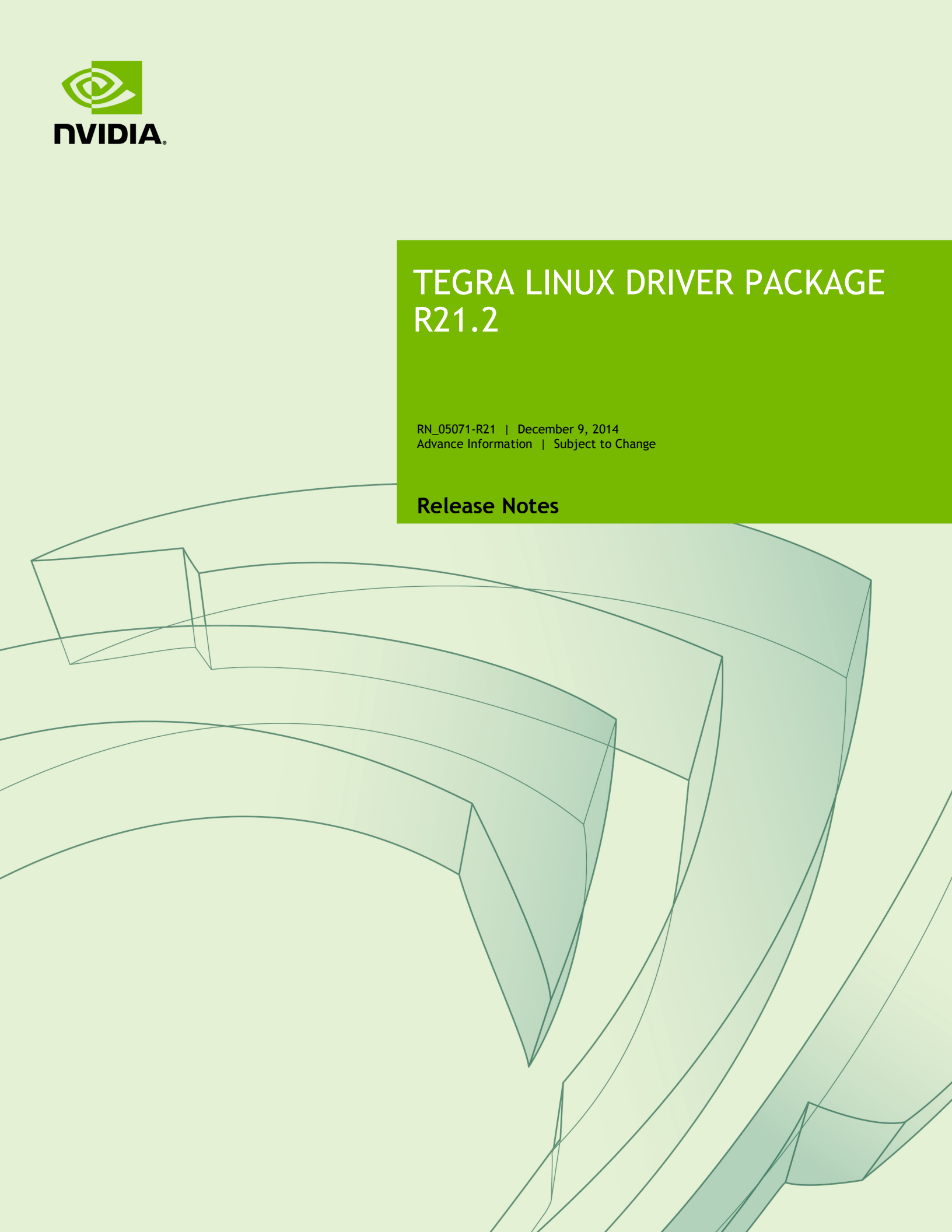

TEGRA LINUX DRIVER PACKAGE R21.2

RN_05071-R21 | December 9, 2014
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® K1 32 Bit series computer-on-a-chip
- Linux kernel 3.10.40
- Git tag for the release: tegra-l4t-r21.2

Note: This release of Tegra Linux Driver Package R21.2 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).

- Support for CUDA version 6.5.31
- Kernel header package included for user development of external kernel modules
- CD575M SKU, 24x7 duty cycle support
- V4L2/soc_camera driver emits raw image data in native format
- Enhanced nvgstplayer-1.0 frames per second (fps) measurement logic

- Support for several commonly-available Wi-Fi modules with Jetson TK1 platform
- Support for block linear NV12 and I420 formats for nvjpegenc JPEG encoder

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.

System

- [200025767, 200028349] Unable to flash device without ID EEPROM present and at standard location
- [200055390] USB Camera with YUYV format output doesn't work on R21.1 sample file system
- [200045794] Symbolic link to libGL.so not present in file system
- [1486933] GUI does not appear on boot after flashing the device for the first time

Multimedia

- [200040952] Using USB camera with USB 3.0 support enabled causes tegra-xhci messages to display
- [200042261, 200048782] Windows created for video playback using loop-forever nvgstplayer-0.10 option not automatically closed
- [200054291] “Gstreamer-CRITICAL” messages display during video recording using nvgstcapture-1.0
- [200054272] “Gstreamer-CRITICAL” messages display during audio playback using nvgstcapture-1.0
- [200041554, 200041591, 200006310] Improvements to Gstreamer NVIDIA overlay sink stability
- [200038672] Optimize nvgstplayer application to eliminate frame drops
- [200045581] Nvgstplayer application fails to play 4-channel audio
- [200041718] Audio and video playback out of sync for nvgstplayer-0.10 and nvgstplayer-1.0 for specific MPEG4 media content
- [200043645] Artifacts appear in video encoded with H.264 encoder
- [1567176] Multi-channel encode support issues
- [1392891] JPEG transcoding issues

Security

- [200013323] Improve reference counting for host1x channels

Power and Performance

- [1536384, 200043556] Improve residency of GPU adaptive power gating

1.4 JETSON TK1-SPECIFIC RELEASES

For the latest releases and errata for the Jetson TK1 platform, visit (Registered Developer Program membership required):

```
http://developer.nvidia.com/jetson-tk1
```

1.5 SOURCES FOR INCLUDED LINUX DISTRIBUTION PACKAGES

Source files for open-source licensed Linux distribution packages included in the release flashed on Jetson TK 1 as shipped are located in the following directory:

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

You can download updated sources, when available at the following Web site:

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

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 [200060263] CAMERA PREVIEW NOT SEEN AFTER LAUNCHING NVGSCAPTURE-0.10 WITH WEBCAM

After launching nvgscapture-0.10 with Logitech HD webcam connected, camera preview does not display. Application must be restarted to view preview.

2.2 [200055546] GUI HANGS WITH ERRORS AFTER IDLE

After approximately 5 minutes, under specific workloads, the GUI hangs, with messages in the kernel log that include the following:

```
[ 2945.691314] gk20a gk20a.0: gk20a_pmu_isr: pmu halt intr not implemented
```

2.3 [200043474] HOT-PLUGGING OUT DEVICES CONNECTED THROUGH A USB HUB CAUSES ERRORS

Hot plugging-out USB devices such as keyboards and mice previously connected to hubs causes errors to display in logs, when the devices were connected to USB 3.0 hubs.

2.4 [1566598] NETDEV WATCHDOG TIMEOUT OCCURS DURING APT-GET OPERATIONS

When running apt-get dist-upgrade, the operation times out in the R8169 driver, and the network becomes unusable.

2.5 [200054967] THE FLASH.SH SCRIPT FOR U-BOOT DOES NOT UPDATE EXTLINUX.CONF

The U-Boot `flash.sh` script does not update the `extlinux.conf` file with changes from the `jetson-tk1.conf` file.

2.6 [200005253] USB 3.0 FLASH DRIVE NOT DETECTED BY U-BOOT BOOTLOADER

A USB 3.0 flash drive containing the file system is not detectable by U-Boot boot loader, causing boot to be unsuccessful.

2.7 [200053327] JPEG DECODER AND ENCODER ARE UNABLE TO RUN CONTINUOUSLY

During JPEG decode, nvjpegdec can only successfully decode one frame at a time, rather than continuous operation. During JPEG encode, nvjpegenc has OOM issues during continuous encoding.

2.8 [200037684] ERRORS DISPLAY IN LOGS WHEN HOT-PLUGGING HDMI CABLE

Hot-plugging the HDMI cable after booting the device with the cable connected causes errors similar to the following to display in logs:

```
mc-err: [mcerr] (dcb) csr_display0ab: EMEM decode error on PDE or PTE
entry
```

2.9 [200036424] SYSTEM HANGS WHILE ENTERING DEEP SLEEP (LP0) WHEN HDMI IS DISCONNECTED

If an HDMI display connected at boot is disconnected by hot-plugging out the cable after boot, the system hangs while entering Deep Sleep (LP0).

2.10 [200059957] UNABLE TO CAPTURE IMAGES OR VIDEO WITH NVGSTCAPTURE

Occasionally nvgstcapture is unable to capture images or video after the first boot after flashing the device. The issue does not occur after rebooting.

2.11 [200057069] SYSTEMD-UDEVD DAEMON ATTEMPTS TO EXECUTE NONEXISTENT FILE

After flashing and booting the system, an error similar to the following appears in logs:

```
daemon:err   : [   11.590708] systemd-udevd[413]: failed to execute
'/usr/sbin/camera_device_detect' '/usr/sbin/camera_device_detect': No such
file or directory
```

This message can be safely ignored.

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.

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