

1 Overview

These are the release notes for the i.MX RT1024 Flashloader. For additional information and getting started instructions, check [Getting Started](#) section of this document.

The device Flashloader is an application that is loaded into the internal RAM of the device. The Flashloader is designed to work as a second stage bootloader for this device. It detects communication on one of the supported peripherals (USB-HID or UART), downloads a user application, and writes the application to external serial NOR flash device. The Flashloader is initially loaded by MfgTool which then helps in programming the flash. Alternately, flashloader can also be loaded using sdphost command line application and blhost application can be used for flash programming.

This release includes the PC-hosted MfgTool application. This application is used for downloading user-application to flash device in both development and production phases. This release also includes the elftosb command-line application. It is used to generate a bootable image for the device ROM and generate a programmable image supported by Flashloader.

2 Development tools

The device was compiled and tested with following development tools.

Firmware projects:

- IAR Embedded Workbench for Arm® v8.50.9
- MDK-Arm Microcontroller Development Kit (Keil)® 5.33 with corresponding device pack
- MCUXpresso IDE v11.3
- Makefiles support with GCC 9-2020-q2-update from Arm Embedded

3 System requirements

System requirements are based on the requirements for the development tools and the MfgTool application. The recommended PC configuration is 2 GHz processor, 2 GB RAM, and 2 GB free disk space.

Windows OS applications like MfgTool require installation of Visual C++ redistributable 2013 or greater.

To make the MfgTool work, the device needs to be connected to a PC via a USB hub. Sometimes, an extra USB hub is required if all the USB ports on the PC are USB root hub ports.

4 Target requirements

This release of the Flashloader supports the following platforms:

- MIMXRT1024-EVK

There are no specific requirements for the hardware other than what the board requires to operate.

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5 Release contents

Table 1 describes the release contents.

Table 1. Release contents

Deliverable	Location
Host binaries and utilities	<sdk_package>/middleware/mcu-boot/bin/Tools example BD files are under <sdk_package>/middleware/mcu-boot/bin/Tools/bd_file folder blhost application is available at www.nxp.com/mcuboot , downloadable via the "Download" Tab elftosb application is available at www.nxp.com/mcuboot , downloadable via the "Download" Tab MfgTool application is under <sdk_package>/middleware/mcu-boot/bin/Tools/mfgtools-rel folder
Flashloader release	<sdk_package>/boards/<board>/bootloader_examples/flashloader

6 Getting started

To understand the steps required to use the Flashloader and corresponding host tools to generate a user application boot image and load it to an external flash device, see the *i.MX RT1024 Manufacturing User's Guide* (document).

7 Features

For downloading an application, the Flashloader supports the following communication interfaces:

- USB-HID
- LPUART1

It also supports configuring and programming the external flash device in a user-friendly manner. For further details, refer to *MCU Flashloader Reference Manual*.

8 Host tools

The bootloader release contains the binaries for the following PC-based host tools:

- `MfgTool2.exe`: GUI Windows application to download and program an application image into the external flash device. `cfg_MXRTX.ini` must be renamed to `cfg.ini` to use.
- `sdphost`: command-line tool to download and execute the Flashloader application on the device. It is available for Windows, Linux, and Mac operating systems.

Host tools must be used with MCUBOOT and are available for download from nxp.com/MCUBOOT.

- `elftosb`: command-line tool to convert ELF/SREC formatted application image into bootable image format (or SB format). It is available on Windows and Linux platforms.
- `blhost`: command-line debug tool called by MfgTool to program the application. It is available for Windows, Linux, and Mac operating systems.

9 Known issues

The Flashloader may fail to work on the MACOS platform on the RT1024-EVK when using the CMSIS-DAP embedded UART. Removing the Jumper J44 can resolve this issue.

10 Revision history

The table below summarizes the changes done to this document since the initial release.

Table 2. Revision history

Revision number	Date	Substantial changes
0	10/2020	Initial release
1	12/2020	Updated for MCUXpresso SDK 2.9.0 release

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For sales office addresses, please send an email to: salesaddresses@nxp.com

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