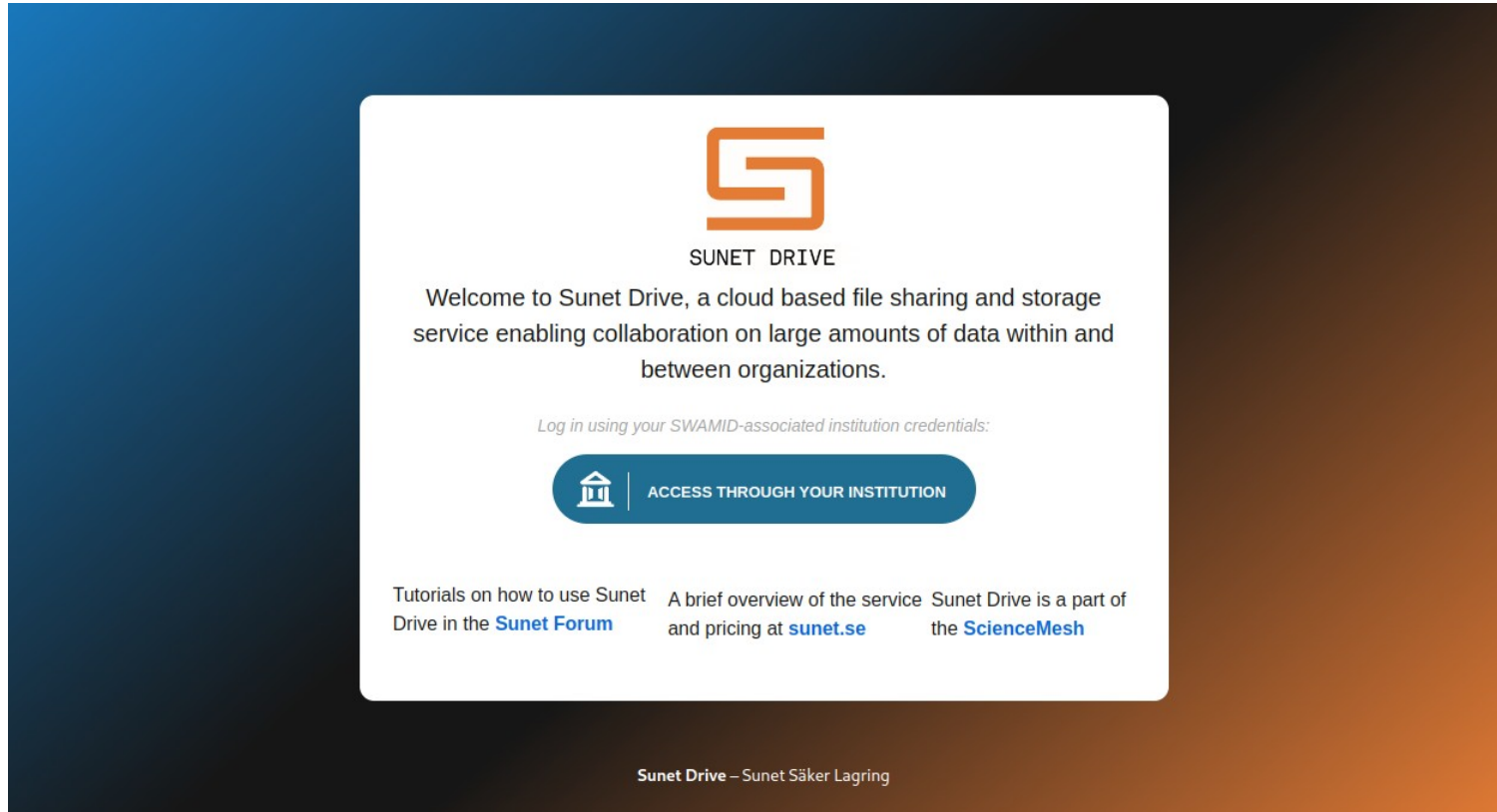


Sunet Drive

An Academic Toolbox with JupyterHub and RDS



The screenshot shows the Sunet Drive login interface. At the top center is the Sunet Drive logo, a stylized orange 'S'. Below the logo, the text reads 'SUNET DRIVE' and 'Welcome to Sunet Drive, a cloud based file sharing and storage service enabling collaboration on large amounts of data within and between organizations.' A login instruction follows: 'Log in using your SWAMID-associated institution credentials:'. Below this is a blue button with a white icon of a building and the text 'ACCESS THROUGH YOUR INSTITUTION'. At the bottom of the page, there are three links: 'Tutorials on how to use Sunet Drive in the [Sunet Forum](#)', 'A brief overview of the service and pricing at [sunet.se](#)', and 'Sunet Drive is a part of the [ScienceMesh](#)'. The footer text reads 'Sunet Drive – Sunet Säker Lagring'.

Sunetdagarna 2024

Sunet Drive - An Academic Toolbox

RDS

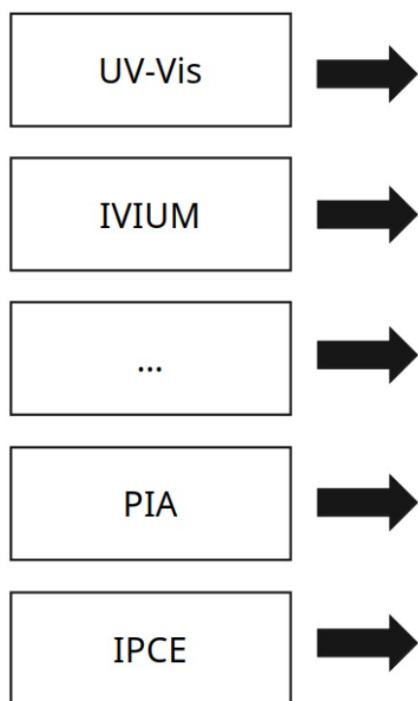
- Background
- What we have
- What we want
- Future development

JupyterHub

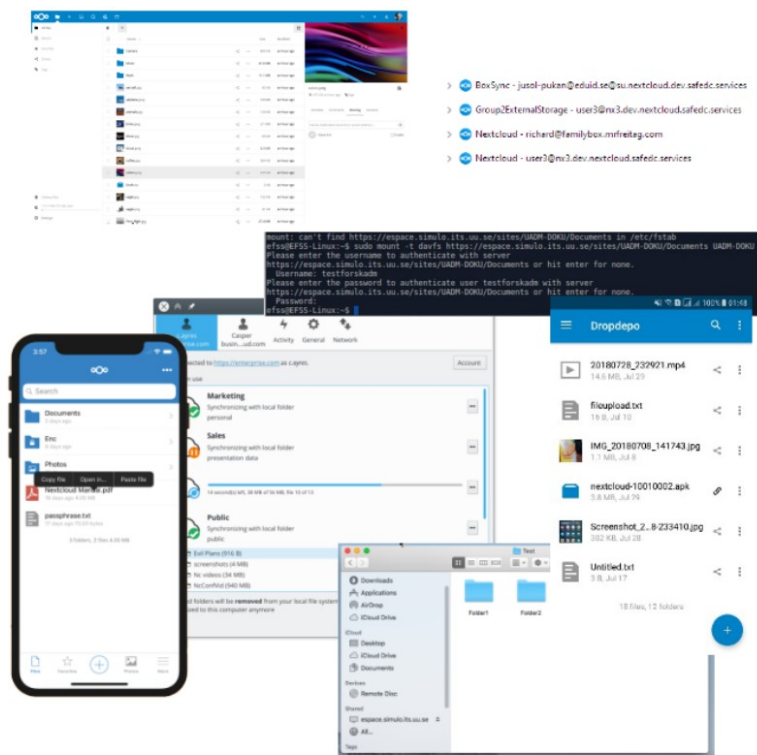
- Overview

Sunet Drive - Future Architecture

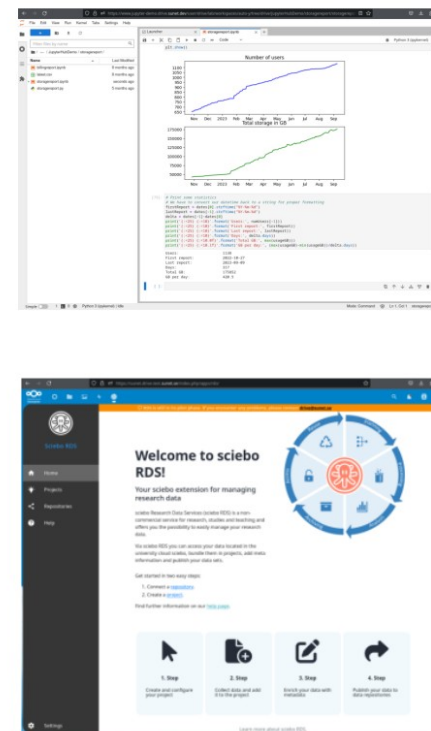
Primary data sources



Secure Storage



Analyze and Publish

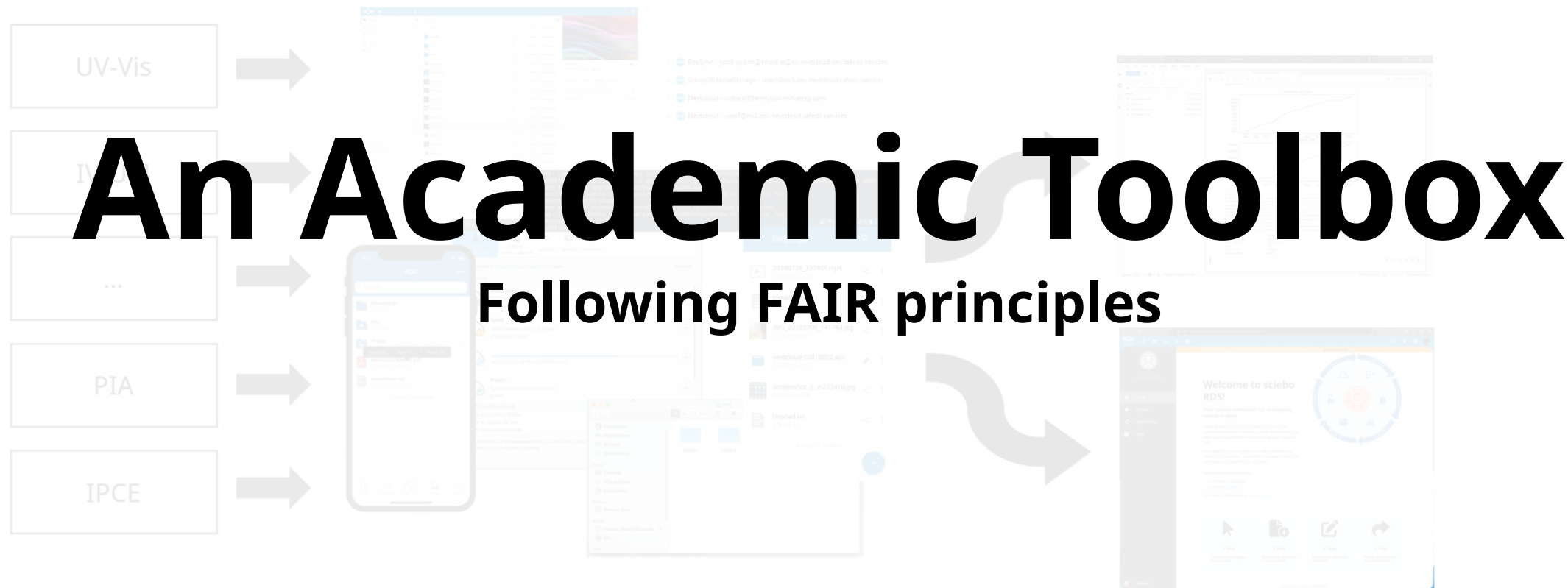


Sunet Drive - Future Architecture

Primary data sources

Secure Storage

Analyze and Publish



Sunet Drive and RDS - Collaboration

University of Münster

- Major German University (44.585 students in 2022/23)
- Runs the **Sciebo** Sync'n'Share service

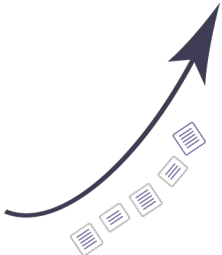
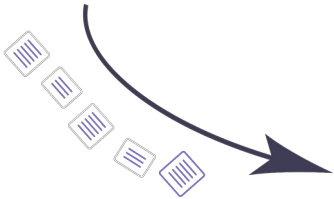
Sciebo

- OC10 based, federated Sync'n'Share
- Will migrate to Nextcloud
- ca. 230.000 users across 40 universities
- 30GB per student, 500GB per employee,
30-2.000GB for project boxes
- ca. 3,9 PB of total storage

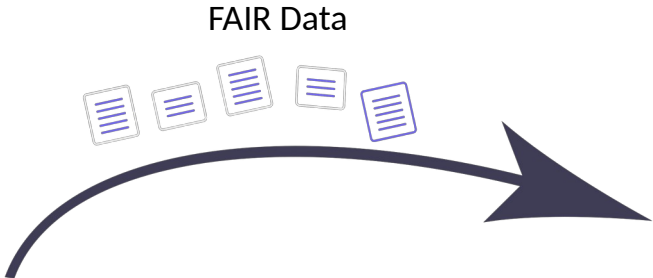
Sunet – Swedish University Computer Network

- Founded in the 1980s as a research project
 - for Swedish computer scientists
- National and international data communication services
- 8400 km nationwide fiber, 750 000 users and
 - 110 connected organisations.
 - [SunetDrive](#)
- NC27 based, federated Sync'n'Share
- Ca. 3000 users across 54 universities
- 2 PB available, ca. 400TB used, >0.5TB per day
- (* The population of NRW is 16M vs. 10M in Sweden)

What we have

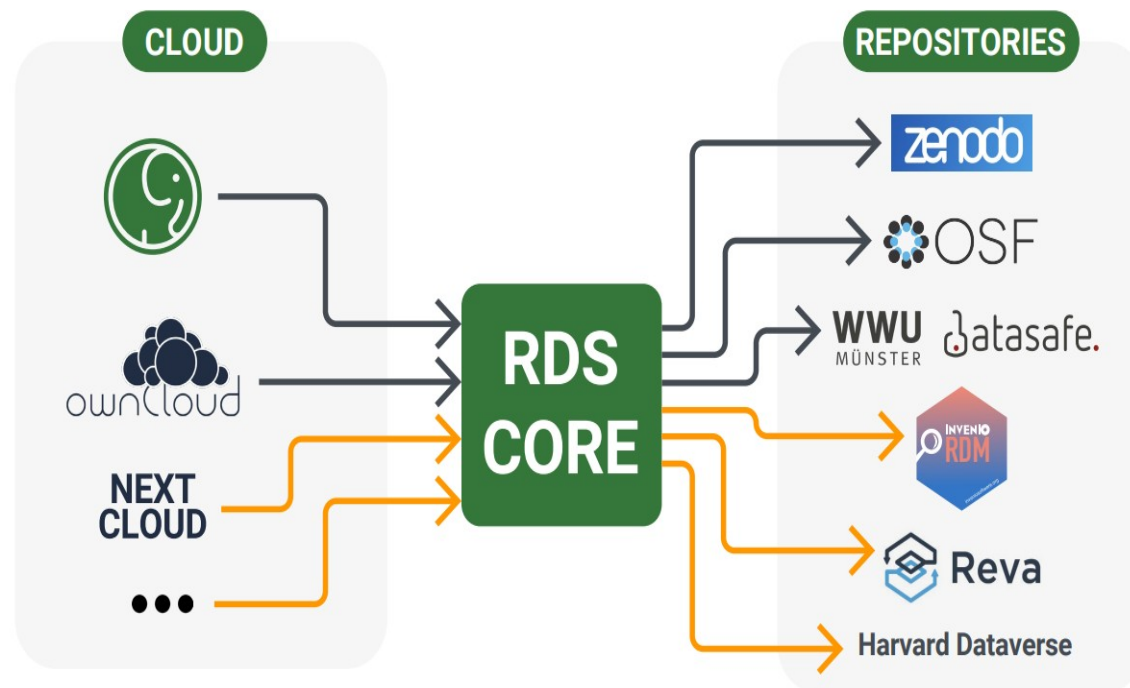


What we want



Sciebo RDS

- Compatibility layer between a host (EFSS) and research data repositories
- Provides metadata annotation via describo, metadata stored as RO-Crate
- Integration via native EFSS plugin system
 - Plugin acts as a wrapper around standalone RDS web app
 - Utilizing basic EFSS functionality like filepickers and oauth for user management
- Each storage provider / repository is implemented as it's own microservice
- Currently in „*public alpha*“



Easily extendable for your EFSS by writing a native wrapper plugin



Easily extendable for your data repository by writing a microservices that maps to your API

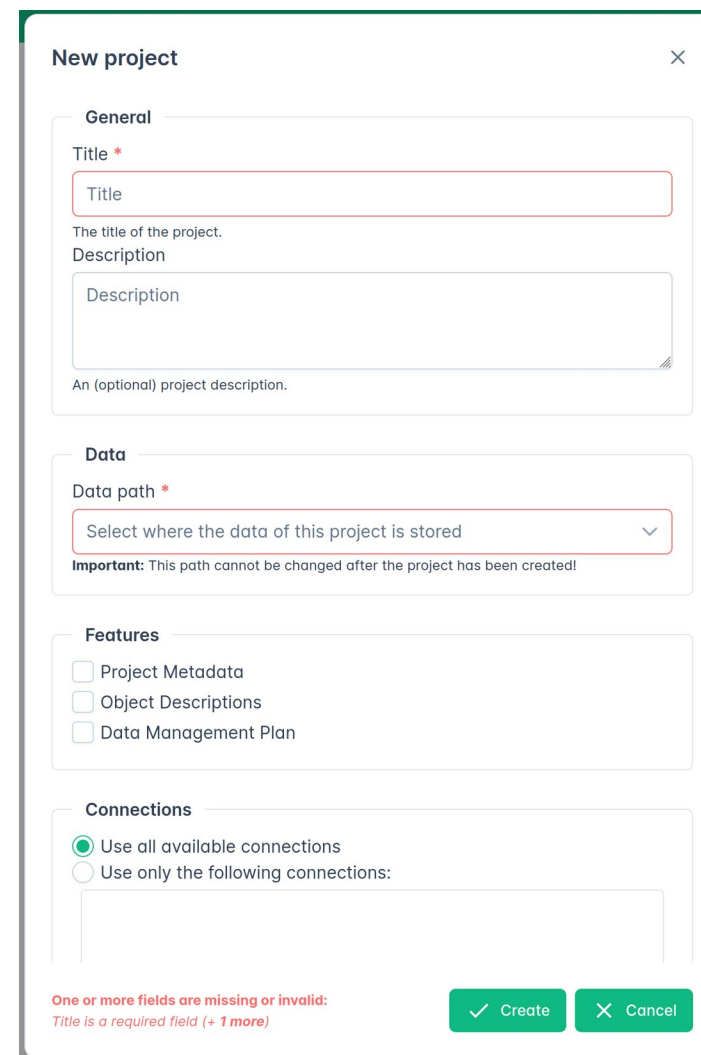
RDS – Legacy and Next Gen

Legacy RDS

- Deployed in test
- Not as stable as we would have liked it to be
- Still working to get a stable deployment

RDS-NG

- New RDS Developed by WWU Münster
- Simplified architecture compared to RDS
- Release potentially in fall



New project [X]

General

Title *

Title

The title of the project.

Description

Description

An (optional) project description.

Data

Data path *

Select where the data of this project is stored

Important: This path cannot be changed after the project has been created!

Features

Project Metadata

Object Descriptions

Data Management Plan

Connections

Use all available connections

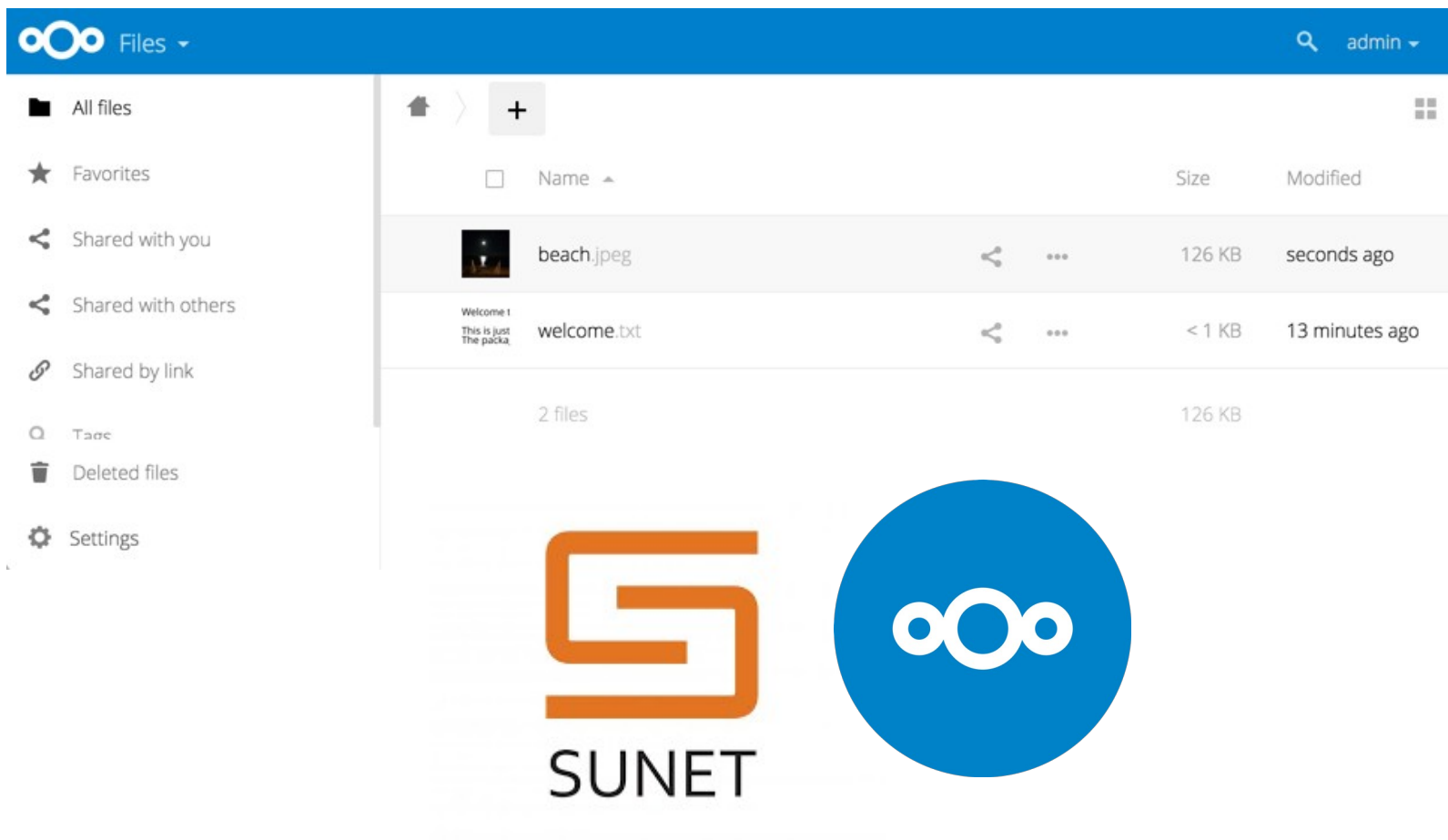
Use only the following connections:

One or more fields are missing or invalid:
Title is a required field (+ 1 more)

✓ Create [X] Cancel

Sunet Drive

- "OneDrive or Google docs on steroids"
- Allows people to share and collaborate on any type of file
- Runs in the browser, on your computer, on your phone and probably more!
- Secure datacenters controlled by SUNET. No data leaves our datacenter, unless you want it to!



Jupyter notebooks

- "Excel on steroids"
- Allows people to share and collaborate on code
- Write once, execute however often you like
- Runs in the browser
- Supports 40+ programming languages



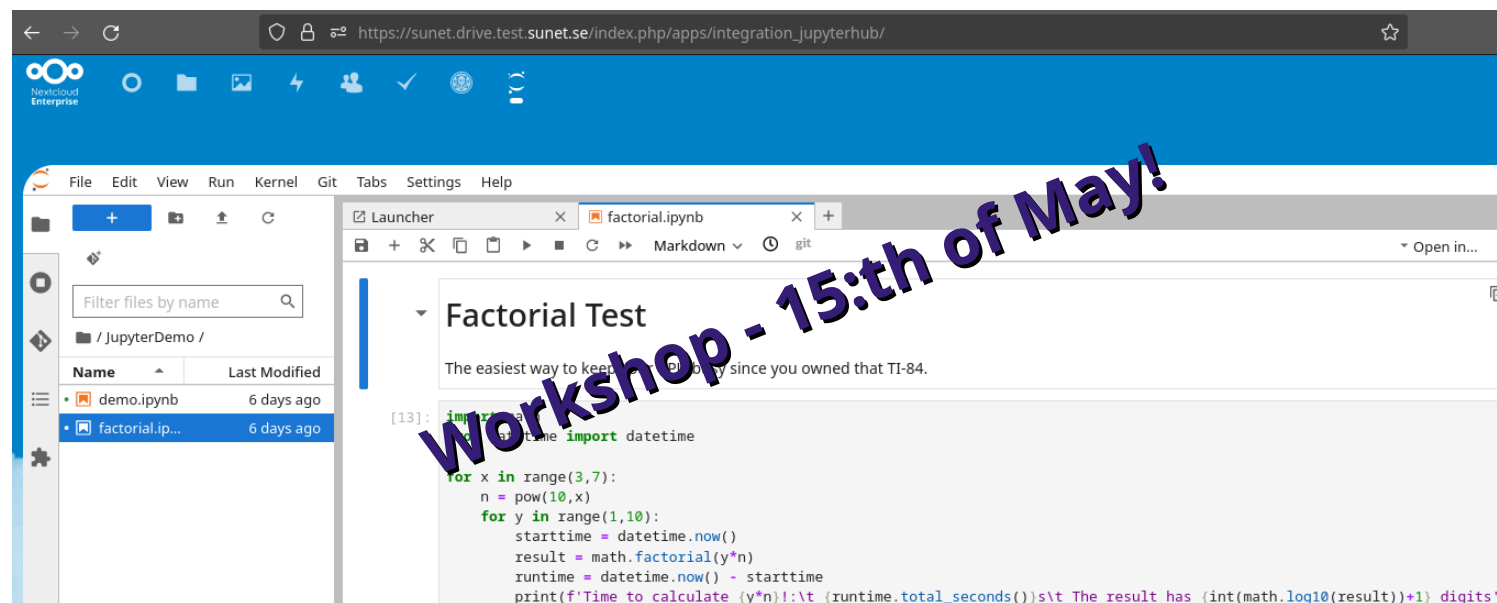
Jupyter notebooks in Sunet Drive - Timeline and status

Sprint 1 - Timeline																		
Start Date:	11/1/2023																	
Assigned to:	S1 - Month 1				S1 - Month 2				S1 - Month 3				S1 - Month 4					
	nov				dec				jan				feb					
	1	8	15	22	29	6	13	20	27	3	10	17	24	31	7	14	21	28
Micke Nordin	Sprint 1 kickoff (50%)	Nextcloud app (50%)								Infrastructure Development (50%)				Bug Fixing (50%)		S1 - Integration Workshop		
Richard Freitag	Sprint 1 kickoff (50%)	Test Infra (50%)	Test Automation (50%)						Scalability Testing (50%)				Test Automation (50%)		S1 - Integration Workshop			
Sprint 2 - Timeline																		
Start Date:	3/4/2024																	
Assigned to:	S2 - Month 1				S2 - Month 2				S2 - Month 3				S2 - Month 4					
	mar				apr				may				jun					
	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	
Micke Nordin	Sprint 2 kickoff (50%)	Infrastructure Scaling (50%)								Bug Fixing - Infra+Code (50%)		Documentation (50%)		TNC 24	Finalize results			
Richard Freitag	Sprint 2 kickoff (50%)	Test Automation (50%)		Load Testing (50%)						Test Automation (50%)		Documentation (50%)		TNC 24	Finalize results	Final Report (50%)		

- Project started in January
- Kickoff meeting with SU (Full Drive customer), UU (Partial Drive customer), HIG (Not a Drive customer... yet)
- Presentation at TNC accepted

JupyterHub Integration

- Integrated in Sunet Drive
- Users can individually execute notebooks
- Users get 10GB “local” Jupyter Storage
- Storage is continuously synchronized between Sunet Drive and JupyterHub
- Other use-cases are being evaluated



Available upon request

<https://jupyter.sunet.dev/workshop/>

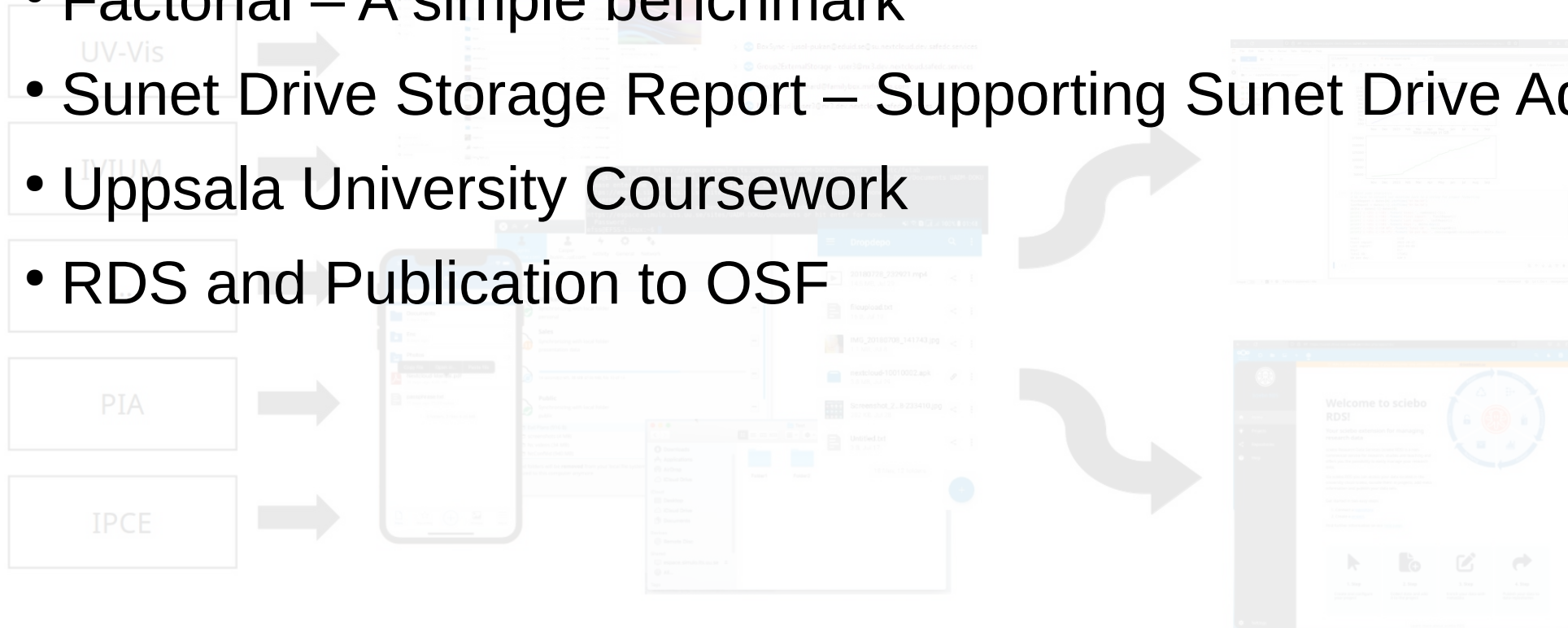
JupyterHub and RDS - Demos

Primary data sources

Secure Storage

Analyze and Publish

- Factorial – A simple benchmark
- Sunet Drive Storage Report – Supporting Sunet Drive Admins
- Uppsala University Coursework
- RDS and Publication to OSF



Tack! Frågor?

Anders Nilsson

anders@sUNET.se

Richard Freitag

freitag@sUNET.se

Micke Nordin

kano@sUNET.se

Magnus Andersson

mandersson@sUNET.se

Issues and Questions

drive@sUNET.se