-20.tar.xz
```

4 Run the SDK installation script

4.1 For ecosystem release v1.2.0

- Create your STM32MP15 Developer Package SDK directory on your host computer

```
PC $> mkdir -p $HOME/STM32MPU_workspace/STM32MP15-Ecosystem-v1.2.0/Developer-Package/SDK
```

- Change the permissions of the SDK installation script so that it is executable



Install the SDK

```
PC $> chmod +x $HOME/STM32MPU_workspace/tmp/stm32mp1-openstlinux-20-02-19/sdk/st-image-weston-openstlinux-weston-stm32mp1-x86_64-toolchain-2.6-openstlinux-20-02-19.sh
```

- Execute the SDK installation script

```
PC $> $HOME/STM32MPU_workspace/tmp/stm32mp1-openstlinux-20-02-19/sdk/st-image-weston-openstlinux-weston-stm32mp1-x86_64-toolchain-2.6-openstlinux-20-02-19.sh -d $HOME/STM32MPU_workspace/STM32MP15-Ecosystem-v1.2.0/Developer-Package/SDK
```

- A successful installation outputs the following log:

```
ST OpenSTLinux - Weston - (A Yocto Project Based Distro) SDK installer version 2.6-openstlinux-20-02-19
=====
You are about to install the SDK to "/local/home/frq08927/STM32MPU_workspace/STM32MP15-Ecosystem-v1.2.0/Developer-Package/SDK". Proceed[Y/n]? Y
Extracting SDK.....
..done
Setting it up...done
SDK has been successfully set up and is ready to be used.
Each time you wish to use the SDK in a new shell session, you need to source the environment setup script e.g.
$ ./<working directory absolute path>/STM32MPU_workspace/STM32MP15-Ecosystem-v1.2.0/Developer-Package/SDK/environment-setup-cortexa7t2hf-neon-vfpv4-ostl-linux-gnueabi
```

4.2 For ecosystem release v1.1.0

- Create your STM32MP15 Developer Package SDK directory on your host computer

```
PC $> mkdir $HOME/STM32MPU_workspace/STM32MP15-Ecosystem-v1.1.0/Developer-Package
PC $> mkdir -p $HOME/STM32MPU_workspace/STM32MP15-Ecosystem-v1.1.0/Developer-Package/SDK
```

- Change the permissions of the SDK installation script so that it is executable

```
PC $> chmod +x $HOME/STM32MPU_workspace/tmp/stm32mp1-openstlinux-4.19-thud-mp1-19-10-09/sdk/st-image-weston-openstlinux-weston-stm32mp1-x86_64-toolchain-2.6-openstlinux-4.19-thud-mp1-19-10-09.sh
```

- Execute the SDK installation script

```
PC $> $HOME/STM32MPU_workspace/tmp/stm32mp1-openstlinux-4.19-thud-mp1-19-10-09/sdk/st-image-weston-openstlinux-weston-stm32mp1-x86_64-toolchain-2.6-openstlinux-4.19-thud-mp1-19-10-09.sh -d $HOME/STM32MPU_workspace/STM32MP15-Ecosystem-v1.1.0/Developer-Package/SDK
```

- A successful installation outputs the following log:



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```
ST OpenSTLinux - Weston - (A Yocto Project Based Distro) SDK installer version 2.6-
openstlinux-4.19-thud-mp1-19-10-09
=====
You are about to install the SDK to "/local/home/frq08927/STM32MPU_workspace/STM32MP15-
Ecosystem-v1.1.0/Developer-Package/SDK". Proceed[Y/n]? Y
Extracting SDK.....
.....
..done
Setting it up...done
SDK has been successfully set up and is ready to be used.
Each time you wish to use the SDK in a new shell session, you need to source the
environment setup script e.g.
$ ./<working directory absolute path>/STM32MPU_workspace/STM32MP15-Ecosystem-v1.1.0
/Developer-Package/SDK/environment-setup-cortexa7t2hf-neon-vfpv4-openstlinux_weston-
linux-gnueabi
```

4.3 For ecosystem release v1.0.0

- Create your STM32MP15 Developer Package SDK directory on your host computer

```
PC $> mkdir $HOME/STM32MPU_workspace/STM32MP15-Ecosystem-v1.0.0/Developer-Package
PC $> mkdir $HOME/STM32MPU_workspace/STM32MP15-Ecosystem-v1.0.0/Developer-Package/SDK
```

- Change the permissions of the SDK installation script so that it is executable

```
PC $> chmod +x $HOME/STM32MPU_workspace/tmp/stm32mp1-openstlinux-4.19-thud-mp1-19-02-20
/sdk/st-image-weston-openstlinux-weston-stm32mp1-x86_64-toolchain-2.6-openstlinux-4.19-
thud-mp1-19-02-20.sh
```

- Execute the SDK installation script

```
PC $> $HOME/STM32MPU_workspace/tmp/stm32mp1-openstlinux-4.19-thud-mp1-19-02-20/sdk/st-
image-weston-openstlinux-weston-stm32mp1-x86_64-toolchain-2.6-openstlinux-4.19-thud-
mp1-19-02-20.sh -d $HOME/STM32MPU_workspace/STM32MP15-Ecosystem-v1.0.0/Developer-
Package/SDK
```

- A successful installation outputs the following log:

```
ST OpenSTLinux - Weston - (A Yocto Project Based Distro) SDK installer version 2.6-
openstlinux-4.19-thud-mp1-19-02-20
=====
You are about to install the SDK to "/local/home/frq08927/STM32MPU_workspace/STM32MP15-
Ecosystem-v1.0.0/Developer-Package/SDK". Proceed[Y/n]? Y
Extracting SDK.....
.....
..done
Setting it up...done
SDK has been successfully set up and is ready to be used.
Each time you wish to use the SDK in a new shell session, you need to source the
environment setup script e.g.
$ ./<working directory absolute path>/STM32MPU_workspace/STM32MP15-Ecosystem-v1.0.0
/Developer-Package/SDK/environment-setup-cortexa7t2hf-neon-vfpv4-openstlinux_weston-
linux-gnueabi
```



5 Starting up the SDK



The SDK environment setup script must be run once in each new working terminal in which you cross-compile

For ecosystem release v1.2.0

```
PC $> cd $HOME/STM32MPU_workspace/STM32MP15-Ecosystem-v1.2.0/Developer-Package
PC $> source SDK/environment-setup-cortexa7t2hf-neon-vfpv4-ostl-linux-gnueabi
```

For ecosystem release v1.1.0

```
PC $> cd $HOME/STM32MPU_workspace/STM32MP15-Ecosystem-v1.1.0/Developer-Package
PC $> source SDK/environment-setup-cortexa7t2hf-neon-vfpv4-openstlinux_weston-linux-gnueabi
```

For ecosystem release v1.0.0

```
PC $> cd $HOME/STM32MPU_workspace/STM32MP15-Ecosystem-v1.0.0/Developer-Package
PC $> source SDK/environment-setup-cortexa7t2hf-neon-vfpv4-openstlinux_weston-linux-gnueabi
```

The following checkings allow to ensure that the environment is correctly setup:

- Check the target architecture

```
PC $> echo $ARCH
arm
```

- Check the toolchain binary prefix for the target tools

```
PC $> echo $CROSS_COMPILE
arm-ostl-linux-gnueabi- /* For ecosystem release v1.2.0  */
arm-openstlinux_weston-linux-gnueabi- /* For ecosystem release ≤ v1.1.0  */
```

- Check the C compiler version

```
PC $> $CC --version
arm-ostl-linux-gnueabi-gcc (GCC) 8.2.0 /* For ecosystem release v1.2.0  */
arm-openstlinux_weston-linux-gnueabi-gcc (GCC) 8.2.0 /* For ecosystem release ≤ v1.
```



Install the SDK

1.0 ⓘ */

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warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

- Check that the SDK version is the expected one

```
PC $> echo $OECORE_SDK_VERSION
```

```
2.6-openstlinux-20-02-19 /* For ecosystem release v1.2.0 ⓘ */
```

```
2.6-openstlinux-4.19-thud-mp1-19-10-09 /* For ecosystem release v1.1.0 ⓘ */
```

```
2.6-openstlinux-4.19-thud-mp1-19-02-20 /* For ecosystem release v1.0.0 ⓘ */
```

If any of these commands fails or does not return the expected result, please try to reinstall the SDK.

Software development kit (A programming package that enables a programmer to develop applications for a specific platform.)

Permission error

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