



# TEGRA LINUX DRIVER PACKAGE R17.1

RN\_05071-R17 | June 24, 2013  
Advance Information | Subject to Change

## Release Notes



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# 1.0 ABOUT THIS RELEASE

The NVIDIA® Tegra® Linux Driver Package supports development of platforms running:

- ▶ NVIDIA® Tegra® 4 series computer-on-a-chip
- ▶ Linux kernel 3.4.35
- ▶ Git tag for the release: `tegra-l4t-r17.1`



**Note:** This release of Tegra Linux Driver Package R17.1 is a release for: Tegra 4 device code-named “Dalmore”

## 1.1 WHAT’S NEW

This release adds the following features:

- ▶ K3.4 device tree support (DTB).
- ▶ Upgraded the sample file system from Ubuntu version 12.04 to Ubuntu version 13.04
- ▶ Tegra X ABI 14 driver.
- ▶ Text-format quick start guide (`l4t_quick_start_guide.txt`) posted with the release.
- ▶ NVIDIA proprietary Gstreamer conversion plug-in library (`libgstnvvidconv.so`). See the “Gstreamer-based Camera Capture (NvGstCapture)” section in the *Tegra Linux Driver Package Developers’ Guide*.
- ▶ VP8 encoding support in the NvGstCapture application.
- ▶ Script to capture log files for bug reports (`bug_report_tegra.sh`).
- ▶ Bluetooth support. See the “Enabling and Using Bluetooth” section in the *Tegra Linux Driver Package Developers’ Guide*.

## 2.0 KNOWN ISSUES

This section provides details about issues that were discovered during development and QA but not resolved prior to this release of the Tegra Linux Driver Package.

### 2.1 INCORRECT XVIDEO STREAMING

Some Xvideo streams might not render properly.

### 2.2 [1347035] U-BOOT INTERMITTENTLY UNABLE TO BOOT

U-Boot intermittently stops booting and reports problems with the Partition Table Header signature.

### 2.3 [1321436] MESSAGES RECEIVED FOR MULTIPLE DEVICES DURING BOOT

Multiple devices report `platform <name>: no map yet available` in kernel logs during boot, where `<name>` is `tegra_rtc`, `tegra_uart.1`, and others.

### 2.4 [1345634] UNSUPPORTED PARAMETER REPORTED IN NVGSTCAPTURE

When using `nvgstcapture` to capture images, with kernel logs enabled, the message “as364x 2-0030: as364x\_user\_get\_param unsupported parameter: 49” is reported.

## 2.5 [1294129] UNNEEDED CAMERA SENSOR DRIVERS INITIALIZED DURING BOOT

Along with drivers for camera sensors on code-name Dalmore platform, ov9772 (front) and imx091 (rear), the drivers for ov9726 and imx132 are also loaded even though they are not used.

## 2.6 [1293381] KERNEL WARNINGS ON TEGRA\_COMMON\_INIT\_CLOCK

Kernel logs report clock rates in excess of maximums from /kernel/arch/arm/mach-tegra/clock.c:882 on tegra\_common\_init\_clock.

## 2.7 [1253304] FRAME DROP DURING HDMI/LVDS VIDEO PLAYBACK

Heavy frame drop occurs during concurrent HDMI and LVDS video playback with the nvxvimagesink application.

## 2.8 X11 MIRROR MODE MIGHT IMPACT MULTIMEDIA PLAYBACK PERFORMANCE

X11 mirror mode might impact playback performance of some multimedia streams.

## 3.0 IMPLEMENTATION NOTES

This section provides additional implementation and support information specific to this release of the Tegra Linux Driver Package.

### 3.1 NVIDIA DRIVER FILES MOVED

In the release the below NVIDIA driver files are moved to new locations:

- EGL files are moved to `/usr/lib/arm-linux-gnueabi[hf]/tegra-egl`
- Gstreamer files are moved to `/usr/lib/arm-linux-gnueabi[hf]/gstreamer-[version]`
- L4T user-space files are moved to `/usr/lib/arm-linux-gnueabi[hf]/tegra`

### 3.2 THE L4T DEVELOPER ZONE WEBPAGE IS NOW ACTIVE

The Developer Zone website had been temporarily moved. The Developer Zone web site is now located at the below URL:

<http://developer.nvidia.com/linux-tegra>

### 3.3 MUST SYNC TO THE CORRECT TAG TO USE THE SOURCE\_SYNC.SH SCRIPT

In the release, the supplied `source_sync.sh` script needs to be provided a tag name to sync to the sources that were used to create the kernel `zImage` and `u-boot.bin` binary files that are included in the release. To sync to the correct sources that the sample provided kernel and u-boot binaries were built from, use the `tegra-l4t-r17.1` tag.

- Execute the above mentioned script and use the following tag when prompted :

```
tegra-l4t-r17.1
```

## 3.4 SOFTFP RELEASE AND DRIVERS ARE DEPRECATED

Support for the softfp release is deprecated.

## 3.5 THE LICENSE.GST-OPENMAX FILE LACKS REFERENCE TO NVVXIMAGESINK.SO

Inside of the LICENSE.gst-openmax file there is a reference to only libgstomx.so. There is no reference to libgstnvximagesink.so.

## 3.6 AMIXER SETTINGS

The amixer settings for the code-name Dalmore platform differ from settings for previous releases and platforms. Follow the instructions in the nvgst text files included in the release.

## 3.7 DEVICE TREE COMPILER AND DTB

The L4T release now includes a pre-built device-tree-compiler (DTC). By default, the flash.sh script uses this DTC tool by adding it to the beginning of the PATH env variable.

The tool was built from kernel sources available with this release. The `make dtbs` kernel target builds this DTC if the defconfig has device tree support enabled in the kconfig.

## 3.8 VERSION 12.04 FILE SYSTEM CAUSES UBUNTU DESKTOP NOT TO LOAD

If you test the release with the Ubuntu version 12.04 rootfs you will encounter an issue where the Ubuntu desktop does not load for the default user. The default sample file system included in this release is 13.04, and does not cause the problem.

## 3.9 VC-1 SUPPORT AVAILABILITY

Due to licensing constraints, VC-1 codecs are not included in the publicly-available release. Contact your NVIDIA representative for further information on obtaining VC-1 codecs.



## 4.0 ABOUT EARLIER RELEASES

26 MAR 2013

### What's New in Linux Driver Package R16.3

This release adds the following features:

- ▶ Adds full support for the hardfp ABI (armhf, arm hard float)
- ▶ Adds an Ubuntu hardfp sample file system

### Top Issues Fixed Since Last Release

- ▶ [973119] Firefox browser exits when URL is entered
- ▶ [1004978] Aisleriot Solitaire card background textures are not rendered correctly

### Power and Performance

- ▶ [964626] Display corruption observed when entering/resuming from LP0 on Ventana

12 NOV 2012

### What's New in Linux Driver Package R16.2

- ▶ All fixes and features from R16 (version 1.0).
- ▶ Kernel bug and stability fixes
- ▶ Added Tegra X11 driver for X ABI 13
- ▶ The Tegra “fuse” driver is renamed “tegra\_fuse”
- ▶ The EGL and GLES libraries have versioned ‘SONAME’ ELF entries for these libraries. Additionally, the library file names are now also versioned:
  - libEGL.so.1

- libGLv1\_CM.so.1
- libGLv2.so.2

## Top Issues Fixed Since Last Release

- ▶ [1031687] Some distributions (ChromiumOS) could show inverted video while displaying multimedia.
- ▶ [1058350] Tegra fuse driver renamed “tegra\_fuse” to avoid collision with the standard kernel module “fuse”.
- ▶ [1047048] Unable to detect USB OTG devices, using the U-Boot boot loader, from Ventana devices.
- ▶ [1005399] System crash observed when selecting HDMI as primary display on Ventana.
- ▶ [1029733, 1029792] Wi-Fi: BCM4330 driver enablement and various bug fixes

## 4 SEP 2012

### What’s New in Linux Driver Package R16

This release adds the following features.

- ▶ Adds full support for the hardfp ABI (armhf, arm hard float)
- ▶ Adds hardfp sample file system derived from Ubuntu

## Top Issues Fixed Since Last Release

The following issues are assumed to have been resolved in this release but are still being verified.

### Applications

- ▶ [973119] Firefox browser exits when URL is entered
- ▶ [1004978] Aisleriot Solitaire card background textures are not rendered correctly

### Power and Performance

- ▶ [964626] Display corruption observed when entering/resuming from LP0 on Ventana

## 11 JUN 2012

### What’s New in Linux Driver Package R15

This release fixes some issues that were found during continued testing and adds/enhances the following features.

- ▶ Adds Ventana kernel support for u-boot
- ▶ Adds `source_sync.sh` script to sync kernel and u-boot source code

## Top Issues Fixed Since Last Release

The following issues are assumed to have been resolved in this release but are still being verified.

### System

- ▶ [965154] I2C device registration fails on Ventana
- ▶ [954564] Cardhu cannot resume after USB device is changed during LP1
- ▶ [937902] Kernel command line parameter should make serial console the default console
- ▶ [961259] VDD voltage regulator initialization error on Ventana
- ▶ [946922] Voltage regulator configuration does not succeed on Ventana
- ▶ [932086] Second modprobe of a Wi-Fi module does not succeed

### Boot Loader/BDK

- ▶ [959318] U-Boot debug messages about warnings/errors from GPT and bootm are expected on Cardhu
- ▶ [930663] I2C bus errors observed during and after boot

### Display

- ▶ [959676] Tegra user space graphics driver lists more video modes than are supported
- ▶ [946409] DVI display is corrupted on Cardhu and Ventana

### Multimedia

- ▶ [966041] `nvgstcapture` does not run successfully when flashed with U-Boot on Cardhu
- ▶ [955196] Corruption observed with `nvgstplayer` on Ventana

### Power and Performance

- ▶ [964400] Audio corruption heard when WAV file is played after device resumes from LP0
- ▶ [961907] Harmony is unable to enter LP0

## 18 APR 2012

## What's New in Linux Driver Package R15.BETA

This release fixes some issues that were found during continued testing and adds/enhances the following features.

- ▶ Preliminary U Boot support. For more information, see [U-Boot support is preliminary in this release](#) in the Implementation Notes section.

- ▶ The multimedia streaming and capture applications `nvgstplayer` and `nvgstcapture` are included in the release file instead of being provided as a separate downloadable package.
- ▶ The Tegra X Driver ABI 12 is supported.
- ▶ A version checking file has been included in `/etc/nv_tegra_release`. For more information, see “Determining the Success of a Driver Update” in *NVIDIA Tegra Linux Driver Package Developers’ Guide*. [959325]

## Top Issues Fixed Since Last Release

The following issues are assumed to have been resolved in this release but are still being verified.

### System

- ▶ [961258] VDD regulator errors observed during initialization
- ▶ [935225] Cardhu device reboots with thermal throttle
- ▶ [946328] Driver probes fail during boot on Cardhu
- ▶ [946330] Kernel chip initialization fails with “uninitialized object...” error on Cardhu
- ▶ [915638] Volume keys are not working on Cardhu and Ventana

### I/O

- ▶ [932023] USB host/device mode functionality does not work after plug-in/plug-out of USB devices to USB-1 on Cardhu

### Multimedia

- ▶ [931180] Display flickers or corruption occurs during `nvgstplayer` video playback on Ventana
- ▶ [893571] “Non-secure read” error message may display during multimedia playback on Cardhu
- ▶ [963995] System crash observed when changing resolution to 1080p in both Video and Still mode

### Power and Performance

- ▶ [942490] Suspend/resume cycles leads to file system instability on Cardhu and Ventana
- ▶ [933291] Resume after Deep Sleep or Suspend does not succeed on Harmony
- ▶ [947673] Resume fails after Deep Sleep or Suspend with dock installed on Cardhu
- ▶ [941531] Intermittent warning message after Resume from Deep Sleep (LP0) on Cardhu

## 12 MAR 2012

### What's New in Linux Driver Package R15.ALPHA

This release fixes some issues that were found during continued testing and adds/enhances the following features:

- ▶ Linux kernel 3.1
- ▶ Camera support + capture application

### Top Issues Fixed Since Last Release

The following issues are assumed to have been resolved in this release but are still being verified.

#### System

- ▶ [931120] Race condition prevents kernel boot completion on Cardhu

## 17 FEB 2012

### What's New in Linux Driver Package R15.ER2

This release fixes some issues that were found during continued testing and adds/enhances the following features:

- ▶ Camera capture application (nvgstcapture) provided.

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