KER 7 | IKERLAN

Monitoring Platform

TYPE

[SERV] [METH]

TECHNICAL READINESS LEVEL

TRL4

INTELLECTUAL PROPERTY RIGHTS

PROPRIETARY

EXPLOITATION ROUTE

OPEN SOURCE

The EXTRACT Monitoring Platform, developed by IKERLAN, is a lightweight, extensible software component that enables intelligent and energy-aware observability across heterogeneous compute continuum infrastructures. It provides core monitoring capabilities that fuel the deployment, orchestration, and scheduling services within the EXTRACT architecture.

KEY BENEFITS FOR COMPUTE CONTINUUM PROJECTS

Designed to support a wide range of computing nodes—from cloud-based servers with high-performance GPUs to resource-constrained edge devices—this platform leverages Prometheus to collect performance and energy metrics (CPU usage, memory, power consumption, etc.) and stores them in time-series databases. It is compatible with instrumented applications, allowing for trace and log gathering. Additionally, a built-in API enables seamless integration with orchestration tools such as COMPSs, offering real-time metric delivery to deployment logic.

FOR RESEARCHERS AND INDUSTRIAL TEAMS:

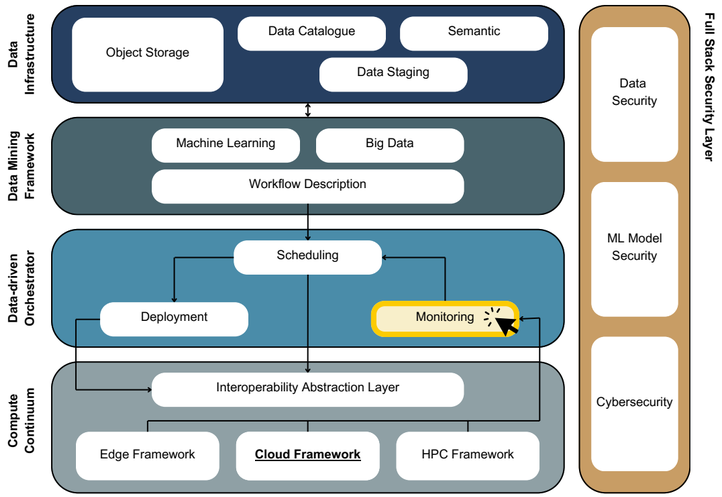
- Monitor and analyze performance and energy consumption across edge–cloud deployments.
- Gain access to fine-grained, real-time observability to enable feedback loops in orchestration workflows.
- Instrument applications to retrieve trace-level performance insights without external tooling.

FOR ADMINISTRATORS AND CDOS:

- React quickly to anomalies in the infrastructure via intuitive dashboards and alerts.
- Reduce manual overhead and improve service continuity by using pre-integrated visualization layers (Grafana).
- Improve resource allocation efficiency through live monitoring inputs that enhance orchestration decision-making.

USE AND IMPACT BEYOND EXTRACT

Beyond the scope of EXTRACT, the platform is expected to contribute to future orchestration and infrastructure management initiatives, both in research and industrial settings. Thanks to its modular architecture and integration-ready design, it can be adapted or extended to meet the needs of diverse environments and orchestration frameworks, supporting continued innovation in performance-aware and energy-aware infrastructure management.



https://gitlab.bsc.es/extract/extract-sa/ansible

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