# STM32CubeProgrammer release v2.13.0

## Introduction

This release note is updated periodically to keep abreast of the STM32CubeProgrammer (STM32CubeProg) evolution, problems, and limitations. Check the STMicroelectronics website at www.st.com/stm32softwaretools for the latest version. For the latest release summary, refer to Table 1.

**Table 1. STM32CubeProgrammer v2.13.0 release summary**

| Type | Summary |
|---|---|
| Major release | • Added support for the STM32H5 series: debug authentication, authentication key provisioning, key generation, firmware encryption and signing, certificate generation<br>• Added support for the STM32WBA series: flash memory and OTP programming, and option bytes<br>• Updated support for the STM32U5 series:<br>– STM32U535/545: SFI support<br>– STM32U595/5A5 and STM32U599xx: SFI and SFIx update<br>• Added support for the STLINK-V3PWR: debug, bridge to bootloader interfaces<br>• Added new calculator features: number converter, file and flash memory checksum |

## Customer support

For more information or help concerning STM32CubeProgrammer, contact the nearest STMicroelectronics sales office or use the ST community at community.st.com. For a complete list of STMicroelectronics offices and distributors, refer to the *www.st.com* webpage.

## Software updates

Software updates and all the latest documentation can be downloaded from the STMicroelectronics support webpage at www.st.com/stm32cubeprog.

# 1 General information

## 1.1 Overview

STM32CubeProgrammer is a tool that allows STM32 device programming through debug interfaces (JTAG and SWD) and bootloader interfaces (UART, USB, $I^2C$, SPI, and CAN). The range of supported bootloader interfaces depends on the microcontroller connected. Refer to the *STM32 microcontroller system memory boot mode* application note (AN2606) for details.

The tool offers a wide range of features to program STM32 internal memories (flash memory, RAM, OTP, and others) and external memories, verify the programming content (checksum, verify during and after programming, compare with file), and automate STM32 programming.

The STM32CubeProgrammer package also offers the optional installation of the STM32 Trusted Package Creator tool, which is used to create secure firmware files for secure firmware install and update. For more information, refer to the *STM32 Trusted Package Creator tool software description* user manual (UM2238).

STM32CubeProgrammer supports STM32 32-bit microcontrollers and microprocessors based on the Arm® Cortex® processor.

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

## 1.2 Host PC system requirements

### Supported operating systems and architectures

- Windows® 7, 8, 10, and 11: 32 bits (x86) and 64 bits (x64)
- Linux® 64 bits (tested on Ubuntu® 64 bits)
- macOS® (minimum version OS X® Yosemite)

*Note: Windows is a trademark of the Microsoft group of companies.*

*Linux® is a registered trademark of Linus Torvalds.*

*Ubuntu® is a registered trademark of Canonical Ltd.*

*macOS® is a trademark of Apple Inc., registered in the U.S. and other countries and regions.*

### Software requirements

For STM32CubeProgrammer versions earlier than v2.6.0, the Java® SE Runtime Environment 1.8 (version 1.8.0_121 or newer) must be installed by Oracle® (only Java® 8 is supported).

Since STM32CubeProgrammer version v2.6.0, the tool can be installed without prerequisite JRE™ installation, because the STM32CubeProgrammer release package contains a JRE™ bundling.

*Note: After the Oracle® announcement related to the "End of Public Updates for Oracle JDK 8", access to OpenJDK is possible via adoptopenjdk.net.*

*Note: Oracle is a registered trademark of Oracle and/or its affiliates.*

*All other trademarks are the property of their respective owners.*

## 1.3 Setup procedure

Refer to the *STM32CubeProgrammer software description* user manual (UM2237) available at *www.st.com*.

## 1.4 Licensing

STM32CubeProg is delivered under the *Mix Ultimate Liberty+OSS+3rd-party V1* software license agreement (SLA0048).

The software components used in the development of STM32CubeProgrammer and their licenses are listed in Table 2.

**Table 2. List of software components licenses**

| Name | Version | Copyright | License(1) | Details |
|---|---|---|---|---|
| QtScript module | 5.12.8 | 2015, The Qt Company Ltd. | GNU Lesser General Public License | opensource.org |
| Expr | - | Copyright © 2014 Andrea Griffini | The MIT License | opensource.org |
| org.openjfx:javafx-controls | 8.40.18 | 2010, 2017, Oracle and/or its affiliates | GPLv2+CE | org.openjfx/javafx-controls |
| RichTextFX | 0.10.4 | 2013-2017, Tomas Mikula and contributors | BSD 2-Clause "Simplified" License | FXMisc/RichTextFX |
| ELFIO | - | 2001-2012 by Serge Lamikhov-Center | The MIT License | ELFIO - C++ library for reading and generating ELF files (sourceforge.net) |
| Slicer4 | 4.0 | 1997-2020 Chris Lomont | BSD-style | Slicer4 |
| Quazip | 7.3 | 1991, 1999 Free Software Foundation, Inc | GNU Lesser General Public License | QuaZIP |
| DFU-Util | 0.11 | 1989, 1991 Free Software Foundation, Inc. | GNU GENERAL PUBLIC LICENSE | dfu-util Homepage (sourceforge.net) |
| OpenSSL | 3.0.4 | 1999-2021 The OpenSSL Project Authors | Apache-style license | openssl.org |
| ImgTool | 2 | Copyright 2017-2020 Linaro Limited<br>Copyright 2019-2020 Arm Limited | Apache License | mcuboot |
| PSA_ADAC [SDA] | - | Copyright (c) 2020 Arm Ltd | BSD-3-Clause | git.trustedfirmware.org |
| PSA_ADAC [SDM] | - | Copyright (c) 2020-2022 Arm Ltd | BSD-3-Clause | git.trustedfirmware.org |
| junit | 4.11 | Eclipse foundation | Eclipse Public License 1.0 | junit.org |
| log4j | | The Apache Software Foundation | Apache-2.0 | logging.apache.org |
| Mockito Core | 2.23.0 | Copyright (c) 2007 Mockito contributors | The MIT License | mvnrepository.com |
| xstream | 1.4.17 | Copyright (c) 2006-2015 XStream Committers | BSD license | x-stream.github.io |
| joda-time | 2.10 | The Apache Software Foundation | Apache-2.0 | joda.org |
| java-uuid-generator | 3.1.4 | The Apache Software Foundation | Apache-2.0 | mvnrepository.com |
| ST components | - | STMicroelectronics | Proprietary | - |

1. *License identifier as defined by OSI (opensource.org/licenses) or SPDX (spdx.org/licenses).*

The software bundled with STM32CubeProgrammer and their licenses are listed in Table 3.

**Table 3. List of software bundled with the tool**

| Name | Version | Copyright | License | Details |
|---|---|---|---|---|
| org.openjfx:javafx-fxml integrated in BellSoft Liberica OpenJDK and Java FX | 1.8.0_265 | 2010, 2017, Oracle and/or its affiliates | GPLv2+CE | org.openjfx/javafx-fxml |

# 2 STM32CubeProgrammer v2.13.0 release information

## 2.1 New features

- Added support for the STM32H5 series:
  - STM32H563/573
    - Debug authentication with password or certificate
    - Authentication key provisioning
    - Key generation
    - Firmware encryption and signing
    - Certificate generation
  - STM32H503
    - Debug authentication with password or certificate
    - Firmware encryption and signing
- Added support for the STM32WBA series:
  - Flash memory and OTP programming, and option bytes
- Updated support for the STM32U5 series:
  - STM32U535/545:
    - SFI support (user interface and command-line interface)
      Flash memory, option bytes, RDP regression with password, and OTP programming.
  - STM32U595/5A5:
    - SFI update (user interface and command-line interface)
    - SFIx update
      - Via debug: user interface and command-line interface
      - Via bootloader: command-line interface only
- Added support for the STLINK-V3PWR:
  - Debug
  - Bridge to bootloader interfaces (SPI, $I^2C$, and CAN)
- Added new calculator features:
  - Number converter
  - File and flash memory checksum

## 2.2 Fixed issues

**Table 4. Main issues fixed in STM32CubeProgrammer v2.13.0**

| ID | Summary |
|---|---|
| 65657 | Add the checksum display as done for the ST-LINK utility. |
| 115829 | [TrustedPackageCreator] Register naming mismatch between reference manual and `.csv` file. |
| 116552 | Possible attack on OEM1KEY and OEM2KEY. |
| 129709 | External flash memory programming issues in auto mode. |
| 132975 | [STM32G0] *Erase selected sectors* does not work properly on 256-Kbyte devices. |
| 135017 | [STM32CubeProg-GUI] Message must be updated while disabling RDP regression with password value. |
| 135436 | [API] Unhandled exception in `writeMemory()`. |
| 136195 | [STM32CubeProg][STM32C0] STM32C031C4T6: wrong flash memory size. |
| 136233 | [CLI] ST-LINK serial number is ignored in shared mode. |
| 137687 | [CLI] Missing data from `hex` file when using `safelib`. |
| 138051 | [STM32CubeProg] STM32L5 CLI displaying protected flash memory content. |

| ID | Summary |
|---|---|
| 140627 | [STM32CubeProg][STM32G4 256 Kbytes][0x495] *Erase selected sectors* does not work properly on 256-Kbyte devices with dual-bank mode (reopen). |
| 140973 | [STM32CubeProg-Connection] Connection issues for STM32G031J4M6. |
| 141725 | [STM32CubeProg][STM32G0 0x466] User configuration option bytes programming failed. |
| 142009 | [[STM32CubeProg-Register_Viewer] NVIC_ISERx[1-4] addresses are incorrect in the register viewer. |
| 142286 | [STM32H5][STM32CubeProg] Cannot erase the flash memory when TZEN=0. |

## 2.3 Known problems and limitations

- Integrity check:
  - STM32H7 microcontrollers: support integrity check for SFI/SMI:
    - Only the devices with a bootloader version higher than 0x91 are supported.
    - STM32CubeProgrammer v2.13.0 does not support the devices with older bootloader versions. Users must use STM32CubeProgrammer v2.9.0 to use devices with old bootloader versions.
  - STM32H73xxx microcontrollers: support integrity check for SFI/SMI/SFIx:
    - Only the devices with a bootloader version higher than 0x93 are supported.
    - STM32CubeProgrammer v2.13.0 does not support the devices with older bootloader versions. Users must use STM32CubeProgrammer v2.9.0 to use devices with old bootloader versions.
  - STM32H7Bxxx microcontrollers: support integrity check for SFI/SMI/SFIx:
    - Only the devices with a bootloader version higher than 0x92 are supported.
    - STM32CubeProgrammer v2.13.0 does not support the devices with older bootloader versions. Users must use STM32CubeProgrammer v2.9.0 to use devices with old bootloader versions.
- Auto mode (Linux® platform):
  - The SPI interface quits after starting without a connection.
- STM32G0 microcontrollers:
  - The `.hex` file does not modify the WRP and PCROP option bytes of bank 2 for the devices with 512 Kbytes of dual-bank flash memory.
  - The SWD `RegDump` command-line instruction does not work on STM32G081xx devices.
- STM32H5 microcontrollers:
  - SFI and SSFI (secure manager) are not supported.
- STM32H503 microcontrollers:
  - A total of 64 bytes are programmed to the OTP area with STM32CubeProgrammer after password provisioning.
- STM32H7 microcontrollers:
  - STM32CubeProgrammer does not support combined SFI and SMI.
  - SMI programming fails.
- STM32MP15x microprocessors:
  - It is not possible to program a `.tsv` file when some partitions are not selected.
  - An error occurs when saving the OTP partition in a macOS® platform.
- STM32U5 microcontrollers:
  - RDP regression with password is not working on macOS®.
  - It is impossible to set OEM keys through DFU.
  - STM32U59xxx microcontrollers: SFIx only supports the area E installation with OTFDec region 1 (region 0 on TPC).
  - STM32U58xxx and STM32U59xxx microcontrollers: for the SFIx area K, the size value must be 32-bit aligned inside the `.kcsv` file.

- STM32WBA microcontrollers:
  - SFI is not supported.
  - OpenBootloader via SPI: cannot connect to STM32CubeProgrammer when the baud rate is below 3000 Bd.
- Azure® RTOS USBX:
  - For STM32U575/585 microcontrollers, erasing sectors from "C" to "F" fails.
  - For STM32U575/585 microcontrollers, some extra data is added at memory programming.
- Debug authentication is not supported on macOS® and Windows® 32 bits operating systems.
- The input of checksum files other than `.bin` files is not supported in the GUI.
- The maximum firmware size for SFx generation with STM32U599xx/595xx/5A5xx microcontrollers is limited to 3 Mbytes.

# 3 Previous release information

## 3.1 STM32CubeProgrammer v2.12.0 release information

### 3.1.1 New features

- STM32 Trusted Package Creator: enhanced SFI UI
- STM32MP1 series: added SSP GUI
- STM32WB series: upgraded the wireless stack and enhanced the UI
- STM32WL series: added module support
- Script manager: added loops and conditional statements
- External flash memory programmer: added B-U585I-IOT02A for SFIx
- 32F746GDISCOVERY and STM32F7508-DK: new external flash loaders

### 3.1.2 Fixed issues

**Table 5. Main issues fixed in STM32CubeProgrammer v2.12.0**

| ID | Summary |
|---|---|
| 116538 | [STM32CubeProg] Address is always equal to 0x0 when saving `.bin` as `.hex` file. |
| 117842 | [STM32CubeProg - STM32L0] EEPROM banks are erased for one EEPROM bank selected. |
| 119632 | [STM32L5][TZEN - Regression] Error occurred when TZEN regression field is checked. |
| 122194 | [API][ST-LINK] No error message displayed when the MCU is not powered. |
| 122254 | [STM32CubeProg - Documentation] Confusing behavior when running `-log` option without file specification. |
| 123745 | [STM32CubeProg][STM32MP1] Even if SWD is not supported for STM32MP1, STM32CubeProgrammer should not crash when trying to connect via SWD/JTAG. |
| 123960 | [GUI] Switching from one section to another in the OB panel does not keep the OB box modified status. |
| 126294 | [STM32CubeProg] Device connection issue after increasing the RDP level. |
| 127191 | [STM32MP157] Unselecting TSV partitions times out while programming. |
| 127922 | [CLI] CMD failure (`Error cmd`) should interrupt the execution of the script. |
| 128988 | [STM32CubeProg-GUI] STM32G0B0xx device missing from device list with ID 0x467. |
| 130116 | [STM32CubeProg] Error while programming a `.bin` file with more than 128 Kbyte flash memory size into an STM32L081xZ device. |
| 130186 | [STM32CubeProg] *"start address"* in download page is grayed while filename extension `.BIN` is uppercase. |
| 130479 | [GUI] *"Select MCU" & "Program HSM"* buttons must be grayed for a programmed HSM. |
| 131027 | [STM32CubeProg - Signing tool] Issue with SC-HSM / PKCS#11. |
| 131245 | [Documentation][UM2237][SWV][CLI] Add explanation for `-startswv`. |
| 131307 | [SFI on STM32H735xx] SFI window hanging. |
| 131765 | [STM32CubeProg][Flash loader] STM32CubeProgrammer does not accept external loader file name containing more than one dot. |
| 131834 | [STM32WB][Stack update] Request to change the error message when trying to update stack with anti-rollback activated without previous stack load. |
| 131987 | [CLI][Error level] Program returned 0 error code when error occurred. |
| 132049 | [DDR][CLI] Error occurs when loading DDR tool via the USB. |
| 132213 | [STM32CubeProg - GUI] Mismatch between STM32WB35xx reference manual and STM32CubeProgrammer database. |
| 132528 | [STM32U5] Register view issue after RDP1 password set/disable. |

| ID | Summary |
|---|---|
| 132716 | [Documentation] UM2237 Rev 19: Incorrect description of I2C configuration panel. |
| 133012 | [GUI][STM32U5] Wrong number of sectors for 1-Mbyte device. |
| 133019 | [STM32CubePRG][ST-LINK] STM32CubeProgrammer keeps reading BL version and displays it in VB3 every second. |
| 133020 | [STM32CubeProg][STM32L0][GUI] BL version is not displayed. |
| 133242 | [API][USB] Cannot list USB_DFU with custom VID&PID. |
| 134250 | [Documentation][UM2237] Add explanation for `-startstack`. |
| 134536 | [STM32CubeProg][TPC] *"Generate Hash"* option must be checked by default. |
| 134843 | [Documentation][UM2238] TPC wrong example for area 'K' pairs. |
| 135228 | [SFI] Update option bytes notation in CSV files. |
| 135237 | [STM32CubeProg][CLI] Update of Inventek Wi-Fi® firmware fails on B-L475E-IOT01 and B-L4S5I-IOT01 boards. |
| 135272 | [STM32CubeProg][STM32U5]Wrong flash memory sector size for STM32U575ZI (2 Mbytes). |
| 135805 | [API] Update `getExternalLoader` parameter description to match current implementation. |
| 136171 | [STM32CubeProg - Documentation][AN5054] Confusing *"multi install"* expression in secure programming using STM32CubeProgrammer application note. |
| 137358 | [STM32G4] Erase selected sectors does not work properly on devices with 256 Kbytes of flash memory. |

### 3.1.3 Known problems and limitations

- Integrity check:
  - STM32H7 microcontrollers: support integrity check for SFI/SMI:
    - Only the devices with a bootloader version higher than 0x91 are supported.
    - STM32CubeProgrammer v2.12.0 does not support the devices with older bootloader versions. Users must use STM32CubeProgrammer v2.9.0 to use devices with old bootloader versions.
  - STM32H73xxx microcontrollers: support integrity check for SFI/SMI/SFIx:
    - Only the devices with a bootloader version higher than 0x93 are supported.
    - STM32CubeProgrammer v2.12.0 does not support the devices with older bootloader versions. Users must use STM32CubeProgrammer v2.9.0 to use devices with old bootloader versions.
  - STM32H7Bxxx microcontrollers: support integrity check for SFI/SMI/SFIx:
    - Only the devices with a bootloader version higher than 0x92 are supported.
    - STM32CubeProgrammer v2.12.0 does not support the devices with older bootloader versions. Users must use STM32CubeProgrammer v2.9.0 to use devices with old bootloader versions.
- Command-line interface:
  - Shared devices listing issue with the `-l` option.
  - Missing data from the `.hex` file when using `safelib`.
- Graphical user interface:
  - Missing data from the `.hex` file when using `save to file`.
- Auto mode (Linux® platform):
  - The SPI interface quits after starting without a connection.
- STM32G0 microcontrollers:
  - The `.hex` file does not modify the WRP and PCROP option bytes of bank 2 for the devices with 512 Kbytes of dual-bank flash memory.
  - The SWD `RegDump` command-line instruction does not work on STM32G081xx devices.
- STM32H7 microcontrollers:
  - STM32CubeProgrammer does not support combined SFI and SMI.
  - SMI programming fails.

- STM32L4 microcontrollers:
  - The full chip erase fails in SPI mode for devices with 1 Mbyte of flash memory.
- STM32L4+ microcontrollers:
  - It is not possible to write the WRP1B and WRP2B option bytes for devices with 2 Mbytes of flash memory.
- STM32MP15x microprocessors:
  - It is not possible to program a `.tsv` file when some partitions are not selected.
  - An error occurs when saving the OTP partition in a macOS® platform.
- STM32U5 microcontrollers:
  - RDP regression with password is not working on macOS®.
  - It is impossible to set OEM keys through DFU.
- STM32WB1xxx microcontrollers:
  - The register dump command is not supported.
- Azure® RTOS USBX:
  - For STM32U575/585 microcontrollers, erasing sectors from "C" to "F" fails.
  - For STM32U575/585 microcontrollers, some extra data is added at memory programming.
  - For STM32F4 microcontrollers, rewriting at a same memory address fails.

## 3.2 STM32CubeProgrammer v2.11.0 release information

### 3.2.1 New features

- Tool updater: can be used to upgrade STM32CubeProg from v2.10.0 to v2.11.0 for all supported operating systems (Windows®, Linux®, and macOS®)
- SFI:
  - SFIx support for STM32U585xx microcontrollers via SWD/JTAG
  - New SFI/SFIx graphical user interface (GUI)
  - STM32 Trusted Package Creator SFI GUI enhancement
  - Support for integrity check with the STM32H7 series and STM32U5 series microcontrollers
- STM32U5 series: the GUI supports the RDP regression with password
- New bootloader support for STM32L476xx microcontrollers
- STM32MP13xx microprocessors:
  - Flash memory load via USB-DFU/UART
  - SSP (command-line interface only)
  - OTP: CLI/GUI

### 3.2.2 Fixed issues

**Table 6. Main issues fixed in STM32CubeProgrammer v2.11.0**

| ID | Summary |
|---|---|
| 90858 | [STM32WB][CLI] Optimize FUS, STACK, and USER app upgrading automatically. |
| 104409 | STM32H735xx: SFI is very slow over SWD. |
| 109240 | Extra option bytes displayed for STM32G030C6: PCROP1A_STRT, PCROP1A_END, PCROP1A_RDP, PCROP1B_STRT, PCROP1B_END, and BOOT_LOCK, SEC_SIZE. |
| 110205 | Fix the reading of CHIPID (DBGMCU_DBG_AUTH_DEVICE) on STM32U5 microcontrollers. |
| 110614 | [CLI] Error level not reported correctly for the CRC safety feature using STM32CubeProgrammer_CLI. |
| 117163 | Launch problem when running the STM32CubeProgrammer GUI from another path. |
| 119604 | [STM32G0][OB] Sector erase cannot be achieved and an STM32CubeIDE debug error occurs when nSWAP_BANK=0. |

| ID | Summary |
|---|---|
| 120935 | STPC v2.9 cannot generate a correct `.sfi` file for SFI. |
| 121452 | [OB] Incorrect SRAM2b secure address for STM32WB1xxx. |
| 121713 | Typo: *"Memory & file edition"*. |
| 123018 | [STM32H7][CM4] BOOT_CM4_ADD cannot be modified. |
| 123740 | [DFU] The single-bank configuration is not correctly managed when connecting with DFU. |
| 123913 | [CLI] It is not possible to write the LOCK byte. |
| 123923 | [UART] A timeout error occurs while disabling the readout protection. |
| 124081 | Odd behavior in the log when connecting a NUCLEO-F030R8 using the GUI. |
| 124446 | Request to add documentation for the `getAuthID` command. |
| 124763 | [OB] Wrong description of nBOOT1. |
| 125039 | [DFU] Strange behavior when trying to program in single-bank mode. |
| 127099 | [STM32L4+] Fail to program STM32L4+ twice in a row. |
| 127311 | The tool closes automatically when trying to load a file the path of which contains Chinese characters. |
| 127978 | Typo in option bytes: IWGDSTDBY. |

### 3.2.3 Known problems and limitations

- No error message is displayed when the microcontroller is not powered.
- A segmentation fault occurs when the STM32CubeProgrammer CLI is executed with a wrong serial number.
- Integrity check:
  - STM32H7 microcontrollers: support integrity check for SFI/SMI:
    - Only the devices with a bootloader version higher than 0x91 are supported.
    - STM32CubeProgrammer v2.11.0 does not support the devices with older bootloader versions. Users must use STM32CubeProgrammer v2.9.0 to use devices with old bootloader versions.
  - STM32H73xxx microcontrollers: support integrity check for SFI/SMI/SFIx:
    - Only the devices with a bootloader version higher than 0x93 are supported.
    - STM32CubeProgrammer v2.11.0 does not support the devices with older bootloader versions. Users must use STM32CubeProgrammer v2.9.0 to use devices with old bootloader versions.
  - STM32H7Bxxx microcontrollers: support integrity check for SFI/SMI/SFIx:
    - Only the devices with a bootloader version higher than 0x92 are supported.
    - STM32CubeProgrammer v2.11.0 does not support the devices with older bootloader versions. Users must use STM32CubeProgrammer v2.9.0 to use devices with old bootloader versions.
- STM32H7 microcontrollers:
  - STM32CubeProgrammer does not support combined SFI and SMI.
  - The Cortex®-M4 boot address for dual-core STM32H7 microcontrollers is not modified with the SWD interface.
- STM32U5 microcontrollers:
  - RDP regression with password is not working on macOS®.
  - SFIx is not working for bootloader interfaces.
  - An RSS CMD error is returned on area C during SFI.
  - An incorrect RSSe version is displayed.
  - The SFI process is successful while generating errors.
  - RDP2 and BootLock fail to be programmed in one shot over SWD.
  - The SFI installation process ends with a segmentation fault (Linux®/macOS®).

- STM32G0 microcontrollers:
  - Extra data is added during OTP programming in DFU.
  - STM32G0B0xx device is missing from the device list with ID 0x467.
- STM32WB1xxx microcontrollers:
  - The register dump command is not supported.
- Azure® RTOS USBX:
  - For STM32U575/585 microcontrollers, erasing sectors from "C" to "F" fails.
  - For STM32U575/585 microcontrollers, some extra data is added at memory programming.
  - For STM32F4 microcontrollers, rewriting at a same memory address fails.

## 3.3 STM32CubeProgrammer v2.10.0 release information

### 3.3.1 New features

- Added the updater tool for automatic software updates.
  The updater allows the users to make automatic updates of the software and its associated packages. It is available in all supported operating systems: Windows®, Linux®, and macOS®.
- Added the support for OpenBootloader via UART for the STM32U5 series.
- Added the possibility to unlock the STM32WL dual-core microcontrollers after a wrong option byte programming through a new button in the GUI or a command in the CLI.
- Added the support for the STM32U59x/5Ax microcontrollers.
- Added the SFI, SMI, and SFIx integrity check for the STM32H73xxx microcontrollers.

### 3.3.2 Fixed issues

**Table 7. Main issues fixed in STM32CubeProgrammer v2.10.0**

| ID | Summary |
|---|---|
| 82999 | [STM32WB series] Make feature, RF Stack type, and version visible on GUI. |
| 83752 | Inconsistent use of bin option for STM32MP1 microprocessors. |
| 97890 | Integrate the modified `MT25TL01G_STM32H750B-DISCO.stldr`. |
| 102454 | Add spent time information for option byte configuration in log file. |
| 103609 | [Signing_Tool] Allow the change of the `-of` option on an already signed stm32 file. |
| 108742 | [STM32L151RD] Wrong flash memory size: 128 Kbytes instead of 384 Kbytes. |
| 111228 | Add *Check for updates* feature. |
| 112974 | STM32MPU157F-EV1 Android™ OS flash programming problem. |
| 113279 | Confusing behavior with NUCLEO-U575ZI-Q at 1.8 V with the SWD frequency max. |
| 116342 | Add the support of `.s19` files. |
| 118242 | STM32CubeProgrammer fails to program an image bigger than 2.8 Kbytes and shows a wrong image size. |
| 118288 | OpenBootloader via SPI receives a checksum as flash memory page number in `Erase Memory` command from STM32CubeProgrammer. |
| 118871 | [FlashLoader] Update the external flash loader `0x450.stldr`. |
| 119243 | [STM32G0 series][GUI] Wrong RAM_PARITY_CHECK description. |
| 119940 | RDU fails on STM32G071xx with RDP set to BB and active bootlock on last cut. |
| 120160 | nRST_STOP, nRST_STDBY, and nRST_SHDW option byte values are modified when scrolling the user configuration option bytes TAB. |
| 120954 | The `.bin` file cannot be programmed successfully on STM32L4R9xx microcontrollers. |
| 121620 | TFA decryption fails. |

### 3.3.3 Known problems and limitations

- SFI, SMI, and SFIx integrity check for the STM32H73xxx microcontrollers:
  - Only the devices with a bootloader version higher than 0x93 are supported.
  - STM32CubeProgrammer v2.10.0 does not support the devices with older bootloader versions. Users must use STM32CubeProgrammer v2.9.0 to use devices with old bootloader versions.
  - Users who want to use SFI on STM32H75xxx and STM32H7Bxxx must use STM32CubeProgrammer v2.9.0 because of the broken compatibility with the integrity check mechanism.
  - Refer to the application note AN5054 for details.
- STM32CubeProgrammer does not support combined SFI and SMI for STM32H7 microcontrollers.
- Azure® RTOS USBX:
  - For STM32U575/585 microcontrollers, erasing sectors from "C" to "F" fails.
  - For STM32U575/585 microcontrollers, some extra data is added at memory programming.
  - For STM32F4 microcontrollers, rewriting at a same memory address fails.
- STM32 Trusted Package Creator on macOS® fails to detect the HSM card reader.
- STM32 Trusted Package Creator on Linux® does not detect HSM only when the TPC CLI is launched in sudo mode.
- STM32WB55xx microcontrollers / FUS_StackWB: After key update, the progress bar remains red even after the programming ended successfully.
- Address is always equal to 0x0 when saving a binary as `.hex` file.
- STM32CubeProgrammer fails to program any option byte or memory when WWDG_SW (or IWDG_SW) is unchecked.

## 3.4 STM32CubeProgrammer v2.9.0 release information

### 3.4.1 New features

- Updated the programming mechanism for the STM32U575/585 microcontrollers via a flash loader usage in TZEN = 0, and a new programming mode in TZEN = 1 (fast/reliable)
- Added double authentication and user keys provisioning via JTAG for the STM32WB series (feature only available with bootloader in previous versions)
- Added a scripting mode including the existing STM32CubeProgrammer CLI commands and a new macro for data manipulation
- Added the support for the PKCS#11 protocol in the signing tool (STM32MP1 series).
- Added the support for Microsoft® Azure® RTOS USBX DFU stack

### 3.4.2 Fixed issues

**Table 8. Main issues fixed in STM32CubeProgrammer v2.9.0**

| ID | Summary |
|---|---|
| 110368 | STM32L5 RSSe binary must be renamed as it handles both the JTAG and bootloader. |
| 110531 | [FUS] Upgrade problem with STM32CubeProgrammer of `stm32wb5x_FUS_fw.bin` version v1.2.0 on STM32WB55RE (512 Kbytes). |
| 111044 | Programming issue using STM32L486xx microcontrollers connected via USB. |
| 111417 | Changing secure area errors. |
| 112266 | Debug in Low-power mode does not display the right state of Stop bit. |
| 112484 | New ST-LINK firmware release V3J8M3 should limit bandwidth to 1 MHz on GUI. |
| 112545 | CLI does not read all requested upload sizes. |
| 113605 | [CLI] Erase all not possible using UART. |
| 113806 | [OB] Error message when configuring WRP option byte. |

| ID | Summary |
|---|---|
| 114171 | STM32CubeProgrammer fails to program large segmented `.hex` file to external flash memory. |
| 114893 | [STM32G4] Bit SEC_SIZE1[8] cannot be programmed. |
| 115651 | Issue with option bytes IWDG and WWDG for STM32G07xxx devices. |
| 116070 | Programmer failed to load bin on STM32U5 with newer ST-LINK firmware version. |

### 3.4.3 Known problems and limitations

- *Script Manager* on Linux®: STM32CubeProgrammer does not recognize a `.prg` file when the directory name contains capital letters.
- STM32 Trusted Package Creator on macOS® fails to detect the HSM card reader.
- STM32 Trusted Package Creator on Linux® does not detect HSM only when the TPC CLI is launched in sudo mode.
- STM32WB55xx microcontrollers / FUS_StackWB: After key update, the progress bar remains red even after the programming ended successfully.
- Address is always equal to 0x0 when saving a binary as `.hex` file.
- STM32CubeProgrammer fails to program any option byte or memory when WWDG_SW (or IWDG_SW) is unchecked.
- STM32L151RD: wrong flash memory size displayed (128 Kbytes instead of 384 Kbytes).

## 3.5 STM32CubeProgrammer v2.8.0 release information

### 3.5.1 New features

- Added the support for the STM32U575/585 microcontrollers
- Added the support for SFI via the JTAG interface for the STM32U575/585 microcontrollers
- Added the support for SFI via the bootloader interface (USB/UART/I$^2$C/SPI) for the STM32U5 series
- Added the new *FUS-Operator* support for the STM32WB1xxx microcontrollers
- Added the anti-rollback support for the STM32WB1xxx and STM32WB5xxx microcontrollers
- Added the support of FUS version display for the STM32WB1xxx and STM32WB5xxx microcontrollers
- Added the support for the *Live Grid Update* feature
- Added the support for the *Blank check* feature
- Added the support for the *Memory/File* and *File/File* compare features
- Added the support for the bootloader version display feature
- Added the support for the *Fill memory* feature
- Added the support for UART interface RTS/CTS signals
- Added the support for *Connect while Watchdog enabled*

### 3.5.2 Fixed issues

**Table 9. Main issues fixed in STM32CubeProgrammer v2.8.0**

| ID | Summary |
|---|---|
| 64267 | Fix issues with FUS via USART boot mode. |
| 72832 | Fix issue with MCU ID for STM32L151VB and STM32L151CB. |
| 74327 | [STM32F7] Unable to read/write data when option byte WWDG_SW is unchecked. |
| 76440 | [STM32WB] Extra bytes are programmed. |
| 81646 | STM32G431RB WRP modification. |
| 93987 | [STM32G0][GUI] Remove NRST_MODE. |
| 100150 | Programming of option bytes list is not completed when SEC_SIZE option byte is programmed. |

| ID | Summary |
|---|---|
| 101017 | [STM32H7] Completes data with 00 bytes at the end. |
| 102103 | [STM32G0] Bit field for BORR and BORF are swapped. |
| 104089 | [STM32G0] Only half of the flash memory is shown under *"Erase & Programming"*, and missing DUAL_BANK and (n)SWAP_BANK option bytes for STM32G0[B-C][0-1]xE microcontrollers. |
| 104320 | [STM32WB] The stack *"Firmware delete"* button is greyed out when connected through USB DFU. |
| 104707 | [STM32U5] RDP regression is not possible when IWDG_SW/WWDG_SW option byte is set to 1. |
| 104832 | [STM32G0] NRST_MODE option byte has been removed for STM32G0x1xx microcontrollers. |
| 105628 | [STM32U5] HDP option byte is not visible. |

### 3.5.3 Known problems and limitations

- STM32G030C6: extra option bytes displayed (PCROP1A_STRT, PCROP1A_END, PCROP1A_RDP, PCROP1B_STRT, PCROP1B_END, BOOT_LOCK, SEC_SIZE)
- STM32L151RD: wrong flash memory size displayed (128 Kbytes instead of 384 Kbytes)
- STM32U575/585 microcontrollers:
  - Bootloader version is not displayed
  - SFI via SWD fails when a USB cable is connected (a workaround is to use a USB wall charger)
  - On macOS®, after setting RDP to 0x55 and TZEN to 0x1, a connection via SWD crashes the tool
  - Regression with PWD from L1 to L0.5 fails
- STM32 Trusted Package Creator tool: HSM cannot be detected on macOS®
- Frequency parameters are not respected
- Azure® RTOS USBX is not supported

## 3.6 STM32CubeProgrammer v2.7.0 release information

### 3.6.1 New features

- Added the support for the STM32WB15xx microcontrollers in the STM32WB series
- Added the support for the microcontrollers with 64 Kbytes of flash memory in the STM32G0 series
- Added *HardFault Analyzer* support
- Added *Register viewer* support

### 3.6.2 Fixed issues

**Table 10. Main issues fixed in STM32CubeProgrammer v2.7.0**

| ID | Summary |
|---|---|
| 58716 | Error when trying to mass erase STM32L0 128K devices from the CLI. |
| 61638 | DFU error with the STM32F746xx microcontrollers. |
| 64229 | Impossible to erase sector 128 and upper on STM32L476RG with STM32CubeProgrammer. |
| 73928 | [STM32CubeProgrammer] [CLI][STM32H7] STM32H745I-DISCO: Unable to read big data from the external Q-SPI flash memory. |
| 78496 | STM32F756 DFU *Application Example* does not work with STM32CubeProgrammer. |
| 80586 | [STM32CubeProgrammer][STM32L0][CLI] Verification progress bar ends at 24%. |
| 85736 | Empty area in HEX file is not well detected by STM32CubeProgrammer. |
| 85898 | Option byte IRHEN must be deleted from STM32CubeProgrammer. |
| 89140 | [STM32CubeProgrammer v2.4.0][CLI]: Failure to recover when using the `rdu` option. |
| 90060 | [STM32L4] STM32L496: Cannot connect using DFU IAP. |

| ID | Summary |
|---|---|
| 91608 | Programming issue using the NUCLEO-L053R8 board connected via the USB. |
| 92200 | [CLI] I²C Host sends out 2 extra bytes in the `NoStretchErase` command. |
| 92774 | [UART] STM32CubeProgrammer cannot program STM32H7 microcontrollers between 0x0810 0040 and 0x0810 0800. |
| 93858 | STM32H757 bootloader UART – `.hex` download verify error on the Cortex®-M4. |
| 93887 | STM32F765xG (1 Mbyte): Not possible to program the flash memory using STM32CubeProgrammer v2.5.0. |
| 94636 | [STM32CubeProgrammer-IAP] DFU programming failed. |
| 96040 | [GUI] When *"No STM32 target found"* STM32CubeProgrammer cannot be closed. |
| 96295 | STM32L471: Not able to successfully connect to or program using the UART. |
| 96905 | [Prg-DB] Wrong flash memory size for STM32L151xx devices. |
| 97365 | USB DFU connection issue using the NUCLEO-L152RE board. |
| 98346 | STM32L073: STM32CubeProgrammer v2.6.0 is not able to successfully connect to STM32L073xx microcontrollers using DFU. |
| 98682 | Programming issues using STM32L471VET6. |
| 99401 | [STM32G4 128K][GUI] Wrong WRP1A/B_END and WRP1A/B_STRT values for 128 Kbytes. |
| 99963 | STM32CubeProgrammer_API document update for STM32MP1 microprocessors. |

### 3.6.3 Known problems and limitations

- Installer: Insignificant message is returned during the installation when other instances are already installed.
- On some macOS® machines, the STM32CubeProgrammer GUI fails to launch (must be launched in CLI mode).
- STM32WB1xxx: Incorrect PCROP area management via SWD.
- STM32WB1xxx: STM32CubeProgrammer is closed when trying to apply FUS upgrade via the UART on macOS®. Only tty is supported.
- STM32WB5xxx: Making FUS upgrade via the SWD interface from recent to older version returns success message.
- Programming of option byte list is not completed when the SEC_SIZE option byte is programmed on some STM32 microcontroller or microprocessor series.
- STM32WB1xxx: STM32Key Provisioning/Double signature is not tested.

## 3.7 STM32CubeProgrammer v2.6.0 release information

### 3.7.1 New features

- Added the support for dual-core microcontrollers in the STM32WL series
- Extended the support for the STM32G0 series to the new STM32G0Bxxx and STM32G0Cxxx microcontrollers
- Added SFI support via JTAG/UART/SPI for STM32WL5xxx microcontrollers
- Added SFI support via I²C/SPI for STM32L5 series microcontrollers
- Added SFIx support via bootloader for STM32L5 series microcontrollers
- Added Sigfox™ credential provisioning support for STM32WL5xxx microcontrollers
- Added multiple flash loader support for STM32 microcontrollers
- Added the SWV feature update (color support)
- Added the support for the server client HSM feature
- Added DFU IAP using custom PID/VID support for all STM32 products
- Added installer JRE bundle (OpenJDK)

### 3.7.2 Fixed issues

**Table 11. Main issues fixed in STM32CubeProgrammer v2.6.0**

| ID | Summary |
|---|---|
| 57835 | Connect under reset with hardware reset is not working with SensorTile in low-power mode. |
| 58716 | Error when trying to mass erase STM32L0 128-Kbyte devices from CLI. |
| 62639 | RDP regression is not functional via BootLoader interfaces for STM32F030R8. |
| 64267 | Issues with FUS via USART boot mode. |
| 70556 | [STM32CubeProgrammer] Bug with STM32F765IGT6 (1-Mbyte flash memory). |
| 76987 | [STM32CubeProg-STM32L5] STM32Cubeprog crash when communicating with the DFU app. |
| 80586 | [STM32CubeProg-STM32L0][CLI] Verification progress bar ends at 24%. |
| 81647 | User DFU functionality with STM32CubeProgrammer. |
| 85313 | [STM32CubeProg-STM32G0][GUI] Remove the BOR level section. |
| 85898 | Option Byte IRHEN must be deleted from STM32CubeProgrammer. |
| 85960 | STM32G431: STM32CubeProgrammer automatic mode download issue. |
| 86576 | [PRG] Fail to write OTP with STM32G4. |
| 90060 | [STM32CubeProgrammer][STM32L4] STM32L496: cannot connect using DFU IAP. |
| 91608 | Programming issue using the NUCLEO-L053R8 board connected via USB. |
| 92038 | STM32CubeProgrammer fails to open on macOS® Catalina v 10.15.6. |
| 92280 | [STM32CubeProg-STM32H7][GUI] *Erasing &Programming* panel hangs (white panel). |
| 92477 | [STM32CubeProg-STM32L1][GUI] Incorrect memory size displayed and cannot make the erase. |
| 92641 | [STM32CubeProgrammer-Option Bytes] Cannot set STM32H743 IO_HSLV, VDDIO_HSLV option bit. |
| 92674 | [STM32CubePrg][STM32L0][DIE417] Cannot connect to board under reset when low-power mode is activated. |
| 92828 | Seems no compatible OpenJFX version for Ubuntu® 20.04 for OpenSTLinux. |
| 93013 | [CubePRG] `CubeProgrammer_API.h` not up to date in last STM32CubeProgrammer: missing 100 bytes in `debugConnectParameters struct`. |
| 93887 | [CubePRG][0x451] Not possible to program STM32F765xG (flash 1 Mbyte) using STM32CubeProgrammer v2.5.0. |
| 93987 | [STM32CubeProg-STM32G0][GUI] Remove NRST_MODE. |
| 94517 | [CubePRG] Cannot write 8 bytes in flash memory using `-w64` STM32CubeProgrammer CLI command. |

### 3.7.3 Known problems and limitations

- STM32MP1 mircoprocessor `get certificate` operation is not complete in the UART mode.
- Production programming issues occur when using multiple ST-LINK in parallel.
- Installer: Insignificant message is returned during the installation when other instances are already installed.
- On some macOS® machines, the STM32Cubeprogrammer GUI fails to launch (must be launched in CLI mode).
- The SFI operation via UART is not achieved and returns an error on macOS® machines.
- STM32WB55: When trying to upgrade more than one stack, the operation can be done only with a second try.
- SFIx operation for STM32L5: An exception appears while programming when the `-elbl` command is not the first one in the command line.

## 3.8 STM32CubeProgrammer v2.5.0 release information

### 3.8.1 New features

- Added the support for STM32G491xC and STM32G491xE microcontrollers
- Added the support for STM32H72xxx and STM32H73xxx microcontrollers
- Added SFI support for STM32H72xxx and STM32H73xxx microcontrollers
- Added SFIx support for STM32H72xxx and STM32H73xxx microcontrollers
- Added SFI support via UART for STM32L5 series microcontrollers
- Added SFI support via USB for STM32L5 series microcontrollers
- Added support of Serial Wire Viewer (SWV)
- Board automatic recognition
- Revision ID display

### 3.8.2 Fixed issues

**Table 12. Main issues fixed in STM32CubeProgrammer v2.5.0**

| ID | Summary |
|---|---|
| 59191 | [STM32WB] Unable to remove or install the RF stack over UART bootloader + RSS. |
| 60618 | Erase of EEPROM memory of STM32L051 using the *Erase selected sectors* option. |
| 62173 | Cannot connect to STM32F072 DFU system bootloader. |
| 65682 | [UART] Cannot update option bytes with the UART. |
| 66596 | [UART] STM32L010 can be programmed. |
| 67646 | CLI missing `-w64` command + OTP area not programmed via SWD. |
| 68736 | [STM32F7] Unable to erase multiple sectors for dual-bank flash memory. |
| 68990 | [secure boot] Key generation not functional with `STM32MP_KeyGen_CLI` on Linux®. |
| 70592 | Start address box is activated after programming `.hex` file. |
| 71108 | [STM32H7] Flash programming through SWD in SFI mode finishes with errors. |
| 73495 | [STM32F072] Cannot remove read protection through DFU bootloader. |
| 79494 | Fail to program STM32L0 MCUs |
| 79912 | [STM32F446] Flash memory size register reading with bootloader interface. |
| 82752 | [UART][CLI] Upload size is bigger than flash memory size. |
| 82867 | *Firmware Upgrade Service* panel does not disappear on disconnect from compatible device. |
| 83296 | [STM32L5][SFI]: SFI fails if RDP is set to 0 or 1 in `.csv` file or if start SFI with `TZEN=1`. |
| 83346 | Get `Cubeprogrammer_API.lib` compiled with x64. |
| 88504 | Issues with programming 512-Kbyte memory with 362-Kbyte file. |
| 89436 | Failure to program binary to STM32L4 Nucleo board with the CAN interface using bootloader. |

### 3.8.3 Known problems and limitations

- For the STM32L5 series, the Option Byte programming GUI is not intuitive enough. Refer to the *STM32L552xx and STM32L562xx advanced Arm®-based 32-bit MCUs* reference manual (RM0438) for permitted accesses.
- For STM32L4Pxxx and STM32L4Qxxx devices, Option Byte programming via bootloader interfaces presents some limitations.
- For STM32H7Axxx and STM32H7Bxxx devices, Option Byte programming via bootloader interfaces (USB) presents some limitations.
- STM32L5 series programming presents limitation in macOS® when `TZEN=1` and `RDP=0x55`.

- Display issues depending on the monitor used can occur with Linux®.
- SFI-HSM V2 *get certificate* fails with STM32L462xx devices.
- Parallel flash programming fails in macOS® for microprocessors in the STM32MP1 series.
- Issues can be reported with some specific `.elf` file in CRC calculation safety feature.
- STM32MP1 mircoprocessor programming via UART presents limitations to program the whole boot chain.
- STM32MP1 mircoprocessor `get certificate` operation is not completed via a UART connection.

## 3.9 STM32CubeProgrammer v2.4.0 release information

### 3.9.1 New features

- Added the support of the graphic user interface (GUI) for the firmware upgrade service (FUS) and stack upgrade for the entire STM32WB series
- Support of HSM V2 on all STM32 microcontrollers and microprocessors supporting SFI/SSP

### 3.9.2 Fixed issues

**Table 13. Main issues fixed in STM32CubeProgrammer v2.4.0**

| ID | Summary |
|---|---|
| 77015 | STM32CubeProgrammer cannot connect ST-LINK without the mass storage feature. |
| 78350 | STM32CubeProgrammer issue with STM32G0 when programming binary (size 18448 bytes). |

### 3.9.3 Known problems and limitations

- For the STM32L5 series, the connection via the ST-LINK protocol is allowed only when mode is set to *hotplug* with `TZEN=1`.
- For the STM32L5 series, the Option Byte programming GUI is not intuitive enough. Refer to the *STM32L552xx and STM32L562xx advanced Arm®-based 32-bit MCUs* reference manual (RM0438) for permitted accesses.
- For STM32L4Pxxx and STM32L4Qxxx devices, Option Byte programming via bootloader interfaces presents some limitations.
- For STM32H7Axxx and STM32H7Bxxx devices, Option Byte programming via bootloader interfaces (USB) presents some limitations.
- STM32L5 series programming presents limitation in macOS® when `TZEN=1` and `RDP=0x55`.
- With some small-screen resolutions, the graphical interface of STM32CubeProgrammer presents anomalies such as inaccessible buttons.
- Display issues depending on the monitor used can occur with Linux®.
- SFIx on STM32H743/753 devices fails via the debug interface.
- SFI-HSM V2 *get certificate* fails with STM32L462xx devices.
- Parallel flash programming fails in macOS® for microprocessors in the STM32MP1 series.

## 3.10 STM32CubeProgrammer v2.3.0 release information

### 3.10.1 New features

- Added the support of the STM32L4Pxxx and STM32L4Qxxx microcontrollers
- Added the support of the STM32H7Axxx and STM32H7Bxxx microcontrollers
- Added the beta support of the STM32WL series microcontrollers
- Added the official support of the STM32L5 series microcontrollers
- Added the support of HSM V1 SFI/SFIx for STM32H7Axxx microcontrollers
- Added the support of HSM V1 SFI/SFIx for STM32L5 series microcontrollers

### 3.10.2 Fixed issues

**Table 14. Main issues fixed in STM32CubeProgrammer v2.3.0**

| ID | Summary |
|---|---|
| 63887 | STM32CubeProgrammer does not program Option Byte from an `.hex` file for STM32F446xx. |
| 64229 | STM32Cubeprogrammer does not erase sector 128 and upper on STM32L476RG. |
| 66609 | STM32CubeProgrammer programming request of OTP byte via STM32CubeProgrammer. |
| 67025 | STM32Cubeprogrammer cannot connect ST-LINK without the mass storage feature. |
| 77015 | Support flash loader for STM32F769-EVAL:MT25QL512. |

### 3.10.3 Known problems and limitations

- For the STM32L5 series, the connection via the ST-LINK protocol is allowed only when mode is set to *hotplug* with `TZEN=1`.
- For the STM32L5 series, the Option Byte programming GUI is not intuitive enough. Refer to the *STM32L552xx and STM32L562xx advanced Arm®-based 32-bit MCUs* reference manual (RM0438) for permitted accesses.
- For STM32L4Pxxx and STM32L4Qxxx devices, Option Byte programming via bootloader interfaces presents some limitations.
- For STM32H7Axxx and STM32H7Bxxx devices, Option Byte programming via bootloader interfaces (USB) presents some limitations.
- STM32L5 series programming presents limitation in macOS® when `TZEN=1` and `RDP=0x55`.
- With some small-screen resolutions, the graphical interface of STM32CubeProgrammer presents anomalies such as inaccessible buttons.
- Display issues depending on the monitor used can occur with Linux®.

## 3.11 STM32CubeProgrammer v2.2.1 release information

### 3.11.1 New features

No new feature is reported for this release. Minor release v2.2.1 is dedicated to issue correction (refer to Fixed issues).

### 3.11.2 Fixed issues

**Table 15. Main issue fixed in STM32CubeProgrammer v2.2.1**

| ID | Summary |
|---|---|
| 74031 | STM32CubeProgrammer issue programming STM32H7 Rev V via DFU. |

### 3.11.3 Known problems and limitations

- For the STM32L5 series, the connection via the ST-LINK protocol is allowed only when mode is set to *hotplug*.
- For the STM32L5 series, the Option Byte programming GUI is not intuitive enough. Refer to the *STM32L552xx and STM32L562xx advanced Arm®-based 32-bit MCUs* reference manual (RM0438) for permitted accesses.
- For the STM32L5 series, Option Byte programming via bootloader interfaces presents some limitations.
- STM32CubeProgrammer does not work under Ubuntu® 18.04.
- With some small-screen resolutions, the graphical interface of STM32CubeProgrammer presents anomalies such as inaccessible buttons.

- Display issues depending on the monitor used can occur with Linux®.

## 3.12 STM32CubeProgrammer v2.2.0 release information

### 3.12.1 New features

- Added the support of the STM32L5 series
- Added the support of HSMv2
- Added the support of IAP for the USB-DFU interface
- STM32WB firmware upgrade via the ST-LINK interface
- Added the support of OTP for the STM32L5 series
- Added the support of SSP for the STM32MP1 series

### 3.12.2 Fixed issues

**Table 16. Main issues fixed in STM32CubeProgrammer v2.2.0**

| ID | Summary |
|---|---|
| 58587 | STM32CubeProgrammer does not support STM32L433RC-P and STM32L433RB. |
| 61375 | STM32L073 - How to erase the Data EEPROM? |
| 61731 | CLI Device not supported but programmed. RDP not programmed. |
| 68802 | USB DFU for STM32L452 and STM32L476 device IDs is unknown while connecting with the USB. |
| 68916 | STM32CubeProgrammer does not recognize STM32F413 USB DFU. |
| 69927 | IAP DFU is not working with STM32CubeProgrammer: `Error Unknown` or unsupported device (`DevID = 0x0000`). |
| 71074 | STM32CubeProgrammer v2.1.0 defect - DFU mode sector erase fails on STM32H743 2MB Rev V. |

### 3.12.3 Known problems and limitations

- For the STM32L5 series, the connection via the ST-LINK protocol is allowed only when mode is set to *hotplug*.
- For the STM32L5 series, the Option Byte programming GUI is not intuitive enough. Refer to the *STM32L552xx and STM32L562xx advanced Arm®-based 32-bit MCUs* reference manual (RM0438) for permitted accesses.
- For the STM32L5 series, Option Byte programming via bootloader interfaces presents some limitations.
- STM32CubeProgrammer does not work under Ubuntu® 18.04.
- With some small-screen resolutions, the graphical interface of STM32CubeProgrammer presents anomalies such as inaccessible buttons.

## 3.13 STM32CubeProgrammer v2.1.0 release information

### 3.13.1 New features

- Added support of STM32G4 series
- Added support of STM32G03x/STM32G04x microcontrollers
- Added support of dual-core microcontrollers in the STM32H7 series
- Added support of secure firmware install (SFI)

### 3.13.2 Fixed issues

**Table 17. Main issues fixed in STM32CubeProgrammer v2.1.0**

| ID | Summary |
|---|---|
| 62057 | Download file is always executed after simple download with ST-LINK/V2 and STLINK-V3. |
| 64155 | Impossible to erase sector 128 and upper on STM32L476RG with STM32CubeProgrammer. |

### 3.13.3 Known problems and limitations

- The use of the UART bootloader prevents from increasing the RDP level and programming the second bank of Option Bytes, or from enabling the two user secure areas simultaneously on STM32H7 microcontrollers.
- Programming over USB bootloader is not reliable with USB2.0 for some devices.
- External memory programming in only available with ST-LINK.
- Installing multiple instances of the same version of the tool in the same directory under Windows® leads to issues when uninstalling.
- UART flash programming of devices in the STM32MP1 series may fail with big partitions.
- Programming issues are observed with the STM32H7 series when the STLINK-V3 $I^2C$ interface is used.
- GUI issues are sometines observed with the OTA programming of devices in the STM32WB Series.
- Linux® 32 bits is not supported.
- STM32 Trusted Package Creator: only the CLI version is supported on macOS®.
- Mass Erase is not working with the SPI bootloader interface on the STM32WB series.
- Mass Erase is not working with the $I^2C$ bootloader interface on the STM32G4 series; errors can occur when writing via the SPI interface.
- Shared mode: board detection failure is observed after multiple refresh operations.
- Writing 8-bit data in RAM on STM32L496G devices is not possible.

## 3.14 STM32CubeProgrammer v2.0.0 release information

### 3.14.1 New features

- Added support of STM32MP1 series
- Added support of STM32WB series
- Added support of *Automatic Mode* for programming devices in a loop
- Added support of OTA programming for the STM32WB series

### 3.14.2 Fixed issues

**Table 18. Main issues fixed in STM32CubeProgrammer v2.0.0**

| ID | Summary |
|---|---|
| 58879 | Internal flash programming issue with STM32L433RC (SMPS version) and STM32L433RB. |
| 60257 | *stlinkv3.rules* is missing in the *drivers\rules* folder. |

### 3.14.3 Known problems and limitations

- The use of the UART bootloader prevents from increasing the RDP level and programming the second bank of Option Bytes, or from enabling the two user secure areas simultaneously on STM32H7 microcontrollers.
- Programming over USB bootloader is not reliable with USB2.0 for some devices.

- External memory programming in only available with ST-LINK.
- Installing multiple instances of the same version of the tool in the same directory under Windows® leads to issues when uninstalling.
- UART flash programming of devices in the STM32MP1 series may fail with big partitions.
- Programming issues are observed with the STM32H7 series when the STLINK-V3 $I^2C$ interface is used.
- GUI issues are sometines observed with STM32WB series OTA programming.
- Linux® 32 bits is not covered.
- STM32 Trusted Package Creator: only the CLI version is supported on macOS®.

## 3.15 STM32CubeProgrammer v1.4.0 release information

### 3.15.1 New features

- Added STM32CubeProgrammer C++ API
- Added support of secure firmware install on STM32L462CEU6F

### 3.15.2 Fixed issues

**Table 19. Main issues fixed in STM32CubeProgrammer v1.4.0**

| ID | Summary |
|---|---|
| 55454 | Programming a STM32F765NIH6 via USART1 can be done. |
| 56817 | Cannot program internal flash memory of STM32F722ZE and STM32F730R8 via USB. |

### 3.15.3 Known problems and limitations

- Read/write operations fail with the CAN interface.
- The use of the UART bootloader prevents from increasing the RDP level and programming the second bank of Option Bytes, or from enabling the two user secure areas simultaneously on STM32H7 microcontrollers.
- Programming over USB bootloader is not reliable with USB2.0 for some devices.
- External memory programming in only available with ST-LINK.
- Installing multiple instances of the same version of the tool in the same directory under Windows® leads to issues when uninstalling.
- The STLinkV3-I2C bridge may not work correctly with STM32F4 series, STM32F7 series, and STM32H7 series.

## 3.16 STM32CubeProgrammer v1.3.0 release information

### 3.16.1 New features

- Added support of STM32G07x and STM32G08x microcontrollers
- Added support of STM32L010 microcontrollers
- Flash memory size displayed with debug interface
- Extended ST-LINK server interface support to Linux® and macOS®
- User interface enhancements
- Added contextual menu in main panel for programming, verification, and saving
- Added support of *.binary* files
- Added support of Unicode® file path
- New panel for external loaders; possibility to search and filter with the loader or board name

### 3.16.2 Fixed issues

**Table 20. Main issues fixed in STM32CubeProgrammer v1.3.0**

| ID | Summary |
|---|---|
| 54212 | STM32CubeProg could not display complete MCU list. |
| 54700 | Issue with file path including Chinese characters (double-byte characters). |
| 55156 | Error with hex file programming with option "run after programming". |

### 3.16.3 Known problems and limitations

- Read/write operations fail with the CAN interface.
- The use of the UART bootloader prevents from increasing the RDP level and programming the second bank of Option Bytes, or from enabling the two user secure areas simultaneously on STM32H7 microcontrollers.
- Programming over USB bootloader is not reliable with USB2.0 for some devices.
- External memory programming in only available with ST-LINK.
- Installing multiple instances of the same version of the tool in the same directory under Windows® leads to issues when uninstalling.
- The STLinkV3-I2C bridge may not work correctly with STM32F4 series, STM32F7 series, and STM32H7 series.

## 3.17 STM32CubeProgrammer v1.2.1 release information

### 3.17.1 New features

- Full-chip erase enabled for STM32L0 series and STM32L1 series
- Enhanced connection to STM32L0 series and STM32L1 with STLINK-V3
- Added support of Quad-SPI flash loaders:
  - N25Q128A_STM32F7508-DISCO
  - MX25L512G_STM32F7308-DISCO
  - MT25TL01G_STM32H743I-EVAL
  - MT25TL01G_STM32H747-EVAL

### 3.17.2 Fixed issues

**Table 21. Main issues fixed in STM32CubeProgrammer v1.2.1**

| ID | Summary |
|---|---|
| 53000 | [GUI-memory edition] UART memory editions do not work |
| 53496 | [Launcher-java10] The tool is not launched in Windows10 64 bits with Java10 |
| 54292 | [USB] Connection time increases after every disconnect/connect with DFU interface |

### 3.17.3 Known problems and limitations

- Read/write operations fail with the CAN interface.
- The use of the UART bootloader prevents from increasing the RDP level and from programming the second bank of Option Bytes, or from enabling the two user secure areas simultaneously on STM32H7 microcontrollers.
- Programming over USB bootloader is not reliable with USB2.0 for some devices.
- External memory programming in only available with ST-LINK.

- Installing multiple instances of the same version of the tool in the same directory under Windows® leads to issues when uninstalling.
- STLinkV3-I2C bridge may not work correctly with STM32F4 series, STM32F7 series, and STM32H7 series.

## 3.18 STM32CubeProgrammer v1.2.0 release information

### 3.18.1 New features

- Add support of STLINK-V3
- Add support of STM32L41x microcontrollers
- Listing of the connected ST-LINK probes using the `--list` command
- Digitally signed USB DFU driver for STM32 bootloader
- Add support of ST-LINK server interface

### 3.18.2 Known problems and limitations

- Read/write operations fail with the CAN interface.
- The use of the UART bootloader prevents from increasing the RDP level and from programming the second bank of Option Bytes, or from enabling the two user secure areas simultaneously on STM32H7 microcontrollers.
- Programming over USB bootloader is not reliable with USB2.0 for some devices.
- External memory programming in only available with ST-LINK.
- Installing multiple instances of the same version of the tool in the same directory under Windows® leads to issues when uninstalling.
- STLinkV3-I2C bridge may not work correctly with STM32F4 series, STM32F7 series, and STM32H7 series.

## 3.19 STM32CubeProgrammer v1.1.0 release information

### 3.19.1 New features

- Add support of STM32F7x0 Value line and STM32H750 Value line
- Add support of M29W128GL external flash memory programming on STM32H743I-EVAL
- Dump device memory into an hex/srec/bin file
- Add Core debug commands in command-line interface
- Add support of data EEPROM programming on STM32L0 series and STM32L1 series

### 3.19.2 Known problems and limitations

- The use of the UART bootloader prevents from increasing the RDP level and from programming the second bank of option bytes, or from enabling the two user secure areas simultaneously on STM32H7 microcontrollers.
- Programming over USB bootloader is not reliable with USB2.0 for some devices.
- External memory programming in only available with ST-LINK.
- Installing multiple instances of the same version of the tool in the same directory under Windows® leads to issues when uninstalling.

## 3.20 STM32CubeProgrammer v1.0.0 release information

### 3.20.1 New features

- STM32 flash programming and erasing over ST-LINK debug probe (JTAG/SWD) and over bootloader interfaces UART and USB DFU
- STM32 option bytes detailed display with description of each bit field
- Option bytes programming over ST-LINK debug probe (JTAG/SWD) and over bootloader interfaces UART and USB DFU

- External memories programming over ST-LINK debug probe (JTAG/SWD) for STM32 microcontroller evaluation and discovery boards
- Read, display and programming of binary files, ELF files, Intel hex files and Motorola Srecord files
- Read and display of STM32 microcontroller memory content
- Command line and graphical user interface
- Generation of secure firmware using the STM32 Trusted Package Creator tool

### 3.20.2 Known problems and limitations

- The use of the UART bootloader prevents from increasing the RDP level and from programming the second bank of option bytes, or from enabling the two user secure areas simultaneously on STM32H7 microcontrollers.
- Programming over USB bootloader is not reliable with USB2.0 for some devices.
- The erase command is not supported with data EEPROM on STM32L0 and STM32L1.
- External memory programming in only available with ST-LINK.
- Installing multiple instances of the same version of the tool in the same directory under Windows® leads to issues when uninstalling.

## Revision history

Table 22. **Document revision history**

| Date | Revision | Changes |
|---|---|---|
| 24-Nov-2017 | 1 | Initial release. |
| 12-Apr-2018 | 2 | Part number changed to STM32CubeProg. |
| 19-Jul-2018 | 3 | Added information related to STM32CubeProg 1.1.0. |
| 7-Sep-2018 | 4 | Added information related to STM32CubeProg 1.2.0. |
| 15-Oct-2018 | 5 | Added information related to STM32CubeProg 1.2.1. |
| 15-Nov-2018 | 6 | Added information related to STM32CubeProg 1.3.0. |
| 20-Dec-2018 | 7 | Added information related to STM32CubeProg 1.4.0. |
| 25-Feb-2019 | 8 | Added information related to STM32CubeProg 2.0.0. |
| 23-Apr-2019 | 9 | Added information related to STM32CubeProg 2.1.0. |
| 11-Oct-2019 | 10 | Added information related to STM32CubeProg 2.2.0. |
| 8-Nov-2019 | 11 | Added information related to STM32CubeProg 2.2.1. |
| 20-Dec-2019 | 12 | Added information related to STM32CubeProg 2.3.0. |
| 24-Feb-2020 | 13 | Added information related to STM32CubeProg 2.4.0. |
| 24-Jul-2020 | 14 | Added information related to STM32CubeProg 2.5.0. |
| 18-Nov-2020 | 15 | Added information related to STM32CubeProg 2.6.0. Updated *Software requirements*. |
| 12-Mar-2021 | 16 | Added information related to STM32CubeProg 2.7.0. |
| 22-Jul-2021 | 17 | Added information related to STM32CubeProg 2.8.0. |
| 29-Nov-2021 | 18 | Added information related to STM32CubeProg 2.9.0. |
| 4-Mar-2022 | 19 | Added information related to STM32CubeProg 2.10.0. |
| 28-Jun-2022 | 20 | Added information related to STM32CubeProg 2.11.0. |
| 25-Nov-2022 | 21 | Added information related to STM32CubeProg 2.12.0. |
| 27-Feb-2023 | 22 | Added information related to STM32CubeProg 2.13.0. Updated the bootloader interfaces in Overview. |

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