

# i.MX 6 Yocto Project Patch Release Notes

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## 1 Release Purpose

The purpose of this patch release is to provide the changes for the 3.10.17\_1.0.3 patch release. Compared with the 3.10.17\_1.0.0 GA release, this release changes the following components:

- Kernel branch: imx\_v2013.04\_3.10.17\_1.0.0\_ga
- U-Boot branch: imx\_3.10.17\_1.0.0\_ga
- Graphics: gpu-viv-bin-mx6q, 3.10.17\_1.0.3
- Graphics: gpu-viv-g2d, 3.10.17\_1.0.3
- Graphics: Xorg-driver, 3.10.17\_1.0.3

This release supports the following i.MX 6 reference boards:

- i.MX 6 Quad/DualLite/Solo SABRE SD
- i.MX 6 Quad/DualLite/Solo SABRE Auto
- i.MX 6 SoloLite

## 2 Patch Descriptions

The following table provides the patch descriptions for this release.

**Table 1. Patch descriptions**

Component	Description
Graphics	<ul style="list-style-type: none"> <li>• MGS-1063 Upgrade wayland-viv extension headers</li> <li>• MGS-768 OpenVG2D fsl-gpu-sdk apps cannot run in wayland</li> <li>• MGS-946-2 flush render target surface when reset current context</li> <li>• MGS-946-1 sync gpu hardware type for wayland driver</li> <li>• MGS-945-2 System crashes when the wl_egl_window_destory called without rendering</li> <li>• MGS-945: System crashes when the wl_egl_window_destory called without rendering</li> <li>• MGS-849 some game application crashes due to not handle SKIP status in glDrawElements.</li> <li>• MGS-532 P13 driver meet "AXI BUS ERROR" on GC2000.</li> <li>• MGS-905 Kernel crash in helloworldx test</li> <li>• MGS-880 Wayland driver hang with run HelloWorldX</li> <li>• MGS-860 Wayland EGL resize stuck.</li> <li>• MGS-908-2 fix heap allocator crash with unsigned comparing</li> <li>• MGS-447 Add API to read out unique build number</li> <li>• MGS-898 One app will crash if enable WCLIP PATCH.</li> <li>• MGS-908 prevent the heap node crash with overflow</li> <li>• MGS-897 eglfCreateContext meet EGL_BAD_MATCH if sharedContext is not empty.</li> <li>• MGS-890 veglFlushCurrentContext() crash due to null context.</li> <li>• MGS-337-2 Enable wclip patch</li> <li>• MGS-886 Fix vdk test issue.</li> <li>• MA-6908 fix system hang up issue reported by customer app</li> <li>• MGS-864 libEGL crash due to not check non-window surface in eglSwapBuffer.</li> <li>• MGS-761 glxs demo met out of memory error</li> <li>• MGS-769 Fsl-GPU-SDK OpenVG test case cannot run in Wayland</li> <li>• GRPH-51 remove optimizer flag in glshfProgramBinaryOS() when linking shader</li> <li>• MGS-732 fix gpu hang when disable power management</li> <li>• MGS-730 Add support for gcvSURF_CONTIGUOUS in gcoSURF_Construct</li> <li>• MGS-707-1 Qt HelloWorldX animation crashes</li> <li>• MGS-707 Qt HelloWorldX animation crashes</li> <li>• MGS-677 Wayland EGL : Return error when buffer import fails</li> <li>• MGS-589 Wayland does not free window memory until app exits</li> <li>• MGS-715 Uninitialized pointer cause compiler warning</li> <li>• MGS-722 Dump kernel command, event queue and DB status when GPU hang</li> <li>• MGS-588 fix debug build broken issue</li> <li>• MGS-608 disable GC2000 TX clock gating</li> <li>• MGS-578 GoogleEarth APK meet shader compile error.</li> <li>• MA-5010 egl:fix screenshot white line issue on KitKat</li> <li>• MGS-367 "CTRL+C" to close the "tutorial7_es20" caused GPU hang</li> <li>• MA-5783 remove some unsupport extensions in gles11</li> <li>• MGS-332 Support N VSYNC feature in weston client.</li> <li>• MGS-293 Wayland EGL is not throttling to VSYNC by default</li> <li>• MGS-337 Disable wclip patch</li> <li>• MGS-327 Unexpected exit like Ctrl-C cause Kernel crash</li> <li>• MA-6115 fix screen vibrates on some special resolution</li> <li>• MA-6054 fix gckKERNEL_QueryProcessDB crash on i.MX6SL</li> <li>• MGS-381 fixed the uninitialized compiler variable</li> <li>• MGS-213 detect VG state in power management</li> <li>• MGS-283 gcvSURF_NO_VIDMEM for gcvHARDWARE_VG is not handled causing double free</li> <li>• MA-5783 input cursor does not display in google search</li> </ul>

## 3 Installation and Build Instructions

This section describes how to install the patch release.

For host setup and Yocto Project setup instructions, see the *Freescale Yocto Project User's Guide*.

### 3.1 Installing Yocto Project layers

To set up the manifest and download the Yocto Project layers, carry out the following commands:

```
mkdir yocto_3.10.17-1.0.3
cd yocto_3.10.17-1.0.3
repo init -u git://git.freescale.com/imx/fsl-arm-yocto-bsp.git -b imx-3.10.17-1.0.3_patch
repo sync
```

### 3.2 Choosing a machine

This release supports the following machines. Choose the machine configuration that matches your reference board. If you do not need to use a Freescale i.MX 6 Reference Platform, wait for the Yocto Project layers to be updated to this patch release.

- imx6qsabresd
- imx6qsabreauto
- imx6dlsabresd
- imx6dlsabreauto
- imx6solosabresd
- imx6solosabreauto
- imx6slevk

Set the machine configuration in `MACHINE=<name from list above>` in the following section.

### 3.3 Choosing a graphical backend

Before the setup, choose a graphical backend. The default is X11.

You can choose the following graphical backends:

- X11: using the xorg-driver interface supporting Qt 4
- Wayland: using the Weston compositor
- DirectFB
- FrameBuffer

You need to use different machine configurations for each backend. The following are examples:

- For X11:

```
MACHINE=imx6qsabresd source fsl-setup-release.sh -b build-x11 -e x11
```

- For Weston on Wayland:

```
MACHINE=imx6dlsabreauto source fsl-setup-release.sh -b build-wayland -e wayland
```

- For DirectFB:

```
MACHINE=imx6slevk source fsl-setup-release.sh -b build-dfb -e dfb
```

- For FrameBuffer:

## Installation and Build Instructions

```
MACHINE=imx6solosabresd source fsl-setup-release.sh -b build-fb -e fb
```

The `fsl-setup-release` script installs the `meta-fsl-bsp-release` layer and configures the `DISTRO_FEATURES` required for choosing the graphical backend. The `-b` parameter specifies a build directory target. In this build directory, a `conf` directory is created from `setup` that contains the `local.conf` file, where `MACHINE` and `DISTRO_FEATURES` are set. The `meta-fsl-bsp-release` layer is added into the `bblayer.conf` file in the `conf` directory under the build directory specified by the `-e` parameter.

## 3.4 Choosing an image target

Choose an image target to build. The following are image examples:

- `core-image-minimal`: builds minimal kernel and U-Boot
- `fsl-image-x11`: builds for X11, including Qt 4
- `fsl-image-weston`: builds for the Wayland graphical backend and uses the Weston compositor
- `fsl-image-dfb`: builds for the DirectFB graphical backend
- `fsl-image-fb`: builds for FrameBuffer

This release is on top of the Dora Yocto Project release and does not currently work with Yocto releases newer than Dora. To use the newer Yocto Project Daisy or Dizzy, wait until 3.10.17\_1.0.3 is upstreamed into the community Yocto Project `meta-fsl-arm` layers in the Dizzy branch, which should be completed in 2015.

## 3.5 Building an image target

```
bitbake <image>
```

Examples:

- For building X11:

```
bitbake fsl-image-x11
```

- For building wayland:

```
bitbake fsl-image-weston
```

- For building Directfb:

```
bitbake fsl-image-dfb
```

- For building Framebuffer:

```
bitbake fsl-image-fb
```

To initialize the build environment when the session is exited, run the following command in the directory above the build directory:

```
setup-environment <build directory>
```

## 3.6 Limitations

This release was not tested with Qt 5, but only Qt 4 on X11. If Qt 5 is required, use the Yocto Project community support on the Daisy or upcoming Dizzy release. This release had limited testing specific to graphics.

The following are known issues:

- MGS-1084 : Wayland:Met segmentation after run sdk openVG GLES11 GLES20 apps for a while then ctrl c. No side effects. No workaround needed.
- MGS-948 : QT Helloworld will run slower after several hours and cpu loading is very high. No workaround needed.

- MGS-960 : Met segmentation fault when run manywin in X11. No workaround needed.
- MGS-879 : Flicker found in wayland resize test. Known issue. No workaround available.

## Appendix A References

- For details on setting up the Host and Yocto Project, see *Yocto Project User's Guide*.
- For details on boot switches, see "How to Boot the i.MX Boards" in the *i.MX Linux User's Guide*.
- For how to download images by using U-Boot, see " Downloading Images Using U-Boot " in the *i.MX Linux User's Guide*.
- For how to set up an SD/MMC card, see " Preparing an SD/MMC Card to Boot " in the *i.MX Linux User's Guide*.

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