GETTING STARTED WITH THE NVIDIA DRIVE AGX ORIN DevKit

FOR DRIVE AGX SDK DEVELOPER PROGRAM MEMBERS

October 2022
WELCOME TO DRIVE AGX

Covers:

► Intro to the NVIDIA DRIVE AGX Orin™ platform
► Step by step guide to register your device
► Instructions on how to join the NVIDIA DRIVE AGX™ SDK Developer program
► A navigation through the Start page

Link to Welcome to the DRIVE AGX Platform
First things first - register your DevKit on the Registration Page. This will ensure an optimal experience for you and help us to provide support.

Up next, visit the Start Page. It is your gateway to explore the DRIVE AGX Platform.
<table>
<thead>
<tr>
<th><strong>DevKit Register Page</strong></th>
<th>developer.nvidia.com/drive/register</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step by step guide to register your DevKit</td>
<td></td>
</tr>
<tr>
<td><strong>DevKit Start Page</strong></td>
<td>developer.nvidia.com/drive/start</td>
</tr>
<tr>
<td>How to Navigate DRIVE Developer Page</td>
<td></td>
</tr>
<tr>
<td><strong>DevKit Setup Page</strong></td>
<td>developer.nvidia.com/drive/setup</td>
</tr>
<tr>
<td>Step by step guide to setup your DevKit</td>
<td></td>
</tr>
</tbody>
</table>
### KEY WEBSITES FOR DRIVE AGX ORIN

<table>
<thead>
<tr>
<th><strong>Downloads</strong></th>
<th><a href="developer.nvidia.com/drive/downloads">developer.nvidia.com/drive/downloads</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Docs</strong></td>
<td><a href="developer.nvidia.com/drive/documentation">developer.nvidia.com/drive/documentation</a></td>
</tr>
<tr>
<td><strong>Hyperion Sensors</strong></td>
<td><a href="developer.nvidia.com/drive/ecosystem-hw-sw">developer.nvidia.com/drive/ecosystem-hw-sw</a></td>
</tr>
</tbody>
</table>

*For additional supported sensors, please refer to [DRIVE AGX Orin Sensors and Accessories](developer.nvidia.com/drive/ecosystem-hw-sw).*
RESOURCE OVERVIEW

- Hardware Setup
- SDK
- Training
- Need Help?
HARDWARE SETUP
PRODUCT BRIEF

Covers:

- Product features
- Highlights mechanical & electrical specification
- Provides list of hardware interfaces

[Link to Product Brief]
HARDWARE QUICK START GUIDE

Covers:
- Components list
- System Connectors
- DevKit versions
- Steps required to run the DevKit for the first time

Link to Hardware Quick Start Guide
MECHANICAL & INSTALLATION GUIDE

Covers:
- Mechanical dimensions
- Mounting considerations
- Interface connections
- Environmental requirements
- Electrical installation

NVIDIA DRIVE AGX Orin Developer Kit Mechanical and Installation Guide

Installation Guide

Link to Mechanical and Installation guide
SUPPORTED SENSORS AND ACCESSORIES

Hardware for DRIVE AGX Orin that is supported by NVIDIA and our partners

Covers:
- Cameras
- Lidars
- Radars
- IMU / GNSS devices
- USS/RCS
- Hardware accessories

Link to DRIVE Hyperion 8.1 Sensors and Accessories
Link to DRIVE AGX Orin Sensors and Accessories
DRIVE OS AND DRIVEWORKS INTRO

The DRIVE SDK website shows architecture and major components of the SDK.

The DRIVE OS website provides more details on the DRIVE OS modules and tools.

The DRIVEWORKS website shares insights on each module under its architecture.

[Link to DRIVE SDK]  [Link to DRIVE OS]  [Link to DriveWorks]
DOWNLOADS

Provides access to all relevant DRIVE SDK releases, including Release Summary, Installation Guides, Release Notes, etc.

Note: DRIVE OS 6.0.4 supports installation via Docker containers and SDK Manager.

Link to DRIVE Downloads Site
Link to Details on NVIDIA DRIVE Platform Docker Containers
Link to Details on NVIDIA SDK Manager
Link to Details on DRIVE OS Docker
DOCUMENTATION OVERVIEW

A collection of documentation that helps you to develop with your DRIVE AGX Orin DevKit, includes:

- Developer Kit documents
- Sensors & Accessories
- DRIVE OS software documentation
- Developer Tools
- Licenses

Link to DRIVE Documentation
DRIVE OS 6.0
INSTALLATION GUIDE

A step-by-step guide introducing the Drive OS 6.0

A guide for how to download the DRIVE OS using either SDK Manager or Docker

Some tips for building & Running sample applications for DRIVE OS 6.x on Linux

Link to DRIVE OS 6.0 Installation Guide
SDK MANAGER

Provides an end-to-end development environment setup solution for NVIDIA DRIVE®

NVIDIA SDK Manager

Everything You Need to Set Up Your Development Environment
NVIDIA SDK Manager provides an end-to-end development environment setup solution for NVIDIA DRIVE™, Xavier, Tegra Mobility, TegraMax, DGX and Ethernet Switch SDNs for both host and target devices.

NGC DOCKER

A quick intro to the NVIDIA Docker Containers concept

Link to NVIDIA SDK Manager

Link to DRIVE SDK Manager download & Run

Link to NVIDIA DRIVE Platform Docker Containers
DRIVE OS 6.0
DEVELOPER GUIDE

NVIDIA DRIVE OS is the reference operating system and software stack for developing and deploying AV applications on DRIVE AGX

Important documentation sections:
- Board Setup & Configuration
- Components & Interfaces
- System Programming
- Mass Storage Partition Configuration
- NVIDIA DRIVE Utilitites

Link to DRIVE OS 6 Linux SDK Developer Guide
DRIVEWORKS DOCUMENTATION

The DriveWorks SDK provides an extensive set of fundamental capabilities, including processing modules, tools and frameworks for advanced AV development.

Important documentation sections:

- Getting Started
- Modules: Functional Components
- Sample Code
- Guide for porting from previous releases

Link to DriveWorks Documentation
NVIDIA TRAINING

NVIDIA provides a wide list of learning tools to help in your development journey

NVIDIA has the following verticals that can help you,

- GTC talks
- DRIVE Videos / DRIVE Labs
- Webinars
- Deep Learning institute courses

Link to DRIVE Training
GTC SESSIONS

- Throughout the GPU Technology Conference (GTC)
- Relevant research such as state-of-the-art algorithms are showcased
- Customers show their work on top of the DRIVE platform
- The NVIDIA DRIVE team provides update on the DRIVE hardware and software

[Link to GTC22 March DRIVE Developer Day](#)

[Link to GTC22 March Automotive](#)
DRIVE WEBINARS

A comprehensive list to increase your learning

35+ Video-Webinars all focused on DRIVE

Requires NVIDIA Developer Login

Link to DRIVE Webinars
DRIVE VIDEOS

There are numerous videos that showcase applications that can be developed on top of the DRIVE platform.

- **DRIVE Labs videos** are short-form videos that dive into specific self-driving algorithms.
- **DRIVE Dispatch videos** provide brief updates from our AV fleet, highlighting new breakthroughs.

[Link to DRIVE Videos]
DEEP LEARNING INSTITUTE (DLI) COURSES

Numerous self-paced and instructor-led courses,
Some recommendations:

- Integrating Sensors with NVIDIA DRIVE
- Fundamentals of Accelerated Computing with CUDA C/C++
- Optimization and Deployment of TensorFlow Models with TensorRT
- Deep Learning at Scale with Horovod

Link to Deep Learning Institute
Link to Course Catalog PDF
GOT STUCK? TRY TO...

Check Out the DRIVE OS and DriveWorks Documentation
Comprehensive documentation that includes many samples that illustrate how to leverage the DRIVE SDK

Browse the Support Forum
The Forum contains 1000+ experiences of other users with answers by our support team. If your question is not already covered — feel free to raise it

Submit a Bug
Raise a bug if suggested by the Forum Support team or via NVONLINE if applicable. Our tech teams will support with information and guidance

Contact your Distributor or NVIDIA Representative
The issue persists? Contact your Developer Relations Manager or Account Manager
SUPPORT FORUM

The Forum contains an ever-evolving collection of customer questions and answers by our support team.

If your question is not already covered – feel free to raise it.

The Forum team usually replies within 24h.

Raising questions in the Forum requires Developer Login.

Link to DRIVE AGX Orin Forum
IF FORUM CAN’T HELP

Report a Bug

- Reporting a Bug on NVIDIA Developer (aka DevZone) for confidential content
- Login to https://developer.nvidia.com/drive
- In upper right user picture, click the down arrow
- Select “Account”
- In the left navigation menu, select “My Bugs”
- Select “Submit a New Bug” (in upper right green box, or within text of bounded green box)
- Fill in the details of your feedback, request or issue
- IMPORTANT:
  - When Filing a Bug, be sure to include the Platform Name — e.g. [DRIVE AGX Orin] in the summary, and
  - Select DRIVE [Autonomous Driving] for Relevant Area
- If you have any issues, please contact InfoDRIVEPX@nvidia.com
- Request: Create one bug per issue: do not file multiple issues in the same report
Report a Bug

- Report a Bug on NVONLINE
- Login to https://partners.nvidia.com/
- In upper left, select BUGS > Report a Bug
- Fill in the details of your feedback, request or issue
- IMPORTANT: When filing Bug, under Project
  - Click Project
  - Select DRIVE
  - If you do not have this project, please contact InfoDRIVEPX@nvidia.com
- Request: Create one bug per issue; do not file multiple issues in the same report
- Tracking a Bug (track status, provide additional information)
- In upper left, select BUGS > View Bug Status
FILE A NVBUG — DETAILS

(1/2)

Problem Type: select either Software Issue or Hardware Issue (Dev) - not others!

Product: select Parker if you are using DRIVE PX 2 (AutoChauffeur, AutoCruise, G3) or DRIVE CX 2; select Xavier if you are using DRIVE Development Platform.

Operating System: select Linux, Android or QNX.

Computer Type: select Mobile.

Driver version: Enter version # of release, e.g. 4.1.2.0 (as displayed on release files).

Cust. Severity: select severity.

Cust. Priority: select priority.

Division Name: select Customer / Partner Name from drop down list.

Project Name: Click Project and select DRIVE.
FILE A NVBUG — DETAILS

(2/2)

Synopsis: enter the bug title using [PartnerName][Platform][SW] <Short Description>, e.g. [MyCmpny][DRIVE PX 2 AutoChauffeur][V4.1L] Camera not responding.

Description: describe your issue with as much details as possible. For e.g. and if applicable:
- SDK/PDK version used on the host and target:
  Example - V4.1L Alpha 2.0 4.1.2.0
- Target Platform: DRIVE PX 2 AutoChauffeur, DRIVE PX 2 AutoCruise, DRIVE PX 2 - G3 (dGPU), DRIVE AGX Xavier or Pegasus
- Detailed description of the issue with step-by-step instructions to reproduce the failure
- Repeatability (<10% / 30% / 50% / 100%)
- Impact of issue: e.g., how this is affecting your project
- Attach log files (under Attach file:)

Remember to SUBMIT your report!