



Category:Embedded software components

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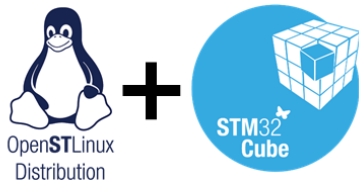
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This category groups together all articles and subcategories related to the software components designed for the STM32MPU microprocessor devices and their associated boards.

STMicroelectronics embedded software architectures

**What is the architecture of the software running on my STM32MPU board?
How can I configure the software for my needs?**

Click on the links in the frame below and let you drive!



**STM32MPU Embedded Software architecture
overview**



**STM32MPU Embedded Software for Android
architecture overview**



Subcategories

This category has the following 7 subcategories, out of 7 total.

- Architecture overview (5 P)
- Platform boot (3 C, 1 P)
- Platform security (2 C, 5 P)
- Platform configuration (2 C, 2 P)
- Linux Operating System (12 C, 1 P)
- STM32Cube MPU (2 C)
- Applications and UI frameworks (1 C, 2 P)



Pages in category "Embedded software components"

The following 2 pages are in this category, out of 2 total.

- [STM32MPU Embedded Software architecture overview](#)
- [STM32MPU Embedded Software for Android architecture overview](#)

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A quality version of this page, approved on *25 September 2020*, was based off this revision.

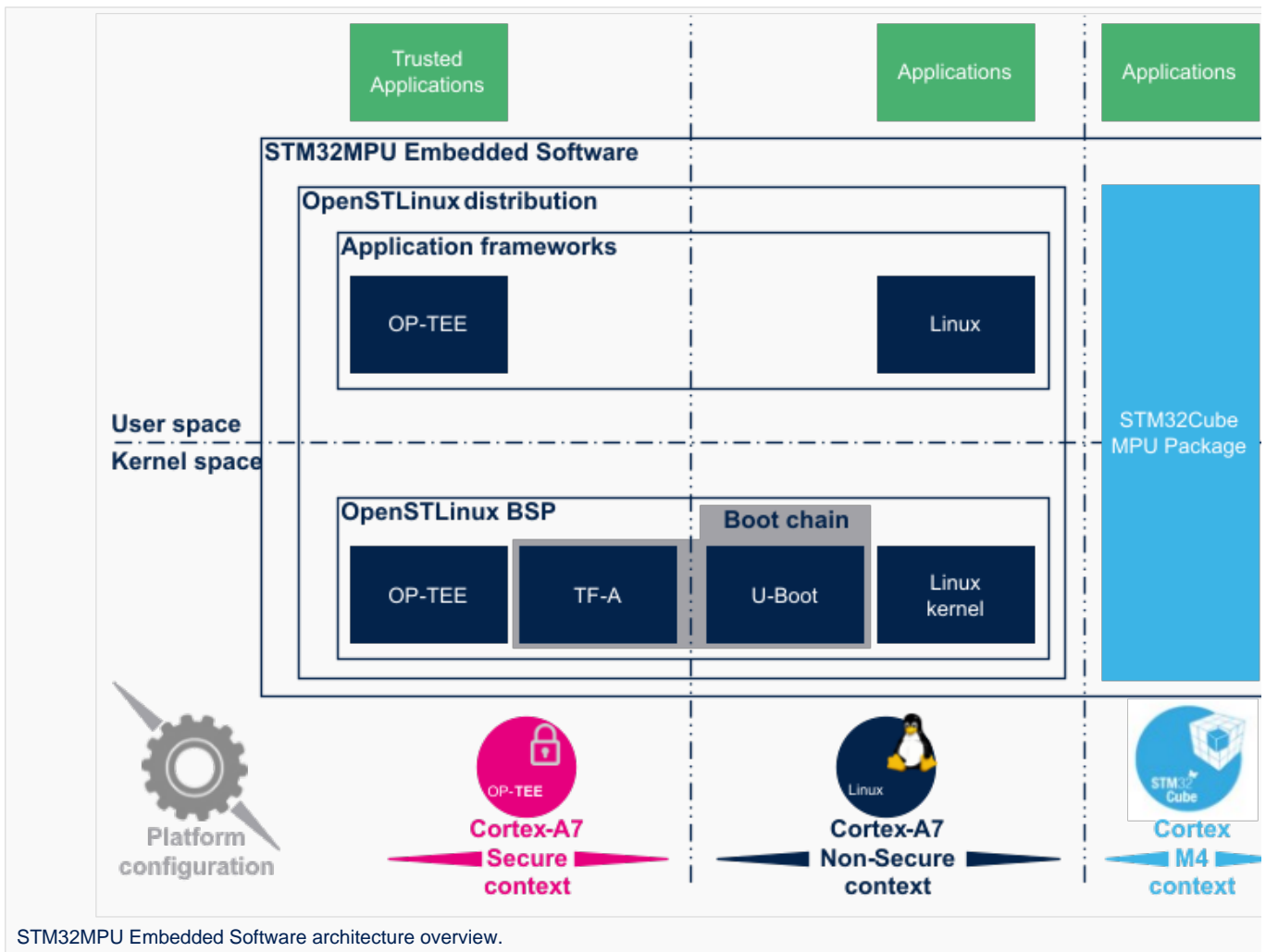


1 STM32MPU Embedded Software overview

The diagram below shows STM32MPU Embedded Software distribution main components:

- The **OpenSTLinux distribution**, running on the Arm[®]Cortex[®]-A, including:
 - The **OpenSTLinux BSP** with:
 - The **boot chain** based on TF-A and U-Boot.
 - The **OP-TEE** secure OS running on the Arm[®]Cortex[®]-A in secure mode.
 - The **Linux[®] kernel** running on the Arm[®]Cortex[®]-A in non-secure mode.
 - The **application frameworks** are composed of middlewares relying on the BSP and providing API:
 - on the **OP-TEE** side to run **Trusted Applications (TA)** that allow to manipulate secrets (not visible from the Linux and STM32Cube MPU Package)
 - on the **Linux** side to run **Applications** that typically interact with the user via the display, the touchscreen, etc.
- The **STM32Cube MPU Package** is running on the Arm[®]Cortex[®]-M: it is based on HAL drivers and middlewares, like other STM32 microcontrollers, completed with coprocessor management.

The figure below is clickable so that the user can directly jump to one of the sub-levels listed above.



STM32MPU Embedded Software architecture overview.



3rd Party		Legend
ST	Community	



2 Open Source Software (OSS) philosophy

The **Open source software** source code is released under a license in which the copyright holder grants users the rights to study, change and distribute the software to anyone and for any purpose^[1].

STMicroelectronics maximizes the using of open source software and contributes to those communities. Notice that, due to the software review life cycle, it can take some time before getting all developments accepted in the communities, so

STMicroelectronics can also temporarily provide some source code on github^[2], until it is merged in the targeted repository.



3 References

- https://en.wikipedia.org/wiki/Open-source_software
- STM32MP1 Distribution Package

Arm® is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.



Cortex®

Board support package

Operating System

Linux® is a registered trademark of Linus Torvalds.

Application programming interface

Open Portable Trusted Execution Environment

Trusted Application

Microprocessor Unit

Hardware Abstraction Layer

Open Source Software

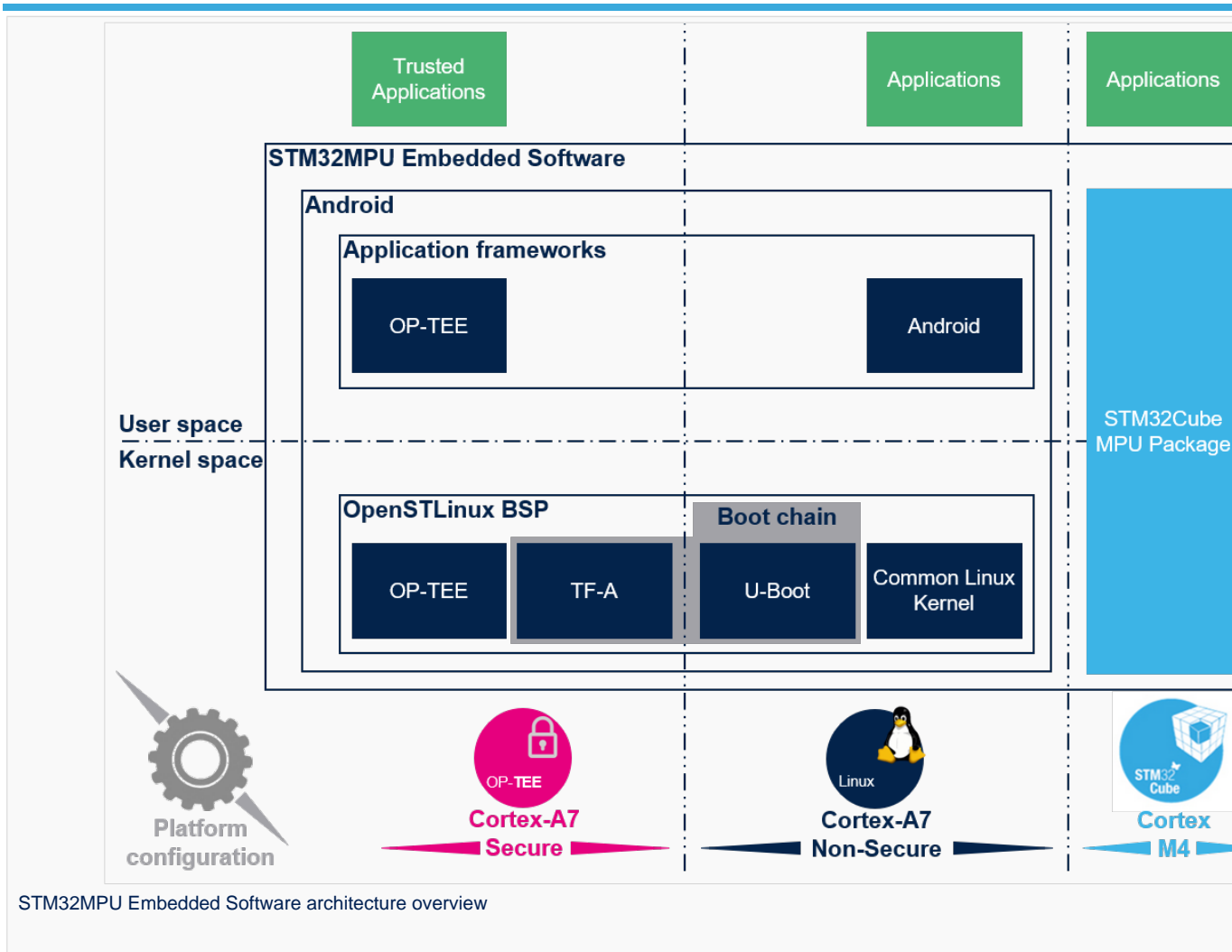
Stable: 15.02.2021 - 13:09 / Revision: 15.02.2021 - 13:03

A quality version of this page, approved on 15 February 2021, was based off this revision.

The diagram below shows STM32MPU Embedded Software distribution for Android main components:

- The **STM32MPU distribution for Android™** running on the Arm®Cortex®-A core. It includes:
 - The **OpenSTLinux BSP** consisting of:
 - The boot chain based on TF-A and U-Boot.
 - The OP-TEE secure OS running on the Arm®Cortex®-A in Secure mode.
 - The Linux® kernel running on the Arm®Cortex®-A in Non-secure mode.
 - **Application frameworks** composed of middleware components relying on the BSP and providing a set of APIs:
 - **OP-TEE** APIs to run **Trusted Applications (TA)** that allow manipulating secrets (information not visible from Linux® and from the STM32Cube MPU Package)
 - **Android** APIs to run **Applications** that typically interact with the user via a display or a touchscreen.
- The **STM32Cube MPU Package**, running on the Arm®Cortex®-M. As for STM32 MCUs, it is based on HAL drivers and middleware components and completed with a coprocessor management module.

The figure below provides an overview of the STM32MPU Embedded Software architecture. Click a sublevel block to jump to the corresponding article.





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2 References

- https://en.wikipedia.org/wiki/Open-source_software

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Board support package

Operating System

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Open Portable Trusted Execution Environment

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Microprocessor Unit

Hardware Abstraction Layer

Open Source Software