



How to



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A quality version of this page, approved on 7 September 2020, was based off this revision.



How to design products with STM32 MPU

Find out suggestions for designing products with STM32 MPU



How to customize software

Browse the tips to customize the delivered software for the STM32 MPU devices

Microprocessor Unit



How to build software

Find out suggestions for building software



How to populate boards

Find out suggestions for populating boards



How to run use cases

Discover the use cases that run on the STM32 MPU boards



How to run use cases with expansions

Use the STM32 MPU ecosystem with hardware and software expansions to build advanced use cases



How to trace and debug

Find out tips to trace, monitor and debug software components



How to Android

Browse the tips related to the Android distribution for the STM32 MPU devices

Stable: 17.06.2020 - 15:26 / Revision: 12.12.2019 - 13:30

A quality version of this page, approved on 17 June 2020, was based off this revision.

This category groups together articles explaining how to achieve some actions (building software, running use cases, debugging, and so on) for the STM32MPU Android Embedded Software distribution, and the STM32 MPUs microprocessor devices and boards.





Pages in category "How to Android"

The following 15 pages are in this category, out of 15 total.

- [How to add a custom service for Android](#)
- [How to build and install an SDK for Android](#)
- [How to build bootloaders for Android](#)
- [How to build kernel for Android](#)
- [How to build STM32MPU distribution for Android](#)
- [How to build TEE for Android](#)
- [How to change audio device for Android](#)
- [How to change Bluetooth device for Android](#)
- [How to change Wi-Fi device for Android](#)
- [How to create your own STM32MPU distribution for Android](#)
- [How to customize kernel for Android](#)
- [How to customize the STM32MPU distribution for Android](#)
- [How to optimize the boot time for Android](#)
- [How to populate boards for Android](#)
- [How to use coprocessor service for Android](#)

Stable: 17.06.2020 - 15:26 / Revision: 12.12.2019 - 13:22

A quality version of this page, approved on *17 June 2020*, was based off this revision.

This category groups together articles explaining how to build software for the STM32MPU Embedded Software distribution, and the STM32 MPUs microprocessor devices and boards.





Pages in category "How to build software"

The following 6 pages are in this category, out of 6 total.

- [How to build Linux kernel user space tools](#)
- [How to compile the device tree with the Developer Package](#)
- [How to create an SDK for OpenSTLinux distribution](#)
- [How to cross-compile with the Developer Package](#)
- [How to cross-compile with the Distribution Package](#)
- [How to integrate an external software package](#)

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A quality version of this page, approved on *17 June 2020*, was based off this revision.

This category groups together articles explaining how to customize software for the STM32MPU Embedded Software distribution, and the STM32 MPUs microprocessor devices and boards.





Pages in category "How to customize software"

The following 17 pages are in this category, out of 17 total.

- [How to add a customer application](#)
- [How to assign an internal peripheral to a runtime context](#)
- [How to avoid proxy issues](#)
- [How to change the CPU frequency](#)
- [How to compile the device tree with the Distribution Package](#)
- [How to configure system resources](#)
- [How to configure U-Boot for your board](#)
- [How to configure uniprocessor mode](#)
- [How to create a new open embedded layer](#)
- [How to create your board device tree](#)
- [How to create your own distribution](#)
- [How to create your own image](#)
- [How to customize the Linux kernel](#)
- [How to disable one CPU](#)
- [How to optimize the boot time](#)
- [How to protect the coprocessor firmware](#)
- [Menuconfig or how to configure kernel](#)

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A quality version of this page, approved on *4 March 2021*, was based off this revision.

This category groups together articles explaining how to design products with STM32 MPU.

It is recommended to first read the [How to create your product from design to manufacturing](#) article.



Microprocessor Unit



Pages in category "How to design products with STM32 MPU"

The following 4 pages are in this category, out of 4 total.

- [Bring-up troubleshooting grid](#)
- [How to bring-up a custom board : procedure](#)
- [How to create your product from design to manufacturing](#)
- [How to define your low-power strategy](#)

Stable: 17.06.2020 - 15:26 / Revision: 12.12.2019 - 13:24

A quality version of this page, approved on *17 June 2020*, was based off this revision.

This category groups together articles explaining how to populate the STM32 MPUs microprocessor boards with the binaries built for the different partitions.





Pages in category "How to populate boards"

The following 8 pages are in this category, out of 8 total.

- [How to populate and boot a board with OP-TEE](#)
- [How to populate the SD card with dd command](#)
- [How to transfer a file over network](#)
- [How to transfer a file over serial console](#)
- [How to transfer files using 'Tera Term'\(on Windows PC\) to Discovery Kit](#)
- [How to update OTP with U-Boot](#)
- [How to update U-Boot](#)
- [How to use STM32CubeProgrammer to populate a board](#)

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A quality version of this page, approved on *17 June 2020*, was based off this revision.

This category groups together articles explaining how to run use cases for the STM32MPU Embedded Software distribution, and the STM32 MPUs microprocessor devices and boards.





Pages in category "How to run use cases"

The following 29 pages are in this category, out of 29 total.

- [How to accelerate JPEG compression and decompression](#)
- [How to activate HSI and CSI oscillators calibration](#)
- [How to boot the kernel via TFTP from U-Boot](#)
- [How to calibrate the touchscreen](#)
- [How to configure a USB remote server with an STM32 MPU board](#)
- [How to configure the Weston keyboard layout](#)
- [How to configure Weston screen resolution](#)
- [How to display an image using Weston](#)
- [How to display on HDMI](#)
- [How to get video details](#)
- [How to launch glmark2 benchmark](#)
- [How to launch Khronos OpenGL ES conformance tests](#)
- [How to make a camera preview](#)
- [How to make a screen capture in Weston](#)
- [How to make a video capture of Weston desktop](#)
- [How to modify the panel backlight](#)
- [How to play a video](#)
- [How to play audio](#)
- [How to record audio](#)
- [How to start the coprocessor from the bootloader](#)
- [How to stop and start Weston](#)
- [How to stream camera over network](#)
- [How to support EXT4 through MMC](#)
- [How to support UBIFS through MTD](#)
- [How to test and benchmark OpenGL ES](#)
- [How to transfer a file over network](#)
- [How to transfer a file over serial console](#)
- [How to use SPI from Linux userland with spidev](#)
- [How to use USB mass storage in U-Boot](#)

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A quality version of this page, approved on 2 October 2020, was based off this revision.

This category groups together articles explaining how to run advanced use cases for which additional hardware (for example, [expansion boards](#)) and/or additional software (for example, [software expansion packages](#) and/or Yocto layers) are needed on top of the STM32MPU boards and the STM32MPU Embedded Software distributions







Pages in category "How to run use cases with expansions"

The following 12 pages are in this category, out of 12 total.

- [How to classify images with AI](#)
- [How to detect objects with AI](#)
- [How to exchange large data buffers with the coprocessor - example](#)
- [How to exchange large data buffers with the coprocessor - principle](#)
- [How to install a simple web browser](#)
- [How to install JAVA JDK](#)
- [How to install Node-RED](#)
- [How to integrate AWS IoT Greengrass](#)
- [How to integrate AWS IoT Greengrass on top of openSTLinux distribution](#)
- [How to measure acceleration and orientation](#)
- [How to measure temperature and humidity](#)
- [How to perform digital signature with TPM](#)

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This category groups together articles explaining how to trace, monitor and debug software components for the STM32MPU Embedded Software distribution, and the STM32 MPUs microprocessor devices and boards.





Pages in category "How to trace and debug"

The following 16 pages are in this category, out of 16 total.

- [How to access information in sysfs](#)
- [How to check that a device tree resource is correctly set](#)
- [How to debug Weston](#)
- [How to detect memory leaks](#)
- [How to diagnose a boot failure](#)
- [How to enable earlyprintk for Linux kernel](#)
- [How to find Linux kernel driver associated to a device](#)
- [How to get DRM KMS logs](#)
- [How to get name and current status of a DRM connector](#)
- [How to get Terminal](#)
- [How to monitor the display framerate](#)
- [How to monitor the GCNANO GPU load](#)
- [How to profile video framerate](#)
- [How to read or write peripheral registers](#)
- [How to retrieve Cortex-M4 logs after crash](#)
- [How to use the kernel dynamic debug](#)