STM32MP1 Distribution Package - OpenSTLinux distribution

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This article aims to give the following information:

- How to download and install the **latest** OpenSTLinux distribution for the STM32 microprocessors Series
- Where to find the associated release note
- Where to find the previous releases (archives)

For more specific information, go through the Distribution Package article relative to your STM32 microprocessors Series: Category:Distribution Package

1 STM32MP15-Ecosystem-v1.1.0 release

- The STM32MP1 OpenSTLinux distribution is delivered through a manifest repository location and a manifest revision (**openstlinux-4.19-thud-mp1-19-10-09**).
- The installation relies on the *repo* command. In case the Repo tool (a Google-built repository management tool that runs on top of Git) is not yet installed and configured on the host PC, refer to the PC prerequisites article.
- The OpenSTLinux distribution is massively using open source software (OSS) packages that are downloaded from a variety of open source repositories; so it is required that the IT infrastructure proxies do not forbid such accesses. If some proxy-related issues are suspected, refer to the How to avoid proxy issues article.
- Install the STM32MP1 OpenSTLinux distribution

	STM32MP1 Distribution Package OpenSTLinux distribution - STM32MP15-Ecosystem-v1.1.0 release

Installation	• Go to the host PC directory where to install the Distribution Package (*<Distribution Package installation directory>*). Example, if following the proposition to organize the working directory:
	`$ cd <working directory path>/Distribution-Package`
	• Create the OpenSTLinux distribution installation sub-directory:
	`$ mkdir openstlinux-4.19-thud-mp1-19-10-09`
	`$ cd openstlinux-4.19-thud-mp1-19-10-09`
	• Initialize repo in the current directory (More details on 'repo init' here).
	`$ repo init -u https://github.com/STMicroelectronics/oe-manifest.git -b refs/tags/openstlinux-4.19-thud-mp1-19-10-09`

	STM32MP1 Distribution Package OpenSTLinux distribution - STM32MP15-Ecosystem-v1.1.0 release
	Note: "ERROR 404" may appear during "repo init" command without any impact on the process • Synchronize the local project directories with the remote repositories specified in the manifest (more details on 'repo sync' here) `$ repo sync` **Note:** *Distribution package* needs around 140MB to be installed (and around 25GB once *distribution package* is compiled).
Release note	Details about the content of this software package are available in the **associated** STM32MP15 ecosystem release note. If interested in previous releases, go through the archives of the ecosystem release note.

- The **OpenSTLinux distribution installation directory** is in the *<Distribution Package installation directory>, and is named* openstlinux-4.19-thud-mp1-19-10-09*:*

```
openstlinux-4.19-thud-mp1-19-10-09  OpenSTLinux distribution
├── layers
│   ├── meta-openembedded                Collection of layers for the OpenEmbedded-
Core universe (OpenEmbedded standard)
│   ├── meta-qt5                         QT5 layer for OpenEmbedded (standard)
│   ├── meta-st
│   │   ├── meta-st-openstlinux          STMicroelectronics layer that contains the
frameworks and images settings for the OpenSTLinux distribution
│   │   ├── meta-st-stm32mp              STMicroelectronics layer that contains the
description of the BSP for the STM32 MPU devices
│   │   │   ├── recipes-bsp
│   │   │   │   ├── alsa                 Recipes for ALSA control configuration
│   │   │   │   ├── drivers              Recipes for Vivante GCNANO GPU kernel drivers
│   │   │   │   ├── trusted-firmware-a   Recipes for TF-A
│   │   │   │   └── u-boot               Recipes for U-Boot
│   │   │   ├── recipes-extended
│   │   │   │   ├── linux-examples       Recipes for Linux examples for STM32 MPU
devices
│   │   │   │   ├── m4coredump           Recipes for script to manage coredump of
cortexM4
│   │   │   │   └── m4projects           Recipes for firmware examples for Cortex M4
│   │   │   ├── recipes-graphics
│   │   │   │   ├── gcnano-userland      Recipes for Vivante libraries OpenGL ES, Open
VG and EGL (multi backend)
│   │   │   │   └── [...]
│   │   │   ├── recipes-kernel
│   │   │   │   ├── linux                Recipes for Linux kernel
│   │   │   │   └── linux-firmware       Recipes for Linux firmwares (example,
Bluetooth firmware)
│   │   │   ├── recipes-security
│   │   │   │   └── optee                Recipes for OPTEE
│   │   │   ├── recipes-st
│   │   │   │   └── images               Recipes for the bootfs and userfs partitions
binaries
│   │   │   └── [...]
│   │   ├── meta-st-stm32mp-addons       STMicroelectronics layer that helps managing
the STM32CubeMX integration
│   │   └── scripts
│   │       ├── envsetup.sh              Environment setup script for Distribution
```

```
Package
│      │       └── [...]
│      ├── meta-timesys                    Timesys layer for OpenEmbedded (standard)
│      └── openembedded-core                Core metadata for current versions of OpenEmb
edded (standard)
```

2 Archives

2.1 STM32MP15-Ecosystem-v1.0.0 release

- The STM32MP1 OpenSTLinux distribution is delivered through a manifest repository location and a manifest revision (**openstlinux-4.19-thud-mp1-19-02-20**).
- The installation relies on the *repo* command. In case the Repo tool (a Google-built repository management tool that runs on top of Git) is not yet installed and configured on the host PC, refer to the PC prerequisites article.
- The OpenSTLinux distribution is massively using open source software (OSS) packages that are downloaded from a variety of open source repositories; so it is required that the IT infrastructure proxies do not forbid such accesses. If some proxy-related issues are suspected, refer to the How to avoid proxy issues article.
- Install the STM32MP1 OpenSTLinux distribution

	STM32MP1 Distribution Package OpenSTLinux distribution - STM32MP15-Ecosystem-v1.0.0 release

Installation	• Go to the host PC directory where to install the Distribution Package (*<Distribution Package installation directory>*). Example, if following the proposition to organize the working directory:
	`$ cd <working directory path>/Distribution-Package`
	• Create the OpenSTLinux distribution installation sub-directory:
	`$ mkdir openstlinux-4.19-thud-mp1-19-02-20`
	`$ cd openstlinux-4.19-thud-mp1-19-02-20`
	• Initialize repo in the current directory.
	Details:
	The below command downloads (in the *.repo* directory) the latest repo source code and a manifest file (*default.xml*) that describes the directory structure of the repositories for OpenSTLinux.
	The *-u* option specifies the manifest repository location, while the *-b* option specifies its branch.
	`$ repo init -u https://github.com/STMicroelectronics/oe-manifest.git -b refs/tags/openstlinux-4.19-thud-mp1-19-02-20`

	STM32MP1 Distribution Package OpenSTLinux distribution - STM32MP15-Ecosystem-v1.0.0 release
	Note: "ERROR 404" may appear during "repo init" command without any impact on the process • Synchronize the local project directories with the remote repositories specified in the manifest Details: If a local project does not yet exist, the command clones a new local directory from the remote repository and sets up tracking branches as specified in the manifest. If the local project already exists, the command updates the remote branches and rebases any new local changes on top of the new remote changes. `$ repo sync`
Release note	Details about the content of this software package are available in the **associated** STM32MP15 ecosystem release note. If interested in previous releases, go through the archives of the ecosystem release note.

- The **OpenSTLinux distribution installation directory** is in the *<Distribution Package installation directory>, and is named* openstlinux-4.19-thud-mp1-19-02-20*:*

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description of the BSP for the STM32 MPU devices
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│   │   │   │   ├── alsa                 Recipes for ALSA control configuration
│   │   │   │   ├── drivers              Recipes for Vivante GCNANO GPU kernel drivers
│   │   │   │   ├── trusted-firmware-a   Recipes for TF-A
│   │   │   │   └── u-boot               Recipes for U-Boot
│   │   │   ├── recipes-extended
│   │   │   │   ├── m4projects           Recipes for STM32Cube MPU Package within the
OpenSTLinux distribution
│   │   │   │   └── stlink               Recipes for STLink
│   │   │   ├── recipes-graphics
│   │   │   │   ├── gcnano-userland      Recipes for Vivante libraries OpenGL ES, Open
VG and EGL (multi backend)
│   │   │   │   └── [...]
│   │   │   ├── recipes-kernel
│   │   │   │   ├── linux                Recipes for Linux kernel
│   │   │   │   └── linux-firmware       Recipes for Linux firmwares (example,
Bluetooth firmware)
│   │   │   ├── recipes-security
│   │   │   │   └── optee                Recipes for OPTEE
│   │   │   ├── recipes-st
│   │   │   │   └── images               Recipes for the bootfs and userfs partitions
binaries
│   │   │   └── [...]
│   │   ├── meta-st-stm32mp-addons       STMicroelectronics layer that helps managing
the STM32CubeMX integration
```

```
│   │   └── scripts
│   │       ├── envsetup.sh              Environment setup script for Distribution
Package
│   │       └── [...]
│   ├── meta-timesys                     Timesys layer for OpenEmbedded (standard)
│   └── openembedded-core                Core metadata for current versions of OpenEmb
edded (standard)
```

Open Source Software

Board support package

Microprocessor Unit

Advanced Linux sound architecture

Graphics Processing Units

Trusted Firmware for Arm Cortex-A

Das U-Boot -- the Universal Boot Loader (see U-Boot_overview)

Open Graphics Library (See http://www.opengl.org/ for more details)

Open Vector Graphics (See http://www.khronos.org/openvg/ for more details)

Khronos Native Platform Graphics Interface (See http://www.khronos.org/egl/ for more details)

ST in-circuit debugger and programmer for the STM8 and STM32 microcontroller families (See ST-LINK for more details)