universität freiburg

Ideas for new research compound succeeding FIDIUM in Freiburg

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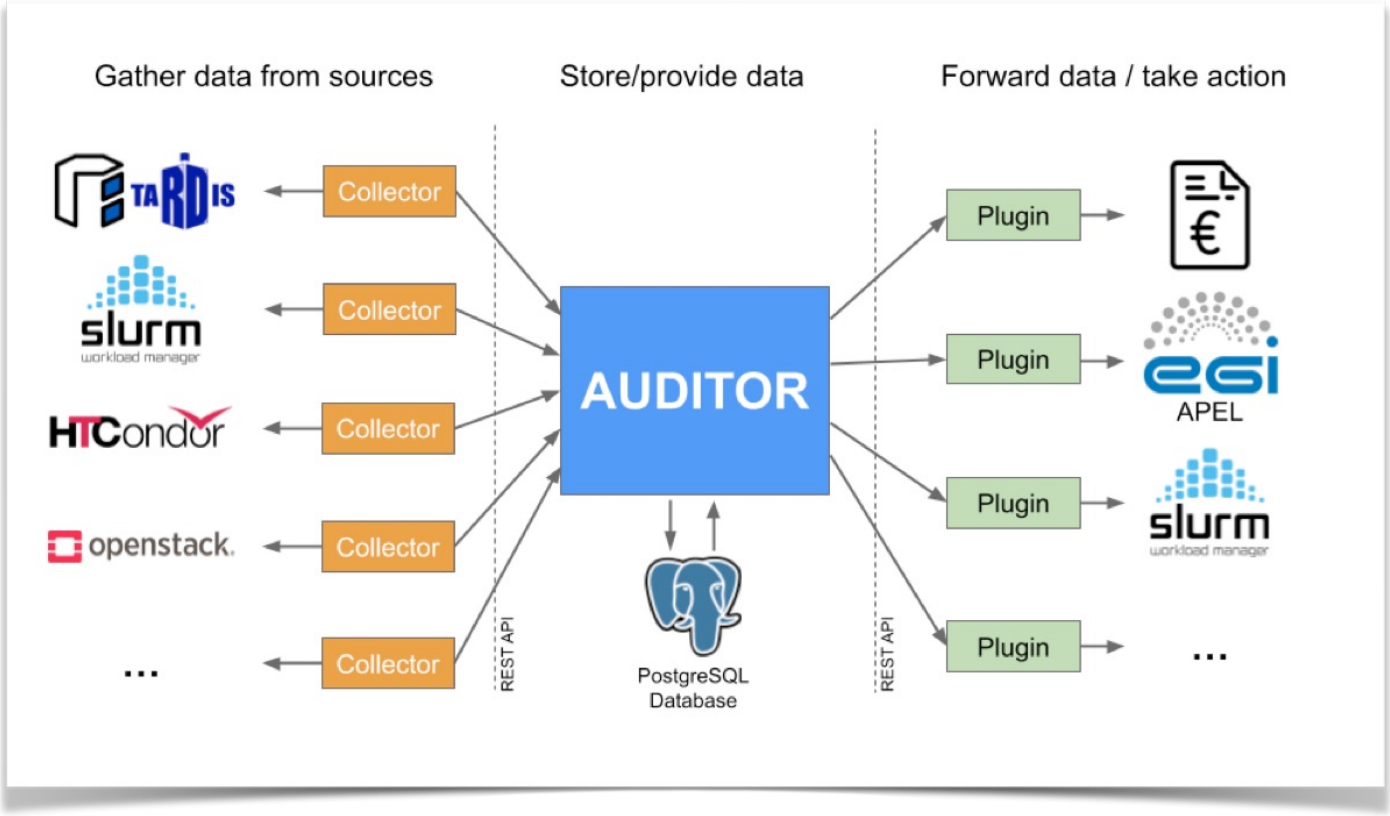
Discussion meeting for new compound succeeding FIDIUM

AUDITOR

Modular accounting Eco-System



Accounting Data Handling Toolbox For Opportunistic Resources
Website: https://alu-schumacher.github.io/AUDITOR/
GitHub: https://github.com/ALU-Schumacher/AUDITOR

Maintenance/Adaption

- of core components
- of existing collectors and plugins (together with partners)
- in order to facilitate easier roll-out to other communities

R&D for future use-cases

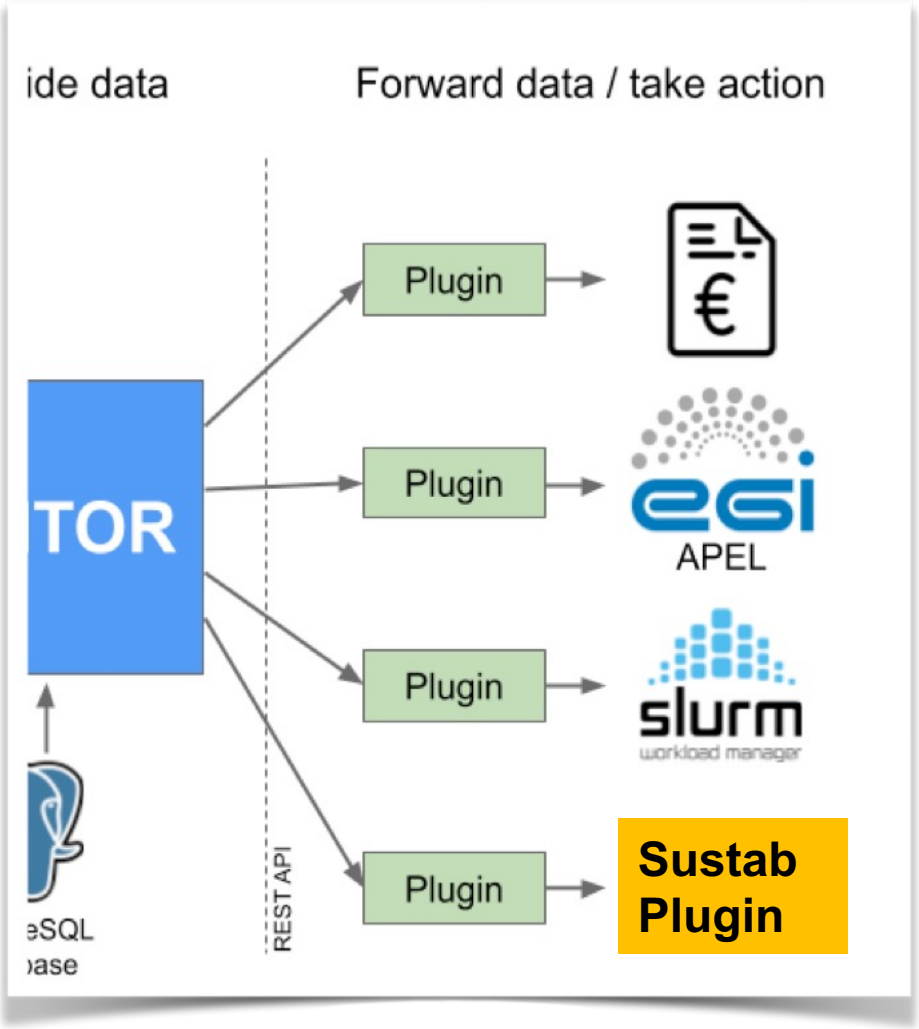
- add new features if requested
- develop new collectors and plugins

Support

- of current users
- of possible new users / use cases

Sustainability (Sustab) Plugin for Auditor

Goal: analyse user resource utilisation and report measures to save resource consumption



Analyse requested vs consumed resources of a user

e.g. in terms of CPUs and RAM

- sends a weekly overview with resource utilisation and the corresponding CO_2 footprint per user
- CO_2 footprint should raise awareness of waste of resources (CO_2 more intuitive than cluster parameters)

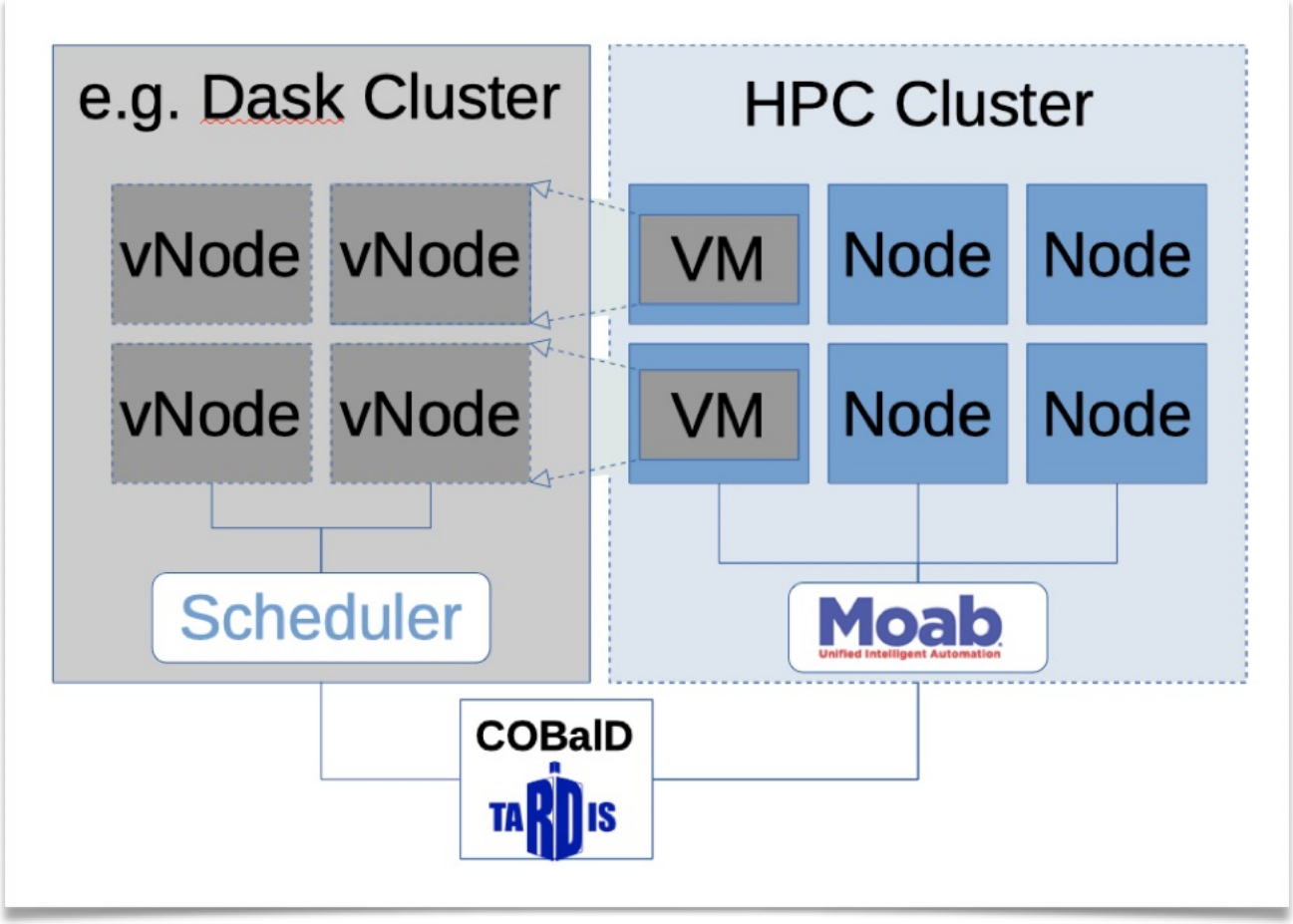
Propose saving measures:

- suggest adapted job parameter to users in order to optimize utilisation efficiency

Evaluate efficiency gain:

- collect long-term resource utilisation in order to evaluate gain induced by using the Sustainability Plugin
- provide input to simulations such as LAPIS

Efficient interactive analysis platform on dynamically provided resources (e.g Jupyter notebooks on HPC clusters)



Python tools and interactive Python workflows are used more and more in HEP

Challenges

1. Scale Python code
2. Scale (Py)Data libraries
3. Provide scale up in interactive timeline

Use Dask (1. and 2.) and COBalD/TARDIS (3.) to provide resources dynamically

Find optimal balance between

- immediate provisioning of resources
- efficient booking of resources

Optimize utilization efficiency

- based on analysis of meta-data collected by AUDITOR
- tune operation hyperparameters

Summary

Maintenance of, Adaption/Extension of and Support for AUDITOR

Development and Evaluation of Sustainability Plugin for AUDITOR

Development of an efficient interactive analysis platform on dynamically provided resources

Will be happy to contribute to other ideas presented today if it fits our expertise