NVIDIA DRIVE

The NVIDIA DRIVE® autonomous vehicle (AV) platform is a full-stack solution for highly automated, supervised driving through fully autonomous operation. It includes active safety, automated driving, and parking—plus AI cockpit capabilities—scaling from Level 2+ to Level 5.

SYSTEM HARDWARE AND ARCHITECTURE:

NVIDIA DRIVE Orin™ SoC:

> Integrated next-generation GPU architecture and Arm Cortex-A78AE CPU cores
> 254 TOPS—more than 8X the performance of the previous-generation SoC
> Adherence to systematic safety standards such as ISO 26262 ASIL-D
> Architecture that scales from Level 2+ ADAS to Level 5 AV

The NVIDIA DRIVE Level 2+ solution is powered by two NVIDIA DRIVE Orin systems-on-a-chip—one for active safety, automated driving, and parking applications, and one for AI cockpit capabilities. It also includes the NVIDIA DRIVE Hyperion™ sensor suite for developers to evaluate their AV platform. DRIVE Hyperion L2+ configuration includes:

> Eight exterior cameras, five radars, and twelve ultrasonic sensors that interpret scenes with 360-degree awareness to produce a comprehensive environmental model.
> Three interior sensing cameras and one in-cabin radar for driver and occupant monitoring.
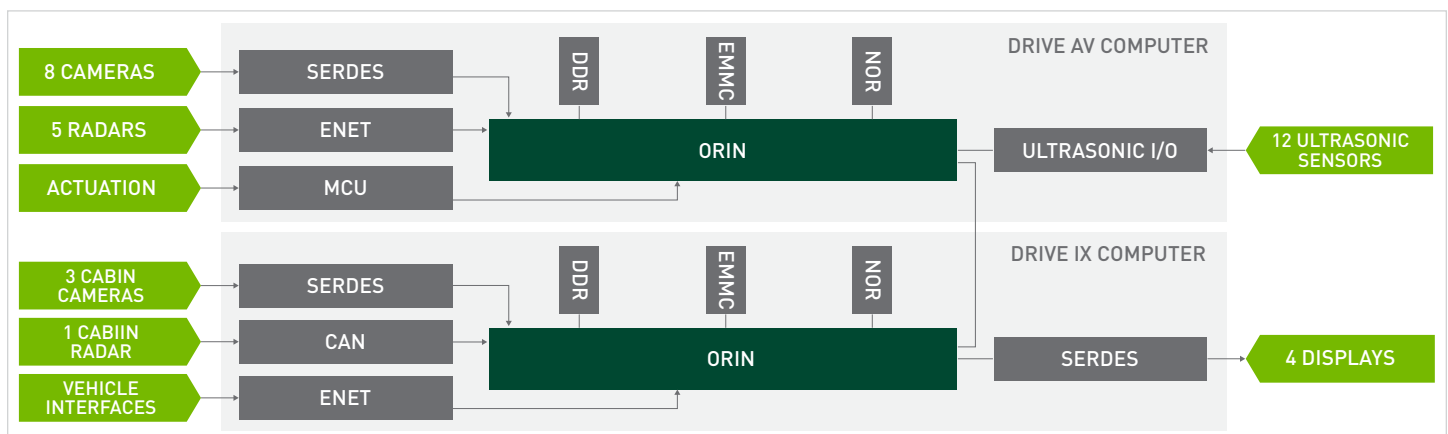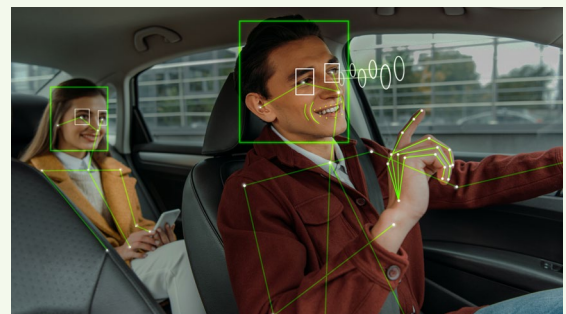
NVIDIA DRIVE SOFTWARE

NVIDIA DRIVE SDK provides a complete development environment for building and deploying state-of-the-art autonomous software applications, including perception, localization, mapping, planning and control, driver monitoring, and natural language processing. It includes **NVIDIA DRIVE OS** for Safety SDK for safety assessment-ready accelerated computing and **NVIDIA DriveWorks** for comprehensive middleware functions. **NVIDIA DRIVE AV** and **DRIVE IX** software applications provide the DNNs and advanced algorithmic modules for perception, mapping, and planning—including **NVIDIA Safety Force Field™**—as well as intelligent cockpit capabilities.

SUPPORTED FEATURES:

Active Safety	Highway Driving	Urban Driving and Parking	Cockpit
> Automatic Emergency Braking > Automatic Emergency Steering > Lane Departure Warning > Lane Keeping Assist > Blind Spot Monitoring > Traffic Sign Assist > Stop Sign and Traffic Light Assist	> Adaptive Cruise Control > Lane Centering > Driver-Initiated Lane Change > Automatic Lane Change > Lane Fork to Follow Route (Highway Interchange) > Lane Merge > Speed Adaptations for Curves and Speed Limit Changes	> Traffic Light Stop at Intersection > Protected Intersection Turn > Unprotected Intersection Turn > Roundabout > Yield to Pedestrian Crossing > Parking Assist > Remote Parking	> Confidence View > Augmented Reality > AR HUD > Parking Visualization > Fused Awareness > Conversational AI > Driver/Occupant Monitoring > Activity Monitoring
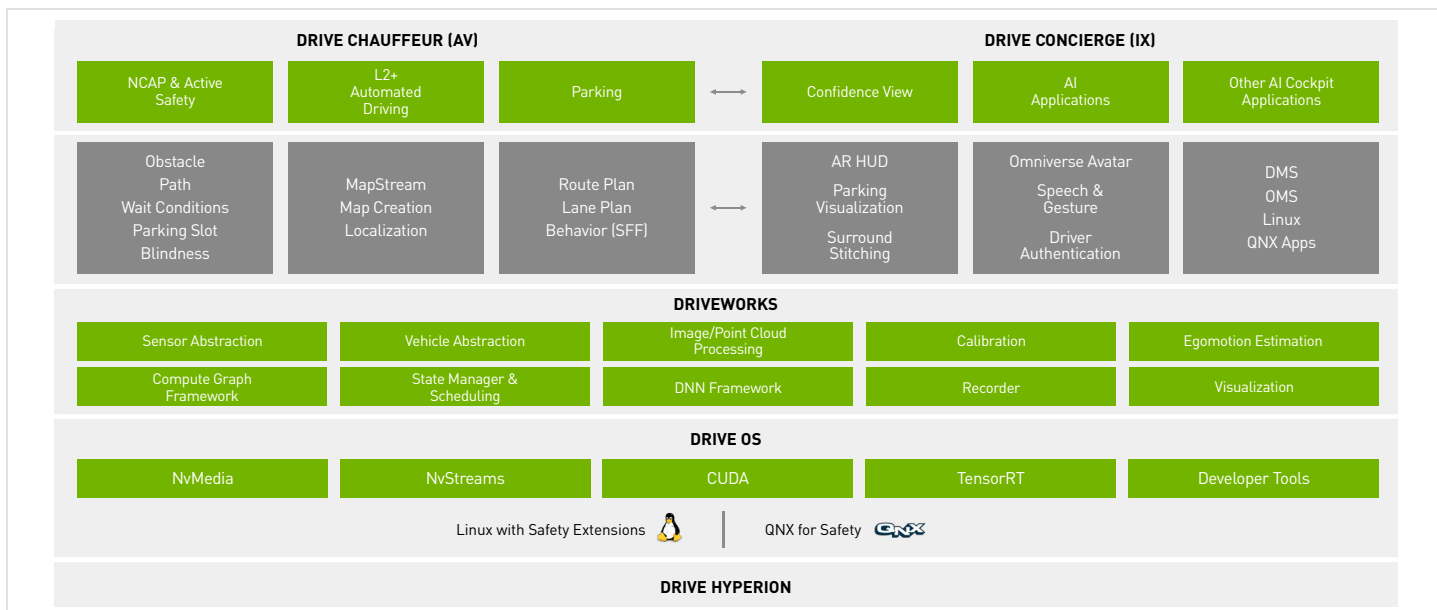
END-TO-END SOLUTION

The NVIDIA DRIVE Level 2+ solution is trained and validated on NVIDIA DRIVE Infrastructure—a true end-to-end development process based on a unified computing architecture. It starts with **NVIDIA DGX™** systems, which enable streamlined, large-scale DNN training and optimization. Using the power of GPUs and AI, developers can comprehensively train DNNs for autonomous vehicle perception, planning, control, and more. The **NVIDIA DRIVE Constellation™** and **NVIDIA DRIVE Sim™** platforms provide a virtual proving ground with a near-infinite variety of driving conditions to test and validate DNNs on the same hardware as in the vehicle. Combined with the DRIVE AV solution, **DRIVE Infrastructure** creates a continuous development cycle for constant improvement.

This software-defined vehicle platform delivers continual enhancements for the end consumer as well. With over-the-air updates, automakers can deliver new features and capabilities throughout the life of the car, extending joy to the customer and creating new, transformative business models.