

RN00266

Debian Software Release Notes

Rev. LDLSDK_25.06 — 24 July 2025

Release notes

Document information

Information	Content
Keywords	i.MX, Linux, Layerscape, LF6.6.52_2.2.0, Debian, SDK, Flexbuild
Abstract	The Debian Linux SDK Distribution is a Debian-based Linux enablement software for NXP series processors that are based on Arm cores to provide quick evaluation for customers.



1 Overview

This document contains important information about the package contents, supported features, known issues and limitations in this release.

This release is based on Linux Release LF6.6.52_2.2.0. For more information on the i.MX software release, see [i.MX LINUX](#), which also includes the basic information about legacy Layerscape platforms.

This document refers to the *i.MX Linux Release Notes* (document [RN00210](#)) of the LF6.6.52_2.2.0 release and includes special information for the Debian OS and Flexbuild tools.

Supported boards:

- i.MX 8M Plus EVK
- i.MX 8M Plus FRDM
- i.MX 8M Mini EVK
- i.MX 93 11x11 EVK
- i.MX 93 11x11 FRDM
- i.MX 91 11x11 EVK
- i.MX 91 11x11 FRDM
- Layerscape LS1028ARDB
- Layerscape LS1043ARDB
- Layerscape LS1046ARDB
- Layerscape LX2160ARDB

Note: During the project setup, to set up an i.MX build, accept the NXP license. This acceptance is recorded in the build configuration files so that the following proprietary binaries can be extracted during the build process. The NXP proprietary packages contain a software content register (SCR) file that lists information about the package: *imx-gpu-viv*, *imx-codec*, *imx-vpu-hantro-vc*, *libgpuperfctnt*, *isp-imx*, and *imx-parser*.

1.1 Release contents

This release includes the following:

- Documentation
- GPU driver upgraded to *imx-gpu-viv-6.4.11.p2.10-aarch64* (compiled based on Debian 12 runtime dependency)
- VPU driver upgraded to *imx-vpu-hantro-vc-1.10.1* (based on Debian 12)
- Flexbuild source code

Flexbuild software also releases open source through repos on [Github](#). The following table lists all the repos on GitHub.

Table 1. Flexbuild GitHub distributions repos

Repo	Description
flexbuild	Flexbuild source code

2 What's new

This section describes the changes in this release, including new features and defect fixes.

2.1 New features

The following new features are added in the Debian Linux SDK 25.06 release:

- Flexbuild upgraded to 2.18.2506.
- Debian 12.9 (base, desktop, server) RootFS updated.
- Linux kernel upgraded to LTS 6.6.52.
- GPU driver upgraded to `imx-gpu-viv-6.4.11.p2.8d-aarch64` (compiled based on Debian 12 runtime dependency).
- VPU driver upgraded to `imx-vpu-hantro-vc-1.10.1` (based on Debian 12).
- Supports eIQ AI/ML and GoPoint components.
- DPDK L2FWD and L3FWD applications.
- Gstreamer 1.24.7 and various plugins for i.MX.

Note: *Other platforms may work with Debian but without warranty due to no full test yet.*

Supported features on i.MX 8M Plus EVK, i.MX 8M Plus FRDM, and i.MX 8M Mini EVK:

- Debian 12.9 Desktop by default, Weston Desktop supported alternatively.
- HDMI monitor display.
- DSI MIPI touchscreen display.
- Desktop GUI with GPU acceleration.
- Multimedia video playback with VPU codec.
- MIPI CSI camera OS08A20 with ISP (only on i.MX 8M Plus EVK).
- MIPI CSI camera OV5640.
- Web browsers (Chromium, Firefox).
- Supports Qt6 application.
- Wi-Fi + Bluetooth.
- eIQ TensorFlow Lite support.
- GStreamer support.
- DPDK for networking acceleration.
- GoPoint Demo support in both GUI and TUI modes.

Supported features on i.MX 93 EVK and FRDM:

- Debian 12 Weston Desktop by default, Gnome Desktop supported alternatively (no acceleration).
- HDMI monitor display.
- LVDS touchscreen display (only on i.MX 93 EVK).
- CSI MIPI camera AP1302 with ISP.
- Wi-Fi + Bluetooth.
- eIQ TensorFlow Lite support.
- GStreamer support.
- DPDK for networking acceleration.
- GoPoint Demo support in both GUI and TUI modes.

Supported features on i.MX 91 FRDM and i.MX 91 EVK:

- Debian 12 Weston Desktop by default, Gnome Desktop supported alternatively (no acceleration).
- Wi-Fi + Bluetooth.

Supported features on Layerscape platforms:

The following table lists the features that are supported in the Layerscape Debian Linux SDK v25.06 release 6.6.52.

Note: Refer to the legend below to decipher the entries:

- **Y:** Feature is supported by the software.
- **/:** Feature is not supported by the software.
- **NA:** Hardware feature is not available.

Table 2. Key features matrix on Layerscape platforms

Feature	LS1028A	LS1043A	LS1046A	LX2160A
64-bit User space, LE	Y	Y	Y	Y
40b phys mem	Y	Y	Y	Y
Data Plane Development Kit (DPDK) - VPP excluded	Y	Y	Y	Y
Hugetlbfs	Y	Y	Y	Y
Management Complex	NA	NA	NA	Y
Open Portable Trust Execution Environment (OP-TEE)	Y	Y	Y	Y
Virtualization	Y	Y	Y	Y
SEC engine	Y	Y	Y	Y
Time Sensitive Network (TSN)	Y	NA	NA	NA
USDPAAs Applications	NA	/	/	NA
Trusted Firmware-A (TF-A)	Y	Y	Y	Y
GUI Desktop	Y	N	N	N

3 U-Boot and device Trees

This section describes the different U-Boots and device trees, as well as different kernel and boot parameters.

3.1 U-Boot configurations

[Table 3](#) lists the U-Boot configurations for each machine configuration.

Table 3. U-Boot configurations

U-Boot configuration for boot device	Description	Supported machine configuration
sd	sd supports boot from an SD card. This is the default U-Boot configuration. For boards supporting eMMC, SD boot can be flashed in eMMC for boot from eMMC instead of an SD card.	imx8mp_frdm_defconfig imx93_11x11_evk_defconfig imx93_11x11_frdm_defconfig imx8mp_evk_defconfig imx91_11x11_evk_defconfig imx91_11x11_frdm_defconfig imx8mm_evk_defconfig ls1028ardb_tfa_defconfig lx2160ardb_tfa_defconfig ls1046ardb_tfa_defconfig ls1043ardb_tfa_defconfig
eMMC	Supports boot from eMMC.	imx91_11x11_evk_defconfig imx93_11x11_evk_defconfig

Table 3. U-Boot configurations...continued

U-Boot configuration for boot device	Description	Supported machine configuration
		imx8mmevk_defconfig imx8mpevk_defconfig ls1028ardb_tfa_defconfig lx2160ardb_tfa_defconfig ls1046ardb_tfa_defconfig ls1043ardb_tfa_defconfig
ecc	Supports DDR ECC.	imx91_11x11_frdm_inline_ecc_defconfig imx93_11x11_frdm_inline_ecc_defconfig

3.2 Kernel device trees

[Table 4](#) lists the kernel and device trees included in this release. It provides a list of device tree files for each board to provide examples on how to handle different pin conflicts due to pin muxing.

Table 4. Kernel and device tree configurations

Kernel and device tree configuration	Description
Kernel binary image	i.MX 8 and i.MX 9 image kernel is built with <code>imx_v8_defconfig</code> in <code>arch/arm64/configs</code> .
DTB descriptions	Each reference board has a standard device tree as follows: <ul style="list-style-type: none"> <code>imx91-11x11-frdm.dtb</code> <code>imx93-11x11-frdm.dtb</code> <code>imx8mp-evk.dtb</code>: Supports single or multiple displays with HDMI, MIPI-DSI-HDMI, and LVDS-HDMI <code>imx8mp-evk-revb4.dtb</code>: Supports i.MX 8M Plus Rev. B4 board <code>imx91-11x11-evk.dtb</code> <code>imx93-11x11-evk.dtb</code> <code>imx93-11x11-evk-pmic-pf0900.dtb</code> <code>imx93-14x14-evk.dtb</code> <code>imx8mm-evk.dtb</code> <code>imx8mm-ddr4-evk</code> <code>imx8mp-frdm.dtb</code> <code>fs1-ls1028a-rdb.dtb</code> <code>fs1-ls1043a-rdb.dtb</code> <code>fs1-ls1046a-rdb.dtb</code> <code>fs1-lx2160a-rdb.dtb</code>
Audio	Enables various audio device trees: <ul style="list-style-type: none"> <code>imx91-11x11-frdm-aud-hat.dtb</code> <code>imx91-11x11-frdm-8mic.dtb</code> <code>imx93-11x11-frdm-aud-hat.dtb</code> <code>imx93-11x11-frdm-8mic.dtb</code> <code>imx8mp-ab2.dtb</code>: Audio board <code>imx8mp-evk-sof-wm8960.dtb</code>: Sound open firmware for WM8960 audio <code>imx8mp-evk-rpmsg.dtb</code>: Supports low-power audio playback <code>imx8mp-evk-rpmsg-lpv.dtb</code>: Supports low-power voice <code>imx8mp-evk-revb4.dtb</code>: Supports WM8962 codec <code>imx8mm-evk-ak4497.dtb</code>: Audio board AK4497 codec

Table 4. Kernel and device tree configurations...continued

Kernel and device tree configuration	Description
	<ul style="list-style-type: none"> • <code>imx8mm-evk-ak5558.dtb</code>: Audio board AK5558 codec • <code>imx8mm-evk-audio-tdm.dtb</code>: Audio board TDM • <code>imx93-14x14-evk-aud-hat.dtb</code> • <code>imx93-11x11-evk-aud-hat.dtb</code> • <code>imx93-11x11-evk-mqs.dtb</code> • <code>imx93-11x11-evk-rpmsg.dtb</code> • <code>imx93-11x11-evk-rpmsg-lpv.dtb</code> • <code>imx93-11x11-evk-pmic-pf0900-aud-hat.dtb</code> • <code>imx93-11x11-evk-pmic-pf0900--mqs.dtb</code> • <code>imx93-11x11-evk-pmic-pf0900--rpmsg.dtb</code> • <code>imx93-11x11-evk-pmic-pf0900--rpmsg-lpv.dtb</code>
Bluetooth wireless technology Wi-Fi	<p>Enables the Bluetooth wireless technology and Wi-Fi hardware. The standard device tree supports Wi-Fi and Bluetooth:</p> <ul style="list-style-type: none"> • <code>imx91-11x11-frdm.dtb</code> • <code>imx93-11x11-frdm.dtb</code> • <code>imx8mp-evk.dtb</code> • <code>imx8mm-evk.dtb</code> • <code>imx8mp-evk-usdhc1-m2.dtb</code> • <code>imx91-11x11-evk.dtb</code> • <code>imx93-11x11-evk.dtb</code> • <code>imx93-11x11-evk-pmic-pf0900.dtb</code> • <code>imx93-14x14-evk.dtb</code>
Video capture	<ul style="list-style-type: none"> • <code>imx8mp-evk-basler.dtb</code>: One Basler ISP camera (AR0821), reaches up to 4K30 • <code>imx8mp-evk-dual-basler.dtb</code>: Dual Basler ISP cameras (AR0821), reaches up to 1080 P60 • <code>imx8mp-evk-basler-ov5640.dtb</code>: Dual cameras Basler ISP + OV5640 • <code>imx8mp-evk-os08a20.dtb</code>: Initial support for one ISP camera - OS08A20 • <code>imx8mp-evk-dual-os08a20.dtb</code>: Initial support for dual ISP cameras - OS08A20 • <code>imx8mp-evk-os08a20-ov5640.dtb</code>: Initial support for dual cameras OS08A20 + OV5640 • <code>imx93-11x11-frdm.dtb</code>: Supports AP1302 • <code>imx91-11x11-frdm-mt9m114.dtb</code> and <code>imx93-11x11-frdm-mt9m114.dtb</code>: Supports parallel MT9M114 camera • <code>imx93-11x11-evk.dtb</code> and <code>imx93-11x11-evk-pmic-pf0900.dtb</code>: Supports AP1302 • <code>imx91-11x11-evk-mt9m114.dtb</code>, <code>imx91-9x9-qsb-mt9m114.dtb</code>, <code>imx93-11x11-evk-mt9m114.dtb</code>, and <code>imx93-9x9-qsb-mt9m114.dtb</code>: Supports parallel MT9M114 camera • <code>imx91-11x11-frdm-tianma-wvga-panel.dtb</code> and <code>imx93-11x11-frdm-tianma-wvga-panel.dtb</code>: Supports Tianma TM050RDH03 5.0-inch WVGA TFT LCD panel • <code>imx93-11x11-frdm.dtb</code>: Single-channel LVDS-to-HDMI converter • <code>imx93-11x11-frdm-dsi.dtb</code>: MIPI DSI 7-inch Waveshare LCD panel
LP UART	<p>Enables LPUART:</p> <ul style="list-style-type: none"> • <code>imx91-11x11-frdm-lpuart.dts</code> • <code>imx93-11x11-frdm-lpuart.dtb</code>
LD	<p>Supports the system to be switched to Low Drive (LD) mode:</p> <ul style="list-style-type: none"> • <code>imx91-11x11-frdm-ld.dtb</code> • <code>imx93-11x11-frdm-ld.dtb</code>

4 Known issues/limitations

[Table 5](#) lists some key known issues of Debian Linux.

Table 5. Known issues and workarounds

ID	Description	Workaround
DEDI-122	CPU stall issue occurs when running Pi stress test on the Layerscape platform and real-time kernel.	None.

5 References

This release includes the following references and additional information:

- *i.MX FRDM Software User Guide* (document [UG10195](#))
- *Debian Linux SDK User Guide* (document [UG10155](#))
- *i.MX Linux Release Notes* (document [RN00210](#))
- *i.MX 93 EVK Quick Start Guide* (document [IMX93EVKQSG](#))
- *i.MX 93 Applications Processor platform* (document [IMX93QSBQSG](#))
- *i.MX 8M Mini EVK Quick Start Guide* (document [8MMINIEVKQSG](#))
- *i.MX 8M Plus EVK Quick Start Guide* (document [IMX8MPLUSQSG](#))

6 Note about the source code in the document

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7 Revision history

[Section 7](#) summarizes revisions to this document.

Table 6. Revision history

Document ID	Release date	Description
RN00266 v.LDLSDK_25.06	24 July 2025	Added the information for the Layerscape platform, updated the Linux information to be compatible with LF6.6.52_2.2.0, and updated the document revision number to LDLSDK_25.06 to be consistent with the <i>Debian Linux SDK User Guide</i> (UG10155).
RN00266 v.1.0	24 February 2025	Initial public release

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