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Come sfruttare l'implementazione dell'AI per ottimizzare lo sviluppo infrastrutturale e semplificare il processo di troubleshooting

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Roma, 07/11/2024

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MLOPS | Why do we need MLOps

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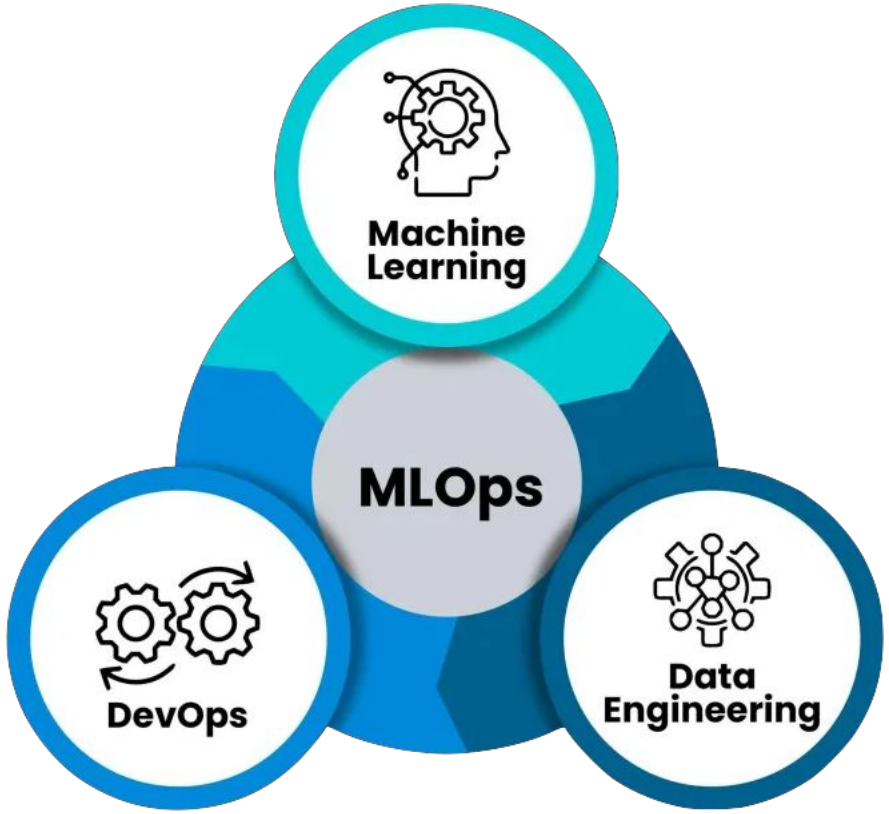
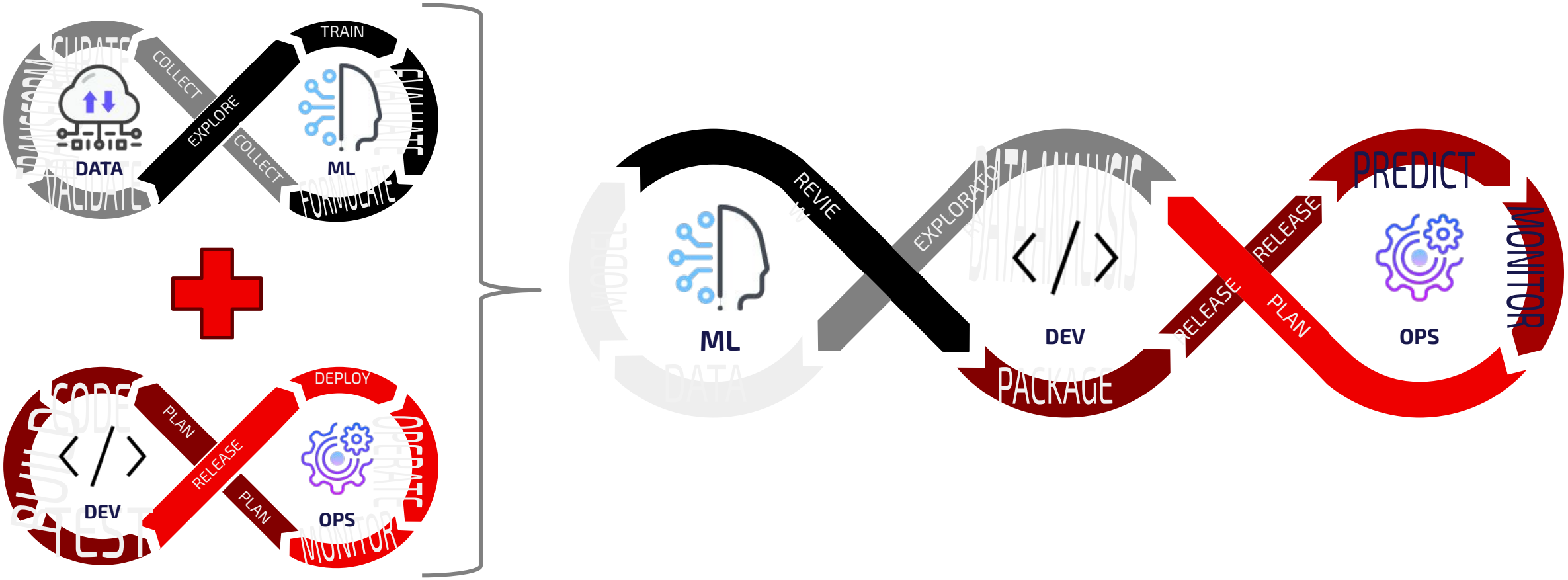
The better question would be to ask **“Why not?”.** When MLOps best practices are integrated into the business model, a plethora of advantages become **clear and the implementation of data-centric AI becomes easier**.

As with anything in the business world, a cost-benefit analysis is necessary and it's up to you to decide what works best.



DEVOPS + ML = **MLOPS**



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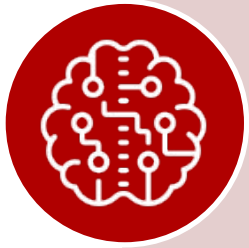
COLLABORATION AND CODE VERSIONING

- Versioning
- Collaboration
- Code Automation

TRAINING AUTOMATION

- CI/CT/CD
- Model Training

MODEL MONITORING AND MANAGEMENT



- Model lifecycle
- Model Training
- Model Quality
- Monitoring (Pipeline & Model)

SECURITY AND GOVERNANCE

- Policy management
- Data monitoring
- Experiment monitoring

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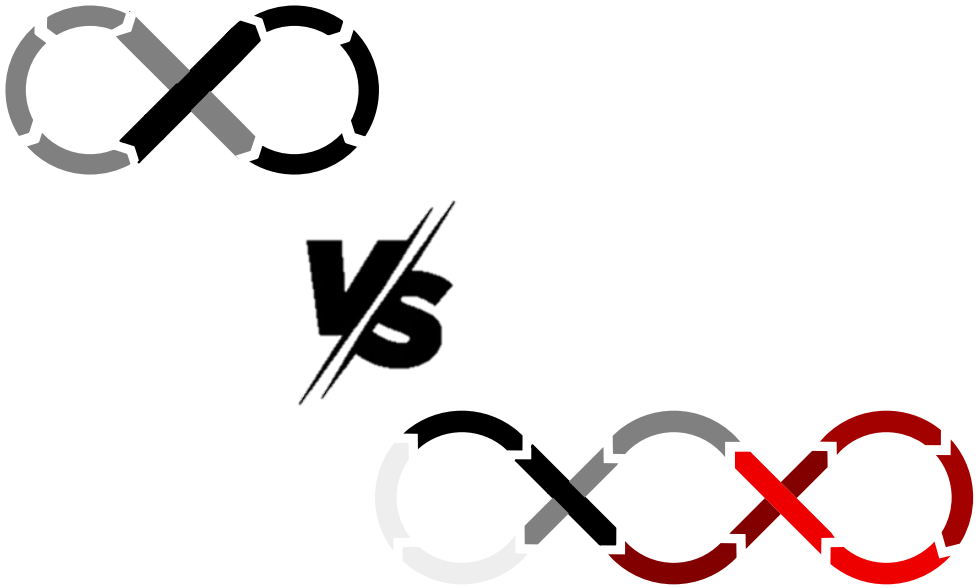
While **DevOps** focuses on software development and release pipelines, MLOps extends this approach to AI models by integrating datasets, machine learning experiments, and models into the lifecycle.



MLOps integrates with platform engineering by creating an ecosystem where data scientists, DevOps engineers, and developers collaborate, enabling automation of AI infrastructures and processes.

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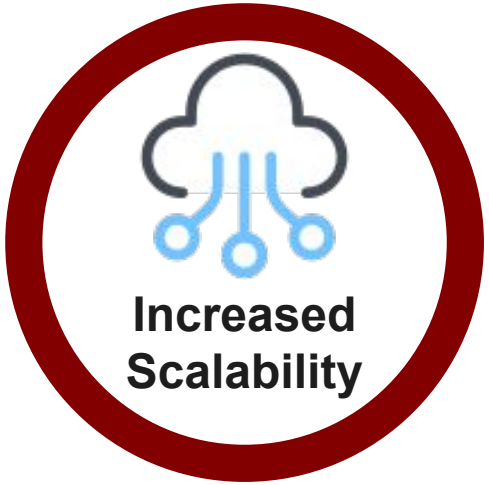

MLOPS allows you to share business targets by integrating them into the evolution of the model. This approach allows you to quickly scale model features and transform them into ROIs

A primary element for security is the **monitoring of the evolution of the model**. Monitoring starts with tools integrated within the toolchain that control and prevent model drift, ensuring its reliability

The use of the MLOps toolchain allows you to improve the models to be applied in **FinOps processes** to improve the infrastructure investment with constant performance

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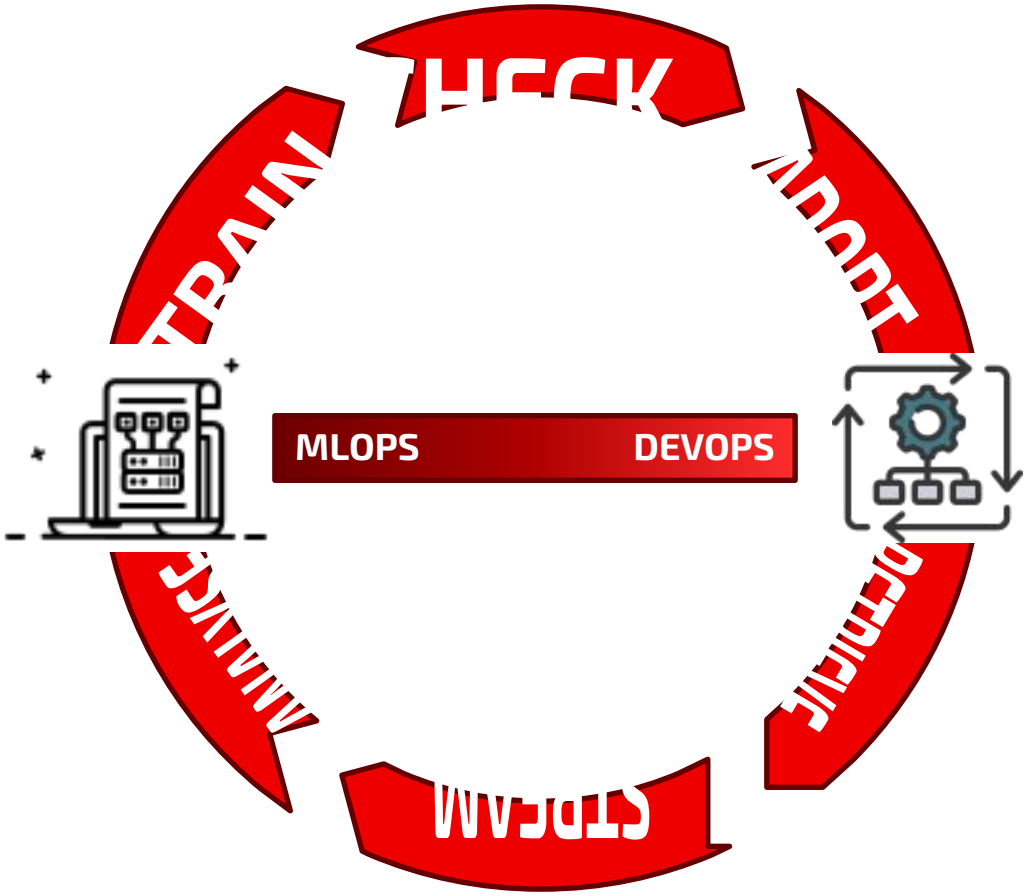

The shift from MLOps to PlatformOps allows infrastructure to be dynamically managed based on model-driven decisions. This approach, enhanced by DevSecOps integration, enables:

- **Dynamic Adaptation:** Infrastructure resources and security adjust in real time based on model outputs.
- **Managed Orchestration:** The infrastructure orchestrator, driven by AI models, allocates resources, scales containers, and updates data pipelines.
- **Flexibility and Security:** Infrastructure changes occur with continuous security monitoring, ensuring operational stability.

This evolution supports a continuous loop of optimization and security, aligned with the dynamic demands of incoming data.

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The Elastic Search AI Platform

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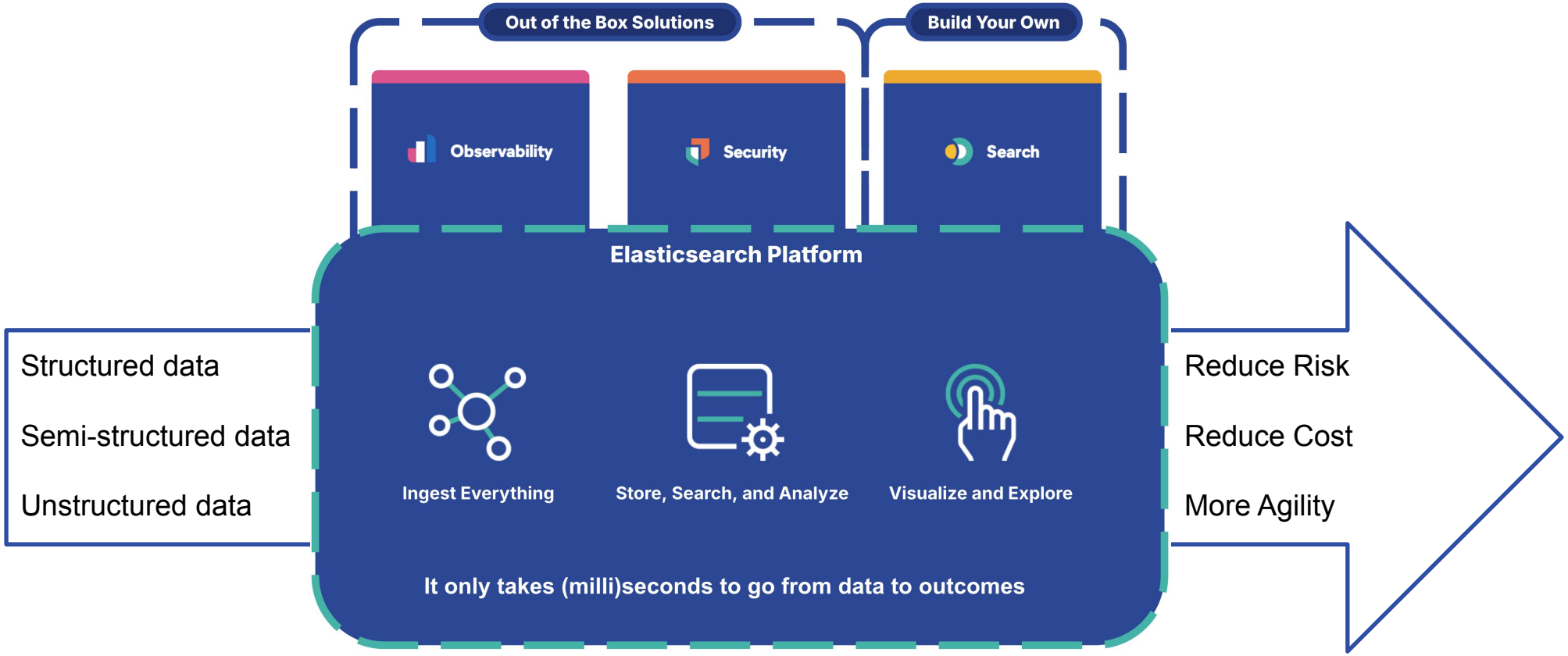
Meet the Elasticsearch platform:

A unified data platform to accelerate your mission



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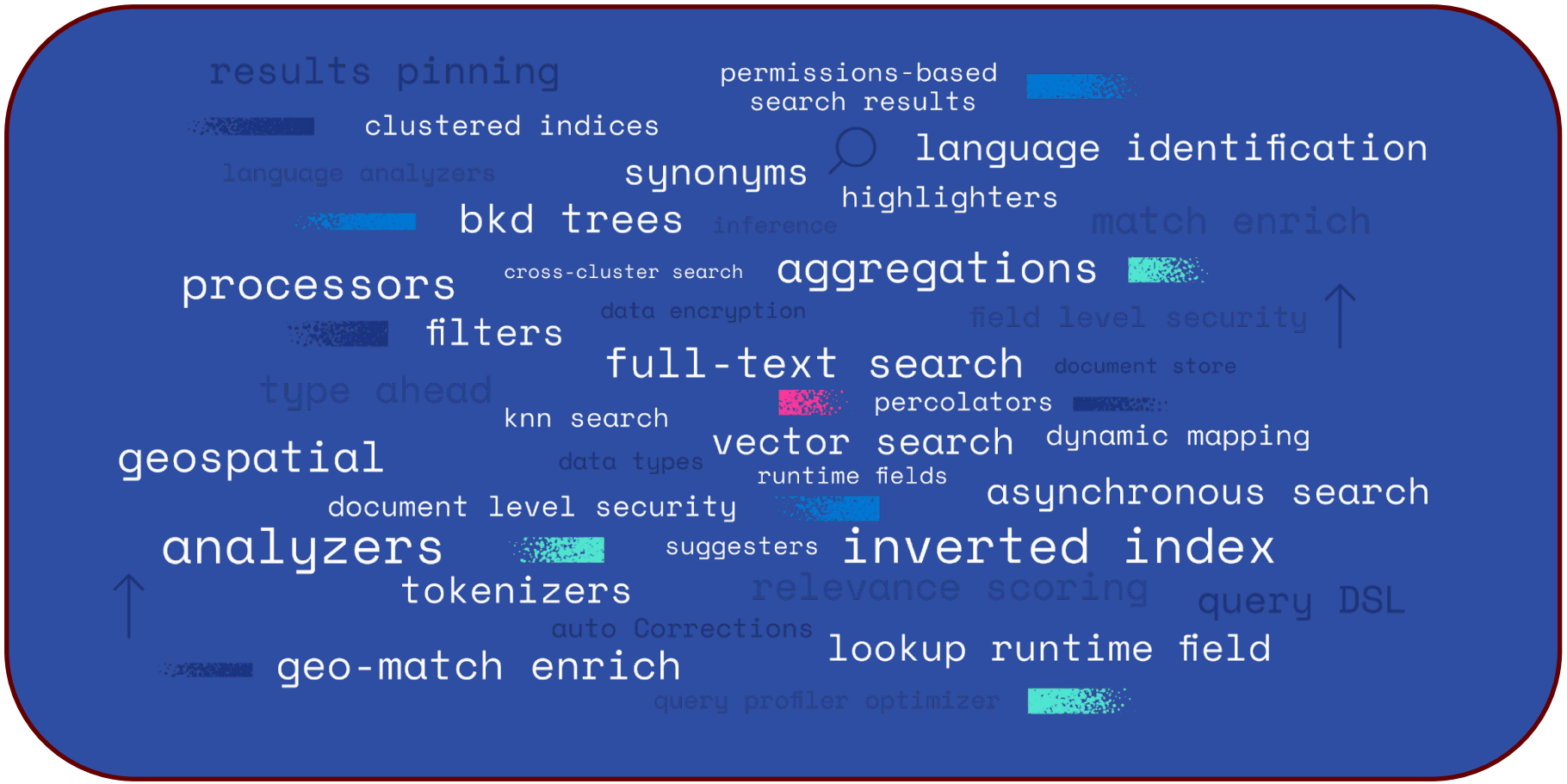
We've Come a Long Way



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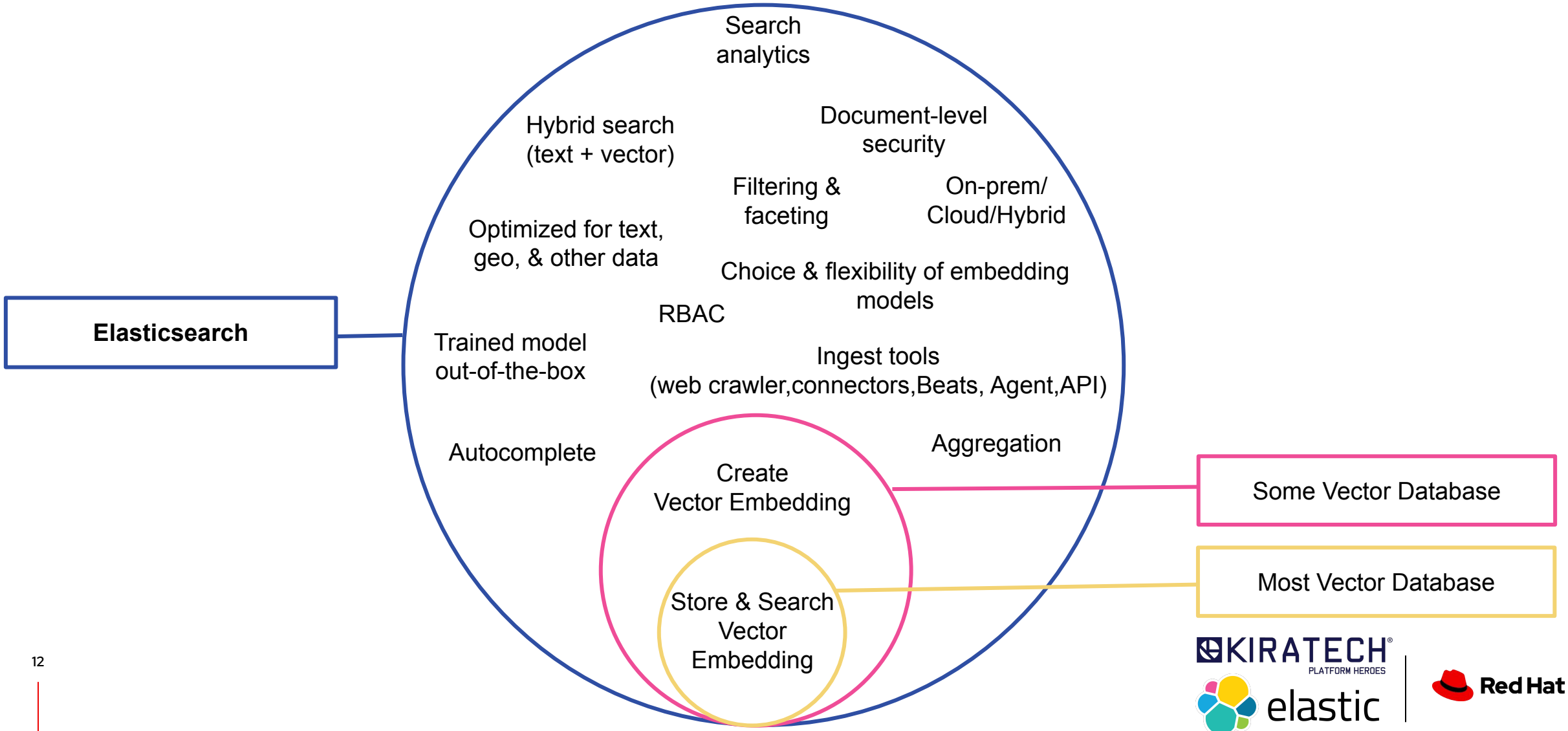
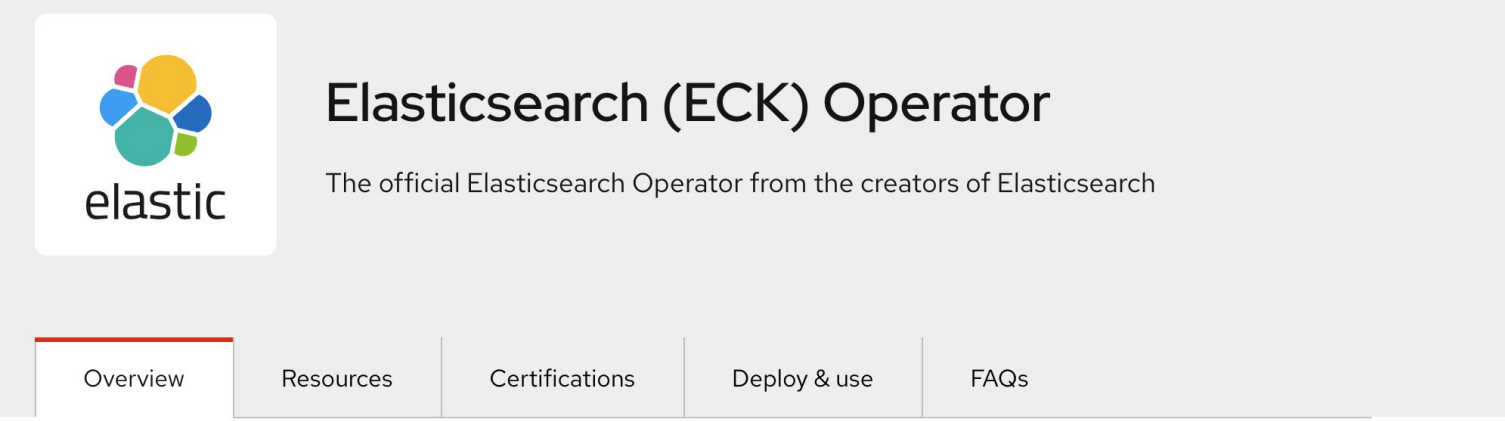
Elastic provides all the capabilities you need in GenAI



Elastic and OpenShift

Elastic Cloud on Kubernetes (ECK) is a Red Hat OpenShift Certified Operator



Elastic Cloud on Kubernetes automates the deployment, provisioning, management, and orchestration of Elastic Stack (e.g. Elasticsearch and Kibana) on Kubernetes. The Operator brings the power of Elastic Enterprise Search, Observability, and Security to Kubernetes. We offer both a Basic and Enterprise license with the Operator. The Basic license is free and comes with a host of features like multi-cluster management. The Enterprise license is paid and great for customers who want 24/7 support and access to advanced features such as cross-cluster search and cross-cluster replication.

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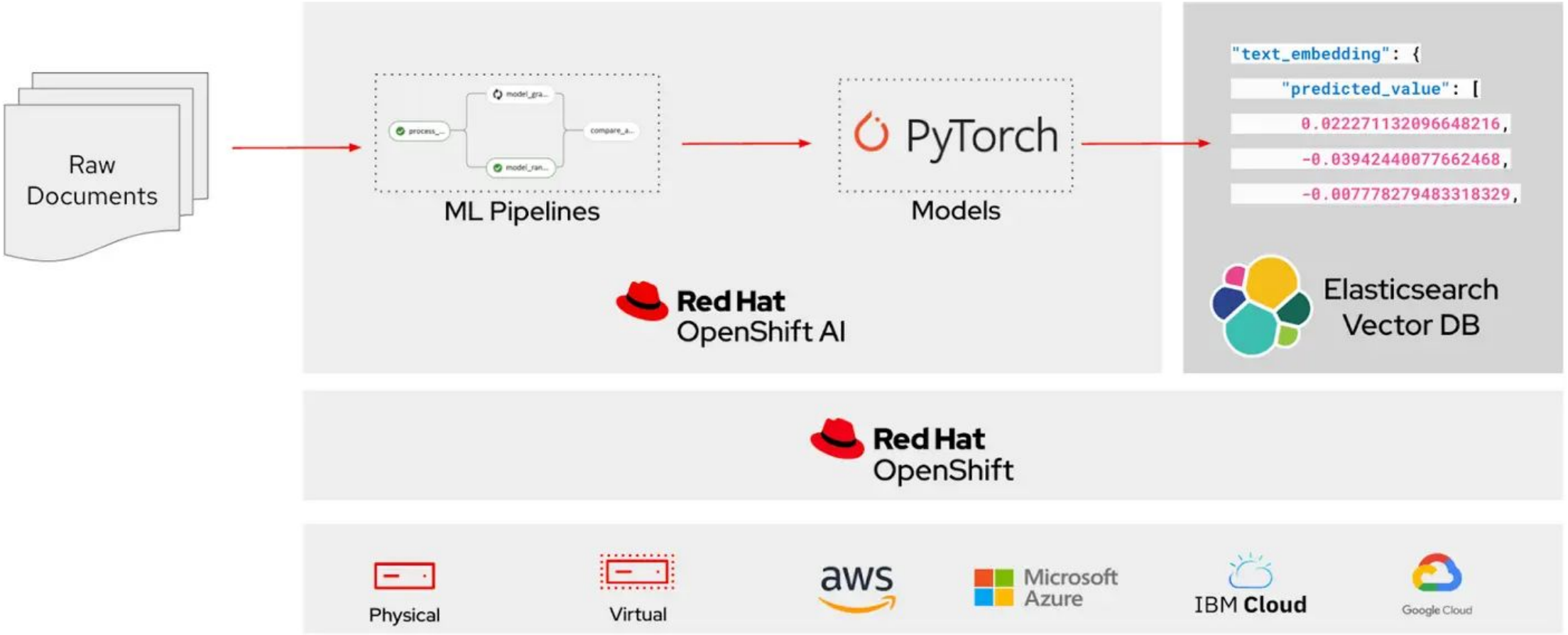
Red Hat OpenShift AI & Elastic Vector Database



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Enabling Technologies

Inference Models

Vector DB

Reranking

Retrivial

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SEARCH AI

Solutions Enabled

Search AI Powered Observability

Search AI Powered Security

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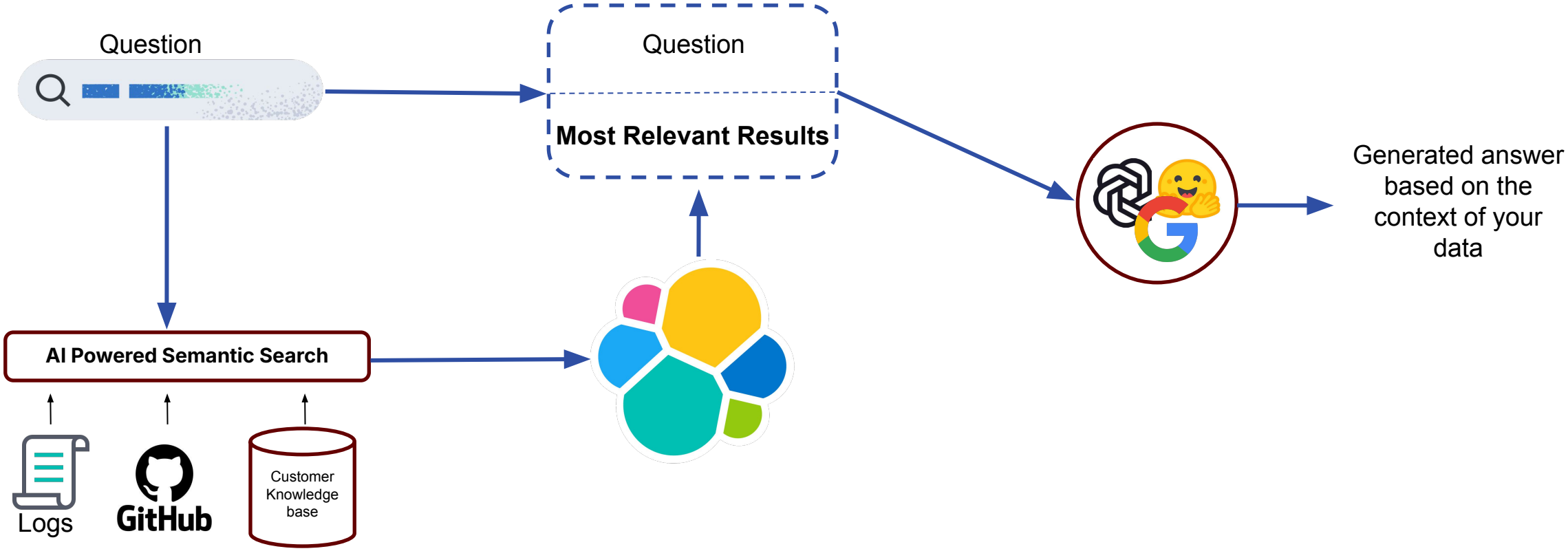
Retrieval Augmented Generation with Elastic



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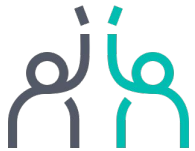
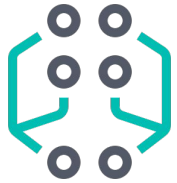
The Elastic AI Assistant for Observability

Contextual Prompts

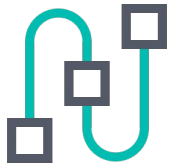


Empower your Engineers



Combine with Internal KB

Open and Transparent



Multi-Model Support

elastic.co/blog/transforming-observability-ai-assistant-otel-standardization-continuous-profiling-log-analytics

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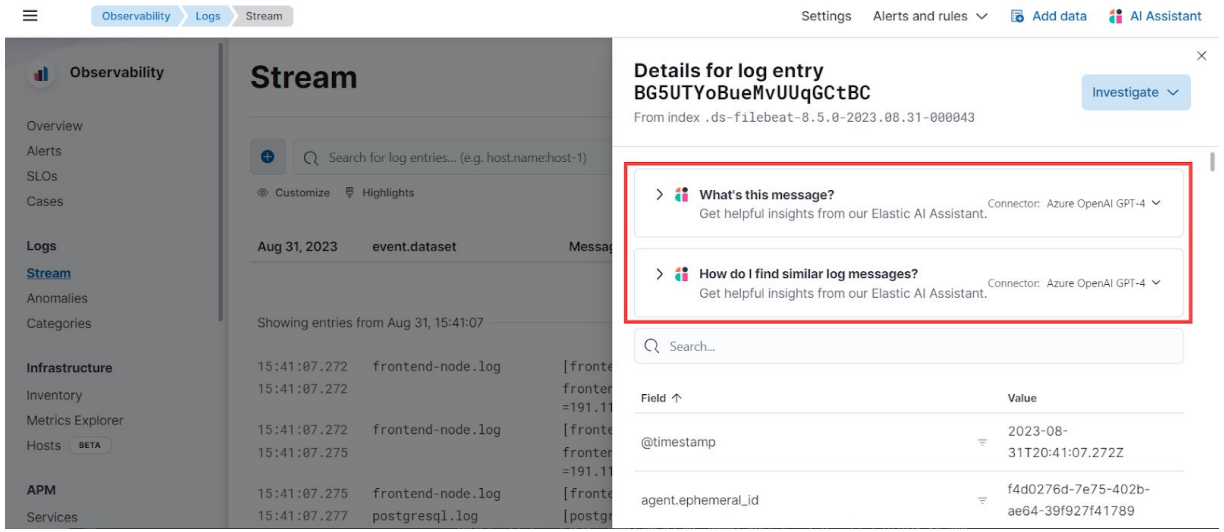
For Every Observability Engineer
The Elastic AI Assistant

Detect → Analyze → Remediate

AI Assistant Observability in context

- Provide Alerting RCA
- Explain log messages
- Explain host processes
- Explain APM errors
- Profiling to analyze libraries and functions



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AI Assistant in Observability use cases

Explain and Solve

Act as an internet search tool to explain error codes, alert conditions, and provide a natural language chat interface to provide solutions.

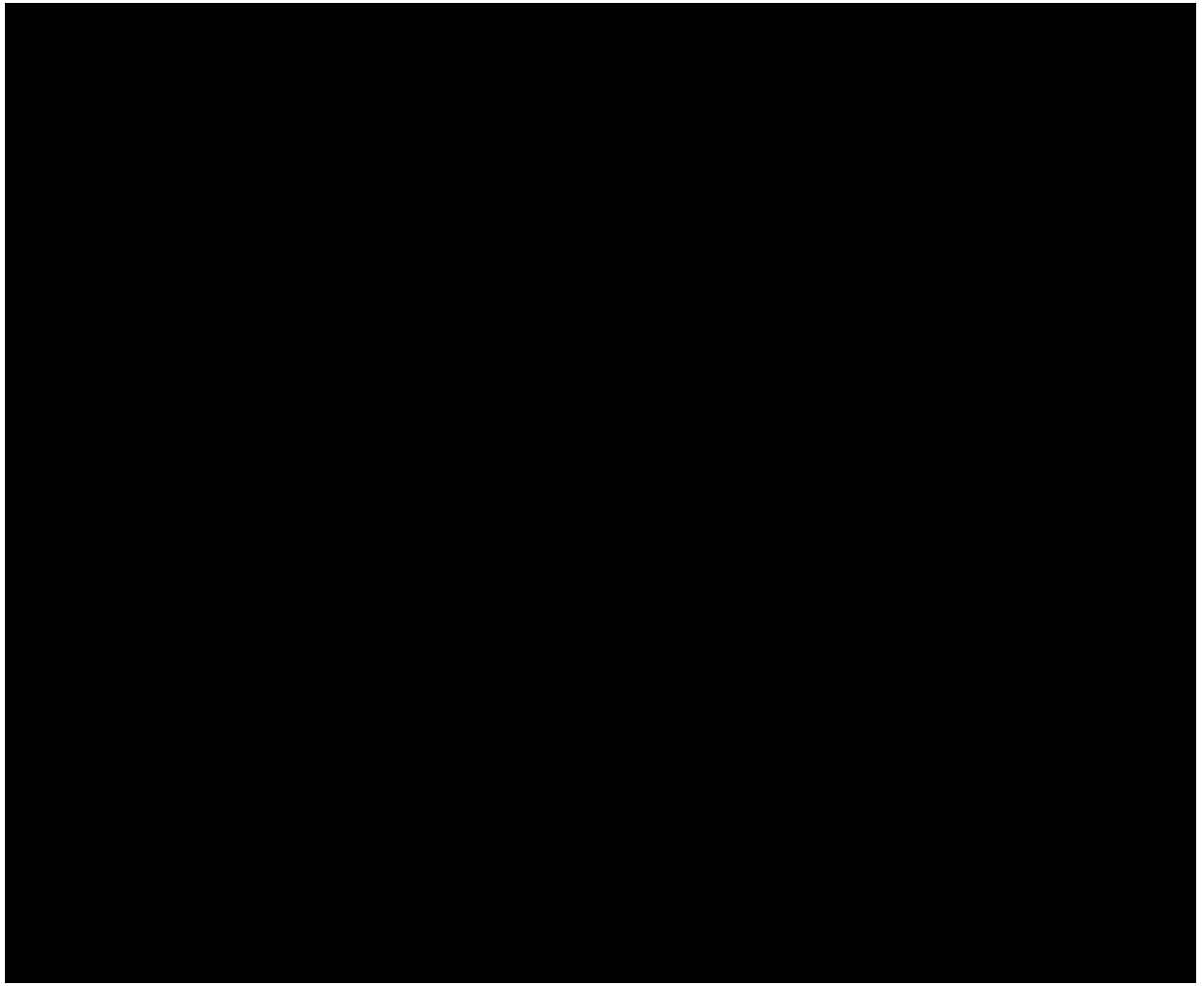
AI for Elastic expertise

Not sure how to create that query or build the visualization? Need to translate a query or synthetic monitor? We have a natural language UI that will build it for you and provide the code or syntax to execute on what you need

Unlock internal knowledge

Ingest internal knowledge, such as the content of private runbooks written by our SREs, github issues, post-mortem reports, internal mailing lists etc. Query the private data to find information that may be relevant in answering the particular query that we are about to send to the LLM.

AI Assistant in Action



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Thank you

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