

Federated de.NBI Cloud

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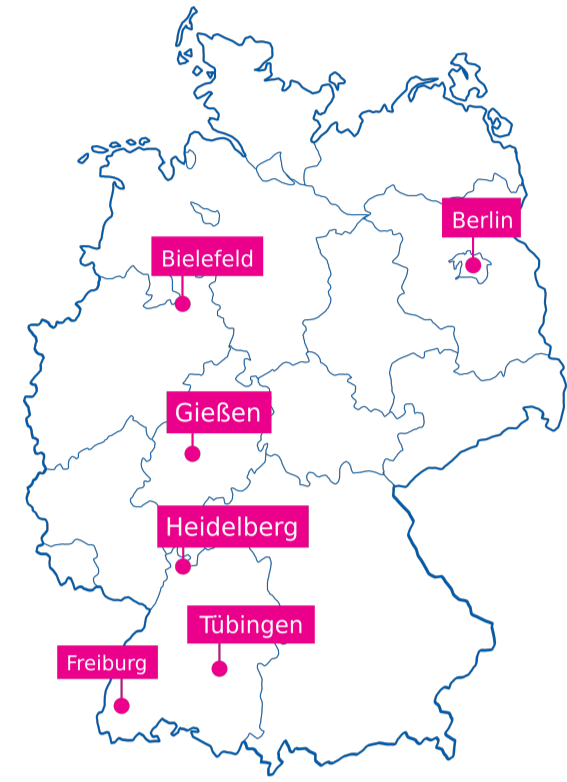
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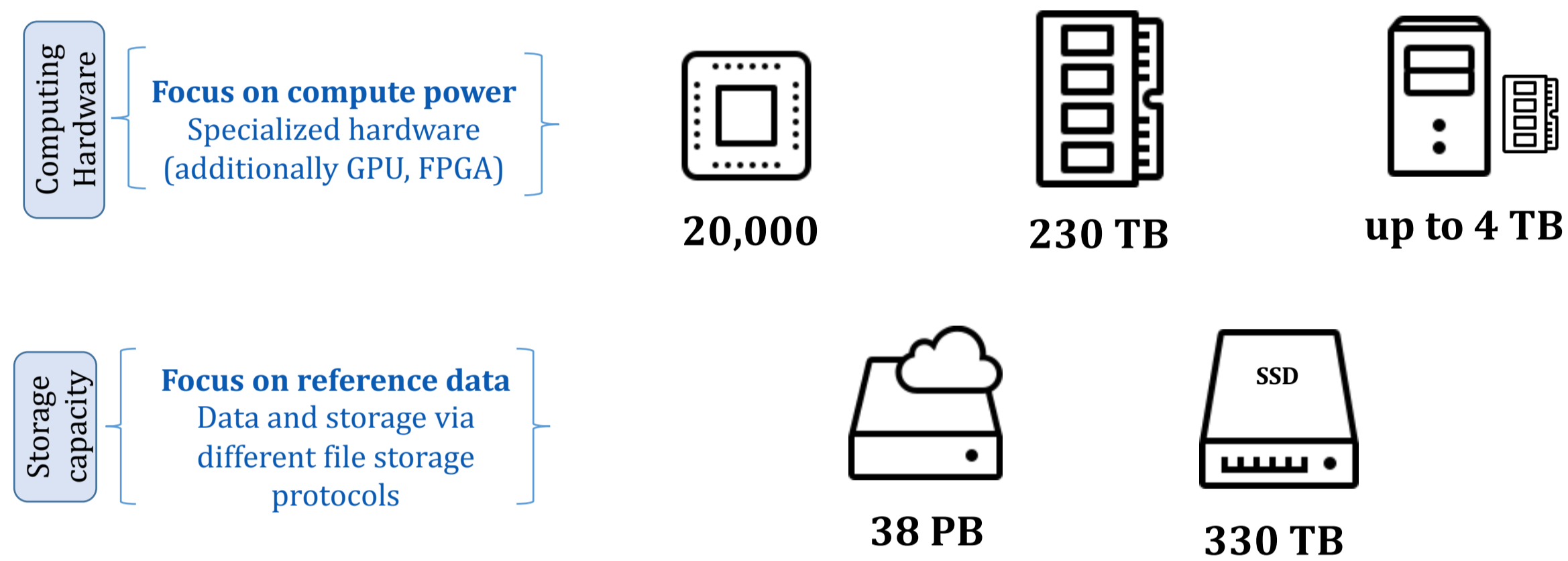
Short description of the project

The de.NBI cloud (www.denbi.de/cloud) is a fully academic cloud federation, that provides storage and computing resources for the life sciences community and is free of charge for academic use. This federation is maintained by six German cloud centers.



General information on the project

The de.NBI Cloud is the largest scientific cloud in Germany and one of the leading European academic clouds in life sciences



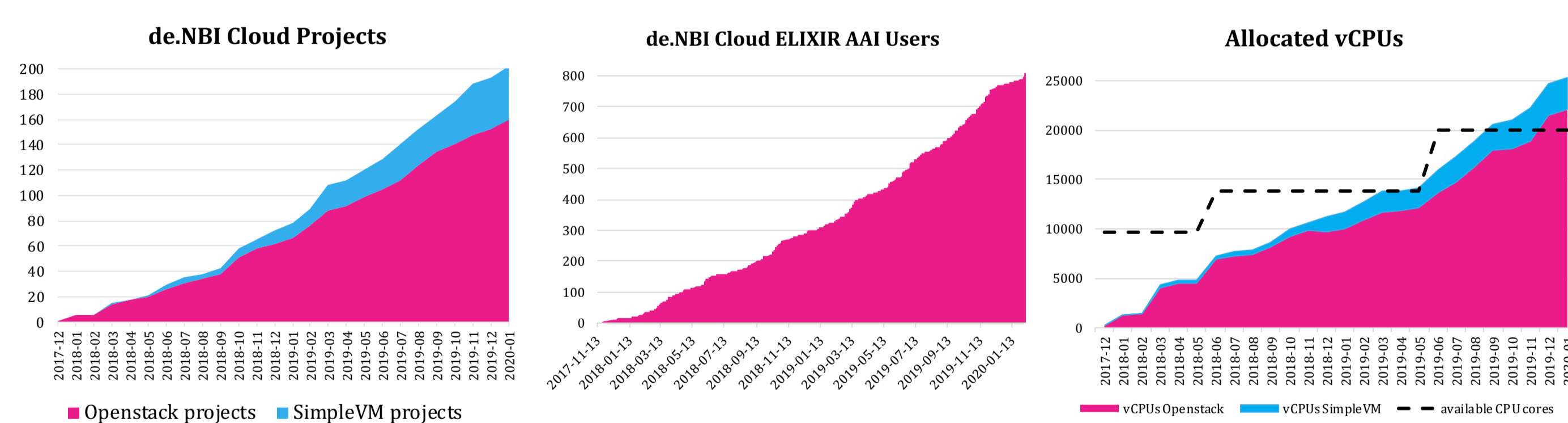
Specialized hardware is available in addition: GPUs, FPGAs

de.NBI Cloud Metrics

Right from the start, de.NBI Cloud attracted scientists and developers and enabled them to do research in the cloud. This is reflected in the growing number of projects and scientists from different universities and research institutions.

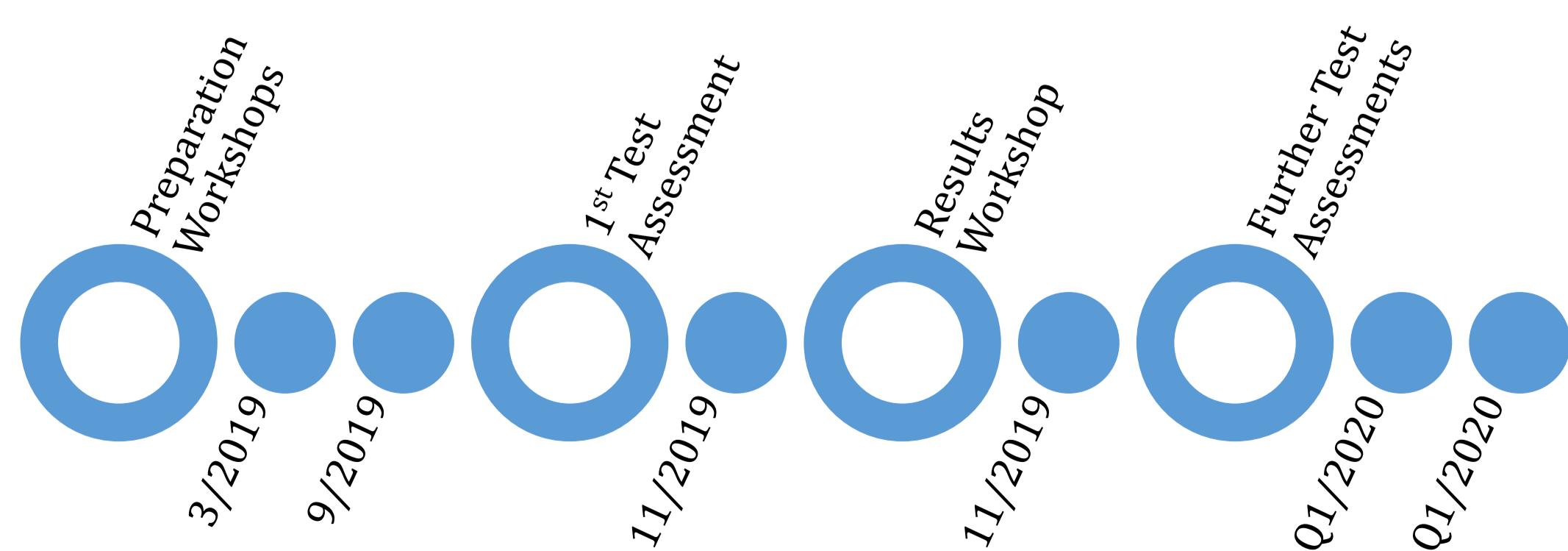
Cloud numbers:

- > 800 registered AAI users
- > 200 projects
- > 25,000 compute cores allocated

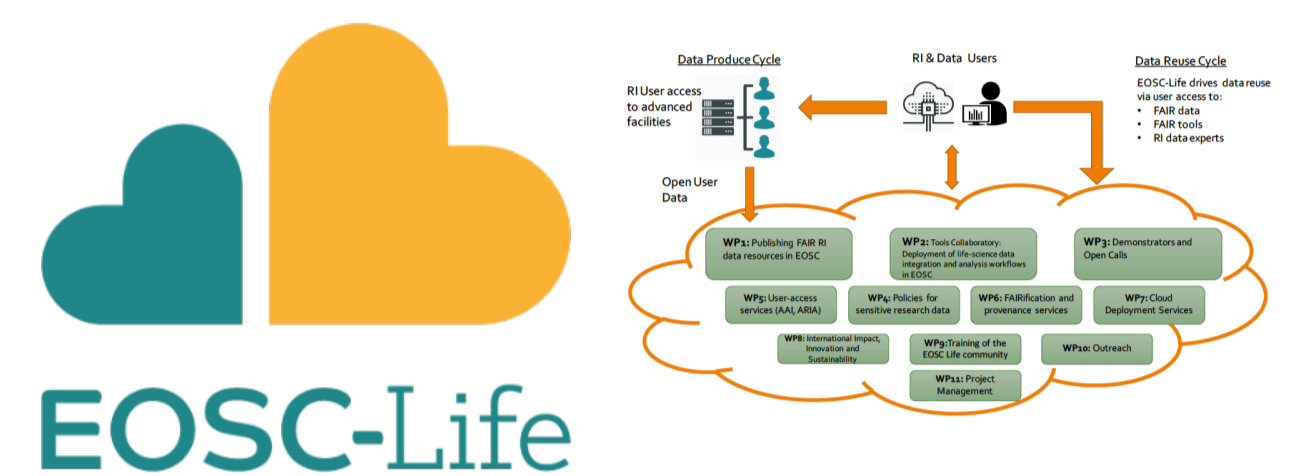


de.NBI Cloud Assessment

Due to high demand, de.NBI Cloud is preparing a suitable infrastructure for sensitive data processing. de.NBI Cloud sites are working with consultancy firm to detect security vulnerabilities in the infrastructure, IT systems and organization (e.g. missing policies or processes). Finally de.NBI Cloud will undergo complex audit processes and an internationally recognized certification process.



Integration in international projects



ELIXIR Compute Platform

- Identity and access management
- Data Integration for Compute
- ELIXIR Hybrid Cloud Eco-system
- Deploying Reproducible Containers and Workflows across Cloud Environments

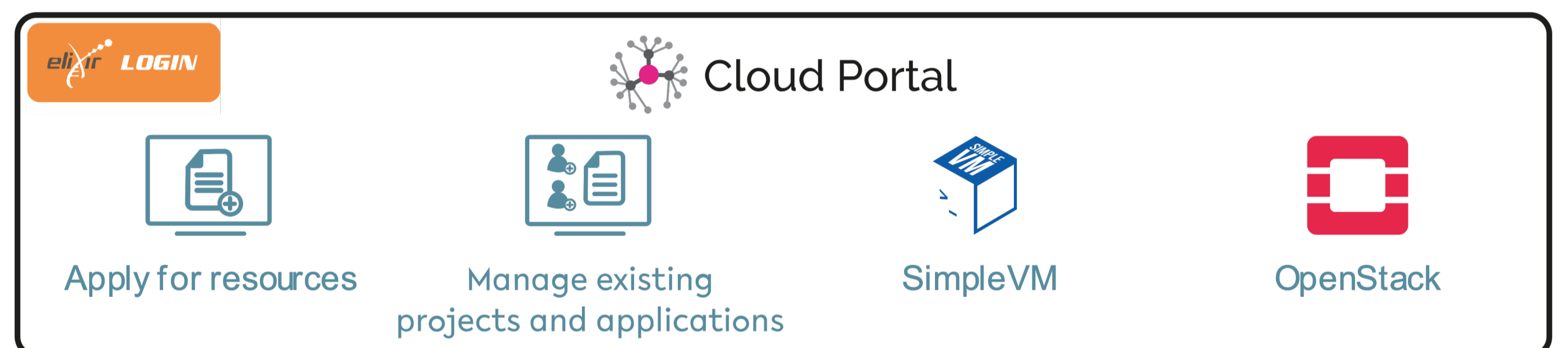
ELIXIR Tools Platform

- Packaging, Containerisation and Deployment

- Metagenomic deployment study (de.NBI)
- Galaxy workflows (de.NBI)
- Tasks in WP Cloud Deployment Services
 - Coordination
 - de.NBI Cloud resources for EOSC projects (others: EBI, Finland, Czechia)
 - Training (ResOps Training, Appliance)
 - Galaxy Workflow Platform
 - Cloud Appliances
 - Operations and Support

de.NBI Cloud access

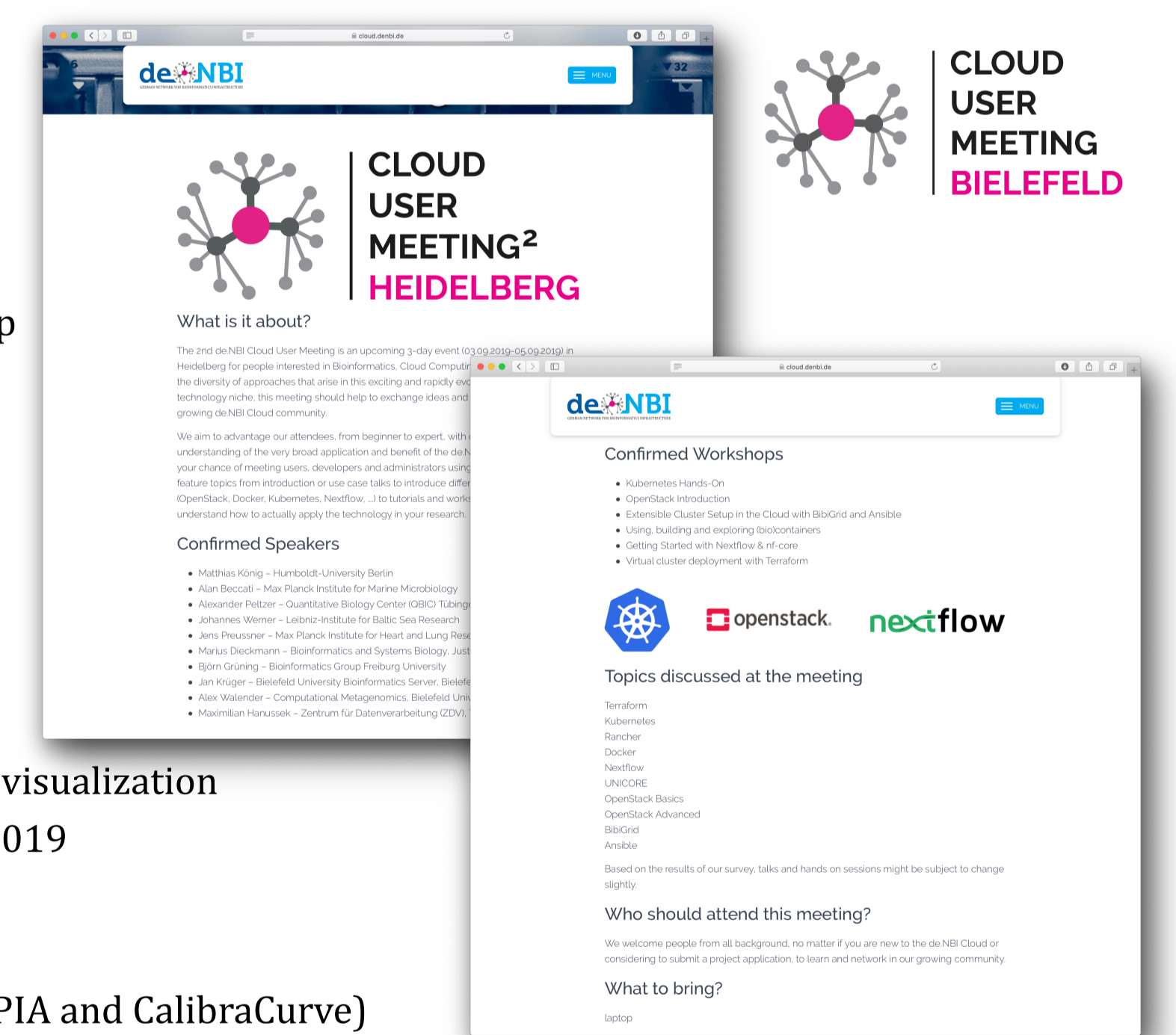
The web-based de.NBI Cloud Portal is the central access point to the de.NBI Cloud federation. Applications for de.NBI Cloud projects have to be submitted by a PI of a german university or research institution. In the last step the application will be reviewed by a cloud access committee.



de.NBI Cloud Events

- Getting started with the de.NBI Cloud - GCB
- Galaxy RNA-seq data analysis workshop
- Galaxy Admin Training 2019
- 7th Galaxy workshop on HTS data analysis
- Miracum whole-exome sequencing pipeline workshop
- Galaxy training and hackathon
- 8th Galaxy workshop on HTS data analysis
- RNA-seq workshop for beginners: from sequences to visualization using Galaxy and R

- de.NBI Summer School 2019 - (Bio)Data Science
- 5th de.NBI Genomics training course
- RNA-seq workshop for beginners: from sequences to visualization
- de.NBI - CeBiTec Nanopore Best Practice Workshop 2019
- 4th de.NBI Training Course on Metagenome Analysis
- Environmental Genomics training course
- 3rd Tool-Training for Proteomics (cloud-based use of PIA and CalibraCurve)



Publications

Christian Lawerenz; Alexander Sczyrba; Alfred Pühler (2016), Cloud-Computing in der Bioinformatik, <http://www.gitlabor.de>
Sergei Iakhnin; Sebastian Waszak; Michael Gertz; Jan Korbel; Enabling (2017), Rapid cloud-based analysis of thousands of human genomes via Butler, <http://biorxiv.org>
Mikael Linden; Michal Procházka; Ilkka Lappalainen; Dominik Bucik; Pavel Vyskocil; Martin Kuba; Sami Silén; Peter Belmann; Alexander Sczyrba; Steven Newhouse; Ludek Matyska; Tommi Nyrönen (2018), Common ELIXIR Service for Researcher Authentication and Authorisation, f1000research