		\leftrightarrow \rightarrow \bigcirc work
	EXPLORER ····	<pre>example.py ×</pre>
Ċ	✓ WORK □ □ □ □ ✓ .pyrun ! environment.yml	<pre> example.py ></pre>
	example.py	<pre>3 # To help you get started, we have included a small example 4 # showcasing how to use lithops. 5 6 # To install more packages, please edit the environment.yml 7 # file found in the .pyrun directory. 8 9 10 import lithops 11 import time 12</pre>
A		<pre>13 14 def my_map_function(id, x): 15 print(f"I'm activation number {id}") 16 time.sleep(5) 17 return x + 7 18 19 20 ifname == "main": 21 iterdata = [10, 11, 12, 13] 22 fexec = lithops.FunctionExecutor() 23 fexec.map(my_map_function, range(2)) 24 fexec.map(my_map_function, iterdata) 25 print(fexec.get_result())</pre>

PyRun: Effortless Scalable Scientific Computing Focus on Code, Not Cloud Complexity Daniel Alejandro Coll Tejeda Universitat Rovira i Virgili

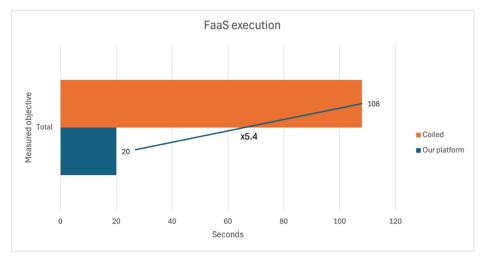
What is PyRun?

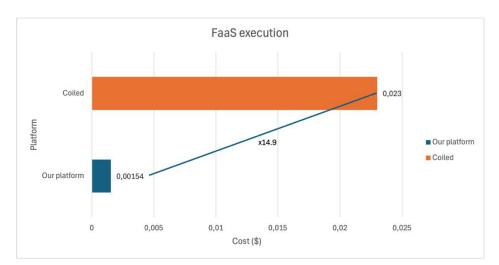
- PyRun: Your Easy Button for Python in the Cloud
- Democratizes scalable cloud computing.
 - **Unified Web Environment:** VS Code-like IDE for code, files, terminal.
 - Automated Runtime Management: Define dependencies (environment.yml / Dockerfile), PyRun builds & deploys.
 - Seamless Framework Integration: Managed support for Lithops (FaaS) and Dask.
 - **Real-Time Monitoring:** Deep insights into jobs (CPU, memory, tasks).
 - Runs on Your AWS Account: Full control & transparency.



Serverless Supercharged: Lithops with PyRun

- Effortless FaaS: Configure Lithops via PyRun UI no manual JSON:
- Significant Performance & Cost Gains:
 - Up to 14.9x Cheaper
 - Up to 5.4x Faster
 - Benchmark: Kerchunk GOES





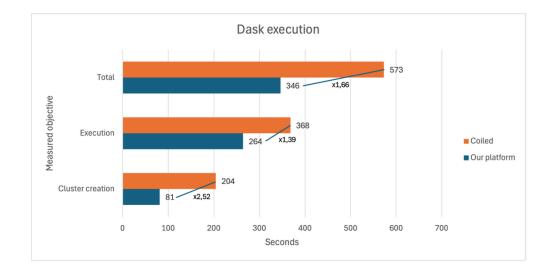
Speed Comparision

Cost Comparision

Beyond FaaS: Dask & **AI/ML** Versatility

Simplified Dask Scaling:

- Faster cluster creation (e.g., IPCC Plots: up to 2.5x faster).
- Run Dask on EC2/Fargate, configured in your code.
- **Ready-to-Run Pipelines:** Explore complex examples (Geospatial, Climate, Metabolomics).
- Streamlined AI/ML:
 - Audio/Image Recognition, Distributed Dask-ML, LLM w/ • Ollama.
 - Manage complex AI environments easily.



\equiv 🤣 PyRun Logged in as WOSCx [→ Log out 命 Home PUBLIC RESOURCES Vorticity Workload with Cubed **CMIP6** Precipitation Frequency Image Classification Change Pipeline Serverless pipeline for computing and Al pipeline for image classification using analyzing vorticity using synthetic TensorFlow Dask pipeline analyzing CMIP6 climate MY RESOURCES oceanographic velocity. model data to quantify changes in precipitation frequency. Workspaces & Medium Cubed Xarray 4 Medium to High TensorFlow Zarr NumPy 4 High Dask Keras Matplotlib NumPy Monitoring Q Lazy computation, first-order deriva Climate change model analysis (CMIP Image classification, CNN, TensorFlow, Data parallel cloud computing, scientific SETTINGS AND HELP Cloud account A My account METASPACE Metabolite Lithops TeraSort Benchmark Model calculation annotation pipeline Serverless pipeline to generate and sor This notebook contains a model arge synthetic datasets using TeraGen calculation process that consumes laz This pipeline showcases metabolite and TeraSort over. annotation of a imzML dataset **&** Medium NumPy Lithops O Multi-step workflow, complex data handling O Serverless parallel data generation, distribute sorting, multipart upload to.

PyRun Pipeline section

Dask execution comparision

HOME

Try PyRun!

- Get Started: pyrun.cloud
- **Documentation:** docs.pyrun.cloud
- Key Takeaways:
 - Faster Time-to-Results
 - Reduced Cloud Complexity & Cost
 - Integrated & Versatile
- Join the Community: discord.gg/utvgFgUqcR
- Email: danielalejandro.coll@urv.cat

