NVIDIA Jetson Linux

Release Notes

Version 35.6.1 GA

RN_10698-r35.6.1 GA | March 2025

Table of Contents

1. About This Release

The NVIDIA® Jetson™ Linux 35.6.1 General Availability (GA) includes the Linux Kernel 5.10, the UEFI based Bootloader, the Ubuntu 20.04-based root file system, NVIDIA drivers, the necessary firmware, toolchain, and more. This release also supports all Jetson Orin™- and Jetson Xavier™-based production modules and Developer Kits.

Important: This GA release can be used for production purposes.

Platform and Release Information

Description	Supported version
Host machine Linux distribution for flashing software onto Jetson devices	Ubuntu x64 18.04 or 20.04 (x64 distribution)
Sample rootfs derived from Ubuntu operating system to run on Jetson devices	Ubuntu 20.04
Supported Linux kernel version	5.10 LTS
Supported ARM architecture	aarch64

Description	Supported version
Name of the configuration file used in flashing. **Note**: When you flash a configuration file with flash.sh, specify the configuration's basename, i.e. the file name without the .conf suffix. For a complete description of supported platforms and configuration names, see the *Jetson Modules and Configurations* table in Environment Variables.	`jetson-agx-orin-devkit-industrial.conf`: Flashes Jetson Orin industrial module (P3701-0008) attached to a Jetson Orin reference carrier board (P3737-0000). `jetson-orin-nano-devkit.conf`: Flashes one of the following modules that is attached to a Jetson Orin Nano Carrier board (P3768-0000): ● Jetson Orin Nano developer kit module with SD Card (P3767-0005) ● Jetson Orin Nano 8GB module (P3767-0003) ● Jetson Orin Nano 4GB module (P3767-0004) ● Jetson Orin NX 16GB module (P3767-0000) ● Jetson Orin Nx 8GB module (P3767-0001) `jetson-agx-orin-devkit.conf`: Flashes one of the following modules that is attached to a Jetson AGX Orin Developer Kit (P3730-0000) reference carrier board (P3737-0000): ● Jetson AGX Orin developer kit module (P3701-0000) ● Jetson AGX Orin 32GB module (P3701-0004) ● Jetson AGX Orin 64GB module (P3701-0005) `jetson-agx-orin-devkit-as-nx-16gb.conf`: Flashes a configuration that emulates a Jetson Orin NX 16GB module on a Jetson AGX Orin module (P3701-0000) that is attached to a Jetson AGX Orin Developer Kit (P3730-0000) reference carrier board (P3737-0000). `jetson-agx-orin-devkit-as-nx-8gb.conf`: Flashes a configuration that emulates a Jetson Orin NX 8GB module on a Jetson AGX Orin module (P3701-0000) that is attached to a Jetson AGX Orin Developer Kit (P3730-0000) reference carrier board (P3737-0000). `jetson-agx-orin-devkit-as-jao-32gb.conf`: Flashes a configuration that emulates a Jetson AGX Orin 32GB module on a Jetson AGX Orin module (P3701-0000) that is attached to a Jetson AGX Orin Developer Kit (P3730-0000) reference carrier board (P3737-0000). `jetson-agx-xavier-devkit.conf`: Flashes a Jetson AGX Xavier module that is attached to a Jetson AGX Xavier Developer Kit reference carrier board.

Description	Supported version
	`jetson-xavier-nx-devkit.conf`: Flashes QSPI-NOR and microSD card for Jetson Xavier NX (P3668-0000). `jetson-xavier-nx-devkit-emmc.conf`: Flashes QSPI-NOR and eMMC for Jetson Xavier NX (P3668-0001). `jetson-agx-xavier-industrial.conf`: Flashes QSPI-NOR and eMMC for Jetson AGX Xavier Developer Kit with Jetson AGX Xavier Industrial module (P2888-0008).
Board names, module names, and revision numbers	Refer to the Jetson FAQ for a detailed list of Jetson device information.
Toolchain for cross-compilation	Bootlin GCC 9.3 https://developer.nvidia.com/embedded/jetson-linux
Release Tag	jetson_35.6.1

1.1. Login Credentials

To create your login credentials, follow the system prompts at the first boot.

1.2. What's New

Jetson Linux 35.6.1 adds the following highlights:

- Super mode support for Jetson Orin Nano devkit and Jetson Orin NX.
- Support for the following Process Change Notifications (PCN):
  - PCN 211761
- Fixes for known security vulnerabilities.
- Improved system stability.

Here is some additional information:

- Jetson Linux Sources are now available on Git in addition to the Jetson Linux page (refer to Working with Sources for more information).

For more information about the adaptation and bring up process for your custom carrier boards, refer to Jetson Module Adaptation and Bringup for the Jetson AGX Orin, Orin NX, Orin Nano, AGX Xavier, and Xavier NX platforms.

- Refer to the Jetson Linux Developer Guide for Jetson Linux documentation and Implementation Details for more information about implementation details that cover a variety of topics.

2. Known Issues

This section provides details about issues that were discovered during development and QA but have not yet been resolved in this release.

2.1. General System Usability

The following general system usability-related issues are noted in this release.

Issue	Description
3747765	The `Video_dec_drm` sample compilation becomes stuck and displays a blank screen when it is run on Jetson AGX Xavier that is connected to the Acer X27 4k60 monitor.

4120373	When attempting to install Nsight Systems for Tegra in an environment without access to an actual Tegra device, or in an environment that lacks the required drivers, you might encounter the `Unsupported Linux aarch64 platform` error.
	
	Workaround
	Install the package directly on a Tegra system.
	
	After the installation is complete, the unpacked binaries can be packaged/copied and used in any environment by running the following additional commands:
	
	• dGPU
	  • `sudo update-alternatives --install /usr/local/bin/nsys nsys /opt/nvidia/nsight-systems/2023.2.4/target-linux-sbsa-armv8/nsys`
	  • `sudo update-alternatives --set nsys /opt/nvidia/nsight-systems/2023.2.4/target-linux-sbsa-armv8/nsys`
	
	• iGPU
	  • `sudo update-alternatives --install /usr/local/bin/nsys nsys /opt/nvidia/nsight-systems/2023.2.4/target-linux-tegra-armv8/nsys`
	  • `sudo update-alternatives --set nsys /opt/nvidia/nsight-systems/2023.2.4/target-linux-tegra-armv8/nsys`

Issue	Description

4191596	The capsule update is aborted after an OTA to R35 top of tree.
	
	To update from release 35.3.1 to release 35.4.1 (slots A and B:
	
	1. Complete a fresh flash in release 35.3.1 and boot from slot A.
	2. Switch to slot B and reboot.
	
	`sudo nvbootctrl set-active-boot-slot 1`
	
	3. Verify that the current slot is B, trigger Debian OTA, and reboot.
	
	`sudo nvbootctrl dump-slots-info`
	
	4. After the reboot, start a system boot from slot A, verify that the current slot is A, and the version is 35.4.1
	
	Slot A has been updated to release 35.4.1.
	
	5. Verify that the current slot is A and trigger Debian OTA, and reboot.
	6. After the reboot, start a system boot from slot B, verify that the current slot is B and the version is 35.4.1
	
	Slot B has been updated to release 35.4.1.

4201491	Although flashing the Jetson-Linux OS on multiple OS boot media such as USB, NVMe, SD, and so on is supported, the media should have an OS only from the same major release. An attempt to flash different OS versions to multiple boot media will lead to a system crash in UEFI because `dtb` overlays that are applied to the kernel `dtb` might be vastly different in their structure for every major release. As a result, UEFI will not be able to apply overlays in the expected manner, and components such as watchdog and the fan will not work as expected. The device might overheat and cause permanent damage. **Workaround** To workaround this issue, ensure that you keep only one boot media and flash again after the board cools down.
4201479	Customers are advised to make a note of the various, connected secondary boot mediums. UEFI has a priority of the boot medium from which to boot. If you have a different Jetpack version flashed on these mediums, or the medium is empty, you might see a boot failure.

Issue	Description
	Ensure that when you flash to a medium, a boot is also happening from that medium. UEFI has different overlays that are flashed in the UEFI partition and are based on whether you are flashing 5.10 or 5.15. If you boot 5.10 with overlays from 5.15, it will corrupt the kernel DTB and vice versa. This configuration *is not* supported. Refer to Overriding the Default Boot Order During Flashing for more information.

2.2. Flashing

The following flashing-related issues are noted in this release.

Issue	Description
3601114 3601261	The minimum recommended SD card or USB device size for flashing the complete JetPack SDK to an SD card / USB for Jetson Xavier NX Developer Kit is 64 GB.
3586898	A complete JetPack installation on the Jetson Xavier NX production module on the 16GB EMMC fails. **Workaround** Starting with release 35.1, the SDK Manager offers the following options: • A complete JetPack installation. • An installation of *only* the JetPack runtime components. The JetPack runtime installation does not include samples and documentation and is helpful for Jetson modules with limited storage and during production.

2.3. Camera

The following camera-related issues are noted in this release.

Issue	Description
3692128	To get IMX318 probed on Jetson, before you flash, remove the camera-related DTBO filenames from the `OVERLAY_DTB_FILE` string in the corresponding `<boardname>.conf` file. This file is used to flash the device by using the `sudo ./flash.sh <boardname> mmcblk0p1` command.

Issue	Description
4035327	Running the `nvgstcapture-1.0` application on Jetson AGX Orin can intermittently show color distortions in camera preview.
3739243	On Jetson AGX Industrial boards with IMX185, the sensor might periodically stop streaming at times through argus when the sensor mode is set to 0. However, the sensor works through the v4l2 interface.
4209096	Corruption might be observed during previews for the IMX318 sensor with Jetson AGX Orin.
200765445	There may be performance issues because of below two patches that were part of BSP 35.6 release: • https://github.com/OE4T/linux-tegra-5.10/commit/2b4a21d956705fe73b0b3a18499f800a6d9d7437 • https://github.com/OE4T/linux-tegra-5.10/commit/7bc4fe38148b326c82ddf1dd5632baa849c59945 If there are performance issues related to High CPU Utilization/ Frame drops during camera use cases, we recommend that you revert the above patches and validate the customer's use cases.

2.4. Multimedia

The following issues are noted in this release related to multimedia.

Issue	Description
4460013	`NvBufSurfTransform()/NvBufSurfTransformAsync()` might cause kernel panic due to some race condition if the same session is used for multiple threads. The recommendation is to use different sessions for different threads to avoid the issue and for better performance.
3796170	A long duration test with `detectnet-camera` on Jetson Xavier NX might lead to an `Out of memory` error after three days.
4507918	The update in JPEG headers can cause JPEG sample failures, so users must use the new updated headers and libraries.
4056033	There is a hang in the `multifilesrc + nvv4l2decoder mjpeg=true + nv3dsink` pipeline.

Issue	Description
	Workaround Use the `multifilesrc + nvv4l2decoder mjpeg=true + nvvidconv + nv3dsink` pipeline instead.

2.5. Display

The following TensorRT-related issues are noted in this release.

Issue	Description
3695925	On Jetson AGX Orin, the display might intermittently go blank during the boot.
3724559	HDMI 4K@60Hz does not work on an ACER Predator X27 monitor that is connected to Jetson AGX Xavier. To work around this issue, change the resolution to 4K@30Hz or a lower resolution.
3517183	After an idle time of the display on Jetson AGX Orin, the following message is repeated in the logs: `NVRM rpcRmApiControl_dce: NVRM_RPC_DCE: Failed RM ctrl call cmd:0x731341 result 0xffff:` This message should not cause any functional impact.
4212752	A minor display corruption might be encountered if a DP Hot-Plug event takes place while the Orin Nano Devkit is in sleep mode. **Workaround** A restart should resolve any visual effects.

2.6. Deep Learning

The following Deep Learning-related issues are noted in this release.

Issue	Description
4053211	A warning appears when users attempt to run on a SKU that TensorRT did not test. This issue occurs only when the users' network requires more than 59 GiB of memory to build.

3. Fixed Issues

This section provides details about the issues that were resolved in this release.

Issue	Description
5066957	Fix race condition that causes the oem-config GUI to not be shown on DP display.
4943319	L0 ap_graphicsperf testing is failing on galen-dvt2 in multiple subtests, which causes TEST_RUN_TIMEOUT.
4923002	Fix UEFI memory leak when running reboot stress test.
4863375	cuDNN 9 support for CUDA 11.
4833653	Fail to set CPU frequency with userspace governor on ONX 8GB.
4796140	mmcblk0p1 taking the entire size of disk even with -S options to set rootfs size.
4732705	USB 3.0 is gone after testing power cycle about 20 times.
4220418	Fix intermittent FSYNC IOCTL failures.
4201155	Add Jaol support in bringup framework.

4. Implementation Details

This section provides information about implementation details.

4.1. Camera

Because UEFI boot is enabled in JP5.x releases, Camera Auto Detection will not work if the EEPROM ID is not configured for a camera sensor.

4.2. Device Registration

After you complete the driver development, you *must* add the new device's information to the system kernel device tree so it can be registered (instantiated) when the kernel boots. The following sections describe ways to register a new device.

Before you begin, ensure that you obtain the kernel source files.

4.2.1. Device Tree Overlay

Because UEFI boot is enabled in this release, the plugin manager is no longer supported. You must create a device tree overlay (DTB overlay or `.dtbo`) file to register the camera module.

If your camera module has an on-board EEPROM, and is programmed with a valid camera ID, at runtime, you can use the device tree overlay file to apply the overlay for a specific camera module and update the device tree entries with proper information. Using a device tree overlay with an EEPROM ID allows a system image to support multiple camera devices. To select a different camera, power down the device, replace the camera module, and reboot. The new module works automatically.

To create and apply a device tree overlay file:

1. Add the `.dtsi` file to the camera configuration `.dtsi` file.
2. Set the status of your device tree nodes to `disabled`.

```
imx185_cam0: imx185_a@1a {
    status = "disabled";
};
```

3. Add the overlay information as fragments to a new `.dts` file.

```
<top>/hardware/nvidia/platform/t19x/common/kernel-dts/t19x-common-modules/tegra194
-camera-overlay-file.dts
```

You can also see the camera DTB overlay files that are provided with the current release for examples.

4. Update the `.dts` file with the correct overlay information and a compatible string.

```
/ {
        overlay-name = "Jetson Camera Dual-IMX274";
        jetson-header-name = "Jetson AGX Xavier CSI Connector";
        compatible = "nvidia,p2822-0000+p2888-0001";

fragment@0 {
     target= "<&imx185_cam0>";
     board_config {
         ids = "LPRD-dual-imx274-002" ;
         sw-modules = "kernel";
     };
      __overlay__ {
          status = "okay";
     };
                 };
                 fragment@1 {
                         . . .
                 };
  };
```

1. To generate a `.dtbo` file, compile the `.dts` file.
2. **Before flashing**, move the `.dtbo` file to `flash_folder/kernel/dtb/`.
3. Add the following line to the `<board>.conf` file, which is used to flash the device.

```
OVERLAY_DTB_FILE="${OVERLAY_DTB_FILE},tegra 194-camera-overlay-file.dtbo";
```

This line causes the following tasks to completed:

- If a specific camera board is found when the kernel boots, the override data is applied to that camera board's tree nodes.
- The tree nodes are made available for the system to use.

4.2.2. Using the Jetson IO Tool

If your camera module does not have an on-board EEPROM, you can use the same DTB overlay file to statically configure the board for the attached camera.

1. After you attach the camera module, apply the camera module's DTB overlay using the Jetson-IO tool, and reboot.

   The new module will work immediately after Jetson Linux starts.

> **Note**: You might have to delete the `board_config{}` node from the fragments in the DTB overlay file.

2. After you compile the `.dts` file to generate a `.dtbo` file, move the `.dtbo` file to `/boot` on the Jetson device, so that the Jetson-IO tool can recognize it.

3. Launch the Jetson-IO tool and configure the DTB overlay.

4.2.3. Adaptation to the Carrier Board with HDMI for the Orin NX/Nano Modules

If you are using a third-party carrier board that supports HDMI, ensure that the following patch is applied in your `mb2 scr bct` in the `./bootloader/t186ref/BCT/tegra234-mb2-bct-scr-p3767-0000.dts` file:

```
--- a/firewall/tegra234-mb2-bct-scr-p3767-0000.dts
+++ b/firewall/tegra234-mb2-bct-scr-p3767-0000.dts
@@ -5,6 +5,11 @@

 / {
     tfc {
+        reg@322 { /* GPIO_M_SCR_00_0 */
+            exclusion-info = <2>;
+           value = <0x38009696>;
+        };
```

```
+
         reg@5138 { /* CBB_CENTRAL_CBB_FIREWALL_QSPI0_BLF, READ_CTL */
             exclusion-info = <2>;
             value = <0x00100009>;
```

This change is needed because the `GPIO_M_0` GPIO pin is used for the HDMI hotplug. In Orin, the access to this pin should be limited *only* to the DCE firmware.

4.3. UEFI

For fixes that were made in the UEFI sources after the release, go to the UEFI GitHub.

Notice

This document is provided for information purposes only and shall not be regarded as a warranty of a certain functionality, condition, or quality of a product. NVIDIA Corporation (“NVIDIA”) makes no representations or warranties, expressed or implied, as to the accuracy or completeness of the information contained in this document and assumes no responsibility for any errors contained herein. NVIDIA shall have no liability for the consequences or use of such information or for any infringement of patents or other rights of third parties that may result from its use. This document is not a commitment to develop, release, or deliver any Material (defined below), code, or functionality.

NVIDIA reserves the right to make corrections, modifications, enhancements, improvements, and any other changes to this document, at any time without notice.

Customer should obtain the latest relevant information before placing orders and should verify that such information is current and complete.

NVIDIA products are sold subject to the NVIDIA standard terms and conditions of sale supplied at the time of order acknowledgement, unless otherwise agreed in an individual sales agreement signed by authorized representatives of NVIDIA and customer (“Terms of Sale”). NVIDIA hereby expressly objects to applying any customer general terms and conditions with regards to the purchase of the NVIDIA product referenced in this document. No contractual obligations are formed either directly or indirectly by this document.

NVIDIA products are not designed, authorized, or warranted to be suitable for use in medical, military, aircraft, space, or life support equipment, nor in applications where failure or malfunction of the NVIDIA product can reasonably be expected to result in personal injury, death, or property or environmental damage. NVIDIA accepts no liability for inclusion and/or use of NVIDIA products in such equipment or applications and therefore such inclusion and/or use is at customer’s own risk.

NVIDIA makes no representation or warranty that products based on this document will be suitable for any specified use. Testing of all parameters of each product is not necessarily performed by NVIDIA. It is customer’s sole responsibility to evaluate and determine the applicability of any information contained in this document, ensure the product is suitable and fit for the application planned by customer, and perform the necessary testing for the application in order to avoid a default of the application or the product. Weaknesses in customer’s product designs may affect the quality and reliability of the NVIDIA product and may result in additional or different conditions and/or requirements beyond those contained in this document. NVIDIA accepts no liability related to any default, damage, costs, or problem which may be based on or attributable to: (i) the use of the NVIDIA product in any manner that is contrary to this document or (ii) customer product designs.

No license, either expressed or implied, is granted under any NVIDIA patent right, copyright, or other NVIDIA intellectual property right under this document. Information published by NVIDIA regarding third-party products or services does not constitute a license from NVIDIA to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property rights of the third party, or a license from NVIDIA under the patents or other intellectual property rights of NVIDIA.

Reproduction of information in this document is permissible only if approved in advance by NVIDIA in writing, reproduced without alteration and in full compliance with all applicable export laws and regulations, and accompanied by all associated conditions, limitations, and notices.

THIS DOCUMENT AND ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS, AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, “MATERIALS”) ARE BEING PROVIDED “AS IS.” NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY, OR OTHERWISE WITH RESPECT TO THE MATERIALS, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF NONINFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL NVIDIA BE LIABLE FOR ANY DAMAGES, INCLUDING WITHOUT LIMITATION ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF ANY USE OF THIS DOCUMENT, EVEN IF NVIDIA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Notwithstanding any damages that customer might incur for any reason whatsoever, NVIDIA’s aggregate and cumulative liability towards customer for the products described herein shall be limited in accordance with the Terms of Sale for the product.

Trademarks

NVIDIA, the NVIDIA logo, are trademarks and/or registered trademarks of NVIDIA Corporation in the U.S. and other countries. Other company and product names may be trademarks of the respective companies with which they are associated.

VESA DisplayPort

DisplayPort and DisplayPort Compliance Logo, DisplayPort Compliance Logo for Dual-mode Sources, and DisplayPort Compliance Logo for Active Cables are trademarks owned by the Video Electronics Standards Association in the United States and other countries.

NVIDIA Corporation | 2788 San Tomas Expressway, Santa Clara, CA 95051
http://www.nvidia.com

HDMI
HDMI, the HDMI logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

Arm
Arm, AMBA, and ARM Powered are registered trademarks of Arm Limited. Cortex, MPCore, and Mali are trademarks of Arm Limited. All other brands or product names are the property of their respective holders. "Arm" is used to represent ARM Holdings plc; its operating company Arm Limited; and the regional subsidiaries Arm Inc.; Arm KK; Arm Korea Limited.; Arm Taiwan Limited; Arm France SAS; Arm Consulting (Shanghai) Co. Ltd.; Arm Germany GmbH; Arm Embedded Technologies Pvt. Ltd.; Arm Norway, AS, and Arm Sweden AB.

OpenCL
OpenCL is a trademark of Apple Inc. used under license to the Khronos Group Inc.

Copyright

NVIDIA Corporation | 2788 San Tomas Expressway, Santa Clara, CA 95051
http://www.nvidia.com