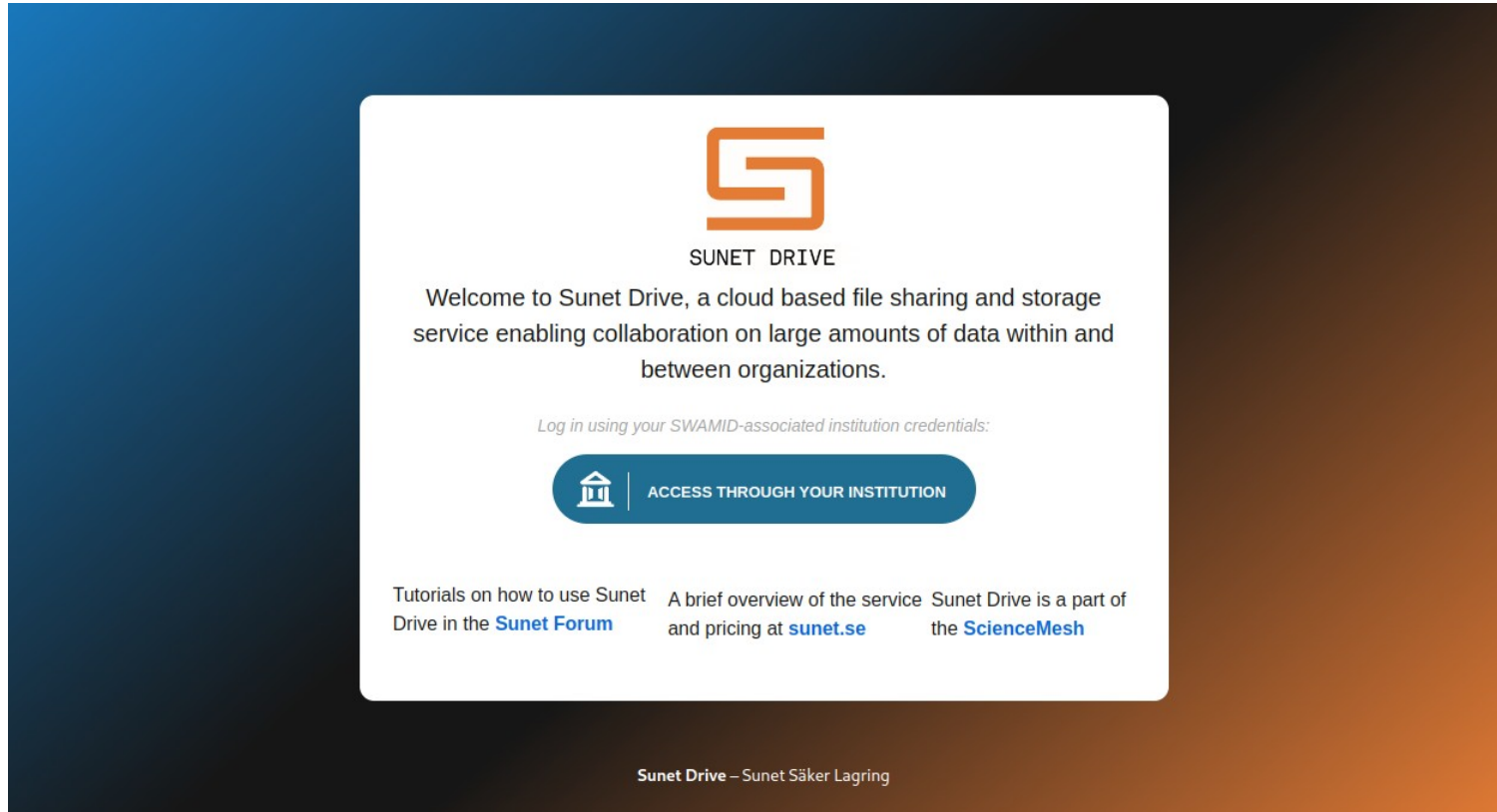


SUNET Drive

News and Changes



The screenshot shows the Sunet Drive login interface. At the top center is the Sunet Drive logo, a stylized orange 'S' inside a square. Below the logo, the text 'SUNET DRIVE' is displayed. A welcome message follows: 'Welcome to Sunet Drive, a cloud based file sharing and storage service enabling collaboration on large amounts of data within and between organizations.' Below this, a prompt reads 'Log in using your SWAMID-associated institution credentials:'. A prominent blue button with a white building icon and the text 'ACCESS THROUGH YOUR INSTITUTION' is centered. At the bottom, 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 of the page reads 'Sunet Drive – Sunet Säker Lagring'.

Sunetdagarna 2024

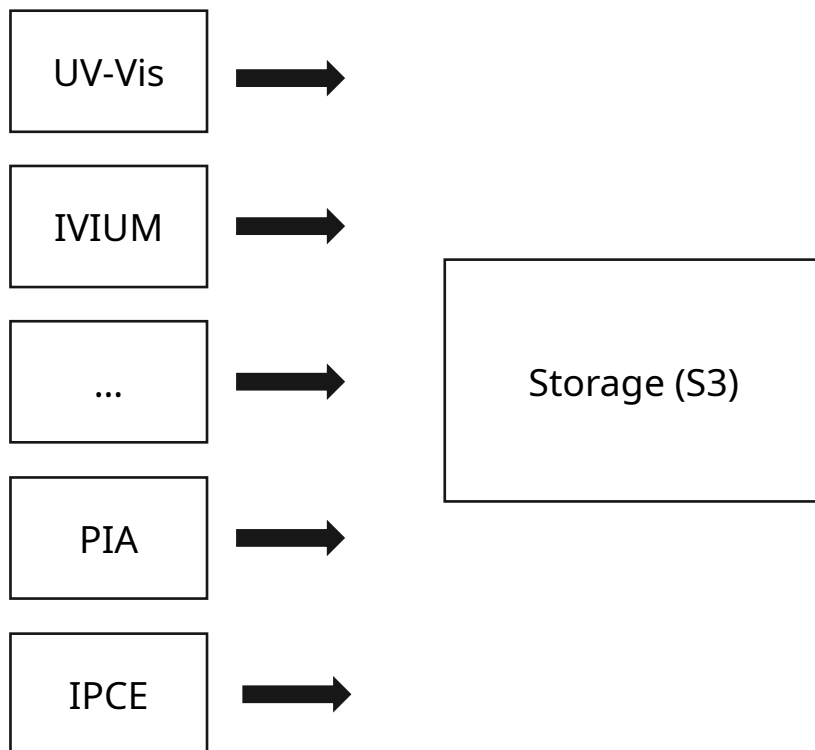
Sunet Drive – News and Changes

Sunet Drive

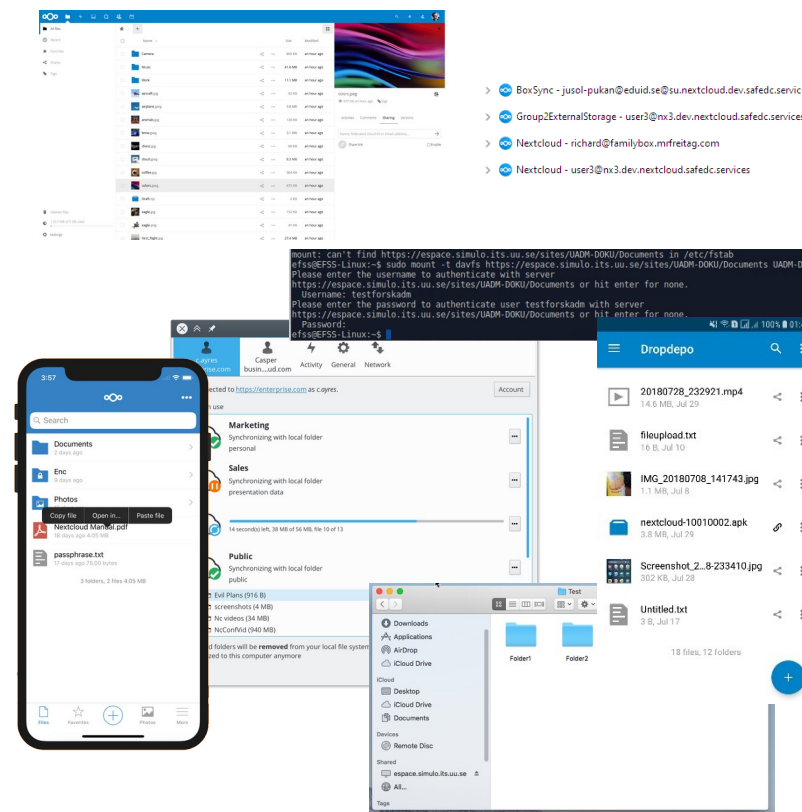
- Current and future architecture → Function, Efficiency, Innovation
- Security audit → Security audit support with universities
- Nextcloud 27 → Nextcloud 28 → Nextcloud 29
- AI Assistant → Same
- MFA and Step-up Authentication → Production for all
- RDS → RDS-NG
- Jupyter → Available on demand
- Productivity apps: Forms, Tasks, Polls, Collectives, Calendar, eduSign (alpha)

Sunet Drive - Current Architecture

Primary data sources

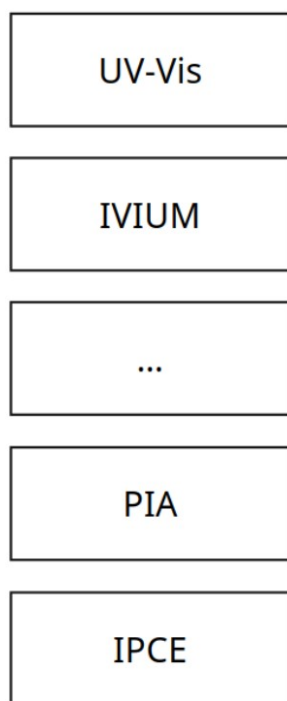


Access

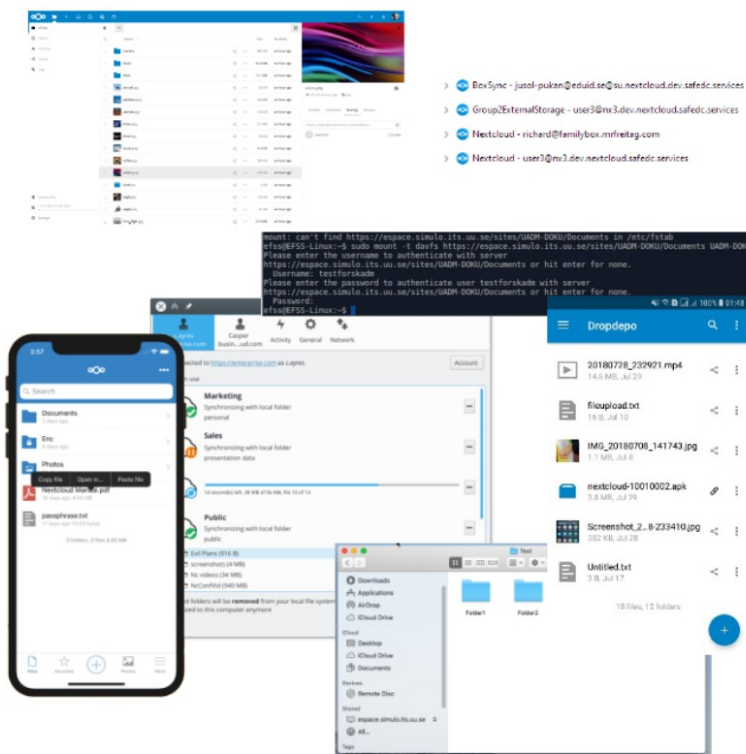


Sunet Drive - Future Architecture

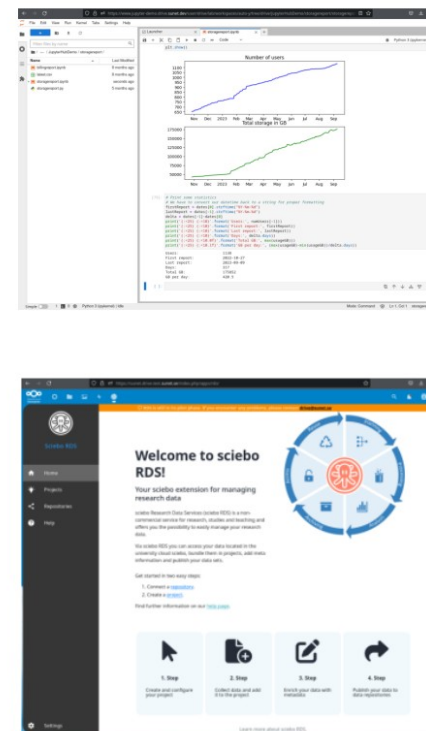
Primary data sources



Secure Storage



Analyze and Publish



Sunet Drive - Future Architecture

Primary data sources

Secure Storage

Analyze and Publish

UV-Vis

UM

...

PIA

IPCE

An Academic Toolbox



FEI - Function, Efficiency, Innovation

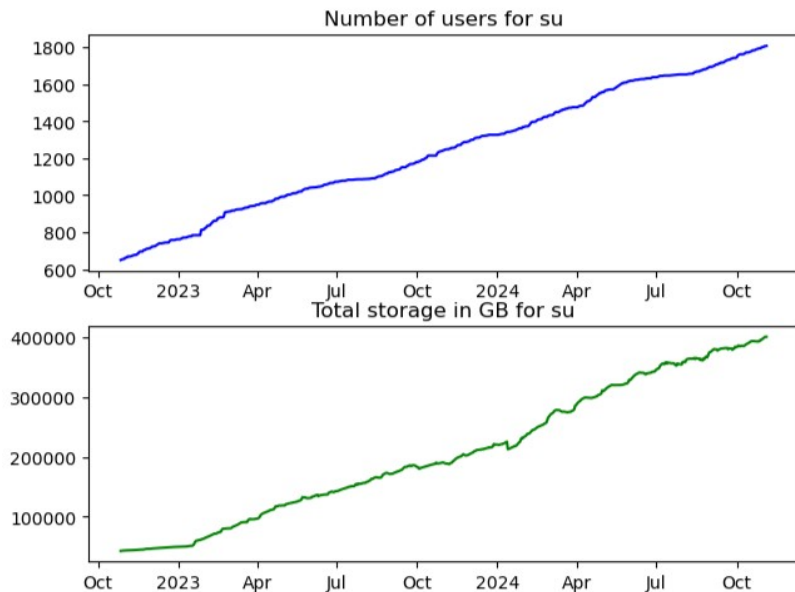
FEI Principles

- **Function** – Sunet Drive provides the core functionality to all of its users. Example: file storage, versioning, backup.
- **Efficiency** – A university can effectively and efficiently manage the system with thousands of users and projects, owning millions of objects and files.
- **Innovation** – New functionality benefiting the users is added to the system and integrated seamlessly. Example: JupyterHub, MFA-Zones, SeamlessAccess, eduid connect.

The challenge: Any innovation becomes a function, often increasing the complexity of the system, while its efficiency needs to be maintained over time.

Sunet drive today since March

- 2x54 nodes (prod & test) → same
- ~300 servers → ~350 servers
- two data centres → three data centres
- 20 paying customers → same
- 376TB data → 527TB data (~0.7TB/day)
- 2,744 users → 3,855 users (~5/day)



Sunet Drive development & projects

- Full RDS-setup in production
- JupyterHub
- Secure Zones/MFA/Step-up Authentication
- Security Audit
- Devops: Third data centre & Kubernetes
- AI Assistant with "Ethical AI"

Core Application
JupyterHub

Core Application
RDS-NG (Under development)

Core Application
Secure Zones/MFA

Sunet Drive Security Audit - 2024-04

- Based on Sunet Drive Prod (27.1.6) → Still relevant
- Worked with individual customers for their internal security audits
- Contact Sunet Drive if it is relevant for your instance



“...that the overall security of the parts of Sunet Drive that we audited is good.”

Nextcloud 28 and 29

Update history of Sunet Drive TEST

- Upgrade to Nextcloud 28.0.5 in May
- Upgrade to Nextcloud 29.0.4 in August
- Many (small) issues with Nextcloud between 29.0.4 and 29.0.8
- We have opened more than 45 support tickets with Nextcloud since the last Sunet Days
- We found many issues during our tests and prevented many, but not all of them, from reaching production

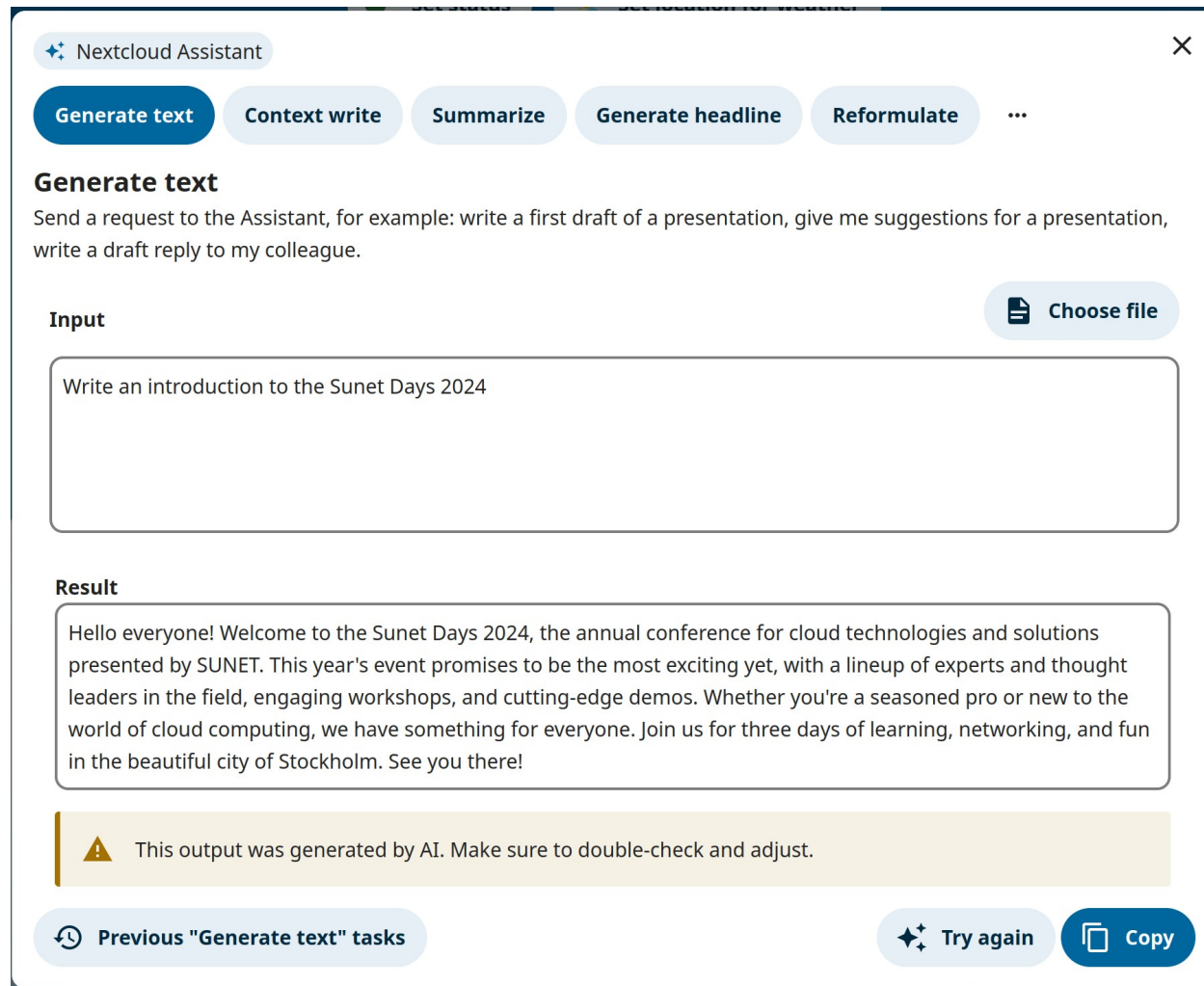
* Nextcloud 30 (Hub 9) has been released on September 19th :-)

#	TITLE	CUSTOMER	ORGANIZATION	GROUP	STATE	CREATED AT
9669989	Unable to remove favori...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	open	13 hours ago
9669895	MySQL deadlock and te...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	open	4 days 11 hours ago
9669549	Migration of users prima...	Micke Nordin	Sunet (via Safespring)	Support	closed	24/10/2024
9669485	Guidance on migrating st...	Micke Nordin	Sunet (via Safespring)	Support	waiting for customer	23/10/2024
9669484	support.nextcloud.com/...	Micke Nordin	Sunet (via Safespring)	Support	open	23/10/2024
9669452	Verh high CPU load on m...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	22/10/2024
9669390	Sharing with external em...	Maria Haider	Sunet (via Safespring)	Support	open	21/10/2024
9669274	System reports sometim...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	18/10/2024
9669184	occ disables Nextcloud n...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	waiting for customer	17/10/2024
9669165	Multiple errors when log...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	16/10/2024
9668862	Shared lock error when ...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	09/10/2024
9668844	Can not log in to Collab...	Micke Nordin	Safespring	Collabora	closed	09/10/2024
9668883	Error message when che...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	07/10/2024
9668668	Desktop and mobile clie...	Micke Nordin	Sunet (via Safespring)	Support	closed	07/10/2024
9668514	Unable to delete files fro...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	02/10/2024
9668497	Token error during pass...	Thorslund Thorslund	Sunet (via Safespring)	Support	waiting for customer	02/10/2024
9668428	Welcome to Nextcloud	Thorslund Thorslund	Sunet (via Safespring)	Support	closed	30/09/2024
9668379	Add another user to SUN...	Gabriel Paues	Sunet (via Safespring)	Support	closed	30/09/2024
9668378	Create a new user for SU...	Gabriel Paues	Safespring	Support	closed	30/09/2024
9668205	Sync client 3.14.0 breaks ...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	26/09/2024
9668047	Web interface sometime...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	waiting for customer	24/09/2024
9667396	Provisioning of new SSO ...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	11/09/2024
9667178	Affected by #6863 - Sync ...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	08/09/2024
9667046	Files access control has L...	Micke Nordin	Sunet (via Safespring)	Support	closed	05/09/2024
9666778	Nextcloud does not exec...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	30/08/2024
9666251	Admin shares hides user...	Micke Nordin	Sunet (via Safespring)	Support	closed	20/08/2024
9666249	External shares malfunc...	Micke Nordin	Sunet (via Safespring)	Support	closed	20/08/2024
9665956	Upgrade to 24.04.4.31 fails	Micke Nordin	Sunet (via Safespring)	Collabora	closed	29/07/2024
9662977	Thanks for the Nextcloud...	Magnus Andersson	Safespring	Support	closed	22/06/2024
9662473	Unable to share files and...	Maria Haider	Sunet (via Safespring)	Support	closed	11/06/2024
9662373	User id after migration fr...	Magnus Andersson	Sunet (via Safespring)	Support	closed	10/06/2024
9661918	Desktop client users freq...	Micke Nordin	Sunet (via Safespring)	Support	closed	30/05/2024
9661833	Many share links are bro...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	28/05/2024
9661824	Files not shown in files a...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	28/05/2024
9661659	Extreme load time of file...	Micke Nordin	Sunet (via Safespring)	Support	closed	23/05/2024
9661654	Remote shares are not a...	Micke Nordin	Sunet (via Safespring)	Support	closed	23/05/2024
9661550	Users do not see files lis...	Richard Freitag (Safespr...	Sunet (via Safespring)	Support	closed	22/05/2024
9661485	Service account disabled	Micke Nordin	Sunet (via Safespring)	Support	closed	21/05/2024
9661231	Undefined array key in L...	Micke Nordin	Sunet (via Safespring)	Support	closed	14/05/2024

Nextcloud AI Assistants

- Introduced in 27.1 and improved in 28/29
- Has support for OpenAI and Local Large Language Models
- On-prem inference using “Ethical AI”

Available in Sunet Drive TEST upon request



The screenshot displays the Nextcloud Assistant interface. At the top, there's a title bar with a star icon and the text 'Nextcloud Assistant'. Below this is a navigation bar with buttons for 'Generate text' (highlighted in blue), 'Context write', 'Summarize', 'Generate headline', and 'Reformulate'. The main content area is titled 'Generate text' and contains a prompt: 'Send a request to the Assistant, for example: write a first draft of a presentation, give me suggestions for a presentation, write a draft reply to my colleague.' Below the prompt is an 'Input' section with a text box containing 'Write an introduction to the Sunet Days 2024' and a 'Choose file' button. The 'Result' section shows the AI-generated text: 'Hello everyone! Welcome to the Sunet Days 2024, the annual conference for cloud technologies and solutions presented by SUNET. This year's event promises to be the most exciting yet, with a lineup of experts and thought leaders in the field, engaging workshops, and cutting-edge demos. Whether you're a seasoned pro or new to the world of cloud computing, we have something for everyone. Join us for three days of learning, networking, and fun in the beautiful city of Stockholm. See you there!' A yellow warning bar below the result states: 'This output was generated by AI. Make sure to double-check and adjust.' At the bottom, there are buttons for 'Previous "Generate text" tasks', 'Try again', and 'Copy'.

MFA and Login-Portal – A Three-tiered Solution

Tier 1 – Step-up Authentication

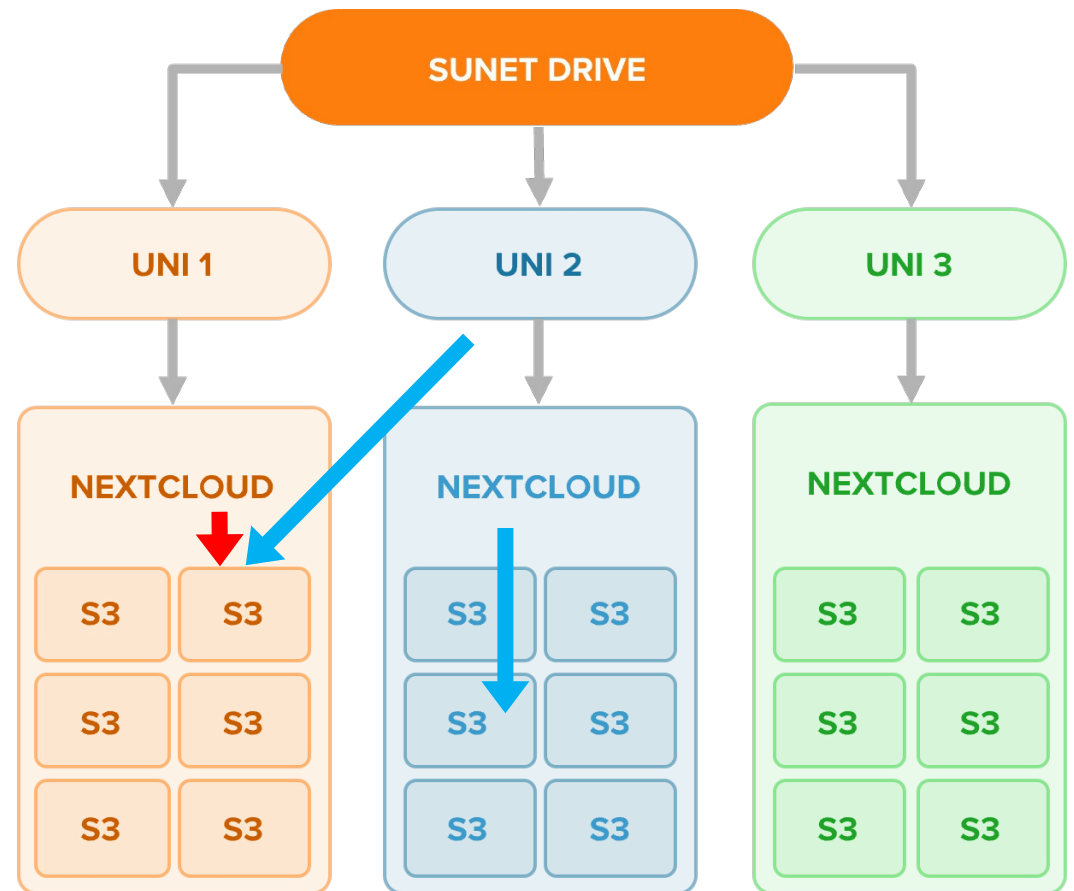
- Adds Nextcloud-native MFA to SSO accounts
- Can be enforced via groups

Tier 2 – Sunet Drive Login Portal/ SeamlessAccess

- Remove Global Site Selector
- Ensures 2FA on all nodes
- Works with synchronization client
- Rollout in November

Tier 3 – MFA Zones

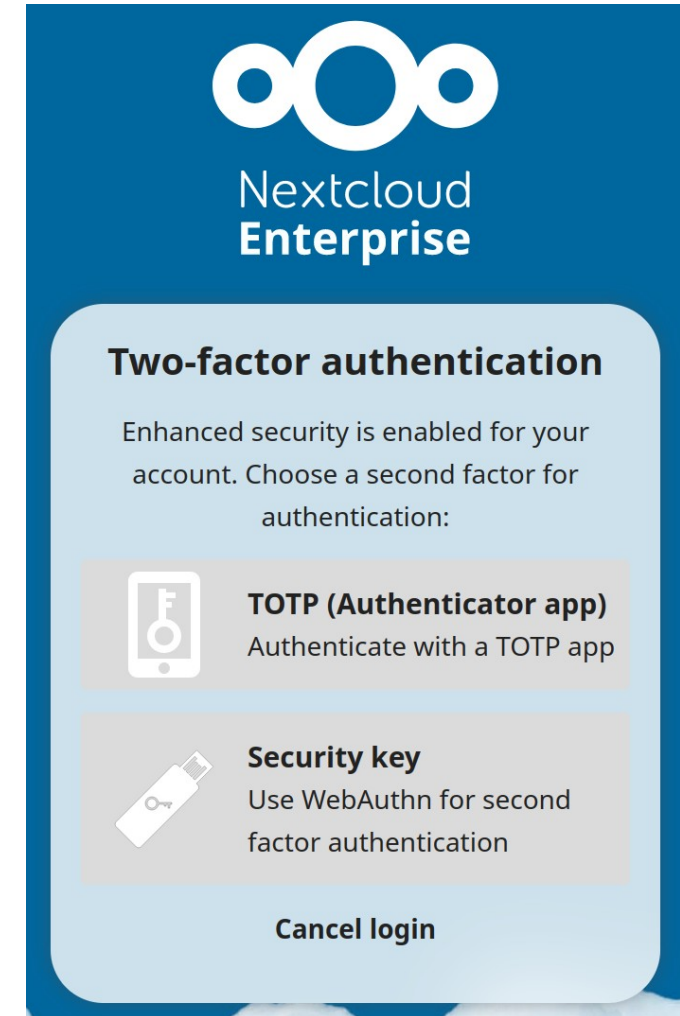
- Enforces MFA on folder-level
- Prevents sharing with non-MFA accounts



Tier 1 – Step-up Authentication

Tier 1 – Step-up Authentication

- Adds Nextcloud-native MFA to SSO accounts
- TOTP or WebAuthn
- Available in production and test
- **Activated on all nodes**
- Can be enforced via groups (forcemfa)
- Might be made mandatory in the future for all users on all nodes
- Step-up Authentication for sync client requires the new login portal (Tier 2)

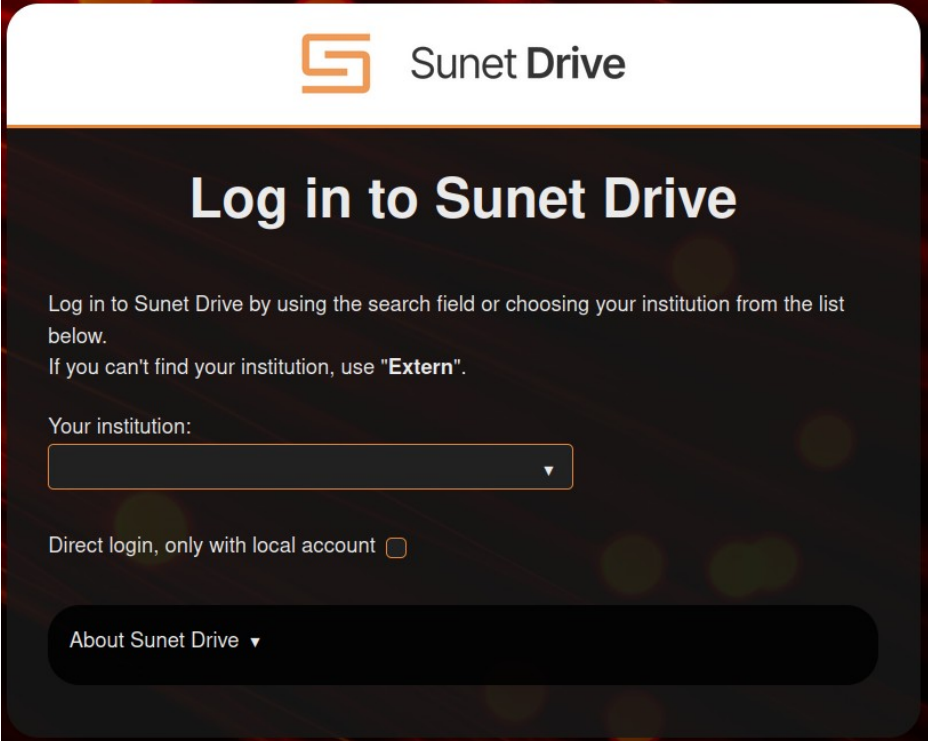


Tier 2 – Sunet Drive Login Portal/SeamlessAccess

Tier 2 – Sunet Drive Login Portal

- Remove Global Site Selector
- Ensures 2FA on all nodes
- Works with synchronization client
- More flexible configuration

Rollout in November!



The screenshot shows the Sunet Drive login portal. At the top, there is the Sunet Drive logo (an orange stylized 'S') and the text 'Sunet Drive'. Below this, the main heading is 'Log in to Sunet Drive'. Underneath, there is a paragraph of instructions: 'Log in to Sunet Drive by using the search field or choosing your institution from the list below. If you can't find your institution, use "Extern".' This is followed by a form field labeled 'Your institution:' with a dropdown arrow. Below that is a checkbox labeled 'Direct login, only with local account'. At the bottom, there is a dark button with the text 'About Sunet Drive' and a small dropdown arrow.

Sneak preview: <https://portal.drive.sunet.se> and <https://portal.drive.test.sunet.se>

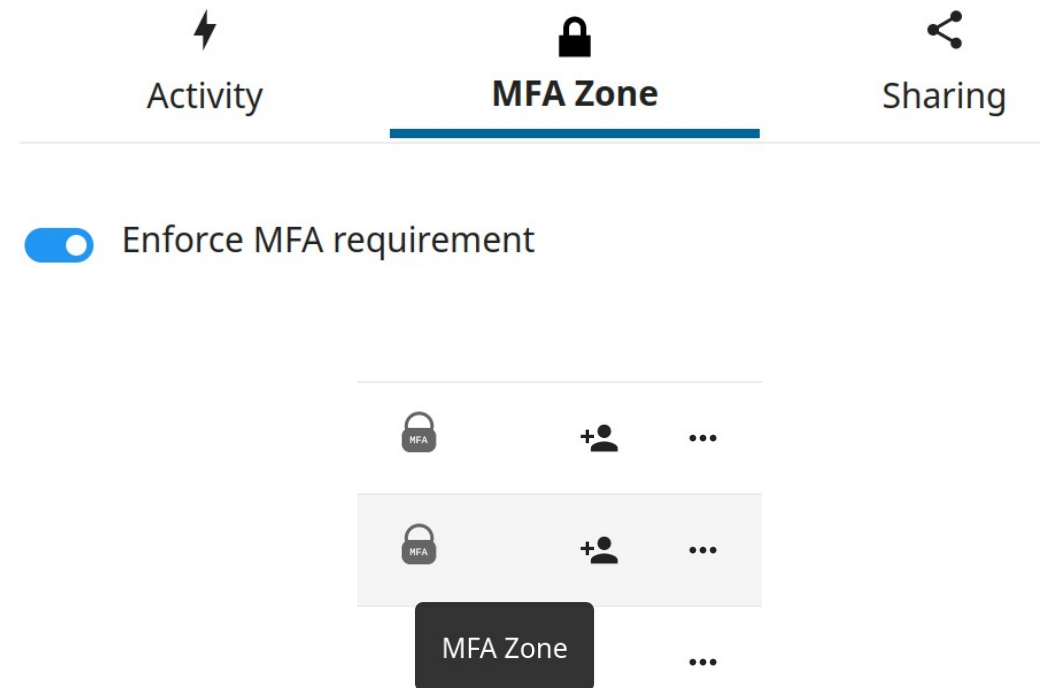
Tier 3 – MFA Zones

Tier 3 – MFA Zones

- Enforces MFA on folder-level
- Prevents sharing with non-MFA accounts
- Works only on a local node
- Proposed OCM-extension
- Automated regression testing for development, test, and production

Hands-on: Wednesday, 6th November, 3:00pm

“The auditors tried to bypass MFA and Step-up authentication but failed. So, even though the efforts were made, our conclusion is that the quality is outstanding regarding the main target of the audit.”



RDS – NG

RDS-NG

- New RDS Developed by WWU Münster
- Simplified architecture compared to RDS
- Release not before the next Sunet Days

New project

General

Title *

The title of the project.

Description

An (optional) project description.

Data

Data path *

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

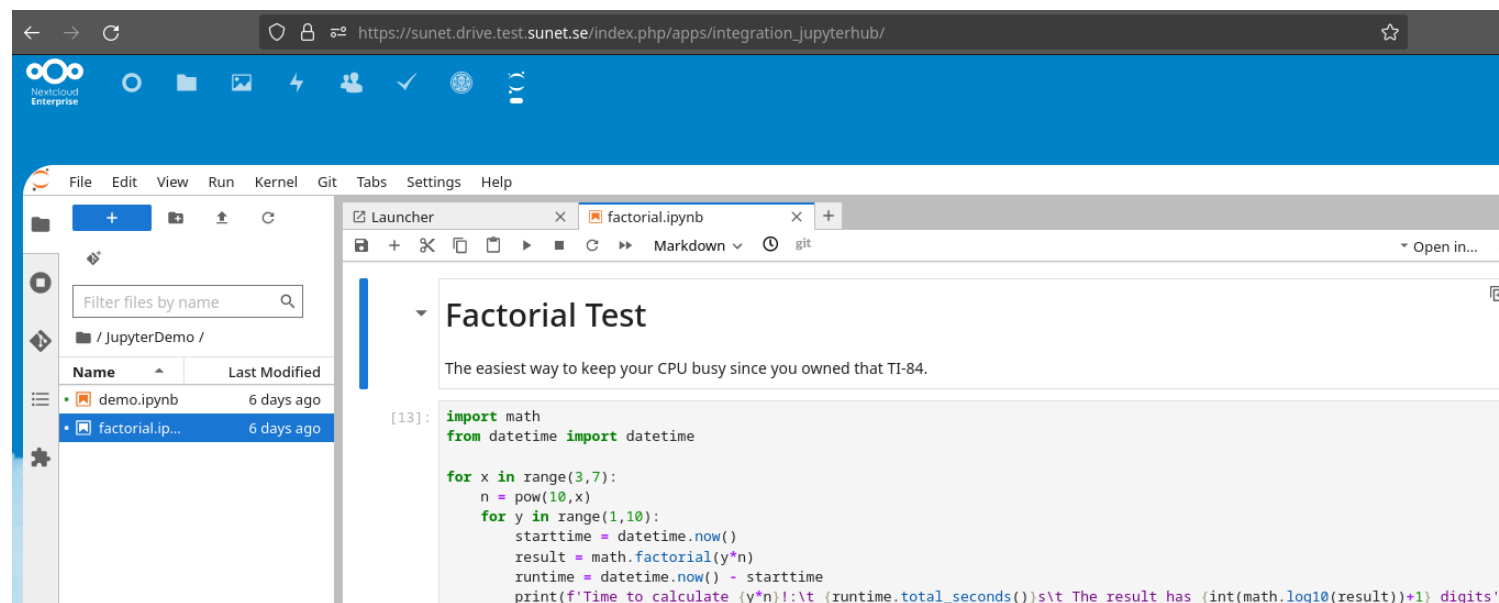
Use only the following connections:

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

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

Available upon request, also without Sunet Drive :-)



Productivity Apps

Forms

- Simple survey and questionnaire
- Export results as CSV

Polls

- Simple polls app with multiple options
- Access control (members, public, hidden)

Calendar

- Nextcloud's built-in calendar app

Tasks

- Manage tasks and subtasks
- CalDav support

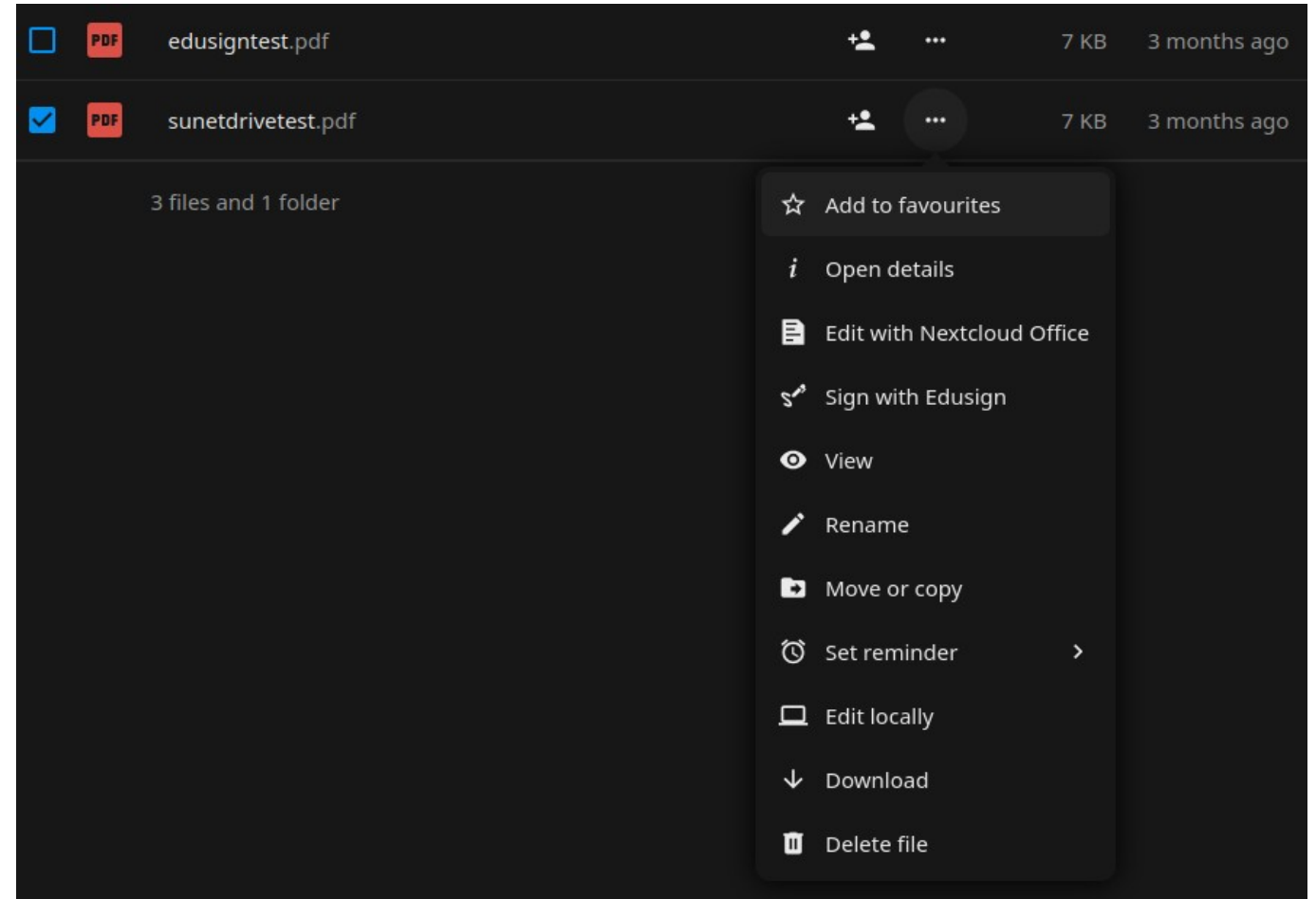
Collectives

- Knowledge-base/wiki functionality
- Uses markup, saved as 'regular' files in Nextcloud

Note: All apps are 'as secure as Sunet Drive' for your node, aligned with the sensitivity levels of each university. Most apps store their data in the Nextcloud database. This means the data is backed up, but a restore is currently only possible on a system-level.

EduSign (alpha)

- Sign documents directly from Sunet Drive
- Currently only works with eduid and eduid Connect
- another reason to use eduid connect... :-)
- Requires more development that can be prioritized depending on demand/interest



Tack! Frågor?

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Issues and Questions

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