

Predictive analytics and data management for law enforcement

Artificial intelligence and machine learning (AI/ML) use cases in law enforcement

Intelligent search.

Search multiple agencies' data (including high-side resources) and external sources from one interface.

Cyber incident response.

Automatically initiate actions such as quarantining a file or spinning down and restarting a virtual machine after detecting signs of infection or intrusion.

Case management.

Analyze historical data, discover patterns, and provide insights to help resolve open cases.

Biometric analysis.

Temporarily scale up infrastructure for large-scale fingerprint, iris, or DNA analyses. Scale down again when analysis is complete, avoiding the costs of provisioning for peak needs.

More data than analysts can process manually

Expectations of federal law enforcement keep rising even as resources and funding shrink. In order to address this need, agencies collect and store vast quantities of data to support investigations, including video, audio transcripts, biometrics, and Internet of Things (IoT) sensor data. The challenge is detecting threats hidden in the data swiftly enough to respond before harm occurs.

Existing search tools, data warehouses, and closed ML models fall short for proactive investigations for several reasons:

- **Backward-looking rather than forward-looking.** Traditional data warehouses focus on reporting and make it more challenging to identify patterns and predict threats.
- **Limited data sources.** Commercial AI/ML solutions are typically limited to one or a few data types. Threat identification is more accurate when models consider data from multiple agencies, the field, and external sources such as social media and rental car activity.
- **Model drift.** Closed ML models tend to become less accurate over time as different variables become more or less important. Retraining can be time-consuming.
- **Closed models.** Closed ML applications typically cannot be integrated with the latest third-party tools for pattern recognition, video transcription, analysis, and data capture from edge devices, image processing, and geospatial modeling.
- **Lack of a unified search interface.** Law enforcement data is scattered across the edge, field offices, and public and private clouds. Analysts who need high-side information often need to visit a specific office to retrieve it, which can delay investigations and response.
- **Lack of scalability.** Data science processing loads spike during investigations. If ML applications are deployed on premise, the IT team needs to provision capacity for peak loads, meaning that expensive resources are often idle. Costs drop when agencies can spin up cloud resources as needed.

To shift from reactive to proactive operations, law enforcement agencies need a platform that provides the right data to the right people at the right time. The platform must work with trusted data and be adaptable to the agency's evolving understanding of the threat landscape to make more accurate predictions.

Red Hat solution for proactive incident response and intelligent search

Build a flexible platform for proactive incident response and intelligent search with Red Hat® AI/ML data management solutions. Red Hat solutions for hybrid cloud, automation, and data services combine with high quality data science software from the open source community and commercial vendors (see sidebar). Shift from reactive to proactive investigations by:

- Sourcing real-time and historical information from multiple agencies and the field, including databases, video, audio, and IoT sensors.



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Use with leading data science tools

Popular tools for Red Hat Open Data Hub are available through [Red Hat Marketplace](#) and [OperatorHub](#). For example, ML modeling building tools include Jupyter notebooks, [TensorFlow](#), and [Apache Spark](#).

- Plugging in data science tools from the open-source community and vendors.
- Continually tuning ML models by feeding prediction results back into the model.
- Automatically scaling processing and storage resources up or down as needed.
- Meeting rigorous federal law enforcement data protection and compliance requirements.

Solution components include:

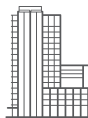
- Open Data Hub, a blueprint for building an AI as a service platform on [Red Hat OpenShift® Container Platform](#) and [Red Hat Ceph® Storage](#).
- Your choice of tools from the open source community and commercial vendors (see sidebar).
- [Red Hat Decision Manager](#) to trigger actions automatically based on events, such as notifying specific personnel of new threats or quarantining suspicious files.
- [Red Hat Ansible® Automation Platform](#) to automate IT activities such as provisioning new resources for the duration of a large-scale biometric analysis.
- [Red Hat Integration](#) to connect applications and data from multiple agencies and external sources across a hybrid cloud.
- [Red Hat Data Services](#) to manage data at rest, in motion, and in action, ensuring compliance with agency cybersecurity and compliance requirements.

Learn more

To find out more about how Red Hat can help government IT innovate, visit redhat.com/nationalsecurity.

About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.



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North America
1 888 REDHAT1
www.redhat.com

**Europe, Middle East,
and Africa**
00800 7334 2835
europe@redhat.com

Asia Pacific
+65 6490 4200
apac@redhat.com

Latin America
+54 11 4329 7300
info-latam@redhat.com

redhat.com
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