UG10387

i.MX Linux Yocto Build Accelerator

Rev. 1.0 — 12 May 2026 **User guide**

Document information

Information	Content
Keywords	UG10387, i.MX, Linux, LF6.12.49_2.2.0, sstate-cache, Yocto Build Acceleration
Abstract	The i.MX Linux Yocto Build Accelerator is a solution that reduces the time to build Yocto-based images for i.MX MPU platforms.

1 Introduction

The i.MX Linux Yocto Build Accelerator is a solution that reduces the time to build Yocto-based images for i.MX MPU platforms.

By using the caching and mirroring mechanisms of Yocto, the build duration can be reduced from approximately 4 hours to 10 minutes. The build duration depends on the chosen machine configuration and the presence of the prebuilt artifacts.

This solution applies to the LF6.12.49_2.2.0 BSP.

2 Description

The Build Accelerator consists of two archives that can be used independently or together:

- LF_6.12.49-2.2.0_yocto-downloads.tar contains:
  - The Yocto layers repositories.
  - The source tarballs downloaded during the BitBake `fetch` process. It contains all sources required to build the `imx-image-full`, `imx-image-multimedia`, `imx-image-core`, or `core-image-minimal` images and the corresponding SDK. This enables the Yocto to build the above images offline, with no additional downloads required.
- LF_6.12.49-2.2.0_yocto-sstate-cache.tar contains:
  - The Yocto layers repositories.
  - The Yocto shared-state cache of prebuilt packages. This cache enables Yocto to build `core-image-minimal`, `imx-image-core`, and the corresponding SDK without any compilation, and to accelerate the build of other images/SDKs.
  - The Hash Equivalence database: enables BitBake to use the shared-state cache.

Note: *Due to the large size of the archives, use the download manager.*

3 Fully accelerated configurations

The following configurations are fully accelerated, but other configurations can benefit as well.

- MACHINE

Table 1. Fully accelerated MACHINE

i.MX 8	i.MX 9
• imx8qmmek • imx8qxpc0mek • imx8mq-evk • imx8mm-lpddr4-evk • imx8mm-ddr4-evk • imx8mn-lpddr4-evk • imx8mn-ddr4-evk • imx8mp-lpddr4-evk • imx8mp-ddr4-evk • imx8ulp-lpddr4-evk • imx8ulp-9x9-lpddr4x-evk	• imx91-11x11-lpddr4-evk • imx91-9x9-lpddr4-qsb • imx91-11x11-lpddr4-frdm • imx93-11x11-lpddr4x-evk • imx93-14x14-lpddr4x-evk • imx93-9x9-lpddr4-qsb • imx93-11x11-lpddr4x-frdm • imx943-19x19-lpddr5-evk • imx943-19x19-lpddr4-evk • imx95-15x15-lpddr4x-evk • imx95-15x15-lpddr4x-frdm • imx95-19x19-lpddr5-evk

- DISTRO
  - fsl-imx-wayland
- IMAGE
  - core-image-minimal
  - imx-image-core

4 Usage

1. Create your development directory. For example:

```
mkdir imx-yocto-accelerator
cd imx-yocto-accelerator
```

2. Install Yocto + package sources and/or precompiled cache. Install at least one of the package sources or precompiled cache.
   a. To use the `LF_6.12.49-2.2.0_yocto-downloads.tar` (package sources):

```
tar xvf LF_6.12.49-2.2.0_yocto-downloads.tar
```

   b. To use the `LF_6.12.49-2.2.0_yocto-sstate-cache.tar` (prebuilt binaries):

```
tar xvf LF_6.12.49-2.2.0_yocto-sstate-cache.tar
```

3. Setup your MACHINE, DISTRO, and build directory. For example:

```
cd imx-yocto-bsp
DISTRO=fsl-imx-wayland MACHINE=imx8mp-lpddr4-evk source imx-setup-release.sh
 -b build
```

4. Add the following configurations into your `conf/local.conf` file:

```
DL_DIR          = "${BSPDIR}/downloads"
SSTATE_DIR      = "${BSPDIR}/sstate-cache"
PERSISTENT_DIR = "${BSPDIR}/persistent"
```

   Explanation of key variables:
   DL_DIR – Sets the central storage location for downloaded sources.
   SSTATE_DIR – Directory for sstate cache used to accelerate builds.
   PERSISTENT_DIR – Contains the Hash Equivalence database.
5. Build your preferred image. For example:

```
bitbake imx-image-core
```

6. If needed, build the SDK for your preferred image. For example:

```
bitbake -c populate_sdk imx-image-core
```

5 Acronyms

Table 2 lists the acronyms used in this document.

Table 2. Acronyms

Acronym	Description
BSP	Board Support Package
MPU	Microprocessor Unit

6 References

Table 3 lists the references used to supplement this document.

Table 3. Related documentation/resources

Document	Link/how to access
i.MX Yocto Project User's Guide (document UG10164)	UG10164

7 Note about the source code in the document

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8 Revision history

Table 4 summarizes the revisions to this document.

Table 4. Revision history

Document ID	Release date	Description
UG10387 v.1.0	12 May 2026	Initial public release

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