VO Federation in EFSS

Andreas Klotz
Helmholtz-Zentrum Berlin

Sander Apweiler
FZ-Jülich

Matthias Leander-Knoll
KIT
Helmholtz Association

1. Berlin
Helmholtz-Zentrum Berlin für Materialien und Energie (HZB)

2. Berlin-Buch
Max Delbrück Center for Molecular Medicine in the Helmholtz Association (MDC)

3. Brunswick
Helmholtz Center for Infection Research (HZI)

4. Bremerhaven
Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung (AWI)

5. Bonn
German Center for Neurodegenerative Diseases (DZNE)

6. Darmstadt
GSI Helmholtz Center for Heavy Ion Research

7. Dresden
Helmholtz Center Dresden Rossendorf (HZDR)

8. Geesthacht
Helmholtz Center Geesthacht Center for Material and Coastal Research (HZG)

9. Hamburg
Deutsches Elektronen-Synchrotron DESY

10. Heidelberg
German Cancer Research Center (DKFZ)

11. Jülich
Forschungszentrum Jülich (FZ Jülich)

12. Karlsruhe
Karlsruhe Institute of Technology (KIT)

13. Kiel
GEOMAR Helmholtz Center for Ocean Research Kiel

14. Cologne
German Aerospace Center (DLR)

15. Leipzig
Helmholtz Center for Environmental Research – UFZ

16. Munich
Helmholtz Center Munich – German Research Center for Health and the Environment (HMGU)

17. Potsdam
Helmholtz Center Potsdam German Research Center for Geosciences GFZ

18. Saarbrucken
Helmholtz Center for Information Security – CISPA

Helmholtz Association: https://www.helmholtz.de/
HIFIS Cloud

- Making existing IT Services accessible to all of Helmholtz
  - And research partners
  - Users log in to services with their home credentials using Helmholtz AAI

https://cloud.helmholtz.de

https://login.helmholtz.de
VO FEDERATION IN EFSS

The Enterprise File Sync&Share (EFSS) situation

- No consolidation
  - Desire for independence

- No OCM\(^1\) federation
  - Exchange of user databases raises data protection issues

- No Nextcloud Global Scale\(^2\)
  - Different Nextcloud versions with different apps in operation
  - Other EFSS vendors could not participate

- Participation in CS3 Community
  - Who were already thinking about new ways to share in EFSS
  - But only for 1:1 shares

---

\(^1\) Open Cloud Mesh: [https://wiki.geant.org/display/OCM/Open+Cloud+Mesh](https://wiki.geant.org/display/OCM/Open+Cloud+Mesh)

\(^2\) Nextcloud Global Scale: [https://nextcloud.com/globalscale/](https://nextcloud.com/globalscale/)
**Problem**

A virtual organization (VO) can be any size, ranging from two persons to a whole research center/community. The diagram illustrates the connection between Local IdM, IdP, and various EFSS (EFFed Services) systems. The EFSS systems are connected through AAI (Attribute Authority Interoperability), and there is a local IdM for each EFSS system. The diagram also shows the virtual organization aspect, which can be expanded or contracted based on the number of participants or the size of the research center/community.
VO FEDERATION IN EFSS

VO-App
VO FEDERATION IN EFSS

VO-Sharing

Virtual Organization

EDU TEAMS

HELMHOLTZ AAI

MyCommunity AAI

EFSS 1

EFSS 2

EFSS 3

EFSS 4

EFSS 5

VO-App

VO-App

VO-App

VO-App

VO-App
VO FEDERATION IN EFSS

VO-App GUI

[Diagram showing examples of file sharing and access controls within a VO-App GUI, including options for sharing with community VO, individual users, and specific projects.]
VO FEDERATION IN EFSS
VO-App interfaces


Adding a SCIM [1] API
- /scim/Me
- /scim/Groups/{id}
  - Data must not be seen by Service
- /scim/Users/{id}
  - Uses specific OIDC [2] scope
- Extension will be proposed as AARC [3] guideline after prototype is available
The issue of pseudo-accounts

AuthN with local pseudo-account and WebDAV Client

Regular VO info query

EFSS

VO-App

Local IdM
VO FEDERATION IN EFSS

VO-App interfaces

- Broadcast
  - for new shares coming from local user
  - VO membership loss
- Query
  - for new shares on VO membership gain

- Shares generated via CS3 APIs \[1\]
  - Which are implemented in Reva \[2\]

Challenges lie in large VOs and increasing federation size

[1] CS3 APIs: https://github.com/cs3org/cs3apis
VO FEDERATION IN EFSS

Outlook

- Tenders for development currently in evaluation
- We will push for development in other EFSS solutions
- Further features like auto-WebDav-mounted VO-Folders may come
- Countless other applications for this technology