iSentry Firefly

Overview

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Firefly – Cross‑Platform Video Intelligence Engine

Firefly is the core implementation of the iSentry intelligent video analytics system, designed to process live video streams and generate actionable alerts in real time. It operates as a cross-platform video analysis engine that integrates seamlessly into diverse environments, from edge deployments to centralised control rooms.

At its core, Firefly ingests video streams and applies a layered analytics pipeline that includes:

- Trigger‑based alerting using rules and smart camera metadata
- Deep Learning (DL) for object detection, classification, and behaviour analysis
- Generative AI (GenAI) via the Aurora engine for contextualising alerts, enabling human-like interpretation of scenes and events

These alerts are then either presented to human operators through the iSentry interface or forwarded to third-party video management systems (VMS) such as Genetec, Milestone, or Immix, using REST APIs or plugin-based integrations.

Key Capabilities

- Real‑Time Contextualisation: Alerts are enriched using Aurora, a GenAI engine that combines vision and language models to explain what's happening in a scene.
- Flexible Deployment: Firefly supports both server-based and hybrid edge/cloud deployments. In Firefly Lite, smart cameras generate base alerts, which are then processed by Firefly for DL and rule-based filtering.
- Third‑Party Integration: Firefly integrates with VMS platforms via plugins and gateways, enabling event triggering, bounding box overlays, and alert forwarding.
- Scalable Configuration: While Firefly Web Settings allows per-camera configuration, the broader iSentry Management Platform supports bulk configuration, multi-tenancy, and template-based setups.

Architecture Overview

- Microservices‑Based: Firefly is built on a modular architecture, enabling independent scaling of components such as alert processing, DL inference, and API services.
- Secure & Cloud‑Ready: Designed with encryption, role-based access, and containerisation (e.g., Docker), Firefly is ready for secure cloud or hybrid deployments.
- Logging & Diagnostics: Detailed logs track analytic events, DL performance, and system health, aiding in real-time diagnostics and system tuning.