KER 4 | URV

Lithops

TYPE

[SERV] [METH]

TECHNICAL READINESS LEVEL

TRL7

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EXPLOITATION ROUTE

OPEN SOURCE

Lithops is a Python multi-cloud serverless framework for running unmodified local code at scale. It abstracts deployment, ensuring portability and avoiding vendor lock-in. Ideal for highly parallel workloads, it supports Big Data, Monte Carlo simulations, and deep learning. Lithops simplifies object storage access with automatic partitioning and offers an intuitive API for large-scale data processing.

KEY BENEFITS FOR COMPUTE CONTINUUM PROJECTS

Lithops' native approach to launching parallel workers for data processing has been key in implementing the radio interferometry pipeline (TASKA-C use case). Additionally, Lithops is agnostic to its computing backend, allowing workloads to run on the cloud, edge and HPC (WIP: in the near future). This will enable us to achieve interoperability across the compute continuum.

FOR RESEARCHERS AND INDUSTRIAL TEAMS:

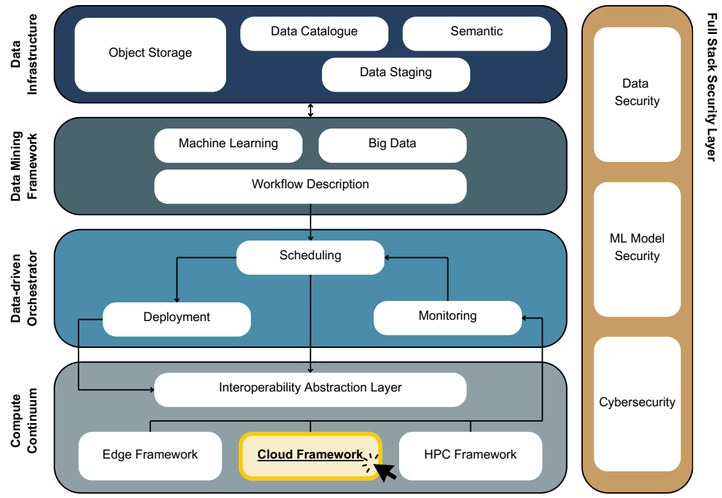
- Run Python code (coded as done in local) in a massive and easy way in the cloud/HPC/edge.
- Lithops is oriented to big data analytics: both research and academia can leverage Lithops as the engine of their use cases.

FOR ADMINISTRATORS AND CDOS

- Quick and elastic computations: they can leverage FaaS elasticity to speedup their applications via serverless implementation over Lithops.
- Lithops is extending its capabilities with automatic resource provisioner (easing the management) of the pipelines.

USE AND IMPACT BEYOND EXTRACT PROJECT AND ITS PARTNERS

Lithops was already a tool with cloud use cases at the start of the EXTRACT project. Throughout the project's progress, Lithops has expanded its support, becoming the central pillar of parallelism in TASKA-C. The new smart resource provisioning layer and the added support for HPC environments will enable deployment across the compute continuum, making it easier to use thanks to the intelligent provisioning layer.



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

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