

WorkflUX: The Workflow User eXperience

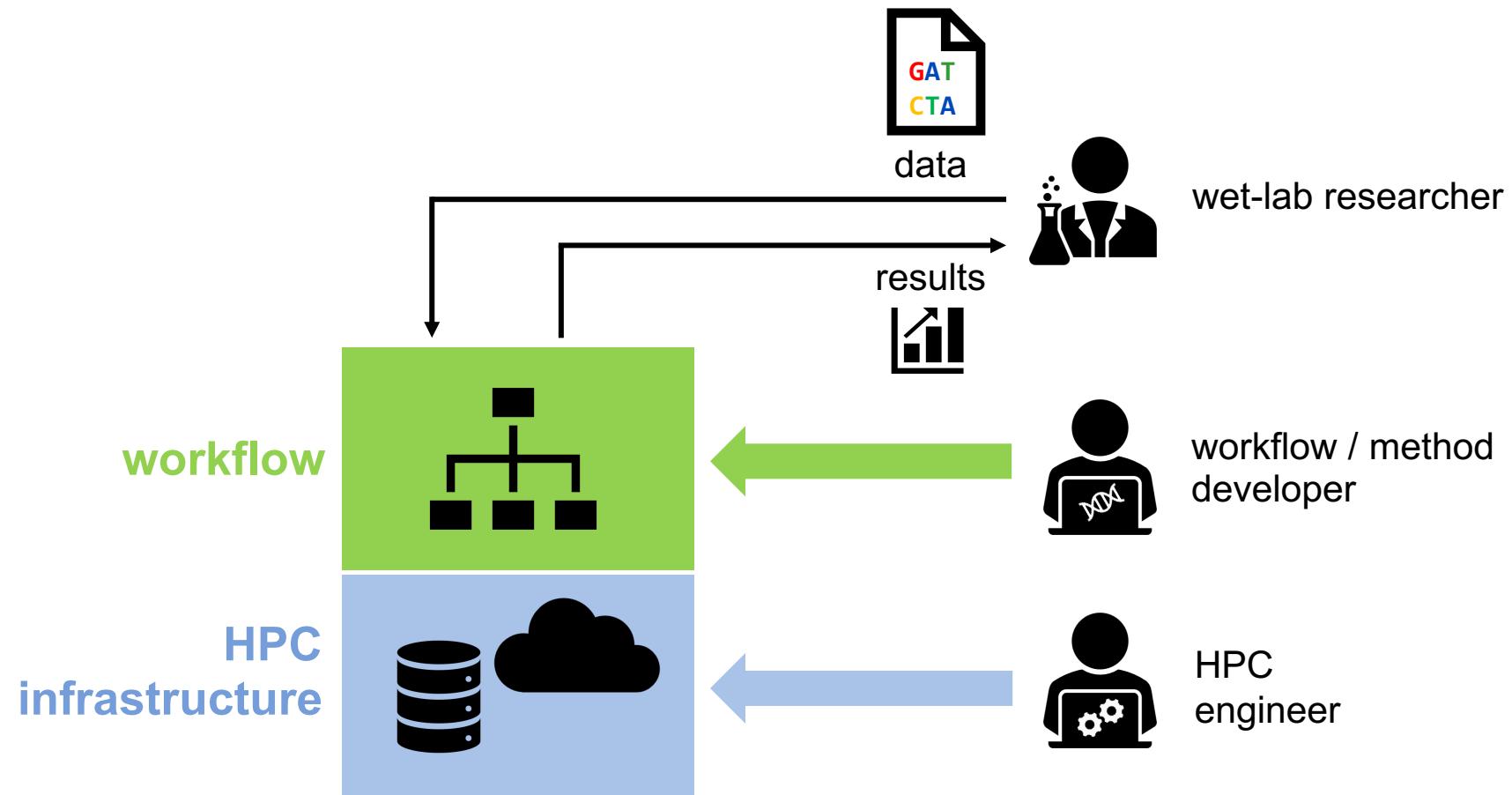
**An open-source, cloud-ready web application for simplified
deployment of CWL workflows**

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Dr. Pavlo Lutsik

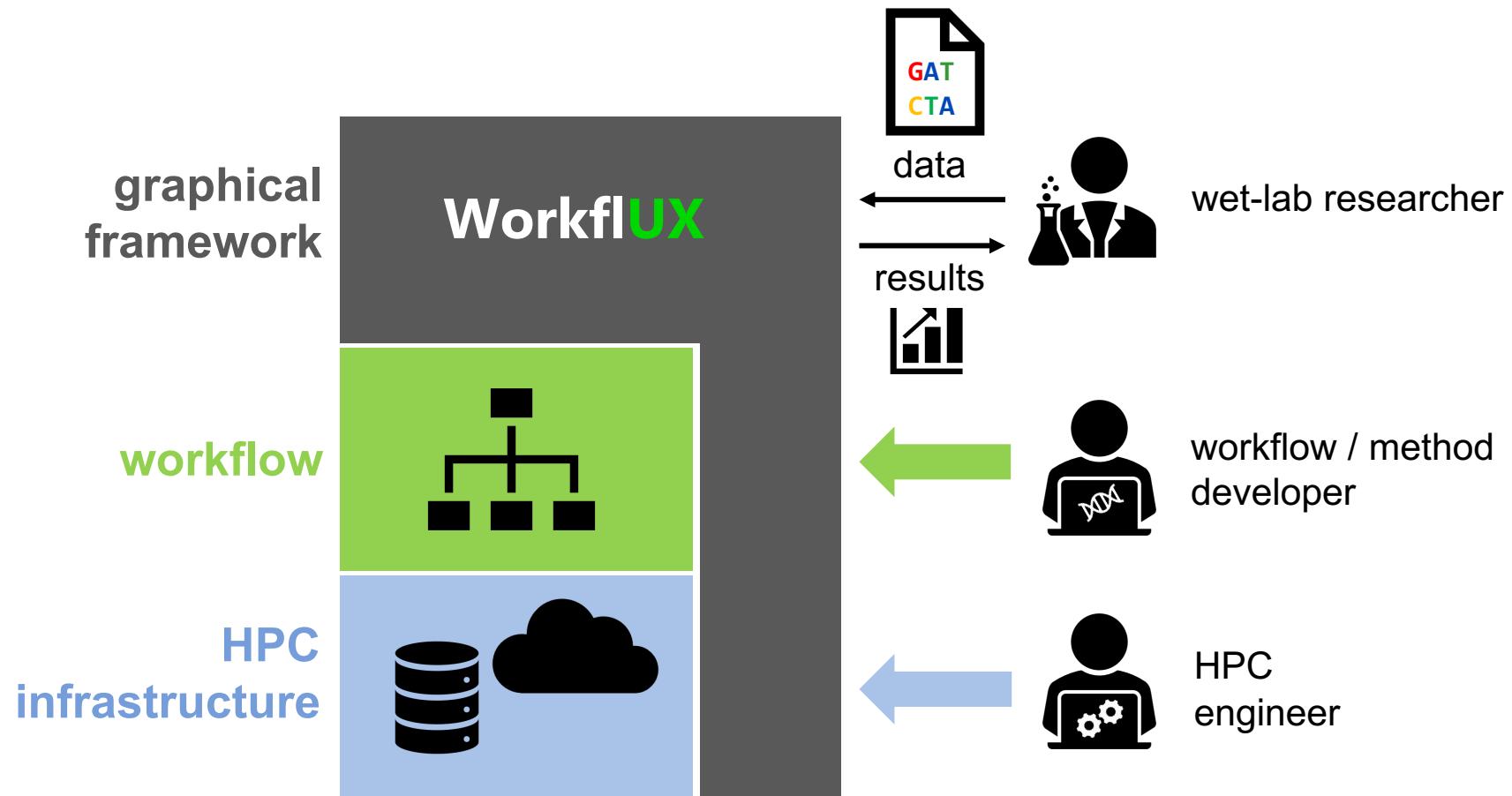
The Division of Cancer Epigenomics
German Cancer Research Center

Main developer: Kersten Breuer

Principle Roles in Workflow Development and Deployment

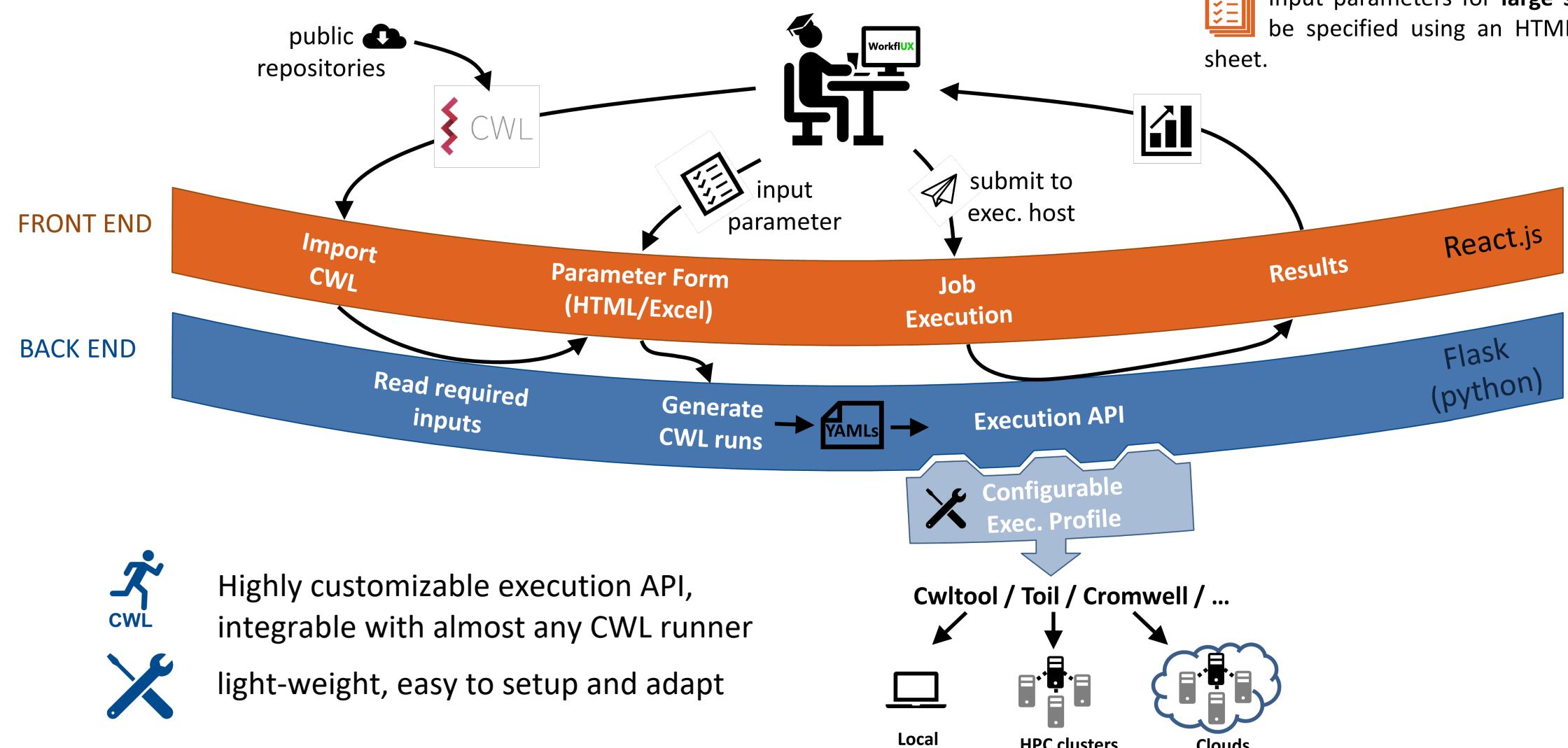


Principle Roles in Workflow Development and Deployment



WorkFLUX – An Outline

The user-friendly web interface requires no programming skills and allows execution on remote infrastructures.



Highly customizable execution API,
integrable with almost any CWL runner
light-weight, easy to setup and adapt

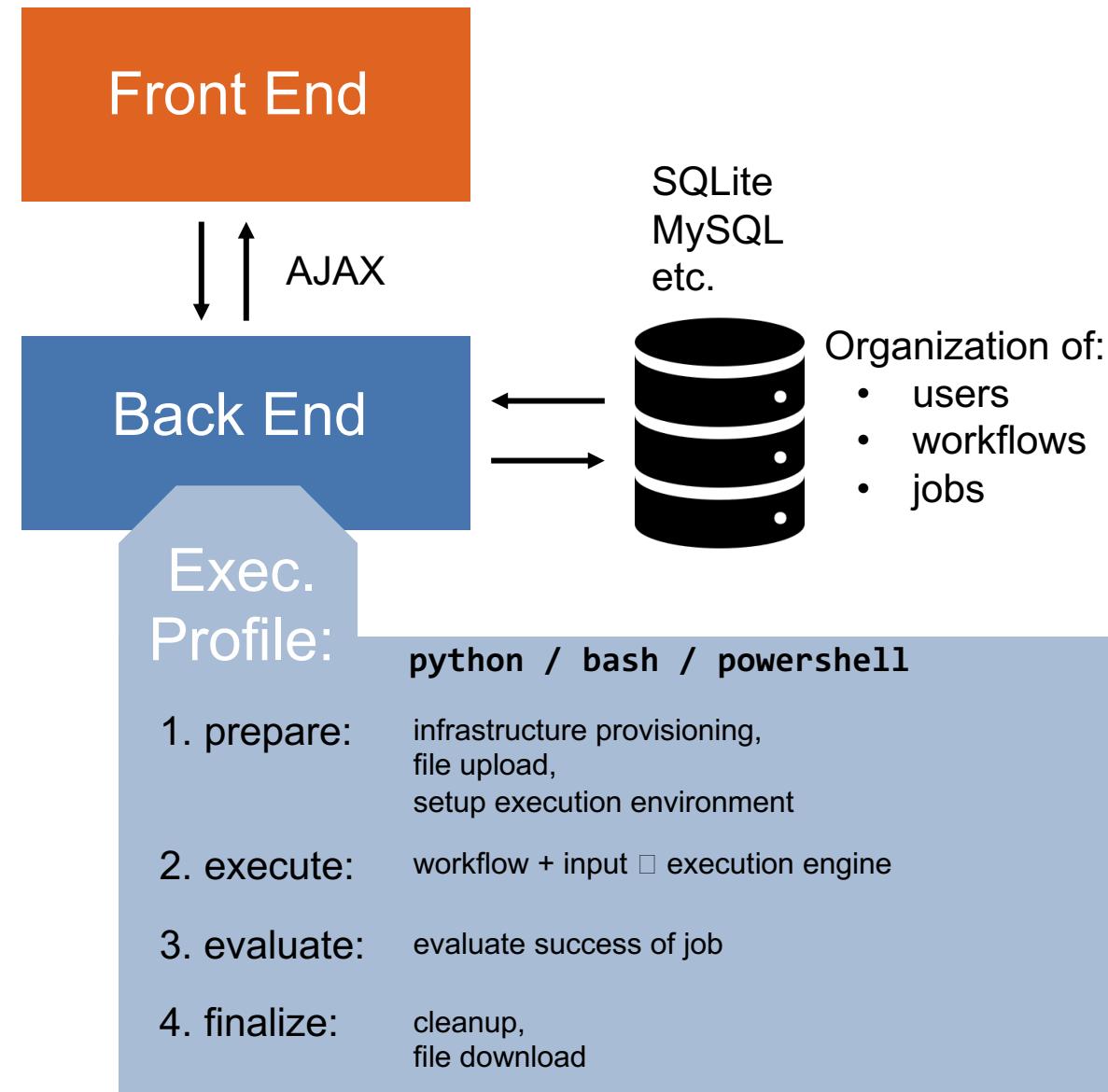
WorkFLUX – Technical Detail



single page web app



Flask
python-based,
scalable with Gunicorn



How does it look?

Welcome to workflUX

The Workflow User eXperience.

workflUX Import CWL Workflow/Tool + Create Job Job Execution & Results

CWL documents:

msa_group_compare.cwl

fasta_1	https://raw.githubusercontent.com/CompEpigen/msa_group_compare.cwl
fasta_2	https://raw.githubusercontent.com/CompEpigen/msa_group_compare.cwl
group_name_1	✓ China_2019
group_name_2	✓ Europe_2020
homology_method	✓ identity
msa_method	✓ ClustalW
seq_type	✓ protein
tree_color_by_group	✓ false <input type="radio"/> true

Validate Selection and Create Job:

validate and create job

Job 20210621_868_covid_19_s-protein_comparison was successfully created. Please head over to "Job Execution and Results"

workflUX Import CWL Workflow/Tool + Create Job Job Execution & Results

Jobs:

2021.06.21/868
covid_19_s-protein_comparison
msa_group_compare.cwl

List of Runs:

Run ID	Status	duration	Exec. Profile	Details
run	executing	0m	cwltool_local	

Actions on Selected Runs:

Start Execution:

Select execution profile: ELIXIR FI WES 1

Select how many runs may execute in parallel: 4

11:44:42 - Successfully started execution for runs: run

Target Audience and Usage Scenarios

currently

Interdisciplinary Research Groups:

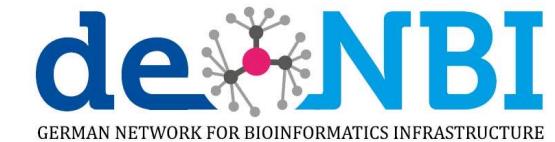
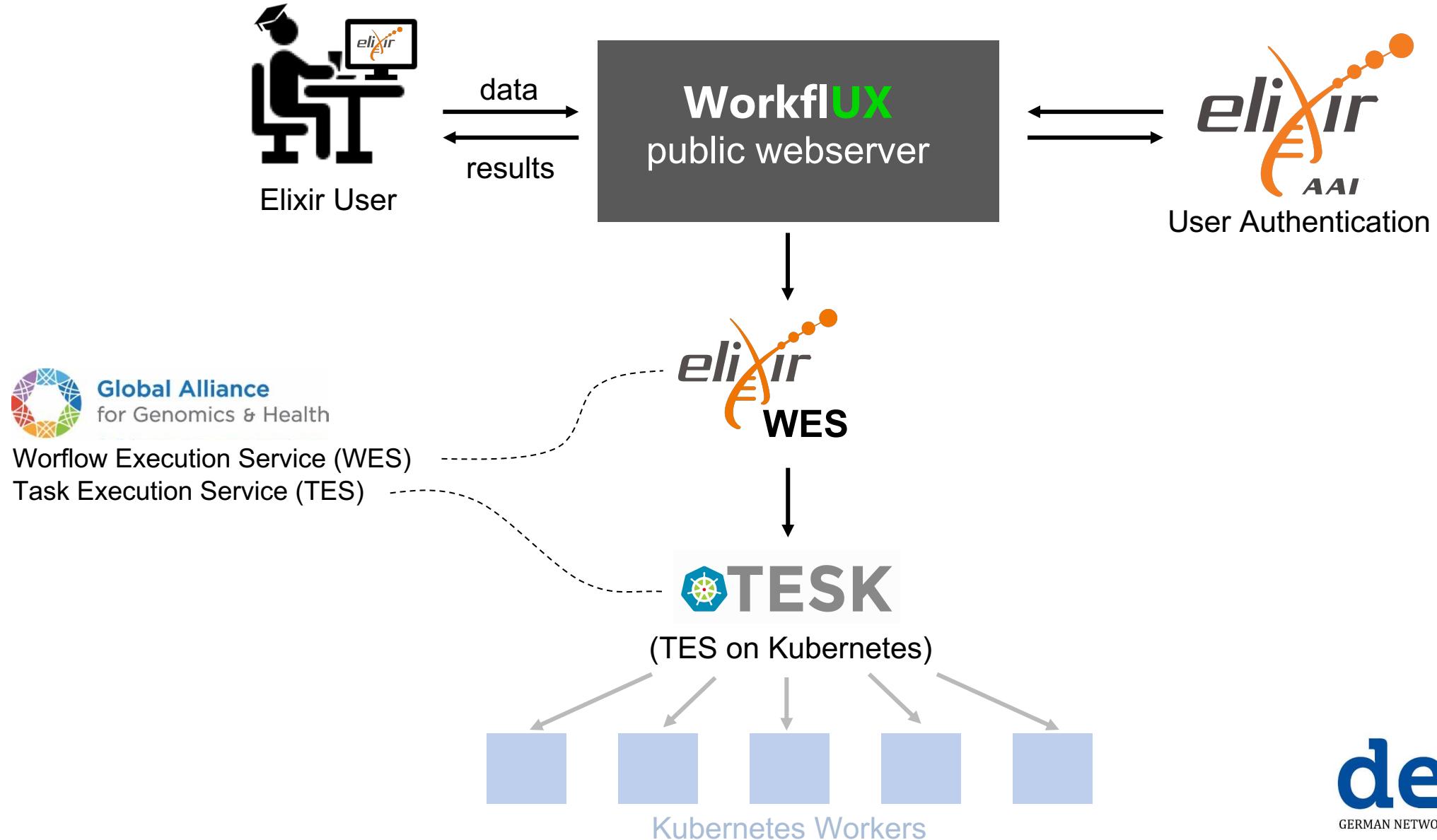
- used locally as desktop application (Linux, Windows, MacOs)
- HPC in protected networks:
 - Servers
 - Clusters
 - Clouds
- minimal setup required
- integration of GA4GH WES standard

in development

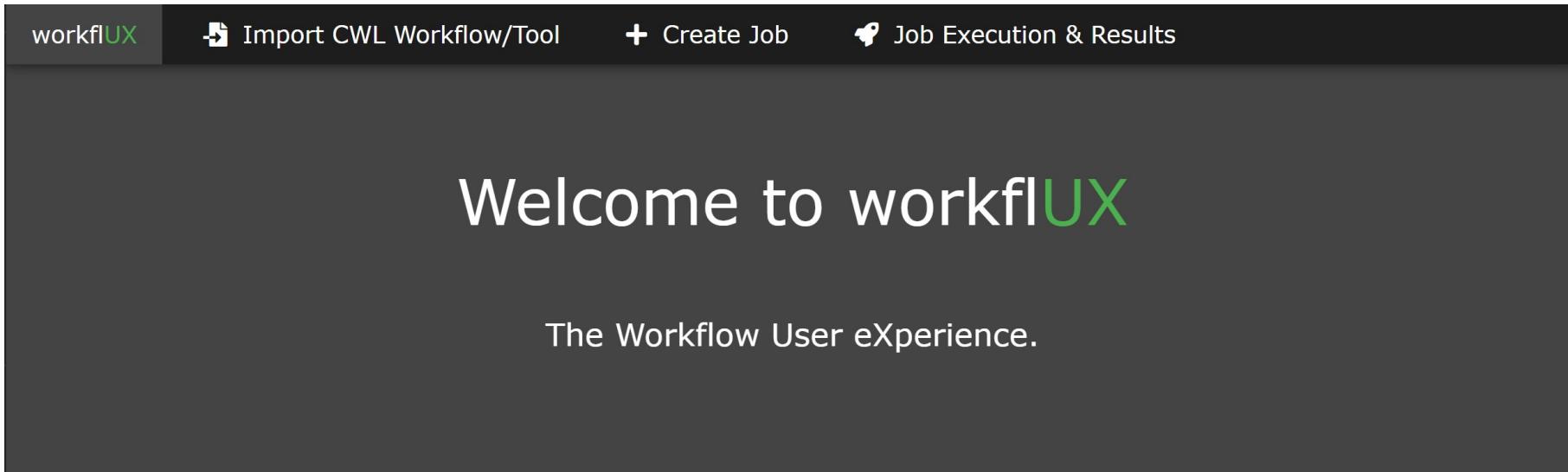
Organizational Scale:

- multi-user, multi-project management
- execution on publicly available infrastructure
- collaborative work on protected data

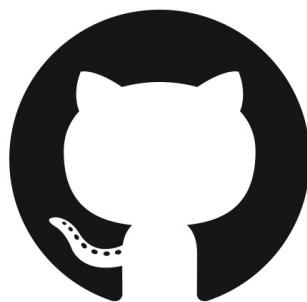
Participating in the Elixir Cloud and AAI Project



Please try it out



The screenshot shows the workflUX web application. At the top, there is a dark header bar with the following items from left to right: a green "workflUX" logo, a "Import CWL Workflow/Tool" button with a file icon, a "+ Create Job" button with a plus sign and gear icon, and a "Job Execution & Results" button with a robot icon. Below the header is a large dark gray central area. In the upper-left portion of this area, the text "Welcome to workflUX" is displayed in a large, white, sans-serif font. In the lower-middle portion, the text "The Workflow User eXperience." is displayed in a smaller, white, sans-serif font.



<https://github.com/CompEpigen/Workflux>

Open source - Apache 2.0 License

Easy to install: `python3 -m pip install workflux`

Feedback and contribution is welcome.

Thanks to our Contributors



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The entire Elixir Cloud and AAI Team for their current and future work.

