

Project 5: National Integration Portal

Workshop 1 - Definition of goals and requirements

Project 5: National Integration Portal

Workshop 2 -
Project scoping

Workshop 3 -
Work Packages and Project Roadmap

Agenda

12:00 – 12:15 Welcome and introductions

12:15 – 12:30 Presentation of “Project 5”

12:30 – 12:50 Introduction of UCloud as a platform

12:50 – 13:00 short break

13:00 – 13:30 General architecture for integration of services

13:30 – 13:50 Collection of requirements from national

13:50 – 14:00 Final words and other workshops

Participants from HPC centers

Affiliation	Name	Position	Affiliation	Name	Position
SDU	Claudio Pica	Professor, Director of the	DTU	Michael Rasmussen	Section leader (FIT), IT-services
SDU	Dan Sebastian Thrane	Team leader Cloud services,	DTU	Martin Haubjerg Rosgaard	IT-Service
SDU	Emiliano Molinaro	Team leader Research	DTU	Nikola Vasiljevic	Special Consultant for
SDU	Johanne Lyhne Hansen	Secretary, SDU eScience Center	DTU	Matthias Wiesenberger	Postdoc, Department of
AU	Kristoffer Nielbo	Associate professor	AAU	Bo Bai	Senior Consultant
KU	Jonas Rank Møller	Group leader, KU-IT	AAU	Frederik Højlund	Web Developer
			AAU	Anton Drastrup- Fjorbak	System Administrator,
			AAU	Rasmus D. Jensen	Team Lead Research IT

Project 5: SDU/DTU/AU proposal

Vision: “create a user-friendly portal for researchers in Denmark, for easy access to all national compute and data resources”

Solution based on UCloud

WP1

Web App/GUI

WP2

Integration of
national HPC

WP3

Integration of
national data
services

Envisioned Functionality

- MFA authentication (WAYF + others)
- Overview of DeiC national services (HPC + others)
- Project management (resources = compute and data):
 - ▶ Resource allocation
 - ▶ Resource monitoring (both for user and grant giver)
 - ▶ Access to resources
- Easy access to files and compute on DeiC services
- Easy access to applications at DeiC HPC centers
 - ▶ Library of common softwares (“app store”)

Design Philosophy

- Project will be developed as EUPL open source
We prefer using tested open source software
- Modular and extensible design
- Avoid single point of failure
- Security and privacy by design and default
- Agile methodology for development and deployment
- Follow best practices

Design Philosophy

- Federated Model: high level federation
- Control is left to local HPC and service providers
 - ▶ Opt-in/opt-out of features
- National HPC centers and future DeiC services expose common interfaces for interoperability
- Design of common API for services
- Implementation of reference components for integration at all DeiC national providers



<https://cloud.sdu.dk>



AALBORG
UNIVERSITET



AARHUS
UNIVERSITY

WAYF WAYF is a green rectangular button containing the word "WAYF" in white capital letters, followed by a small, stylized yellow and green logo icon.

Login

More login options



UCloud

data centric platform for interactive HPC



UCloud

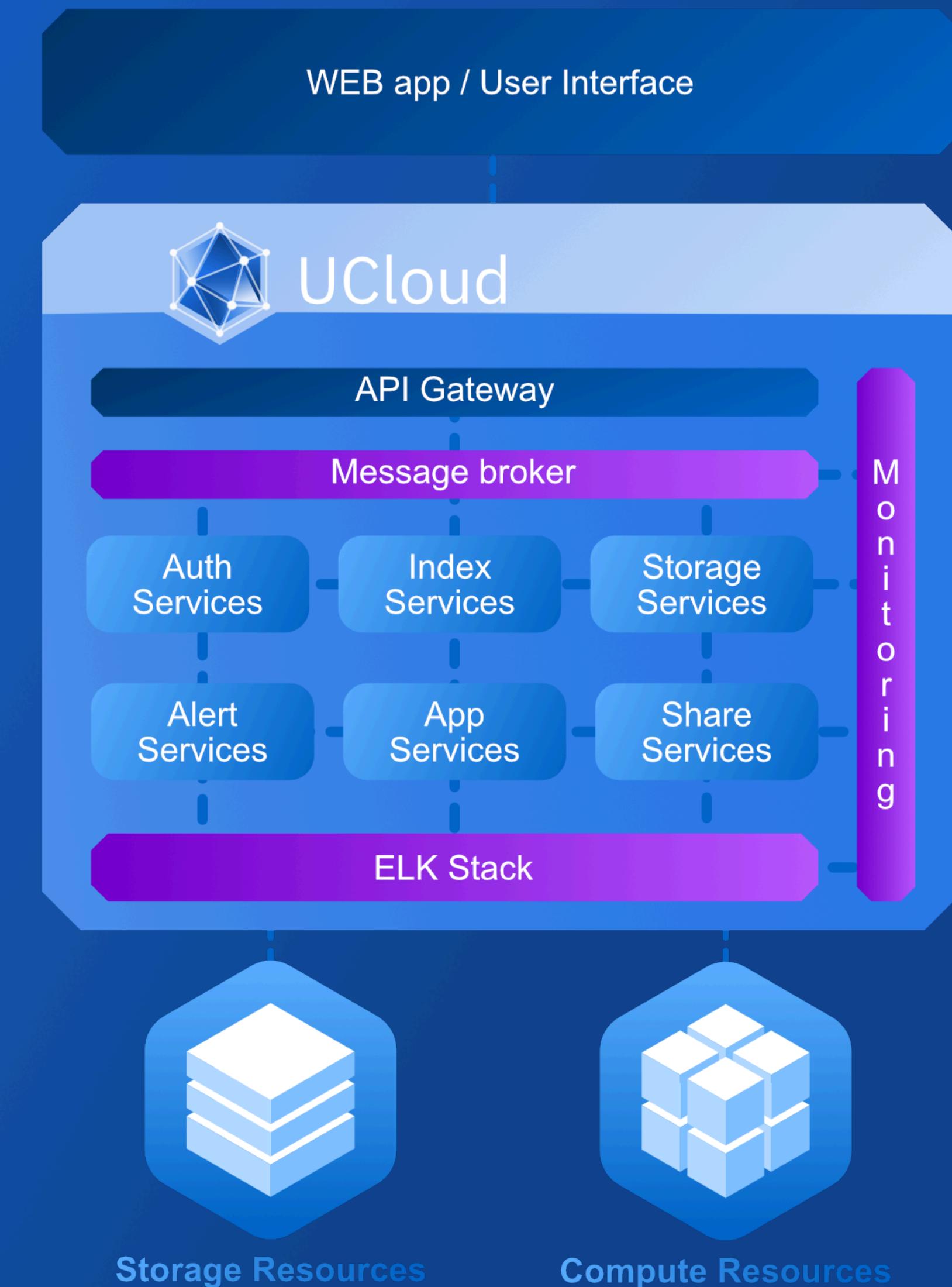
Architecture

Flexible microservice architecture

Present a simple and consistent user experience

“Abstracts” lower-level resources, such as data storage/archives and compute clusters

Modern infrastructure build from the ground up during the last 3 years, and open source, EUPL.





UCloud

User Experience



Research Data



Interactive HPC



Share & Collaborate



Security





UCloud

User Experience

Mission: make complex digital technology accessible to all researchers.

User centric development, with an intuitive graphical user interface (GUI)

Extensible to match the ever changing demands of novel research using new digital tools.





UCloud

Interactive HPC

A flexible compute service which can use different compute facilities.

Ideal for interactive computing, data analytics, AI, visualization, “cloud”-like services, teaching.

Uses virtualization to allow researchers to "bring your own environment"

Large, extensible, catalog of "Apps" available, easy to deploy and access.





UCloud Share & Collaborate

Virtual workspaces dedicated to each project.

Members of a team have each a role (eg. PI, external collaborator, data steward, etc), with specific permissions.

Teams can share data and metadata, workflows and applications.





UCloud

Research Data

Durable, resilient and secure storage.
Supports large volume and variety of
research data.

Metadata associated to files,
applications and user activity can be
indexed for fast, near-real time search.

Metadata could be used to automate
common data management tasks, such
as e.g. backups, data ingestion,
preprocessing and archival.





UCloud

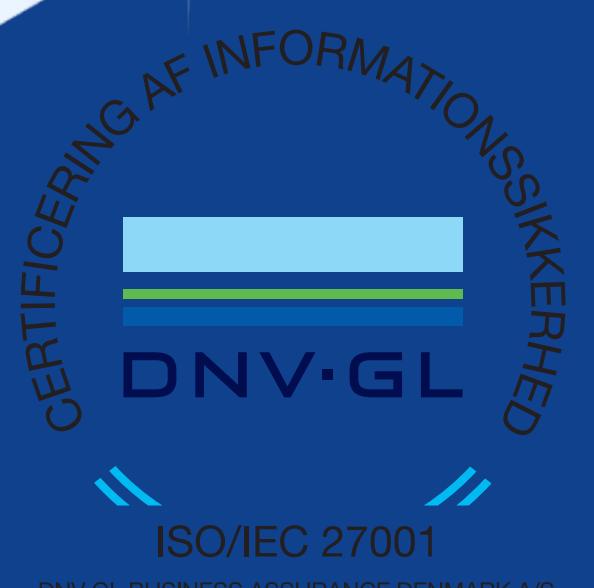
Security

Built with security and privacy in mind.
Any operation leaves an audit trail.

Access to files and resources is role-based.

Uses multi factor authentication,
encryption, network isolation and
monitoring tools.

ISO27001 certification since 02/2020.



DNV GL BUSINESS ASSURANCE DENMARK A/S



UCloud

Short Demo

UCloud My Workspace

Files Shares Apps Runs Activity Admin

News

UCloud Release 05/11/20
Bug fixes and minor tweaks 09:00 05/11/2020

Todays UCloud update brings a range of various bug fixes and minor tweaks.

Fixes

- #1952, #1953: Fixes an internal issue with mails. You should now be able to receive mails from UCloud again.
- #1970: Application favoriting issue in the frontend
- #1959: Renaming buttons has 'Create' instead of 'Update'/'Rename'
- #1955: 'Remaining' value is incorrect in usage table

View more

Recent Notifications

17 minutes ago New grant application to SDU-NAT

about 2 hours ago New grant application to SDU-HUM

about 21 hours ago Grant application updated (Rejected)

about 21 hours ago Grant application updated (Rejected)

about 21 hours ago New grant application to Type 1 - AU

2 days ago Comment on Application

2 days ago Comment on Application

ID ClaudioPica#7566

UCloud Docs

SDU Data Protection

Favorite Files

- TensorFlow-Examples
- Snakemake-Examples
- r-master
- TensorFlow
- eScience
- Examples
- Dash_Examples

Recent Runs

- Terminal Ubuntu 3 days ago
- JupyterLab 14 days ago
- Terminal Ubuntu 14 days ago
- JupyterLab 29 days ago
- TRACER 30 days ago
- Overleaf about 1 month ago
- Coder about 1 month ago

Resources

ucloud / u1-standard 4.998,46 DKK

ucloud / u1-cephfs 2.954,72 DKK

ucloud / u1-cephfs (Quota) 178.54 GB of 1.07 TB (16.63%)

Apply for resources

Usage

Past 30 days

Storage 5,84 DKK

Compute 0,75 DKK

Collection of Requirements

- Type 2 HPC/AU, DTU, KU
- Type 4 HPC/KU
- DeiC