TEGRA LINUX DRIVER PACKAGE R19.3

RN_05071-R19 | July 1, 2014
Advance Information | Subject to Change

Release Notes

TABLE OF CONTENTS

1.0 ABOUT THIS RELEASE 3

1.1 Login Credentials 3
1.2 What's New 3
1.3 Top Issues Fixed Since Last Release 4
1.4 Software Quality 4
1.5 Sources for Included Linux Distribution Packages 4
1.6 Updating an Existing L4t Installation to the R19.3 Release 4

2.0 KNOWN ISSUES 5

2.1 "Gk20a_fifo_handle_mmu_fault" observed when playing any video using Xvimagesink 5
2.2 Presence of bluetooth.conf causing display of many warnings on boot 5
2.3 Invocation of oom-killer and graphical corruption in screen orientation stress testing 5
2.4 Display divided 4 ways after increasing resolution on 4K displays higher than 1080p 6
2.5 HDMI audio output option in settings intermittently missing after boot 6
2.6 Kernel image pickup failure message displays after boot 6
2.7 USB support 6
2.8 GUI controls for logout, shutdown, and reboot might not function 7
2.9 Display support 7
2.10 System settings details section hangs 7
2.11 Linux Unity installer launcher should not be present 7
2.12 libglx.so overwritten by release 8
2.13 User accounts must belong to the Video group to access the GPU 8
2.14 GPU driver error might occur under heavy workload 8
2.15 Desktop background remains visible after stopping lightdm service 8
2.16 Temporary graphical corruption displays might occur after UI login 8
2.17 Mono audio formats not audible via audio output jack 9
2.18 Video resume command does not function with nvgstplayer 9
2.19 USB headset not listed as audio output device in sound settings 9

3.0 IMPLEMENTATION NOTES 10

3.1 Gstreamer 1.0 Support 10
3.2 Reboot required after flashing New Jetson TK1 Systems 10

1.0 ABOUT THIS RELEASE

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

- NVIDIA® Tegra® K1 32 Bit series computer-on-a-chip
- Linux kernel 3.10.24

Git tag for the release: tegra-l4t-r19.3

Note: This release of Tegra Linux Driver Package R19.3 is a release for: Tegra K1 32 Bit device code-named "Jetson TK1"

1.1 LOGIN CREDENTIALS

The default Jetson TK1 login credentials are:

- Username: `ubuntu`
- Password: `ubuntu`

Note: A debug console is available via female-to-female NULL modem cable. The console is not password protected.

1.2 WHAT'S NEW

This release fixes some issues that were found during continued testing and adds/enhances the following feature(s).

- U-Boot support for Jetson TK1.
- Includes accelerated libjpeg library: libnvgstjpeg.so
- Gstreamer 1.0 support. (The nvgstplayer application defaults to gstreamer 0.1 support. To run the 1.0 versions, use the full path to the binary.)

- Includes libgstegl-1.0.so.0 and libgstnveglglessink.so (for gstreamer1.0 only)

1.3 TOP ISSUES FIXED SINCE LAST RELEASE

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

- Default partition size no longer must be increased.

1.4 SOFTWARE QUALITY

The Jetson TK1 platform is pre-flashed with version R19.2 of Linux For Tegra (L4T). For the latest releases and errata, visit:

http://developer.nvidia.com/jetson-tk1 (Registered Developer Program membership required.)

1.5 SOURCES FOR INCLUDED LINUX DISTRIBUTION PACKAGES

Source files for open-source licensed Linux distribution packages included with the release are located in the following directory:

```
./usr/src/
```

These are specific to the R19.2 release. The R19.3 release source files are available on the R19.3 release page:

```
https://developer.nvidia.com/linux-tegra-rel-19
```

1.6 UPDATING AN EXISTING L4T INSTALLATION TO THE R19.3 RELEASE

If your Jetson TK1 system has come pre-installed with the R19.2 release and you need instructions for updating to R19.3, refer to “Updating Drivers on an Existing Target System” in *NVIDIA Tegra Linux Driver Package Development 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 "GK20A_FIFO_HANDLE_MMU_FAULT" OBSERVED WHEN PLAYING ANY VIDEO USING XVIMAGESINK

Intermittent MMU fault occurs during NvXVimageSink video playback. This is difficult to reproduce.

2.2 PRESENCE OF BLUETOOTH.CONF CAUSING DISPLAY OF MANY WARNINGS ON BOOT

The presence of the file `bluetooth.conf` in the upstart directory /etc/init causes display of many warnings after booting the device.

2.3 INVOCATION OF OOM-KILLER AND GRAPHICAL CORRUPTION IN SCREEN ORIENTATION STRESS TESTING

After approximately. 150-200 iterations of screen orientation change stress testing, the GUI is corrupted and several applications call oom-killer (nautilus/compiz/X). Low memory warnings are also displayed.

2.4 DISPLAY DIVIDED 4 WAYS AFTER INCREASING RESOLUTION ON 4K DISPLAYS HIGHER THAN 1080P

Switching the resolution for a connected 4K display to resolutions above 1080p causes the display to split 4 ways, in a 2 x 2 grid, for 3 to 4 seconds or until GUI is updated or refreshed.

2.5 HDMI AUDIO OUTPUT OPTION IN SETTINGS INTERMITTENTLY MISSING AFTER BOOT

HDMI audio-out option in Sound settings is intermittently missing from one boot to the next.

2.6 KERNEL IMAGE PICKUP FAILURE MESSAGE DISPLAYS AFTER BOOT

The following kernel image pickup failure message displays after otherwise successful boot with the u-boot boot loader:

```
Wrong Image Format for sysboot command
ERROR: can't get kernel image!
```

2.7 USB SUPPORT

USB device mode is not supported. USB 3.0 is supported in this release, but is turned off by default.

To enable USB 3.0

Modify odmdata settings in `jetson-tk1.conf`.
Flash and boot the system.

> The `jetson-tk1.conf` file includes information on correct odmdata settings for USB 3.0 and USB 2.0.

2.8 GUI CONTROLS FOR LOGOUT, SHUTDOWN, AND REBOOT MIGHT NOT FUNCTION

Intermittently, GUI controls for logout, shutdown, and reboot appear to start those processes, but UART logs do not report any progress. Commands invoked from a terminal session function properly.

2.9 DISPLAY SUPPORT

Display support in this release has the following issues:

- Some DVI/HDMI displays show truncated output during boot.
- Hot plugging HDMI display may result in resolution change.
- Desktop resolution higher then 1080p might result in temporary corruption.
- You must connect HDMI prior to booting for subsequent hot plug detection to function
- DVI displays connected via HDMI-DVI cable might not synchronize correctly

Continuous graphical corruption occurs on 4K displays when set to 3096 x 2160 resolution.

To avoid the 4K corruption

- Disable EMC scaling with the following command:

```
$ echo 0 > /sys/module/tegra12_emc/parameters/emc_enable
```

2.10 SYSTEM SETTINGS DETAILS SECTION HANGS

The system settings Details section causes the system to hang.

2.11 LINUX UNITY INSTALLER LAUNCHER SHOULD NOT BE PRESENT

This application is not applicable for an installed system and will be removed in a subsequent release.

2.12 LIBGLX.SO OVERWRITTEN BY RELEASE

The `libglx.so` file located at

```
/lib/xorg/modules/extensions/libglx.so
```

Included in the xserver-xorg-core package is overwritten in this release by the NVIDIA-provided `libglx.so` library. If you update the xserver, the NVIDIA libglx.so might be overwritten. Save the libglx.so file to a separate location prior to updating the system.

2.13 USER ACCOUNTS MUST BELONG TO THE VIDEO GROUP TO ACCESS THE GPU

Newly created user accounts must belong to the video group to ensure the GUI appears after login.

2.14 GPU DRIVER ERROR MIGHT OCCUR UNDER HEAVY WORKLOAD

The following error is observed under heavy multi-application GPU workload:

```
gk20a_fifo_set_ctx_mmu_error: channel 0 with hwctx generated a mmu fault
```

2.15 DESKTOP BACKGROUND REMAINS VISIBLE AFTER STOPPING LIGHTDM SERVICE

After stopping the `lightdm` service the desktop background image might remain visible.

2.16 TEMPORARY GRAPHICAL CORRUPTION DISPLAYS MIGHT OCCUR AFTER UI LOGIN

After booting the device temporary graphical corruption of the UI might occur. This graphical corruption will resolve itself.

2.17 MONO AUDIO FORMATS NOT AUDIBLE VIA AUDIO OUTPUT JACK

Mono audio may not be audible when the audio output jack is used for output to a connected 3.5 mm headset. The same files result in audible output when routed to HDMI.

2.18 VIDEO RESUME COMMAND DOES NOT FUNCTION WITH NVGSTPLAYER

Video playback does not resume from pause when using run-time commands of `nvgstplayer`. The `gstreamer` application exits with an error.

2.19 USB HEADSET NOT LISTED AS AUDIO OUTPUT DEVICE IN SOUND SETTINGS

A connected USB headset does not automatically list in Sound Settings as an available audio output device. The following command enables a USB headset device:

```
# pactl load-module module-alsa-sink device=hw:2,0
```

3.0 IMPLEMENTATION NOTES

3.1 GSTREAMER 1.0 SUPPORT

This release includes gstreamer 1.0 support. The nvgstplayer application defaults to gstreamer 0.1. To run the 1.0 version, use the full path to the binary.

3.2 REBOOT REQUIRED AFTER FLASHING NEW JETSON TK1 SYSTEMS

When flashing a new Jetson TK1 system for the first time, you must hard reboot the Jetson TK1 device after flashing by pressing the RESET button. The system soft reboots immediately after a successful installation, displaying a black screen with a warning message. You must hard reboot the device when the black screen with the warning message is displayed. The GUI starts normally after the hard reboot. This hard reboot is only required after the first time re-flashing the system with the root file system provided with the R19.1 and R19.2 L4T releases.

Notice

Trademarks

Copyright