



Accelerate Industrial AI on NVIDIA Jetson Orin Nano with Peridio & Avocado OS



Executive summary

Jetson Orin Nano delivers up to 67 TOPS of AI performance in a tiny 7–25 W envelope. It brings industrial-grade AI and robotics to compact devices such as cameras, sensors, and autonomous robots. But productionizing a developer kit still demands months of Linux, OTA, and security work. Peridio + Avocado OS remove that friction:

Production-ready Yocto runtime

Avocado OS boots deterministically on Jetson in minutes with secure boot, dm-verity, and LUKS.

Fleet management & OTA

Peridio Fleet registers devices and orchestrates phased updates and SBOM/CVE compliance.

Enterprise support

Long-term CVE patching and SBOM management free your team to focus on applications.

Jetson Orin Nano hardware highlights

Feature	8 GB model	4 GB model	Notes
AI performance	67 TOPS (INT8)	34 TOPS	Up to 142× faster than Jetson Nano
GPU	1024-core Ampere + 32 Tensor Cores	512-core Ampere + 16 Tensor Cores	CUDA-X & TensorRT for realtime inference
CPU	6-core Arm Cortex-A78AE @ 1.7 GHz		Armv8.2 64-bit with safety features
Memory	8 GB LPDDR5 (102 GB/s)	4 GB LPDDR5 (51 GB/s)	High bandwidth for multi-sensor vision
Power	7–25 W		Scales down to battery devices
I/O & expandability	4× cameras, NVMe, M.2, GbE, USB 3.1, CAN, GPIO		Ideal for industrial cameras & robots
Operating temp	–40 °C to +70 °C		Rugged industrial compliance

How Peridio & Avocado OS empower Orin Nano

Turnkey BSP – Boot a secure, deterministic image in minutes; hardware-in-the-loop tools slash iteration time.

Developer tooling – Containerized SDKs with hot reload and ROS2 integration.

Long-term support – 10-year kernel and CVE maintenance.

Unified security – Secure boot, dm-verity, LUKS, reproducible builds.

Fleet & OTA – Cohort-based rollouts, metrics, instant rollback.

Business impact

▶▶ Time-to-market

Shrinks 18-month embedded projects to ≈4 months.



Cross-platform reuse

Port Avocado OS layers to Qualcomm, MediaTek, and more.



Lower total cost

10× faster cycles, 3× fewer engineers, no distro maintenance.

Use-case examples



Industrial smart cameras

Multi-camera CSI input for inspection & detection, OTA model updates.



Autonomous mobile robots

On-board perception and navigation with ROS2.



Edge AI gateways

Local LLMs and Gen AI with NVMe acceleration.

Next steps

Peridio and Avocado OS transform Jetson Orin Nano into a secure, deployable industrial AI platform.

Contact us for an evaluation image or Peridio Fleet demo.

