GETTING STARTED WITH THE NVIDIA DRIVE AGX DevKit

Congratulations for getting your NVIDIA DRIVE AGX™ DevKit
Here is how you can get started

Ecosystem Version September 2021
## KEY WEBSITES FOR DRIVE AGX

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<th>Developer Program</th>
<th><a href="https://developer.nvidia.com/drive">developer.nvidia.com/drive</a></th>
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<td>Gateway to all online resources</td>
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<td>Comprehensive documentation</td>
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<td>Ask questions or browse threads</td>
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HARDWARE SETUP
HARDWARE ERRATA

⚠️ Please check the “Hardware Errata” document BEFORE unboxing your DevKit

Covers known Hardware Errata for the DRIVE AGX Developer Kit

Requires DRIVE Developer Login

🔒 Link to “Hardware Errata”
“HOW TO SET UP”
INTRO VIDEO

Covers:
- Connecting the unit to its peripherals
- Setup host PC
- Updating software
- Sample projects
- Cross-compilation

[Link to “How to set up” Video](please scroll down on page)
MECHANICAL & INSTALLATION GUIDE

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

Requires DRIVE Developer Login

Link to Mechanical & Installation Guide

Additional Development Resources:

Documentation (pdf)
- All NVIDIA DRIVE documentation can be found here: https://developer.nvidia.com/drive/documentation
- Quick Start Guide: DRIVE AGX Developer Kit HW Quick Start Guide [PDF]
- Product Brief: DRIVE AGX Developer Kit Product Brief [PDF]
- Mechanical & Installation Guide: DRIVE AGX Developer Kit Mechanical & Installation Guide [PDF]

On developer.nvidia.com/drive/drive-agx
SUPPORTED SENSORS & HW

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

Covers:
- Cameras
- Lidars
- Radars
- GNSS / IMU devices
- Accessories

Link to DRIVE Ecosystem Hardware and Software Components
SDK
DOWNLOADS

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

Note: DRIVE OS 5.2.6 Docker containers are supported in addition to the SDK manager.

Link to DRIVE Downloads Site
Link to Details on NVIDIA DRIVE Platform Docker Containers
INSTALLATION GUIDE DOCUMENTATION

Step-by-step guide explaining software installation

Covers:

- Overview and terminology
- System requirements, required downloads, Update Matrix, valid transition paths
- SDK Manager usage: Download, install, repair, uninstall
- New: Use Docker containers to build with DRIVE SDK

Link to DRIVE installation Guide Documentation
SDK MANAGER DOCUMENTATION

Explains the SDK manager in-depth

Useful if there are questions beyond the content on SDK Manager in the Installation Guide Documentation

e.g.

- System Requirements
- DIRVE Install
- Command-Line Install
- Offline Install
- Docker Images

[Link to NVIDIA SDK Manager Documentation]
DRIVE OS DOCUMENTATION

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

Important documentation sections:

- Host/Target Configuration
- Board Setup
- Camera Setup
- System Software
- NVMedia: Media data processing API

Link to DRIVE OS 5.2.6 Documentation
Link to DRIVE Documentation Overview
Link to DRIVE OS Website
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 3.5 Documentation
Link to DRIVE Documentation Overview
Link to DriveWorks Website
NEED HELP?
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 and our tech teams will support with information and guidance

Contact your NVIDIA Representative
The issue still persists? Contact your Developer Relations Manager or Account Manager
# DOCUMENTATION OVERVIEW

## DRIVE Hardware

**DRIVE AGX Developer Kit**
- DRIVE AGX Developer Kit Hardware Errata
  - DRIVE Software 10.0 and DRIVE OS 5.2.0 include improvements for some items documented in this Errata. Please immediately update to one of these releases available on DRIVE Downloads.
- DRIVE AGX Developer Kit Hardware Quick Start Guide [PDF]
- DRIVE AGX Developer Kit Product Brief [PDF]
- DRIVE AGX Developer Kit Mechanical & Installation Guide [PDF]

**DRIVE Hyperion Kit**
- Requires DRIVE AGX Pegasus running DRIVE Software
- DRIVE Hyperion Kit Quick Start Guide [PDF]
- DRIVE Hyperion Hardware Installation Guide [PDF]

## DRIVE Developer Program Documentation

(Login & NDA Required)

**Details**

## DRIVE SDK Documentation

(No Login Required)

**Details**
DRIVE DEVELOPER PROGRAM DOCUMENTATION (LOGIN & NDA REQUIRED)

Developer program documentation in-depth

Highlights:

- **HW Errata**
- **HW Quick Start Guide**
- **Mechanical & Installation Guide**
- **Supported Sensors & Accessories**
- **DRIVE OS Release Notes**
- **DRIVE OS & DriveWorks Documentation**

**DRIVE Hardware**

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**DRIVE Hyperion Kit**

- Requires DRIVE AGX Pegasus running DRIVE Software
  - **DRIVE Hyperion Kit Quick Start Guide (PDF)**
  - **DRIVE Hyperion Hardware Installation Guide (PDF)**

**Accessories and sensors**

- **DRIVE Ecosystem Hardware and Software Components**

**New DRIVE OS 5.2.6 and DriveWorks 4.0 (Linux)**

- **DRIVE OS 5.2.6 Release Blog**
- **DRIVE OS 5.2.6 Installation Guide**
- **DRIVE OS 5.2.6 Release Notes (PDF)**
- **DRIVE OS Third Party Software Licenses (PDF)**
- **DRIVE OS Documentation**
  - DriveWorks 4.0 will be available in late summer 2021.

**DRIVE OS 5.2.0 and DriveWorks 3.5 (Linux)**

- **DRIVE OS and DriveWorks Release Blog**
- **DRIVE OS and DriveWorks Documentation**
- **DRIVE OS Installation Guide**
- **DRIVE OS Release Notes (PDF)**
- **DRIVE OS Third Party Software Licenses (PDF)**

[Link to Developer Kit Documentation]
DRIVE SDK DOCUMENTATION
(No Login Required)

Collection of relevant software documentation

Covers:

- DRIVE Software (Includes DRIVE AV and DRIVE IX)
- DRIVE OS
- DriveWorks

NVIDIA DRIVE AGX and DRIVE PX 2 Developer Kit Documentation

- NVIDIA DRIVE Software for DRIVE AGX
- NVIDIA DRIVE OS for DRIVE AGX
- NVIDIA DRIVE OS and DriveWorks for DRIVE AGX
- NVIDIA DRIVE OS with DriveWorks for DRIVE PX 2

Link to DRIVE SDK Documentation
DRIVE SDK DOCUMENTATION
(No Login Required)

Collection of relevant software documentation

Covers:

- DRIVE OS
- DriveWorks

Link to DRIVE SDK Documentation
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.

The Forum team usually replies within 24h.

Raising questions in the Forum requires Developer Login.

Link to DRIVE AGX Forum
IF FORUM CAN’T HELP
Report a Bug

- Reporting a Bug on NVIDIA Developer (aka DevZone) for confidential content
- Login to developer.nvidia.com/drive
- In upper right, click the down arrow by Hello, <your name>
- Select My 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 PX 2] OR [DRIVE AGX Xavier | Pegasus] 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
TRAINING
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]
WEBINARS

Click here to unfold Webinar list

15+ Video-Webinars on all relevant topics

Requires NVIDIA Developer Login

Link to Webinars

Webinars

Upcoming Webinars

Register for upcoming automotive developer webinars to learn more about the NVIDIA DRIVE® platform.

In each hour-long session, NVIDIA experts will dive into the details of various aspects of the end-to-end AV computational pipeline and will be available for live Q&A.

Point Cloud Processing on DriveWorks

Wednesday, August 25, 2021, 9:00 AM PDT | 6:00 PM PDT

Register Now

Point cloud processing is a key component for autonomous vehicle (AV) obstacle perception, mapping, localization and planning algorithms. The NVIDIA DriveWorks SDK contains a collection of CUDA-accelerated low level point cloud processing modules optimized for NVIDIA DRIVE AGX platforms. These modules include core algorithms that AV developers working with point-cloud representations need, such as accumulation and registration.

As with the rest of the DriveWorks SDK, these modules expose well-defined APIs and data structures. This enables developers to integrate modules with their own software stack, reducing custom code and development time.

Check out the Past Webinars to learn more about the NVIDIA DRIVE Platform.

Past Webinars [Click to toggle open/close]

Past Webinars require membership to the NVIDIA DRIVE Developer Program for DRIVE AGX. To request access to this developer program, contact us.

Catchup on the past DRIVE webinars recording at your own convenience!

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<td>Turbocharge Autonomous Vehicle Development with DRIVE OS and DriveWorks</td>
<td>DRIVE OS, DriveWorks</td>
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<td>DRIVE AV Perception Overview</td>
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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 GTC sessions](#)
The blog contains articles that explore a variety of technical topics such as “Cross-Compiling Robot Operating System Nodes for NVIDIA DRIVE AGX™” or “Accelerating Lidar for Robotics with NVIDIA CUDA-based PCL”.

Link to Developer Blogs
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 Integrating Sensors with NVIDIA DRIVE courses
Link to Course Catalog PDF