EGI Check-in

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WLCG Grid Deployment Board, 8 Nov 2017, CERN

Outline

- Overview
- Use cases
- Status
- Next steps

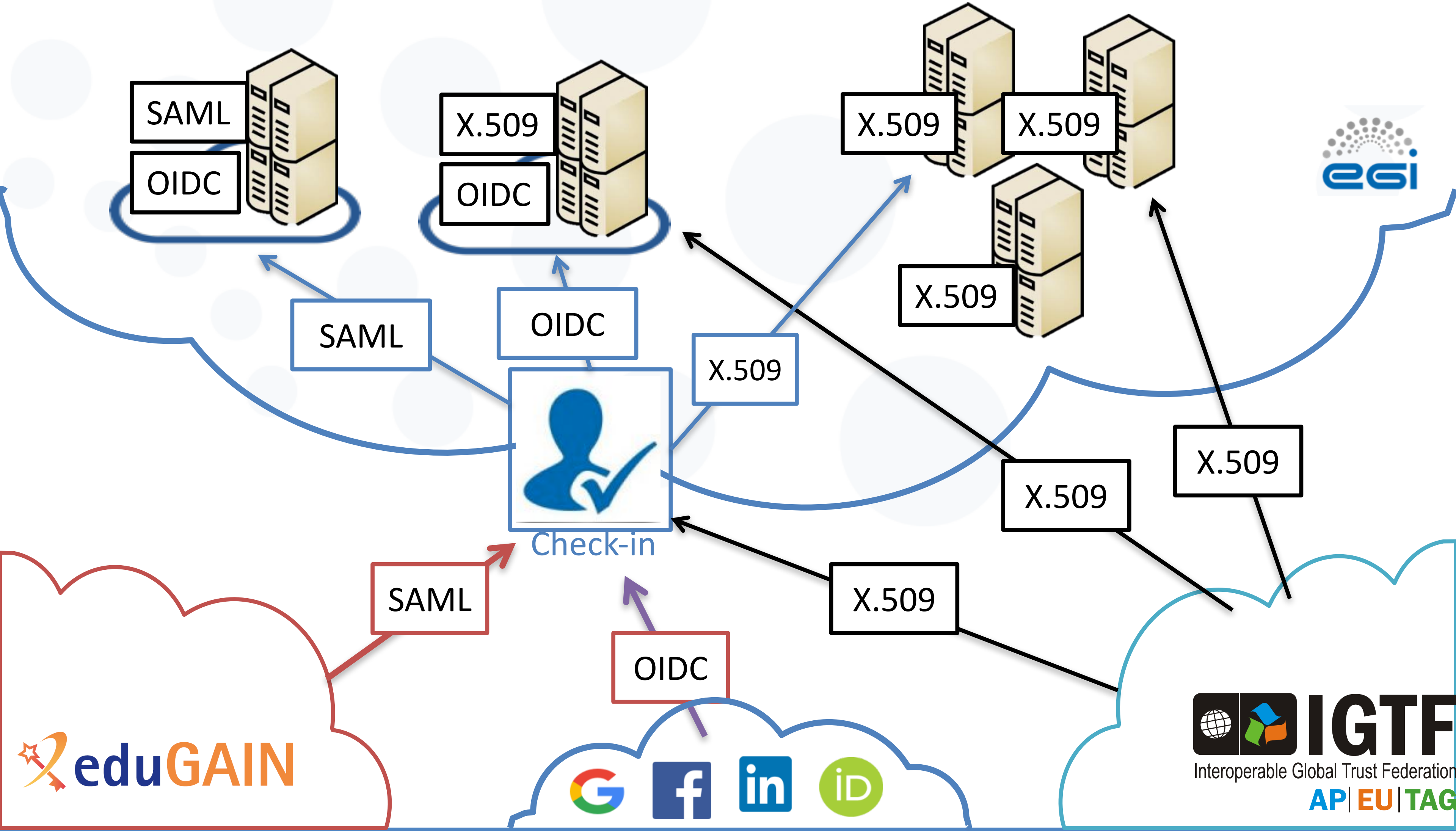
Check-in Overview

In a nutshell

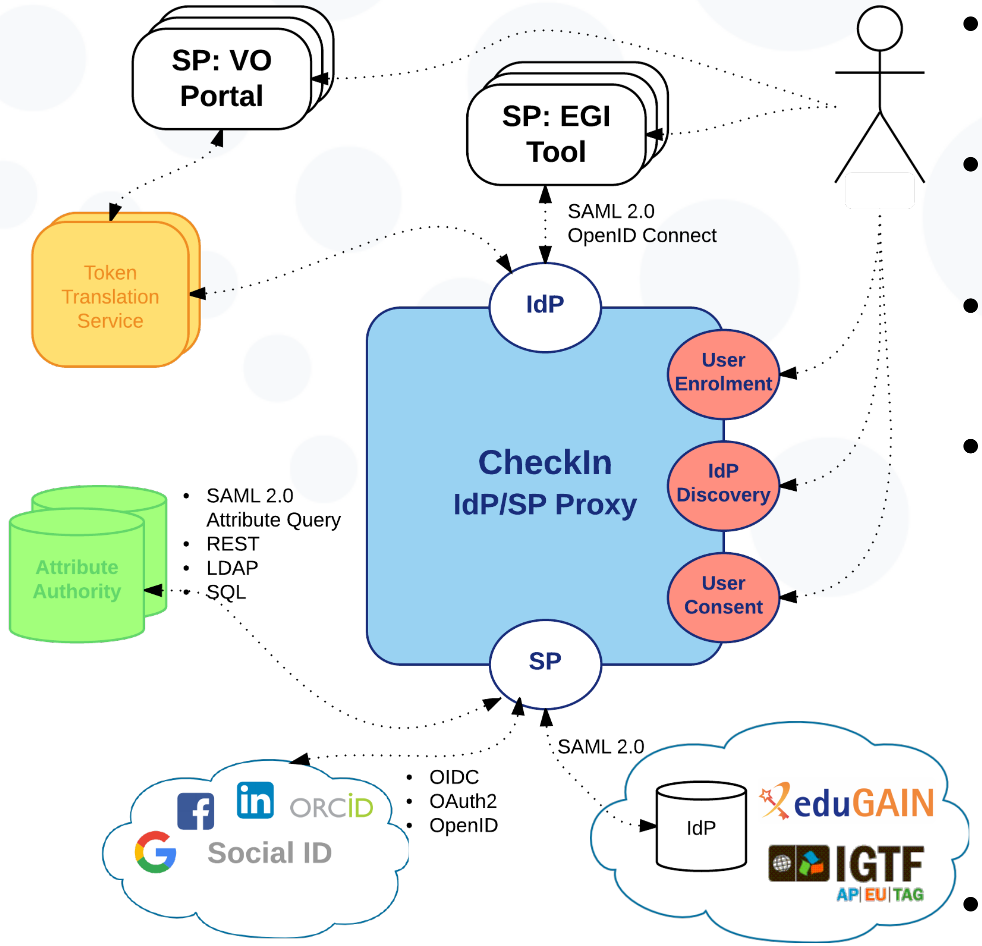
Check-in provides a reliable and interoperable AAI solution for the EGI service providers federation, and external service providers. It enables single sign-on to services through eduGAIN identity providers and other institutional or social media credentials

- Check-in has been developed in EGI-Engage, in close collaboration with the AARC project in order to implement the recommendations of the AARC Blueprint Architecture and Policy Framework
- Services connected to Check-in can be made available to +2,000 universities and research institutes with little or no administrative overhead

A bird's-eye view



Architecture



- Implementation of the AARC blueprint architecture
- All SPs can have one statically configured IdP
- No need to run an IdP Discovery Service on each SP
- Connected SPs get consistent/harmonised user identifiers and accompanying attribute sets from different IdPs/AAs that can be interpreted in a uniform way for authorisation purposes
- External IdPs only deal with a single EGI SP proxy

What is new or improved?

- ✓ Secure - operates under the strict security policies of the EGI federation
- ✓ Simple - hides the complexity of dealing with multiple authentication providers and sources of authorisation information
- ✓ Low overhead - lowers the bureaucratic burden of integrating multiple identity providers and attribute authorities
- ✓ Interoperable - implements the AARC blueprint architecture and is compliant with eduGAIN, REFEDS R&S and Sirtfi policies
- ✓ Polyglot - translates SAML 2.0, OpenID Connect, OAuth 2.0 and X.509 credentials

What benefits does Check-in bring?

- Only one account needed for federated access to multiple heterogeneous (web and non-web) service providers using different technologies (SAML, OpenID Connect, OAuth 2.0, X509)
- Identity linking enables access to resources using different login credentials (institutional/social)
- Assurance information associated to each authenticated identity
- Aggregation and harmonisation of authorisation information (VOs/groups, roles) from multiple sources

Deployment options

Check-in is offered in 2 deployment models:

- As a multi-tenant service:
  - All the standard Check-in authentication options
  - Independent community management using COmanage or Perun
  - Limited customisation of user-facing interfaces (e.g. community-specific themes for enrolment flows, group management)
  - Limited customisation of AAI proxy behaviour
- As a dedicated service (individual components or AAI platform as a whole:
  - Customisation of user-facing interfaces: WAYF, enrolment, group membership UI
  - Customisation of AAI proxy behaviour (e.g. attribute aggregation rules, service entitlements)
  - Easy integration with the main Check-in instance, or other dedicated instances if necessary

Reliable and secure AAI platform

EGI has always invested in improving and maintaining the reliability and security of the services

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TÜV SÜD ISO 20000

TÜV SÜD ISO 9001

- EGI has a mature and complete set of security policies and the processes to enforce them
  - Extended with Check-in specific policies:
    - ✓ Check-in acceptable usage policy
    - ✓ Check-in data protection policy
    - ✓ Agreement documents to integrate non-EGI and non-eduGAIN SPs and IdPs and maintain the compliance

Check-in use cases

Who can use Check-in? For what?

Check-in can provide secure and user-friendly federated authentication and authorisation for:

- User communities with different needs:
  - operating their own full-fledged AAI solution
  - operating their own group management service
  - in need of a ready-to-use group management solution
- Service Providers
  - looking to leverage “AAI as a Service”

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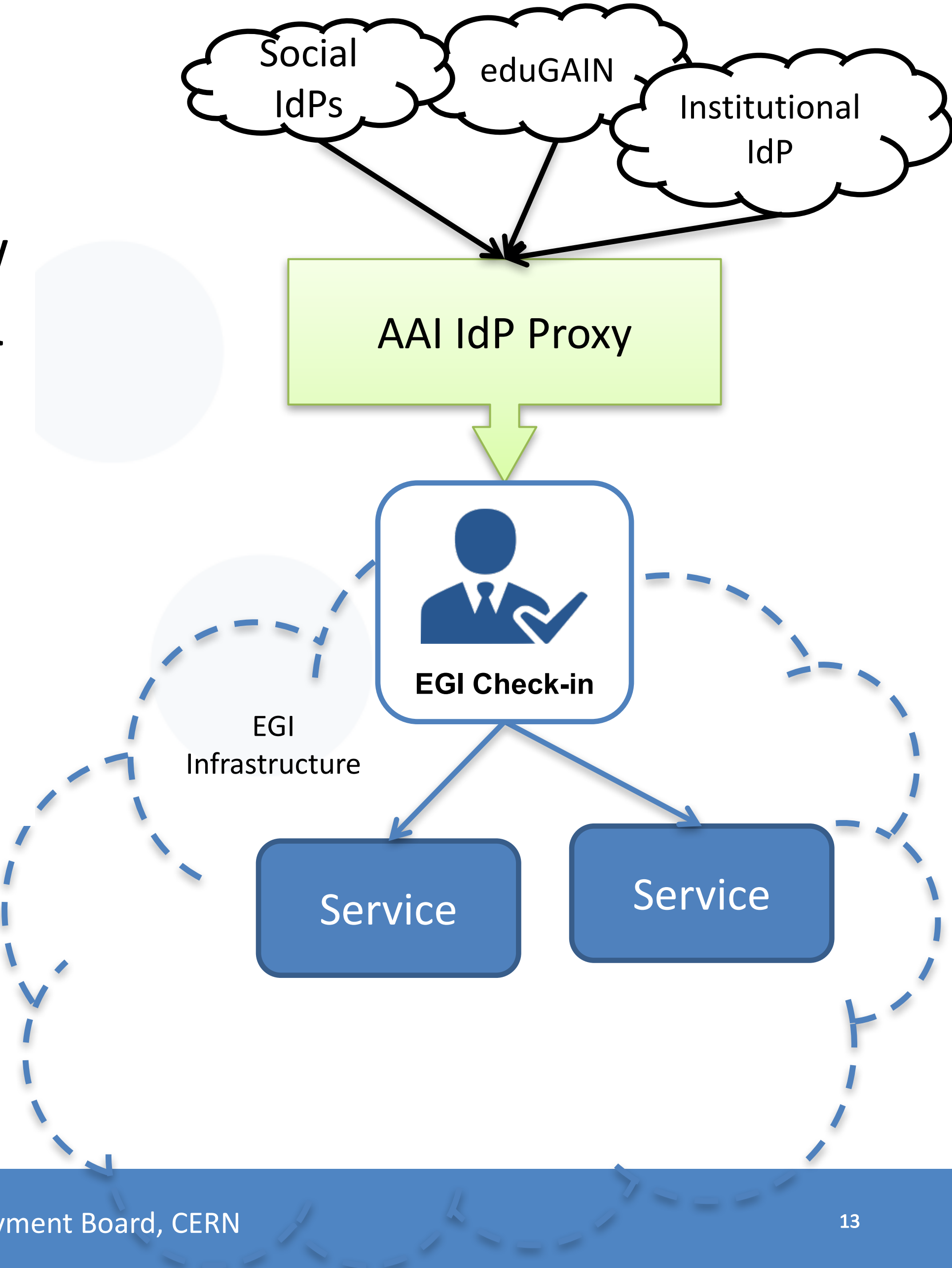
For communities operating their own AAI

Community's AAI connected to Check-in as an IdP Proxy to allow its users to access EGI services & resources

✓ Access EGI services without changing your authentication workflow

Examples: *ELIXIR Research Infrastructure - Check-in allows ELIXIR users to use their ELIXIR IDs to interact with relevant EGI services (Cloud, Configurations database, Applications on Demand*



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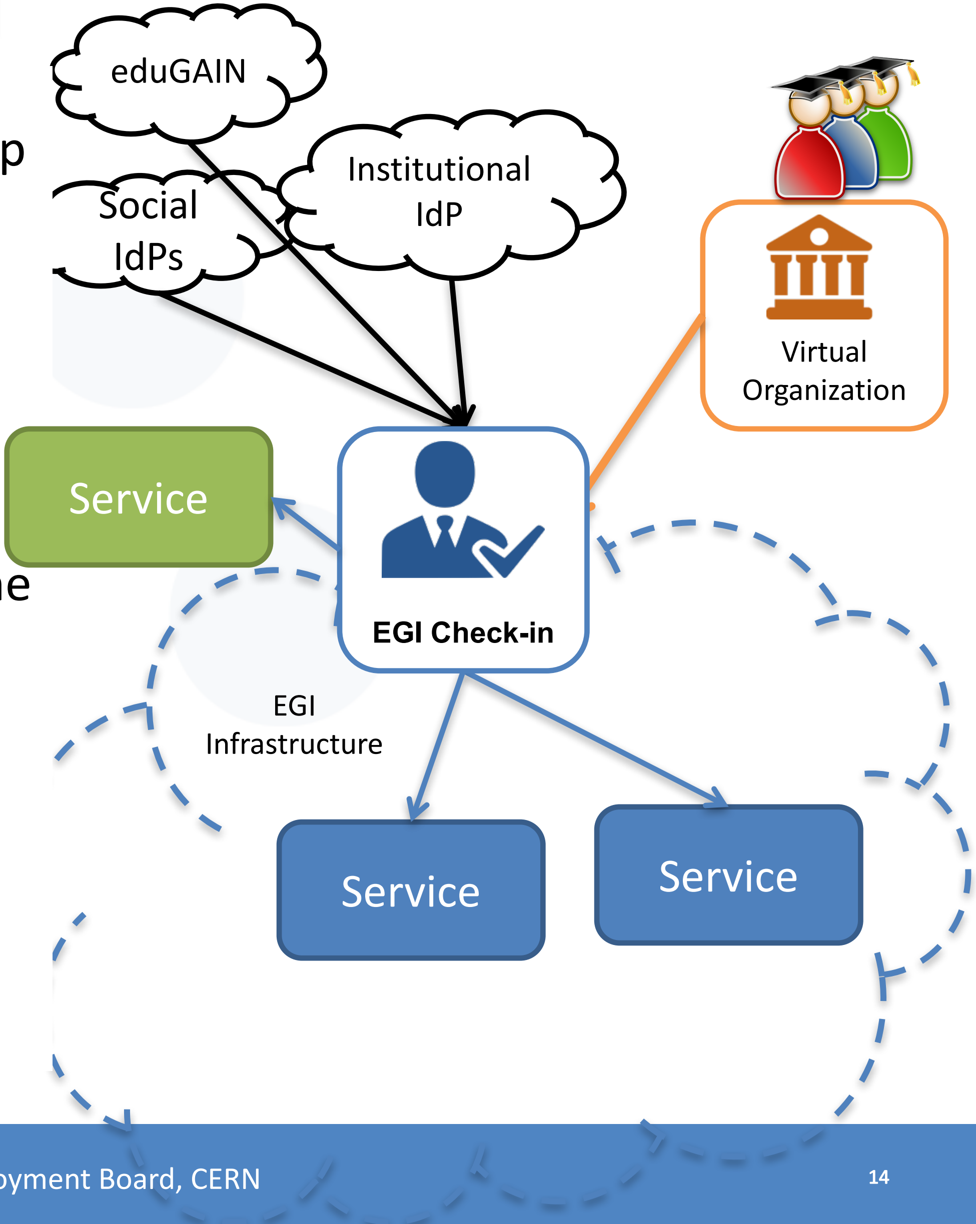
For communities operating their own group management service

Community managing authorisation information about the users (VO/group memberships and roles) via their own group management service, which is connected to Check-in as an external attribute authority

- ✓ Check-in will handle the configuration of the IdPs and the aggregation of the attributes for the SPs
- ✓ No need to migrate the group management functionality to an EGI-specific attribute authority

***Examples:** VOMS-managed VOs such as FedCloud*

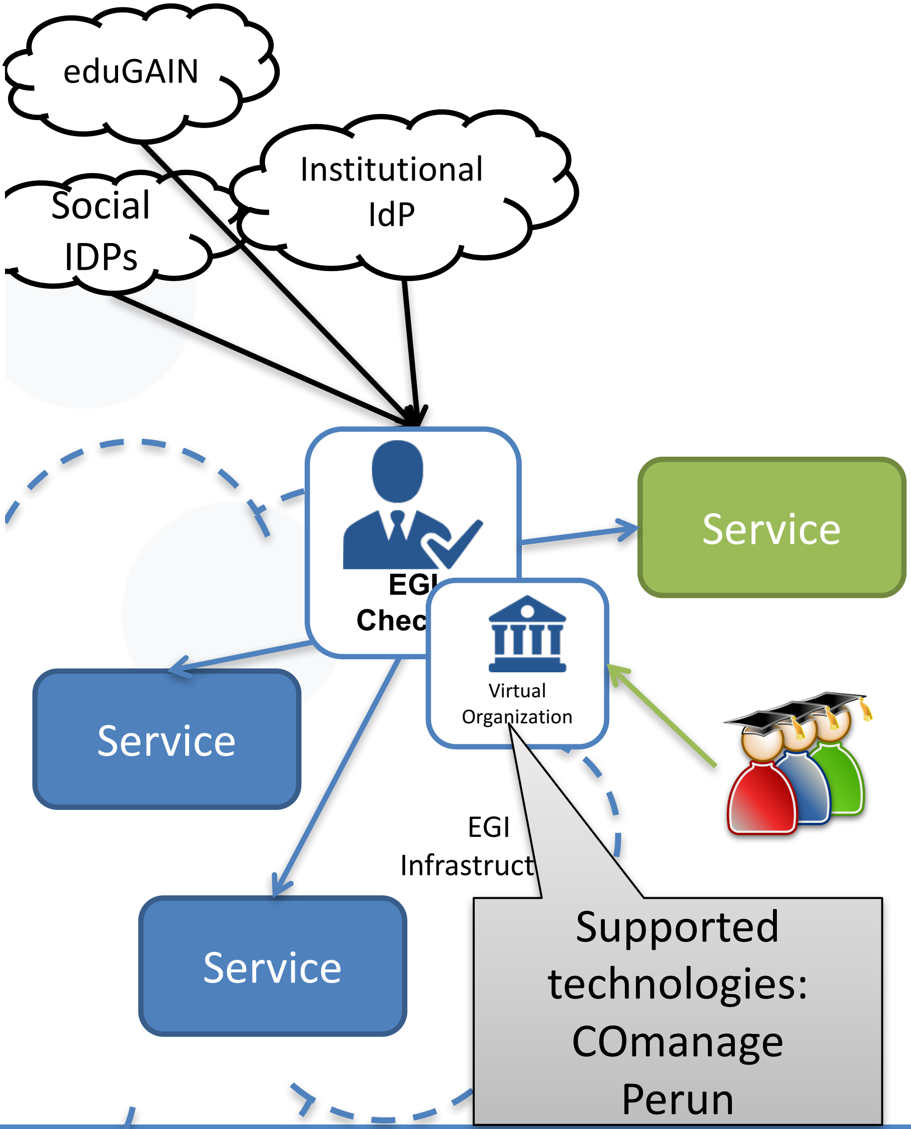


For communities in need of a ready-to-use group management solution

Communities that do not operate their own group management service can leverage the group management capabilities of the Check-in platform

- ✓ Ready-to-use solution
- ✓ Avoid overhead of deploying a dedicated group management service
- ✓ Support for multi-tenancy to allow authorised VO admins to manage the information about their users independently
- ✓ Easy connect to both EGI and non-EGI services

Examples: *Training and Long Tail of Science communities*



Supported technologies:
COmanage
Perun

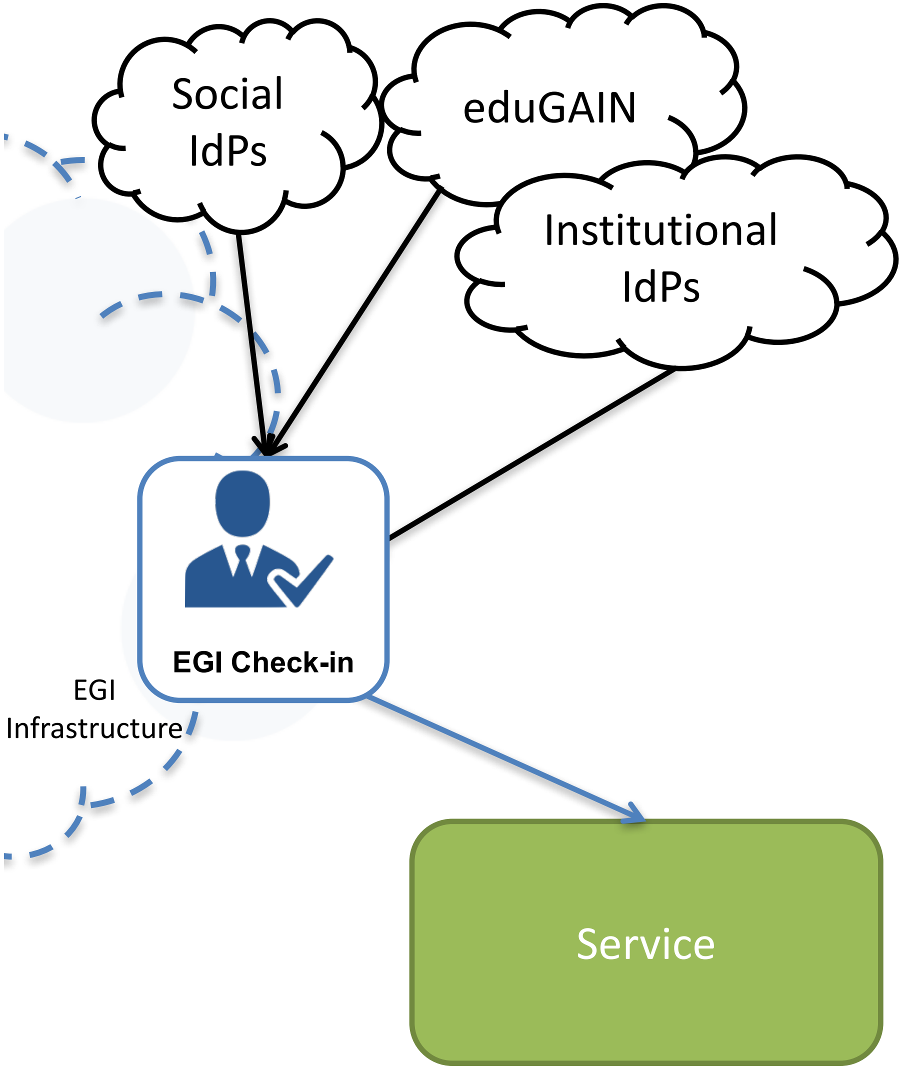
For service providers: AAI as a service

Check-in as an authentication proxy

- ✓ Enable login from institutional IdPs in eduGAIN and social media
- ✓ Minimal overhead for the service development
- ✓ All the other Check-in features are available for the SP: account linking, attribute aggregation, ..

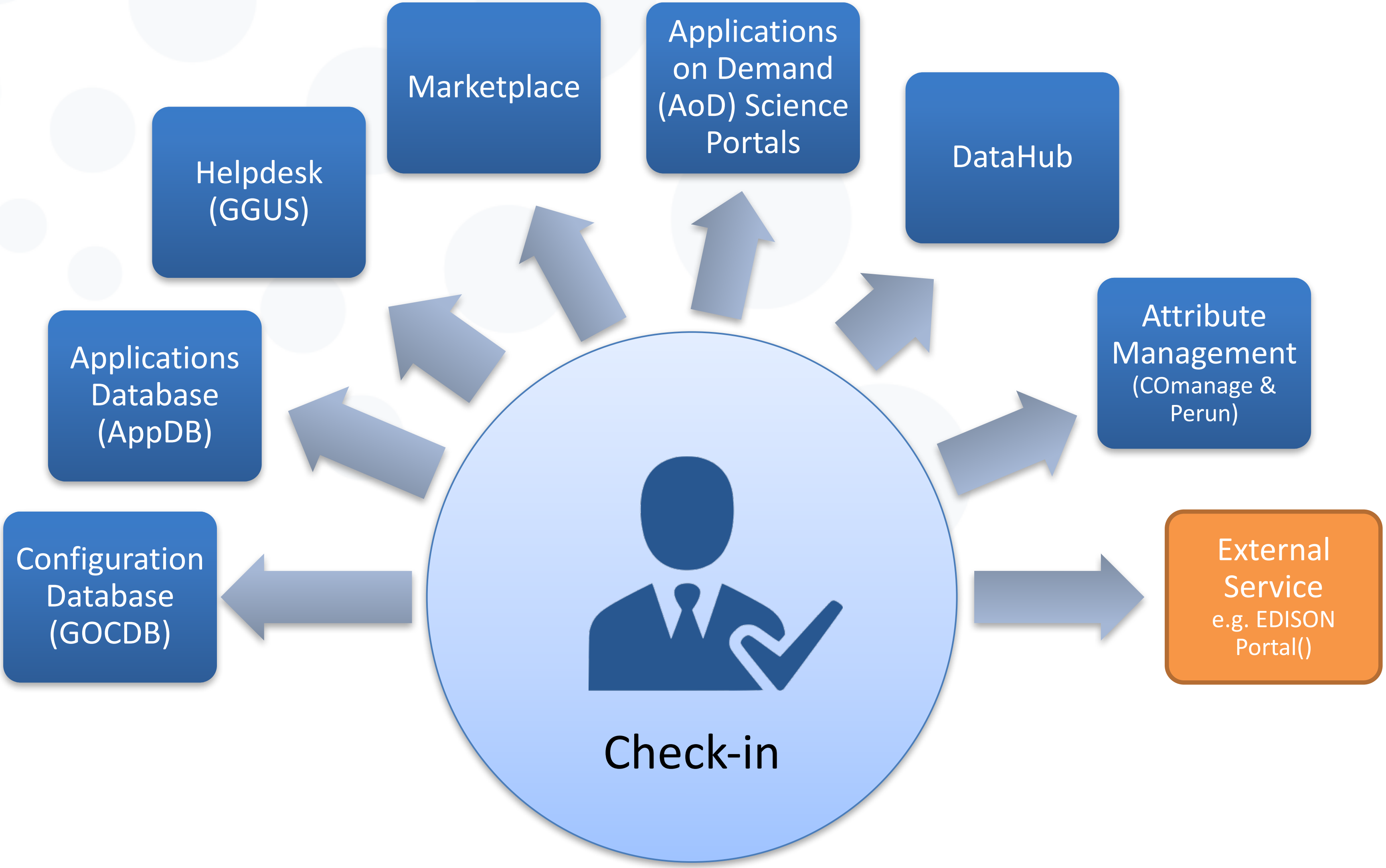
- Prerequisites:
  - ✓ Service provider must accept EGI policies on data protection

***Examples:** EDISON Community Portal*



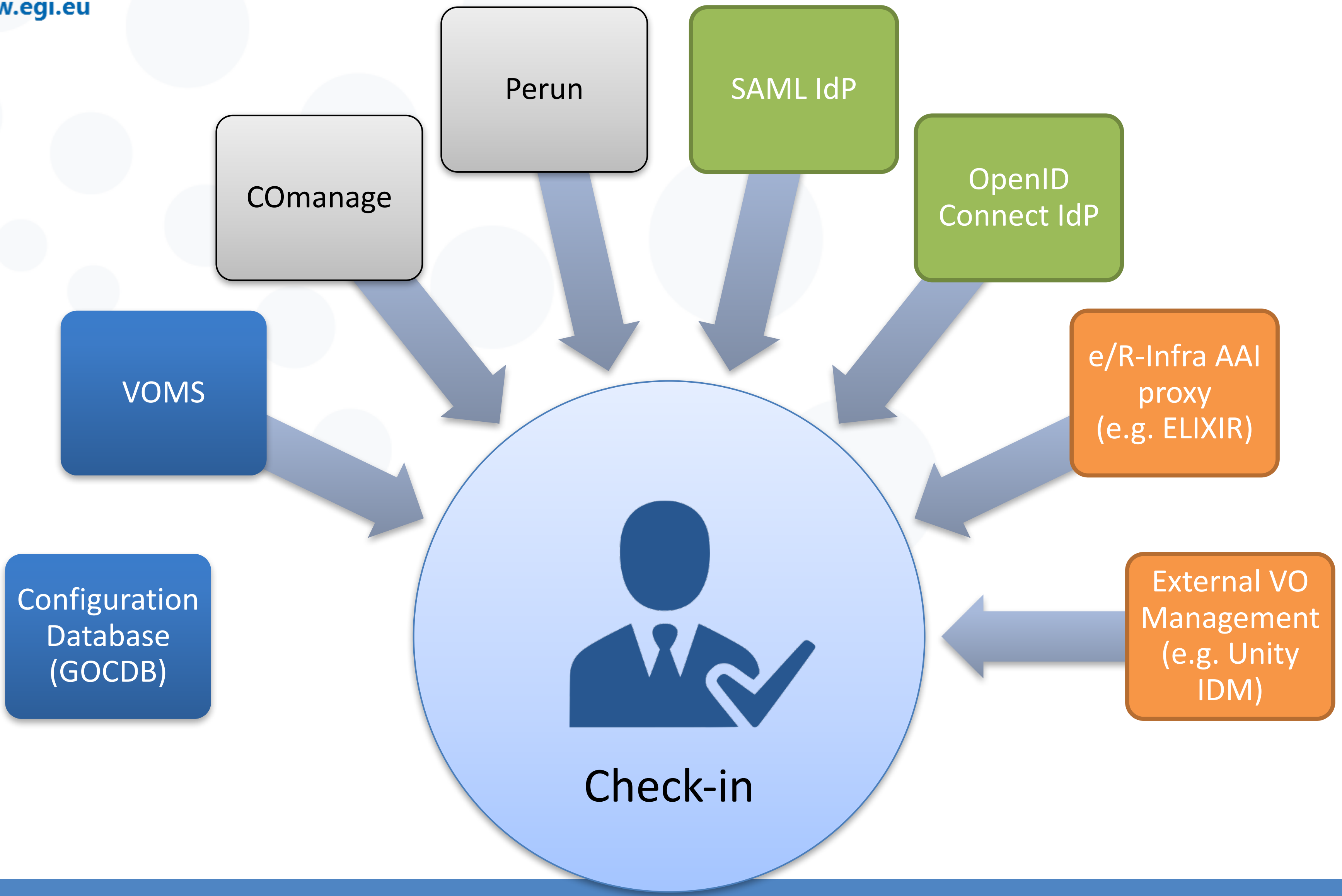
Check-in Status

Check-in enables access to several services



Marketplace
Applications on Demand (AoD) Science Portals
Helpdesk (GGUS)
DataHub
Applications Database (AppDB)
Attribute Management (COmanage & Perun)
Configuration Database (GOCDB)
External Service e.g. EDISON Portal()
Check-in

Check-in consumes information from many diverse sources


Perun
SAML IdP
COmanage
OpenID Connect IdP
VOMS
e/R-Infra AAI proxy (e.g. ELIXIR)
Configuration Database (GOCDB)
External VO Management (e.g. Unity IDM)
Check-in

Group membership and role information in Check-in

Use of URN-formatted entitlement values:

```
<namespace>:group:<group>[:<subgroup>*][:role=<role>]#<group-authority>
```

- <group> is the name of a VO, research collaboration or a top level arbitrary group; unique within a given <namespace>
- optional list of <subgroup> components represents the hierarchy of subgroups in the <group>
- optional <role> component indicates particular position of the user; scoped to the rightmost (sub)group
- <group-authority> indicates the authoritative source for the group membership and role information

Assurance information

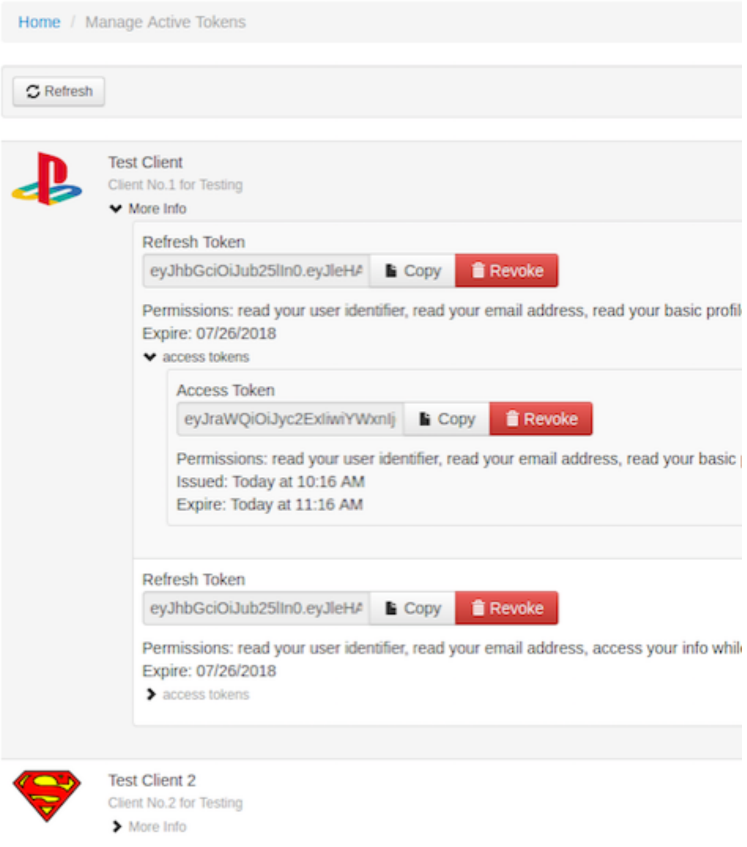
- Check-in conveys the assurance associated with the authenticated identity to SPs for authorisation purposes
  - Communicated through the eduPersonAssurance attribute in SAML or acr clain in OIDC
  - Translated into entitlements expressing the right of a user to access a particular resource (e.g. access Rcauth Onlince CA)

- Check-in will align with REFEDS/AARC Assurance Profiles:

Key features/ Profiles	*AARC-Assam*	IGTF-DOGWOOD	IGTF-BIRCH	AARC-Darjeeling
Unique ID		✓	✓	✓
Identity Vetting			✓	✓
Multi Factor				✓

Managing OpenID Connect/OAuth 2.0 tokens

- Provides users with an overview of all OpenID Connect/Oauth 2.0 services they have authorised to access their EGI account
- Allows users to see the specific permissions (e.g. read email, offline access, etc.) granted to each service
- Enables users to manage access/refresh tokens associated with each service:
  - Revoke access for individual tokens or service as a whole
  - Retrieve access/refresh tokens to be used for federated access to CLI tools/APIs



Test Client
Client No.1 for Testing
More Info

Refresh Token
eyJhbGciOiJub25lIn0.eyJleHA
Permissions: read your user identifier, read your email address, read your basic profil
Expire: 07/26/2018
access tokens

Access Token
eyJraWQiOiJyc2ExIiwiYWxnIj
Permissions: read your user identifier, read your email address, read your basic
Issued: Today at 10:16 AM
Expire: Today at 11:16 AM

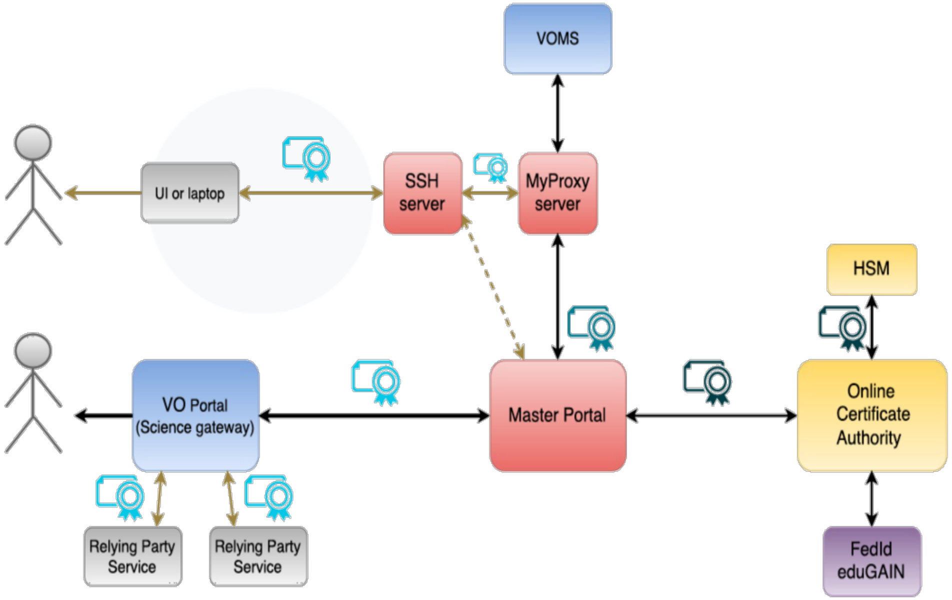
Refresh Token
eyJhbGciOiJub25lIn0.eyJleHA
Permissions: read your user identifier, read your email address, access your info whil
Expire: 07/26/2018
access tokens

Test Client 2
Client No.2 for Testing
More Info

Integration with RCauth.eu Online CA

- Check-in has been integrated with the production RCAuth.eu Online CA
  - Users can retrieve X.509 proxies by authenticating through Check-in

- Check-in Master Portal retrieves end-entity certificate from RCauth.eu
- Long-lived proxy certificate stored in backend MyProxy server
- Short-lived proxies provided via:
  - Science Gateways via OIDC (so-called VO-portals)
  - users e.g. via SSH key authentication



Next steps

Check-in next steps

- Align with AARC guidelines on expressing group membership and role information
- Align with REFEDS/AARC Assurance Profiles
- Complete integration with EUDAT AAI
- Complete integration with GÉANT AAI
- Support for (de-)provisioning and continuous update of user account information

Check-in in EOSC-hub

- Check-in will be one of the pillars of the AAI services for EOSC-hub
- EOSC-hub AAI platform will be interoperable with several RIs and thematic services:

CLARIN
ELIXIR
ENES
ICOS
LifeWhatch
ICOS

CMS
EISCAT
EPOS
ITER
LNEC
WeNMR

DARIAH
EIDA
GEOSS
IFREMER
LOFAR

Thank you for your attention.

Questions?

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