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Sunetdagarna

Sunets molntjänster

Agenda

- Sunet Drive
  - MFA
    - SND-Doris
    - Office
- Sunet Drive
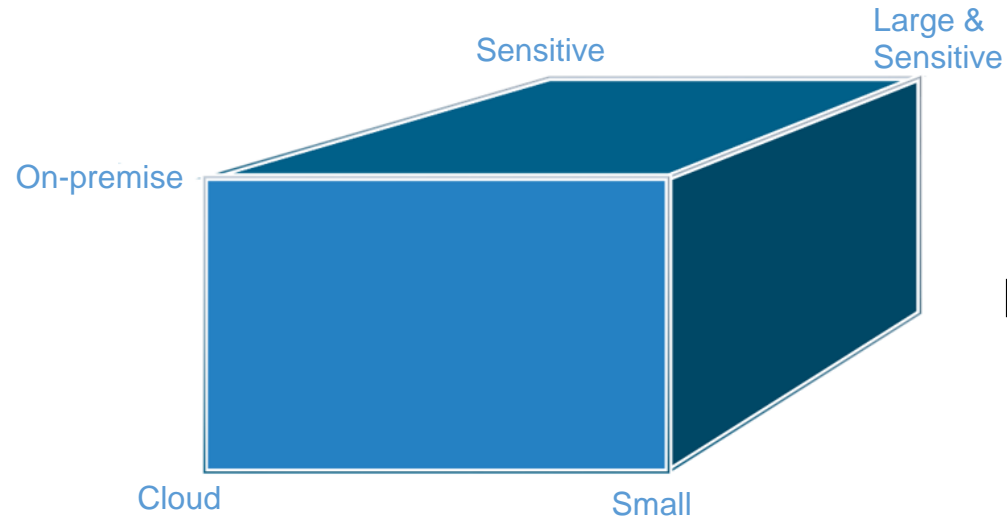 - Tekniken

Agenda

- Sunet Drive
  - Alternativ 2
- Ny prismodell för server IaaS
  - Volym rabatt
  - Rabatt bindningstid
- Nyheter / Pågång

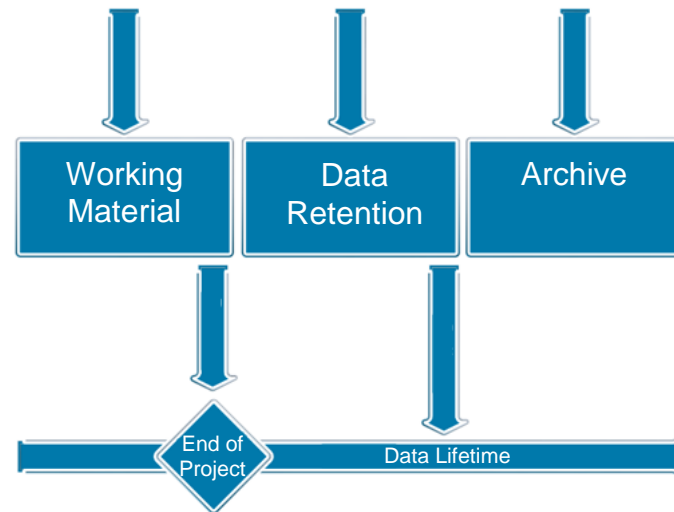# Sunet Drive

Research Data – A model

Classification

Sensitive

Large & Sensitive

On-premise

Cloud

Small

Access

"Classical" Folders

"Modern" Apps

How do you access data?

Where is my data?

Livecycle

Working Material

Data Retention

Archive

End of Project

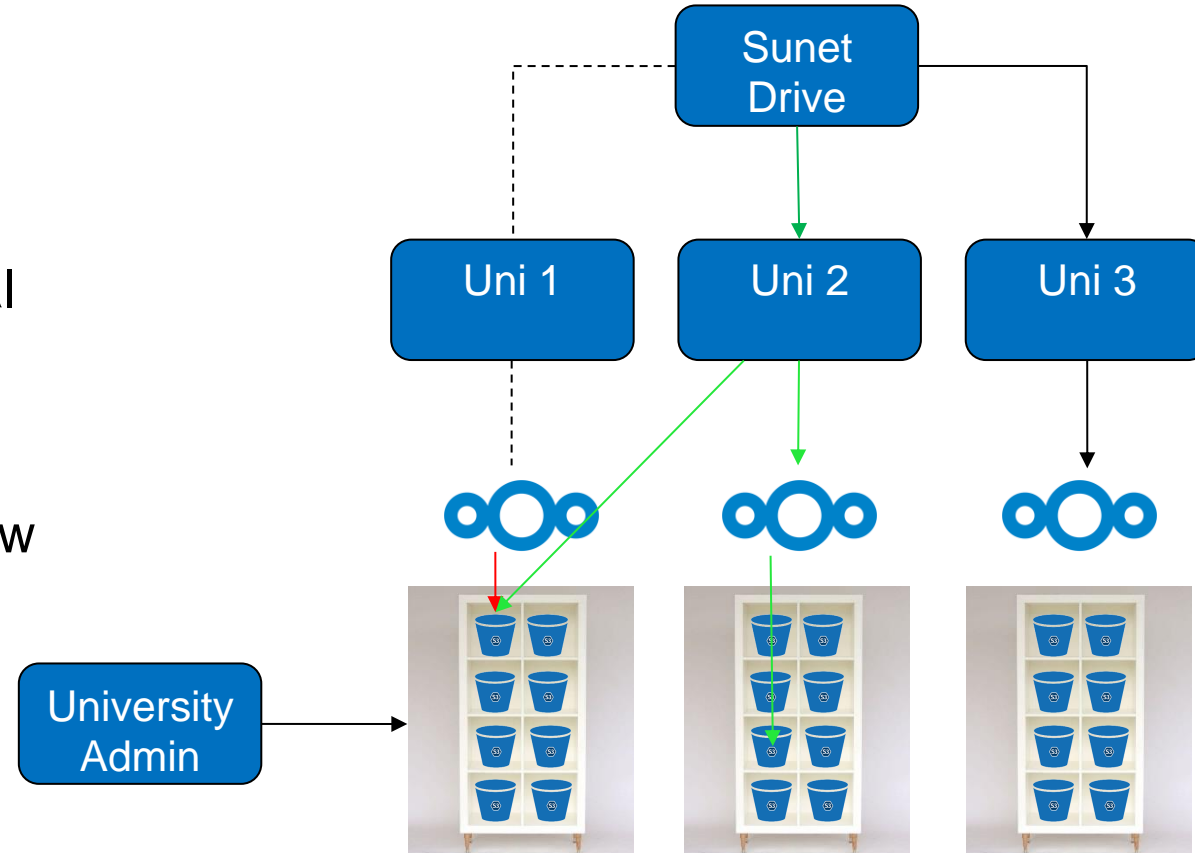Data Lifetime

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Federated Data Storage and Governance

- S3-buckets as main storage unit

- Nextcloud as access layer

- Individual nodes as part of global scale

- Co-management with Sunet

- Follow your data even from a new organisation

- **Separation of access vs ownership**

Replication of data/backup

Manual replication/backup strategy

- Based on rclone
- Manually mirror between data centers
- Backup-buckets with retention time
- Requires a lot of tuning

- Waiting for something better
  (deuxfleurs/garage?)

Garage

Garage is a lightweight S3-compatible distributed object store, with the following goals:

- As self-contained as possible
- Easy to set up
- Highly resilient to network failures, network latency, disk failures, sysadmin failures
- Relatively simple
- Made for multi-datacenter deployments

Non-goals include:

- Extremely high performance
- Complete implementation of the S3 API
- Erasure coding (our replication model is simply to copy the data as is on several nodes, in different datacenters if possible)

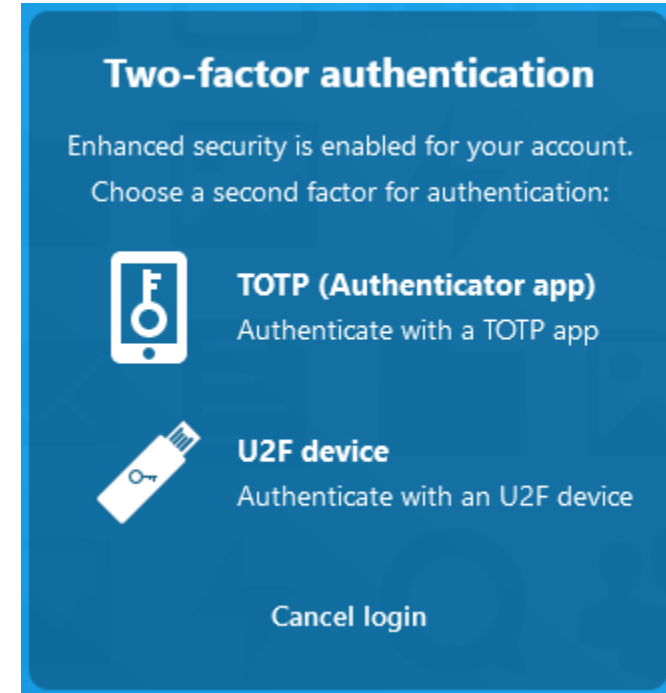Our main use case is to provide a distributed storage layer for small-scale self hosted services such as Deuxfleurs.

Not ready for prime time

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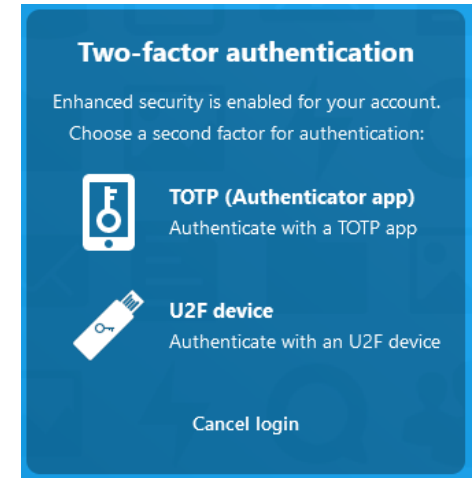# Nextcloud

Nextcloud Issues 2021/22
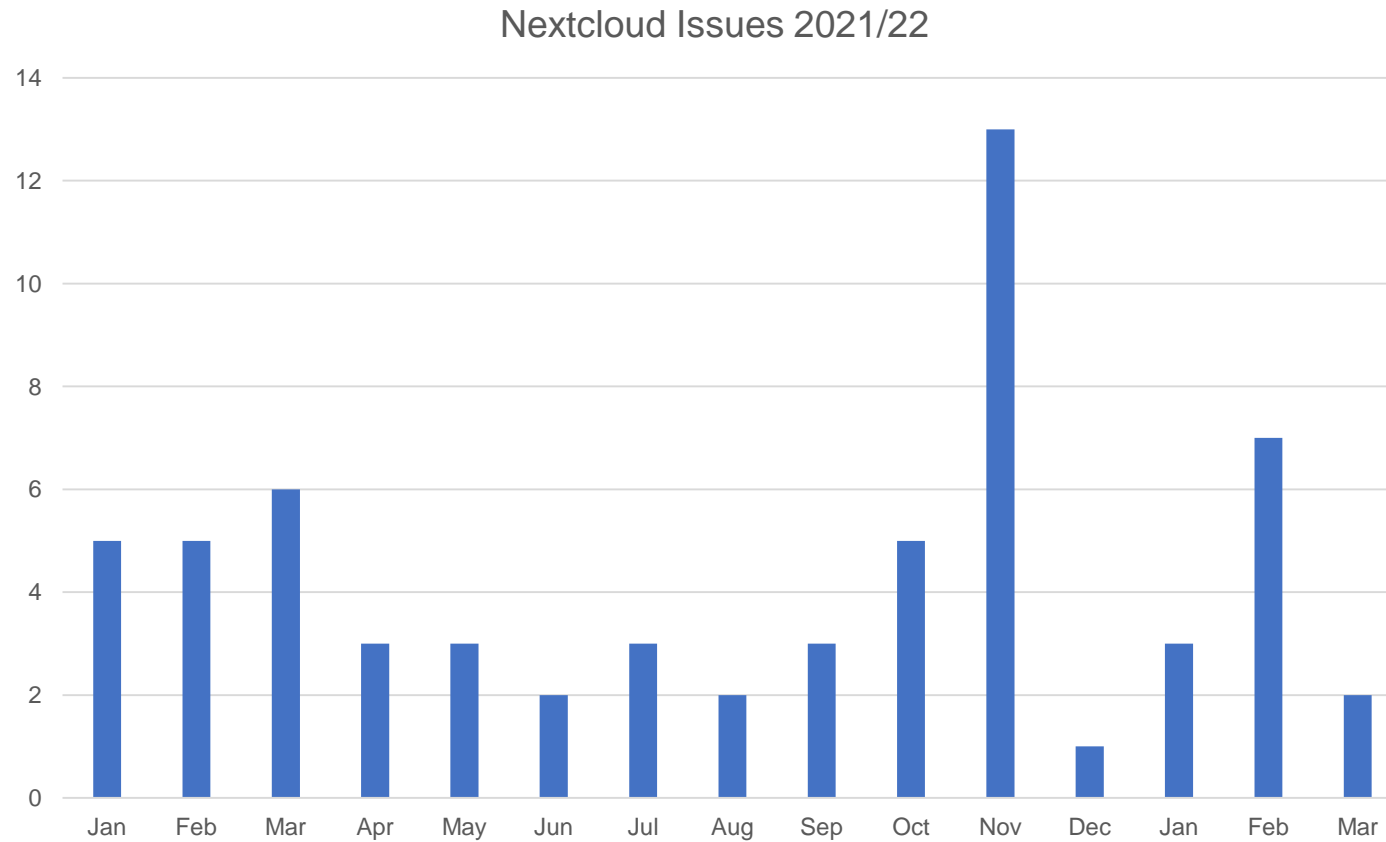
MFA – What is MFA?

- Multifactor Authentication
  - Security technology that requires multiple methods of authentication from independent categories of credentials
  - Examples: SMS, TOTP (Authenticator app), U2F (Yubikey)

Two-factor authentication

Enhanced security is enabled for your account.
Choose a second factor for authentication:

TOTP (Authenticator app)
Authenticate with a TOTP app

U2F device
Authenticate with an U2F device

Cancel login

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MFA – Why is it complex?

- Multiple technologies
  - SMS
  - TOTP (Authenticator app)
  - U2F Device (Yubikey)
  - Other (Mail, proprietary)

- Who implements MFA?
  - Identity provider
  - Service provider
  - Both (?)

- Requires administration
  - Lost or stolen devices
  - Remove/Reenable MFA

- Identity providers
  - Must implement MFA individually
  - Different technologies for different IdPs

- Service providers
  - Can enforce same MFA technology for all
  - Could turn Two-factor into Three-factor if IdP has added factor

Two-factor authentication

Enhanced security is enabled for your account.
Choose a second factor for authentication:

TOTP (Authenticator app)
Authenticate with a TOTP app

U2F device
Authenticate with an U2F device

Cancel login

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Nextcloud and MFA

- Current state:

  - Either SAML/SSO-login or local login (non-SSO)

  - IdP must implement MFA in first case

  - MFA can be added in second case

  - No support for "Step-up Authentication"

Step-up Authentication: Add MFA independently from whether an IdP has MFA or not. Could result in "Three-factor"-Authentication.

Sunet Drive Requirements

- MUST support both MFA and non-MFA logins

- MUST have control over MFA- and non-MFA-areas

- MUST prevent other sharing for MFA-only areas

- SHOULD be easy to administrate

Development started

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SND/Doris Integration

New data description

Title *

Enter a descriptive, preferably unique, name for the data description, both in Swedish and in English. If no title is available in Swedish, or if it is difficult to translate, the English title can be entered in both fields.

Title (in Swedish)

Title (in English)

Data accessibility level *

Access to data through SND or other external actor *

Specify where data will be available. You choose whether the data is made available through SND's research data portal, via downloading or by request, or through an external s.. Show more

○ Access to data through SND

○ Access to data through an external actor

Level of accessibility *

Data that are shared by SND can have two different accessibility levels. Data should, in keeping with the recommendations from the Swedish Research Council, be openly accessible as .. Show more

○ Data are freely accessible

○ Access to data is restricted

Office Integration

- Collabora Online

  - In betatest

  - Active for some nodes

  - Some issues to be solved

  - Testers welcome!
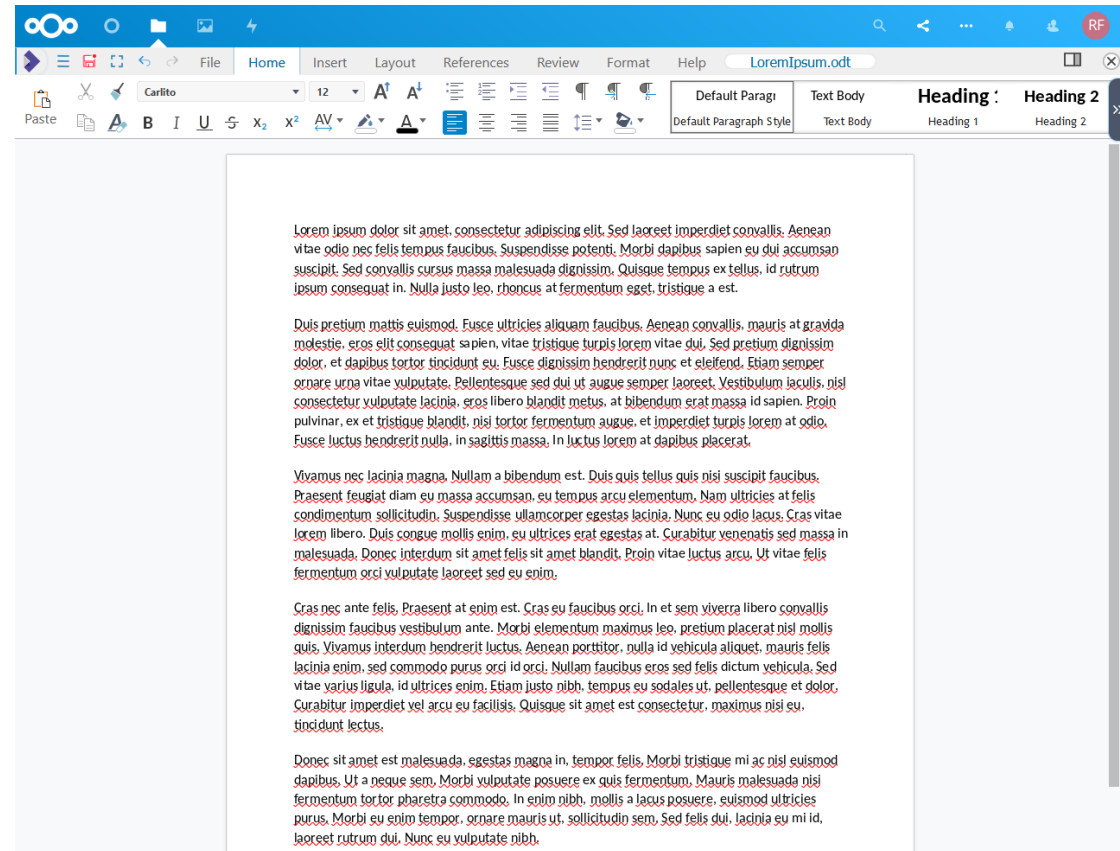
Compute and Integration

- Compute and Integration

  - Run computations on top of Sunet Drive storage

  - Unclear requirements

  - Will require a lot of "trial and error"

- Existing solutions

  - Local sync always works

  - VS Code Remote Workspaces

  - WebDAV integration

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Testing and automation

- Test automation

  - Core functions (e.g., status pages, buckets, users)

  - OCS-API (e.g., user provisioning)

  - Selenium (Web UI tests)

  - Running in jenkins

Test Result Trend

Failed · Skipped · Passed

#25 #26 #27 #28 #29 #30
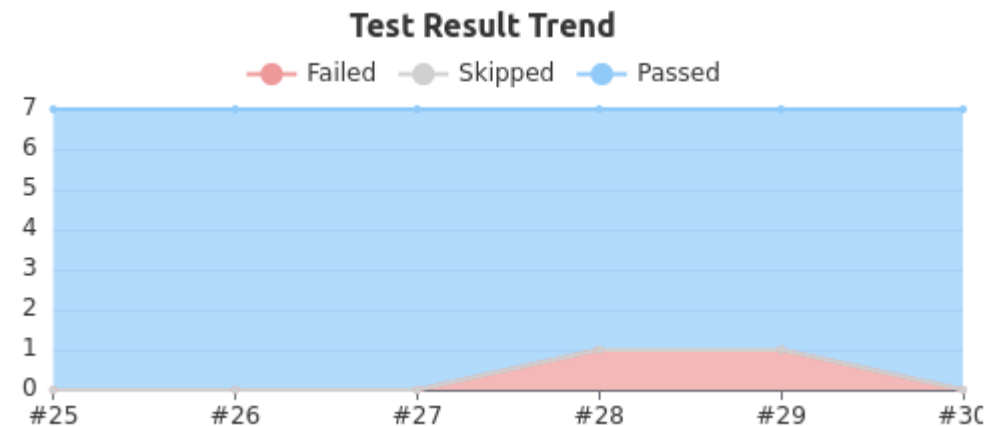
Sunet Drive - Teknik

Arkitekturöversikt

- Load-balanced Sunet Drive Frontend Servers*
- MariaDB Galera cluster as database
- Redis Server/Sentinel Cluster for improved performance
- All storage in Ceph S3 storage cluster

*https://github.com/SUNET/sarimner-frontend
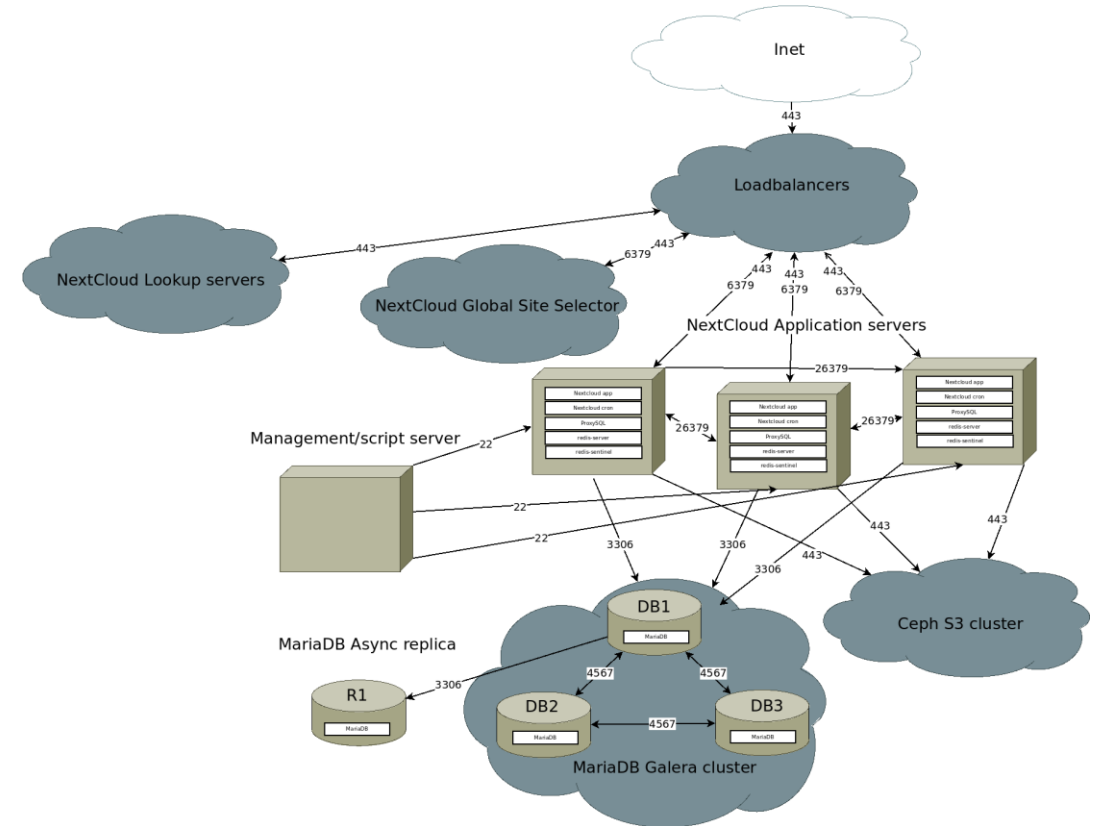
Stödjande system
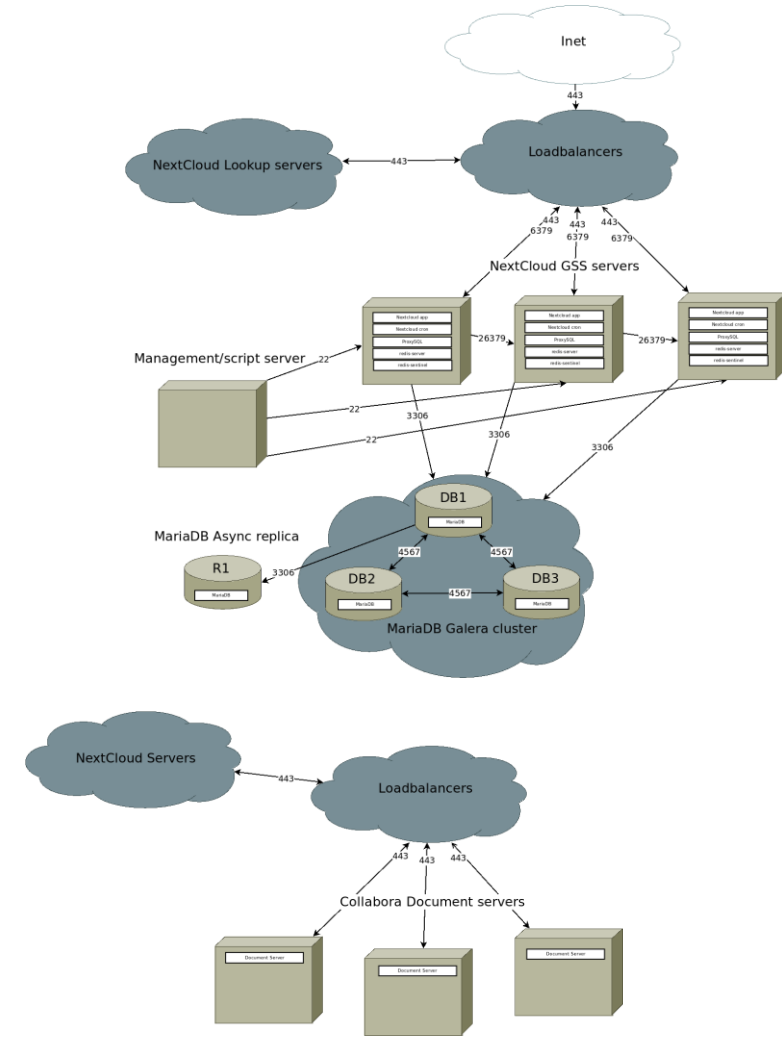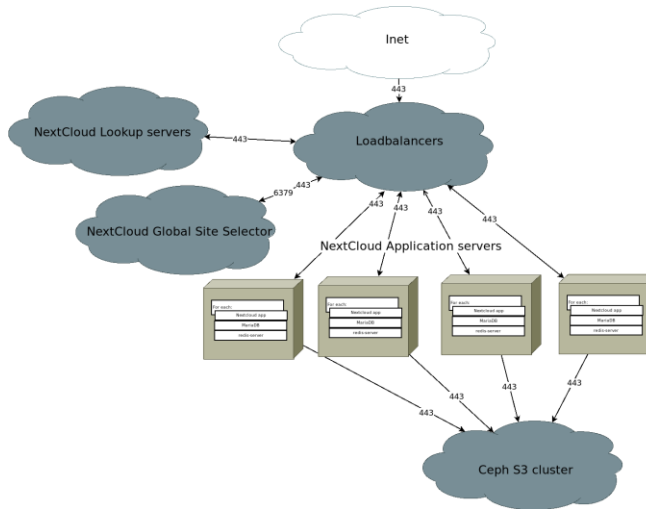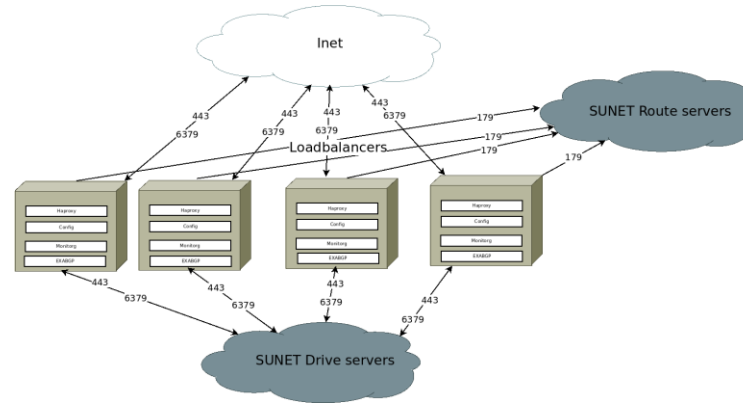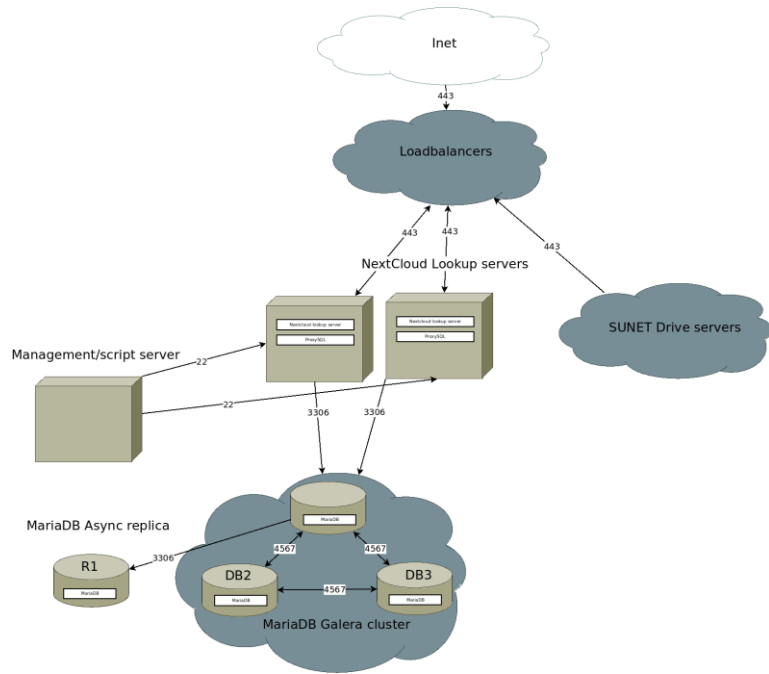
Infrastructure as Code*

Sunet Drive Commits 2021/2022
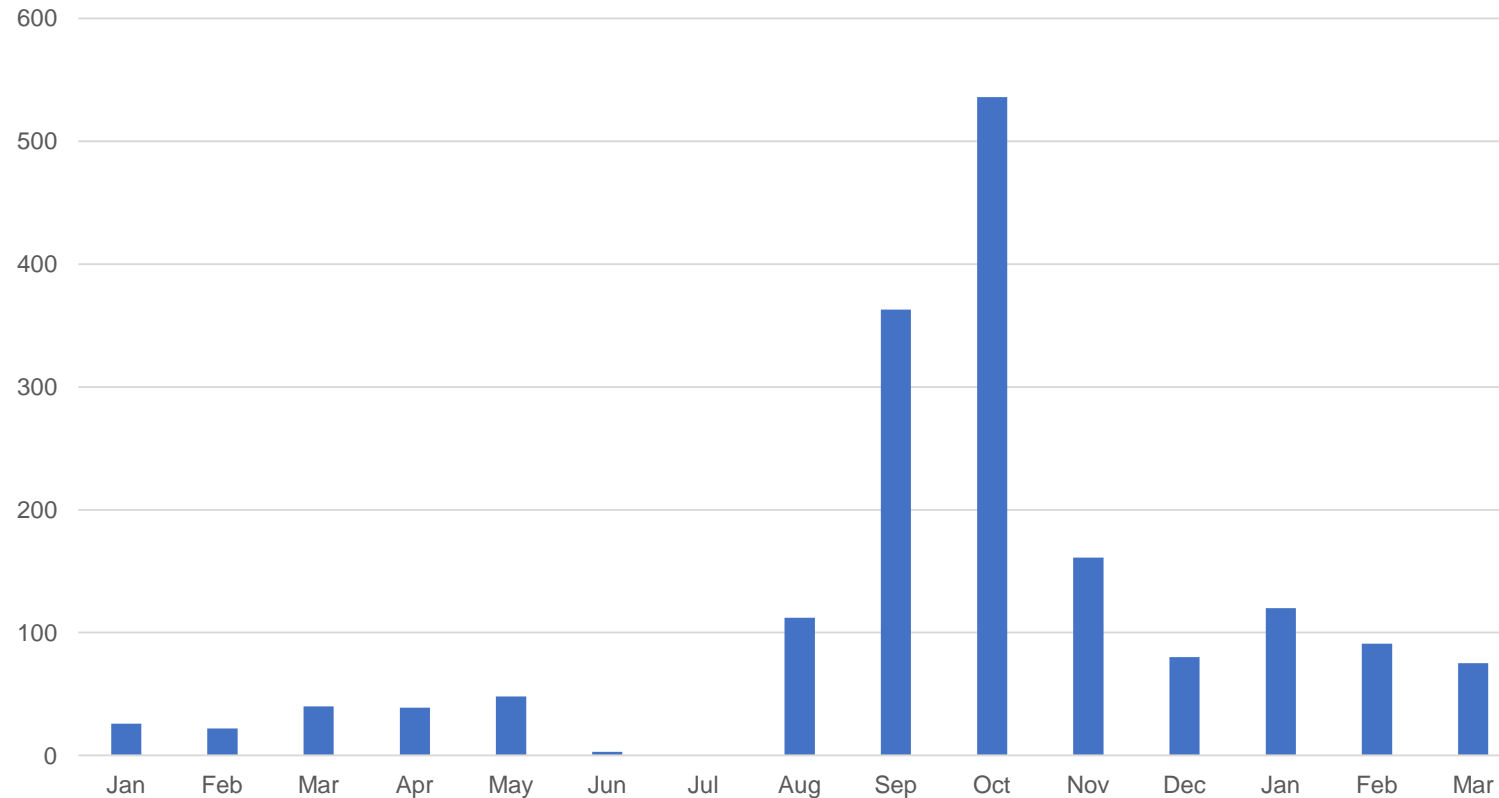
Övervakning, säkerhet och stabilitet

* https://www.naemon.io
https://www.thruk.org

Framtidsplaner

Sunet Drive alternativ 2

Sunet Drive – alternativ två

- Nytt sätt att licensiera Sunet Drive
- Baseras på antal användare från en organisation som loggat in
- Ingår lagring 10Gb per användare
- Organisationen behöver hålla reda på hur många som loggat in
- Information om nyttjande både användare och lagring kommer från Sunet
- Autentisering via organisationens IdP

Sunet Drive – alternativ två
vad kostar det

- Kostnad 100 Kr per användare och månad ingår 10GB data
- Kostnad för nyttjade >10Gb lagring per användare, ej klart
- Maxgräns för lagring, ej klart
- Avstämning för fakturering görs löpande

Sunet Virtuellt datacenter

Sunet Virtuella servrar [IaaS] 1(2)

- Nytt namn: Sunet Virtuellt datacenter

- IaaS först ut

- Kostnaden baseras på den totala förbrukningen

  - vCPU

  - Minne

  - Disk, blocklagring

    - Large

    - Fast

- Konfigurationer väljs från lista

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Sunet Virtuella servrar [IaaS] 2(2)

- Summerar kostnaden för varje delkomponent
- Den totala summan är grund för en rabatt som förändras beroende på kostnaden
- Rabatten ökar när summan ökar
- Rabatten för förbetald bindningstid förändras också till procentsatser för 12 respektive 36 månader
- Finns förnärvarande bara i Sunets publika moln

Sunet Virtuella servrar princip

Service	Enhet	per tim. (SEK)	720 tim.
Compute vCPU	vCPU	X	720 X
Compute RAM	GB	Y	720 Y
Compute local nvme disk	GB	Z	720 Z
Volume Storage -FAST disk	GB	V	720 V
Volume Storage -LARGE disk	GB	W	720 W

Volym rabatter

Månatlig förbrukning av tjänster kSEK	Rabatt
0 – 50	N1%
50 – 100	N2%
100 – 150	N3%
150 – 200	N4%
200 – 250	N5%
250 – 350	N6%
350 - 500	N7%
500 -	N8%

Volym åtagande och förbetald tjänst

Period	Rabatt
12 månader	M1 %
36 månader	M2 %

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Sunet Virtuella exempel på konfigurationer

Instanser med lokal NVMe-disk

Produkt ID	vCPU	RAM (GB)	Lokal disk (GB)
INSTANCE- l2. c2 r4. 100	2	4	100
INSTANCE- l2. c2 r4. 500	2	4	500
INSTANCE- l2. c4 r8. 500	4	8	500
INSTANCE -l2. c8 r16. 100	8	16	100
INSTANCE- l2. c8 r16. 1000	8	16	1000
INSTANCE- l2. c16 r32. 500	16	32	500
INSTANCE- l2. c16 r32. 1000	16	32	1000

Instanser utan lokal disk

INSTANCE- b2. c1 r2	1	2	0
INSTANCE- b2. c2 r4	2	4	0
INSTANCE- b2. c4 r16	4	16	0
INSTANCE- b2. c16 r64	16	64	0

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Nyheter / Pågång

- VDC till Sunets privata moln
  - Inväntar ny hårdvara
  - Konfigurationer med bättre prestanda
  - GPU
- Orosmoln – osäkra leveranstider

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Sunetdagarna

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