ProHawk

ProHawk Vision Server for Linux
Technical Specifications

Overview

ProHawk Vision Server delivers real-time, pixel-by-pixel video restoration using ProHawk AI's patented technology. Designed for mission-critical applications, it operates on-premises, at the edge, and in the cloud, leveraging NVIDIA®'s accelerated computing to restore video clarity under adverse conditions. ProHawk Vision Server integrates seamlessly into AI-driven workflows, improving object detection, tracking, and situational awareness across security, transportation, healthcare, and industrial environments.

Hardware Requirements

- **Processor:** Intel Xeon Scalable / AMD EPYC (10+ cores/20+threads, 2 cores/4 threads per stream)
- **Memory:** 16GB DDR4/DDR5 RAM
- **GPU:** NVIDIA RTX A4000 / NVIDIA L4 / RTX A5000 / RTX A6000 / T4 / A10 / A40 / L40S / 1000 CUDA cores per 1080p30 stream
- **Storage:** 512GB NVMe SSD (Minimum), additional storage required for high-resolution video
- **Network:** 1Gbps Ethernet / 10Gbps recommended / 5Mbps Ingress - 15 Mbps Egress per stream

Software Requirements

- **Operating System:** Ubuntu 20.04 LTS, Ubuntu 22.04 LTS
- **Frameworks:** NVIDIA CUDA® 12.x, TensorRT
- **Libraries:** DirectX, OpenCV

Network Requirements

- **Transport Protocols:** TCP, UDP
- **Control Protocols:** RTSP, RTP, RTMP, ONVIF
- **Encoding:** H.264, H.265

NVIDIA Jetson Orin™ Requirements

- **Operating System:** Ubuntu 22.04 LTS

NVIDIA Jetson Xavier Requirements

- **Operating System:** Ubuntu 18.04 LTS, 20.04 LTS

Core Features

ProHawk Vision Plugin

- **Patented** restoration algorithms
- **Real-Time** fog, rain, snow, & smoke removal
- **NVIDIA CUDA Acceleration:** Maximize GPU performance for real-time processing
- **Pixel-Level** brightness & contrast correction
- **AI-Based** noise reduction & detail refinement

ProHawk Vision Server Container

- **Automatic Mode** AI-driven optimization with no manual adjustments required
- **Containerized Architecture:** Supports Kubernetes and Docker deployments
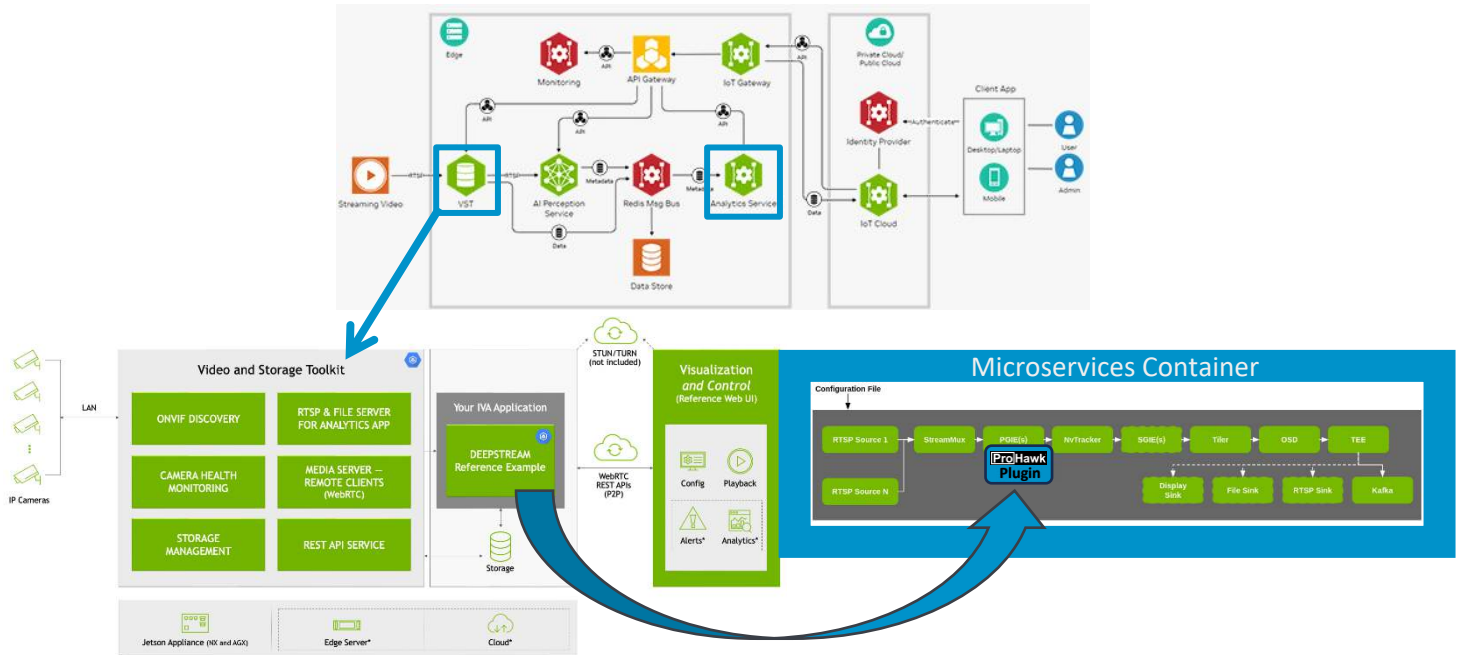- **Protocols & Encoding**

ProHawk Vision Server Agent

- **Edge, On-Premise, & Cloud Deployable:** Management of all components anywhere
- **Seamless Integration:** Works with existing Video Management Systems (VMS) and AI analytics

ProHawk Vision Server

- **Management Console:** configuration of cameras, outbound RTSP port connections for seamless video stream integration
- **Operator Console:** comprehensive tiled view of video streams alongside intuitive ProHawk AI controls

Deployment Architectures

ProHawk Vision Server v7 for Linux delivers advanced deployment flexibility with a comprehensive suite of components, including the ProHawk Vision Plugin for DeepStream, Metropolis Microservices container, ProHawk Vision Server Agents, ProHawk Vision Server Management Console, and the ProHawk Vision Server Operator Console. The server integrates seamlessly with existing VMS platforms, leveraging GPU acceleration for low-latency, high-throughput video restoration. The server operates on NVIDIA-powered industrial systems, enabling real-time processing close to the source—ideal for time-sensitive applications in transportation, manufacturing, retail, and security. The server's containerized architecture supports Kubernetes orchestration, ensuring elastic scalability and seamless integration with AI workflows on AWS, Azure, and NVIDIA GPU Cloud. These deployment architectures enable organizations to maximize performance, scalability, and cost-efficiency across diverse operational scenarios.

Software & API Integrations

Feature	Details
Supported Video Encoding Formats	H.264, H.265
Supported Protocols	TCP/IP, UDP, RTP, RTSP, ONVIF, RTMP, HTTP
Integration APIs	REST API, WebSockets, ONVIF, DeepStream Plugin
VMS Compatability	All VMSs, Milestone, Genetec, NX Witness GUI Plugins
Cloud Compatability	AWS, Azure, NVIDIA GPU Cloud (NGC), Google Cloud
AI Pipeline Support	NVIDIA DeepStream, Metropolis, Isaac, GStreamer

Stream Sizing Chart

GPU	CUDA Cores	CPU	Cores/Thread	# Streams
NVIDIA L4	7,424	Xeon Silver 4310	12C/24T	4
NVIDIA RTX 5000 Ada	12,800	Xeon Silver 4510	24C/48T	8
NVIDIA L40	36,352	Xeon Gold 6442Y	48C/96T	16