Karlsruhe Institute of Technology

2. HDF AAI Meeting -- Demo Slides

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Introduction

- HDF Proposal:
  - 6 Helmholtz Centres (AWI, DESY, DKFZ,FZJ, GSI, KIT), 10 M€/a
  - Focus on **hardware**, to “satisfy the additional resource needs of a wide spectrum of scientific domains covering the Helmholtz research fields Energy, Earth and Environment, Health, Key Technologies and Matter”...
  - ...“**data centres will be federated**”...
  - ...“the federation is open and **extensible for additional data centres from** Helmholtz, universities and other research institutions in **Germany**”...
  - ...“Links to European and international research data and supercomputing **infrastructures like EUDAT, EU-T0, WLCG, PRACE and NDS** will be established”...
  - ...“**enable** a better **cooperation** of scientists in Germany with their **international colleagues and ESFRIs**”...

Goals

1. Extensible Federated Authentication and Authorisation Infrastructure
2. Compatible with international initiatives
3. Resources mainly in Germany, but international users

- Derived / technical Goals:

1. Be in line with **european activities** focusing around the European Open Science Cloud **EOSC**
2. Enable the **participating centres to connect services** to federated infrastructure
   - Including non-web services
3. Enable **Principal Investigators / Virtual Organisations**
   => **allocate resources** on behalf of their group
   => **manage membership and authorisation** for their groups
4. Enable **global researchers** to use services provided by Centres
   (Given they are properly authorized and their identity is adequately understood)
5. Ensure that **federated users are well known**, based on **solid authentication**
   => Policies
6. Proof of Concept Demonstrator:
   - Example services
   - Deployment
7. Policies

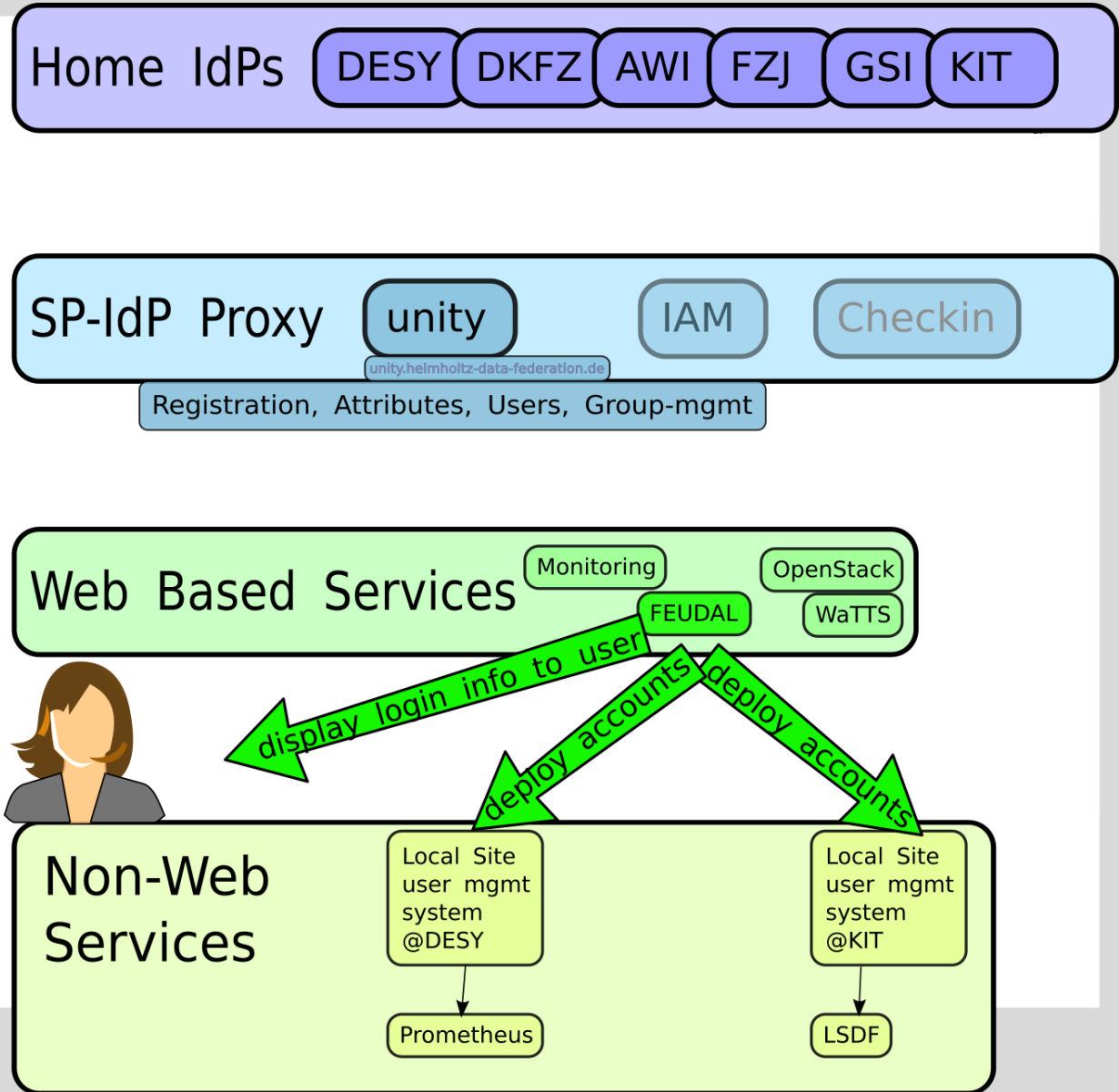
General Plan in HDF-AAI

- Unity is the SP-IdP-Proxy
  - http://unity.helmholtz-data-federation.de
- Use OIDC to integrate services
- Group based access control
  - Services filter access by group membership
- Delegated Group Management
  - E.g. Communities can self manage their membership
  - Centres can provide services for selected communities
- Delegated Authentication / Identity verification
  - **Services trust other centres to do their thing right**

Architecture

- Based on existing solutions
  - DFN-AAI Federation for IdPs (each HDF Partner already operates one)
  - Based on international developments: AARC Blueprint Architecture (BPA)
  - SP-IdP Proxy: Unity
- This allows
  - Users with home-account
  - Authenticate to
    - SAML services (Web-portals)
    - OpenID Connect services (Web, REST-APIs, Unicore-Grid)
    - X.509 services (EGI-Grid)
    - SSH (Interactive commandline)
  - All using Single Sign On (SSO)

Architecture model

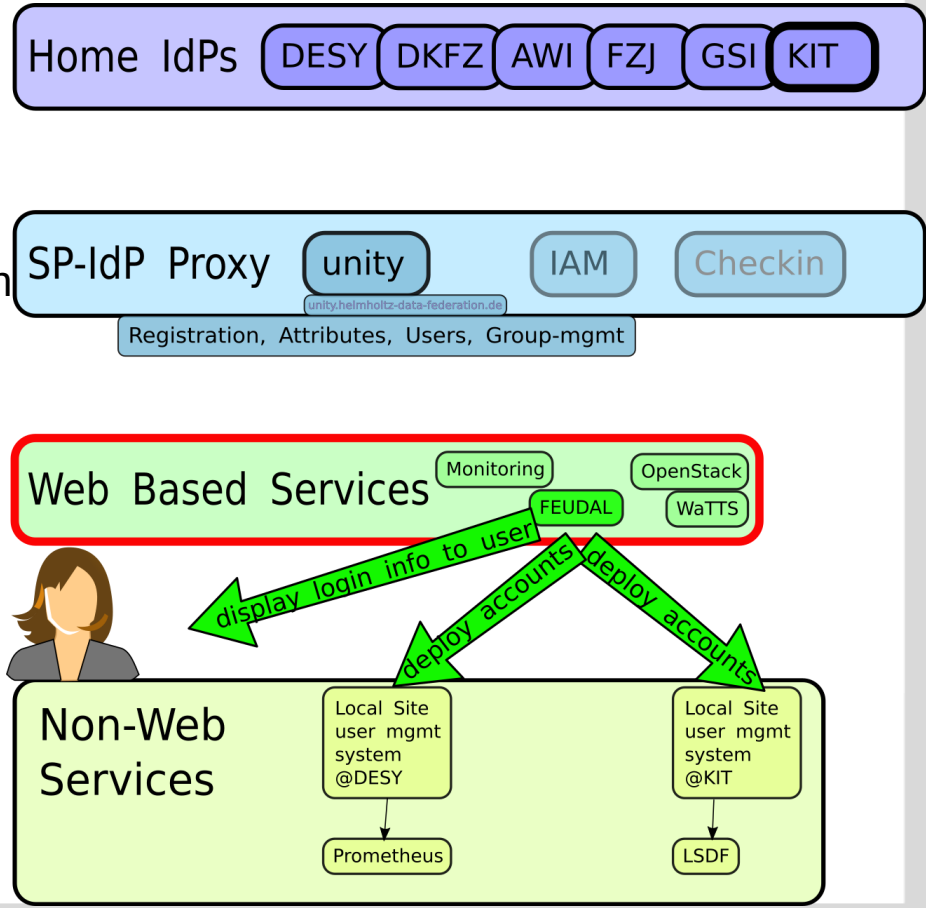


Demos

- Goals
  - Demonstrate current capabilities
  - Motivate additional services to make use of HDF AAI
- Demos
  - 1: Login for a known user
  - 2: Single sign on for additional services
  - 3: Access cmdline-based services
- Services that are available for demo:
  - Unity
  - Icinga Monitoring
  - WaTTS token translation
  - OpenStack
  - Via FEUDAL
    - LSDF Storage
    - dCache / Prometheus

Demo – Login

- Prerequisites
  - User has a home-account in DFN-AAI
  - User is already known to infrastructure
  - User is member of the “MyExampleCollab” Virtual Organisation
- User goes to a service of his choice



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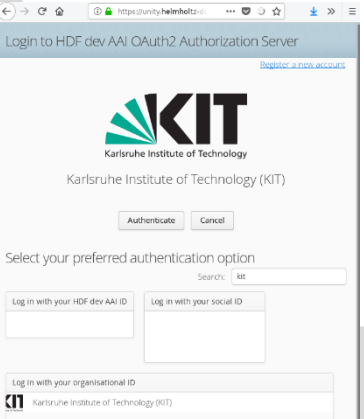
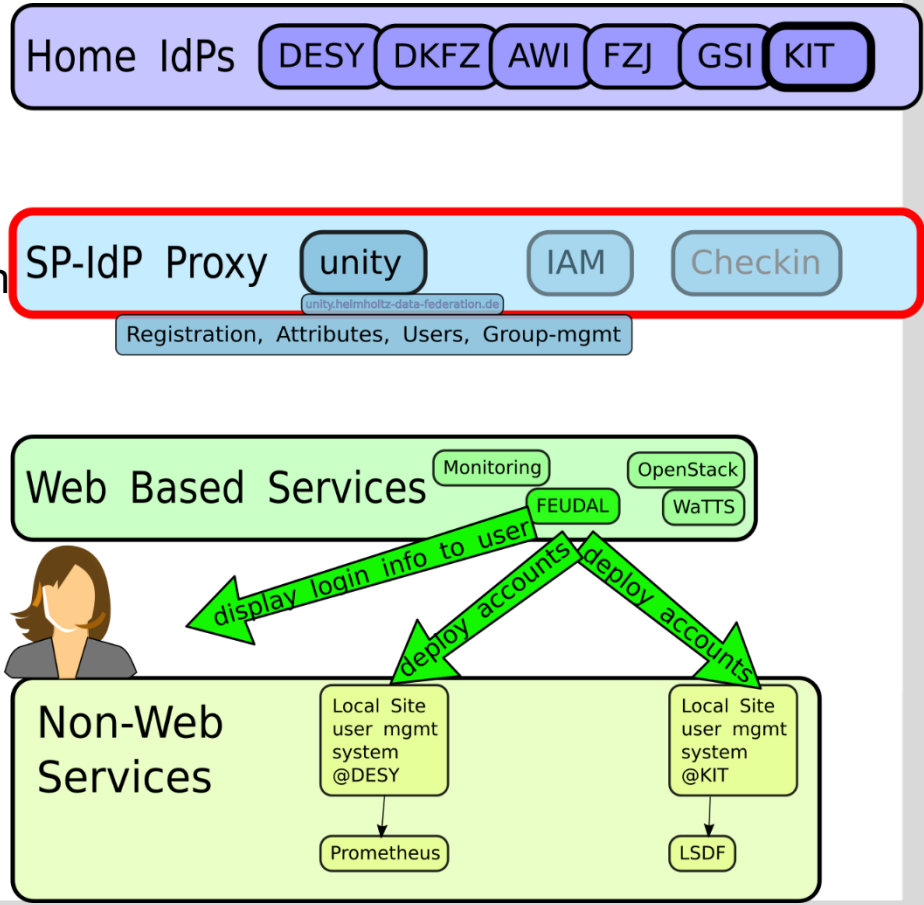
- Service redirects user to unity
  - Choose home-IdP





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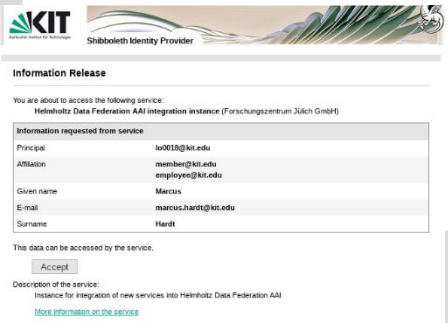
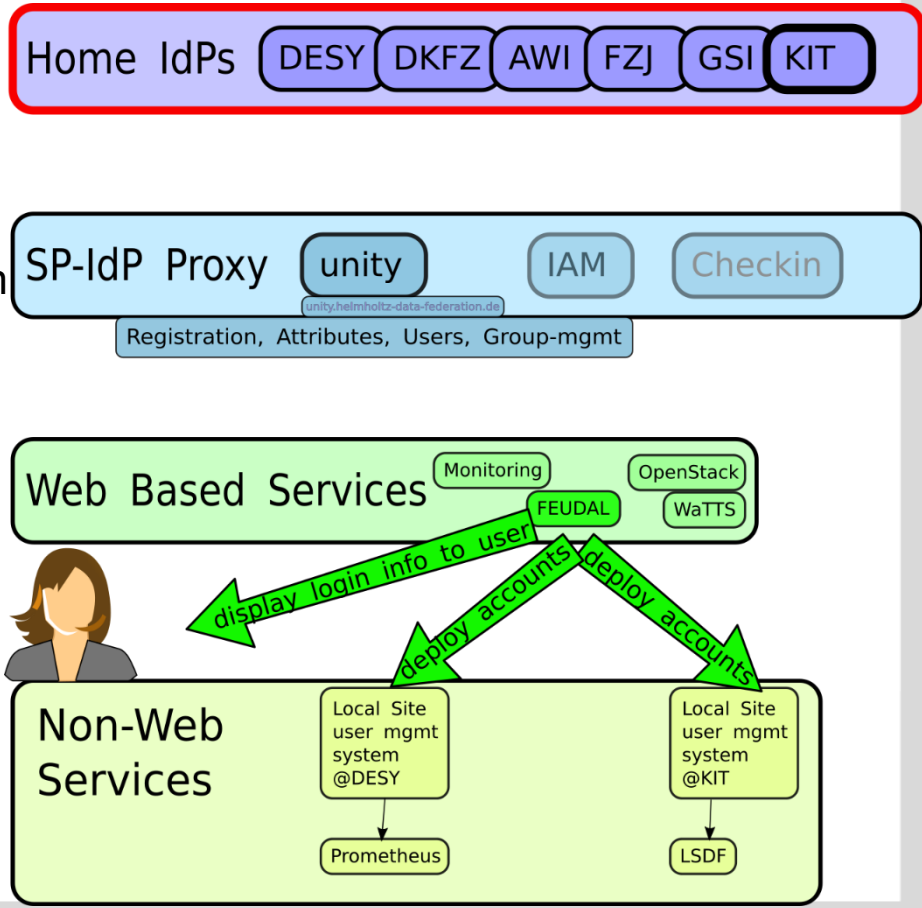
  - Choose home-IdP
- Unity redirects user to home-IdP





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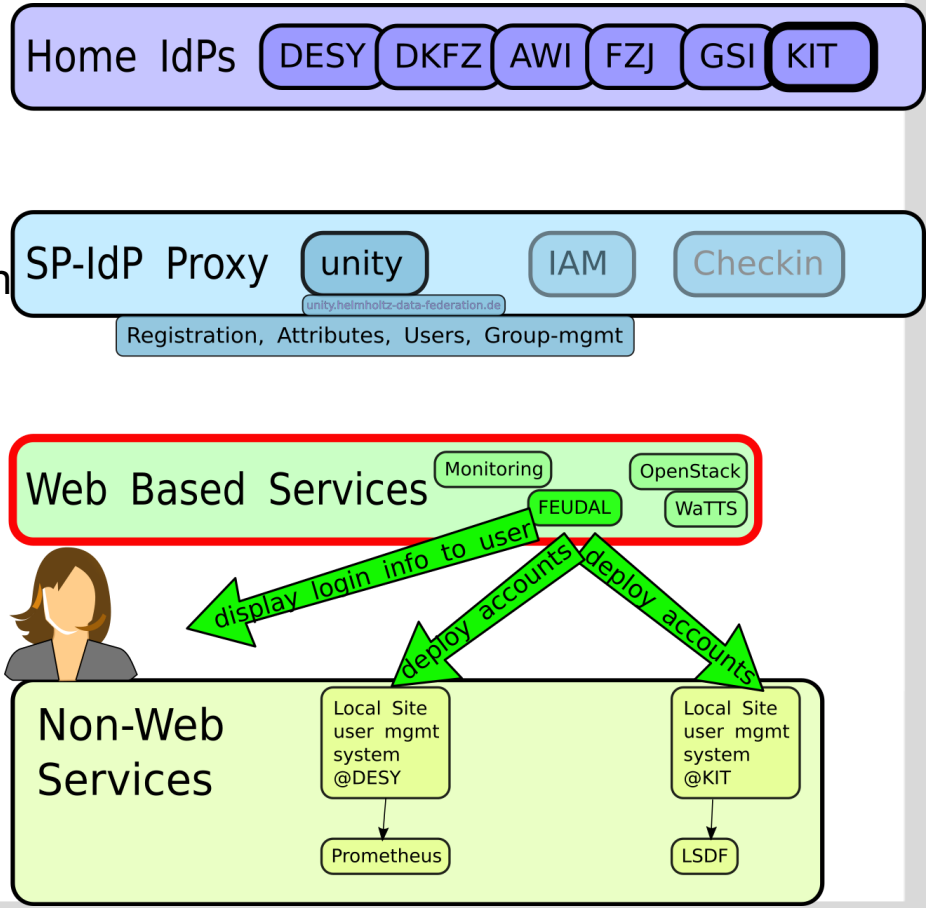
- User goes to a service of his choice
- Service redirects user to unity
  - Choose home-IdP
- Unity redirects user to home-IdP
- Double redirect
  - Home-IdP => unity => service

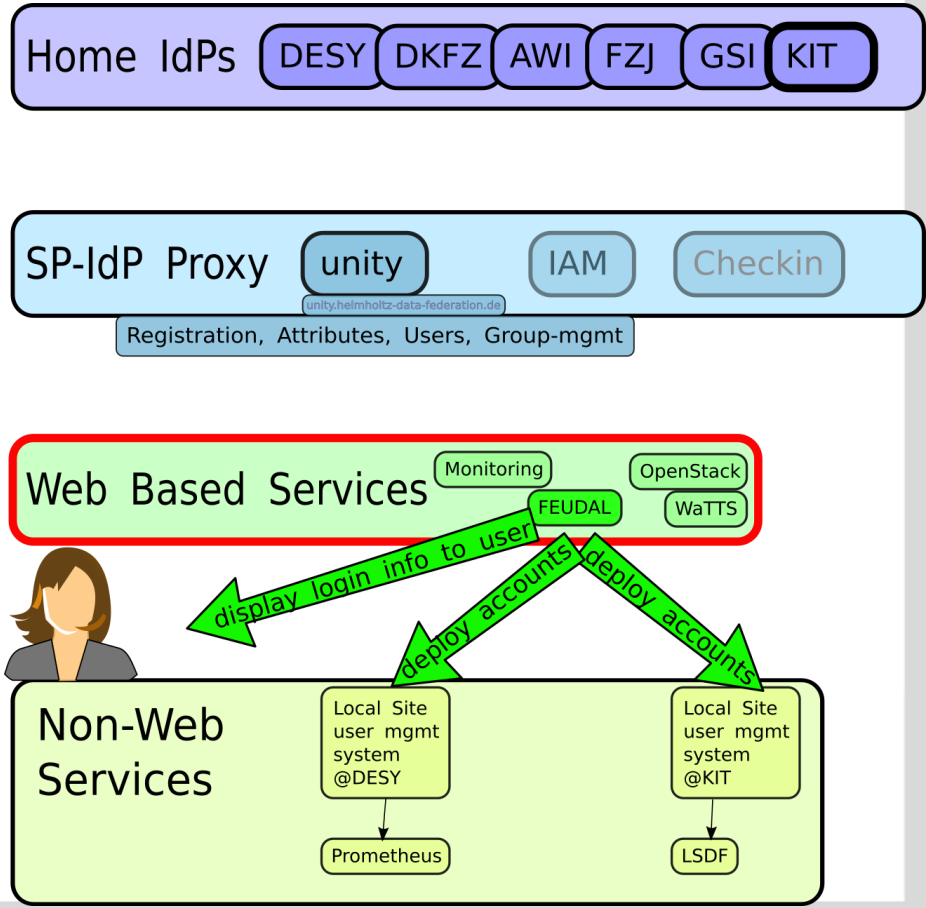
=> User can use the service



Demo Single Sign On (SSO)

Demo – SSO

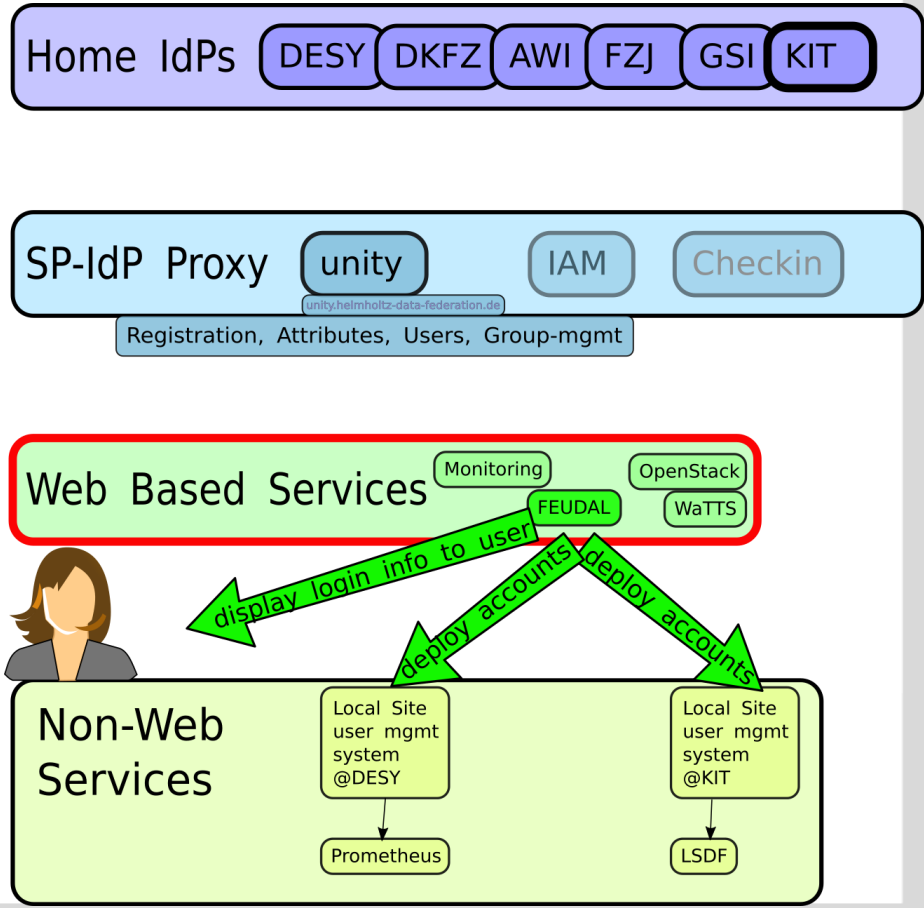
- Prerequesites
  - User was already logged in to another service (e.g. 10 min ago)
- User goes to another service of his choice
  - Redirects happen quickly, in the background, without the user noticing
  - Sessions live between 10min and 1h
- User is immediately logged in



Demo Commandline Based Services

Demo – Services that require deployment

- Some services require deployment of a user account prior to the user logging in
  - Examples: ssh, prometheus
- User visits the “FEUDAL” service



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- Some services require deployment of a user account prior to the user logging in
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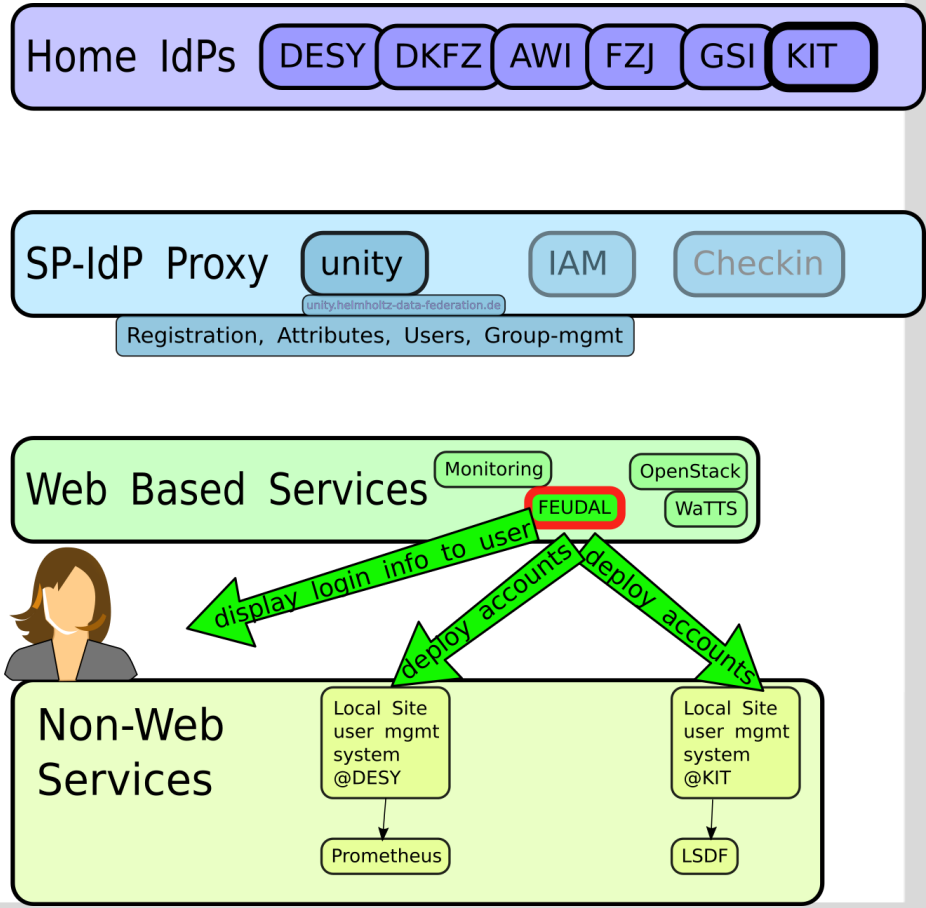
- User visits the “FEUDAL” service
  - Provides ssh-key as a credential
  - Chooses services (or VOs) to which he needs to be deployed



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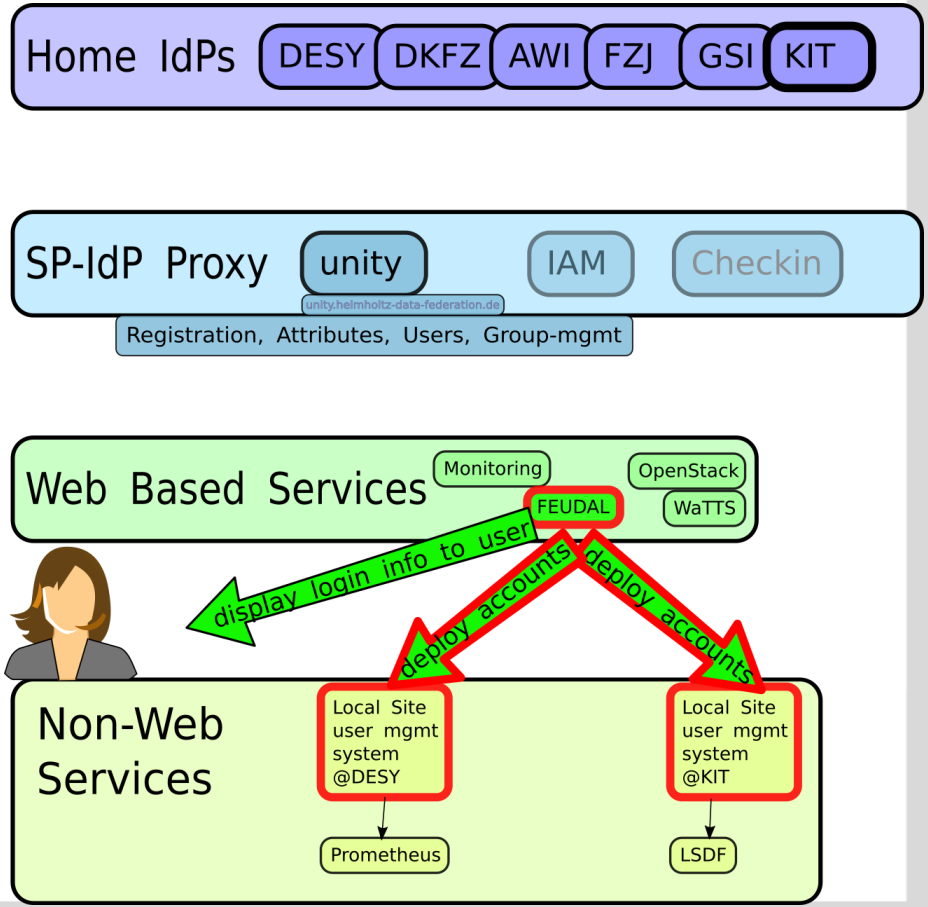
  - User account is deployed into site-local systems



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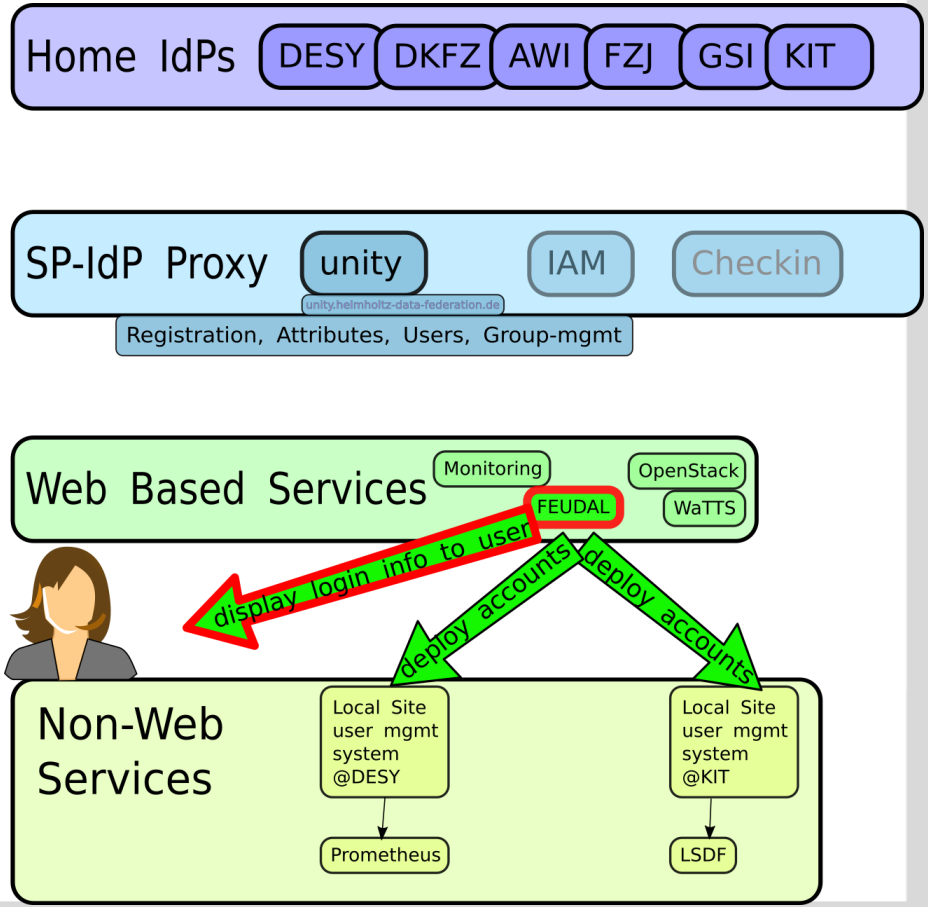

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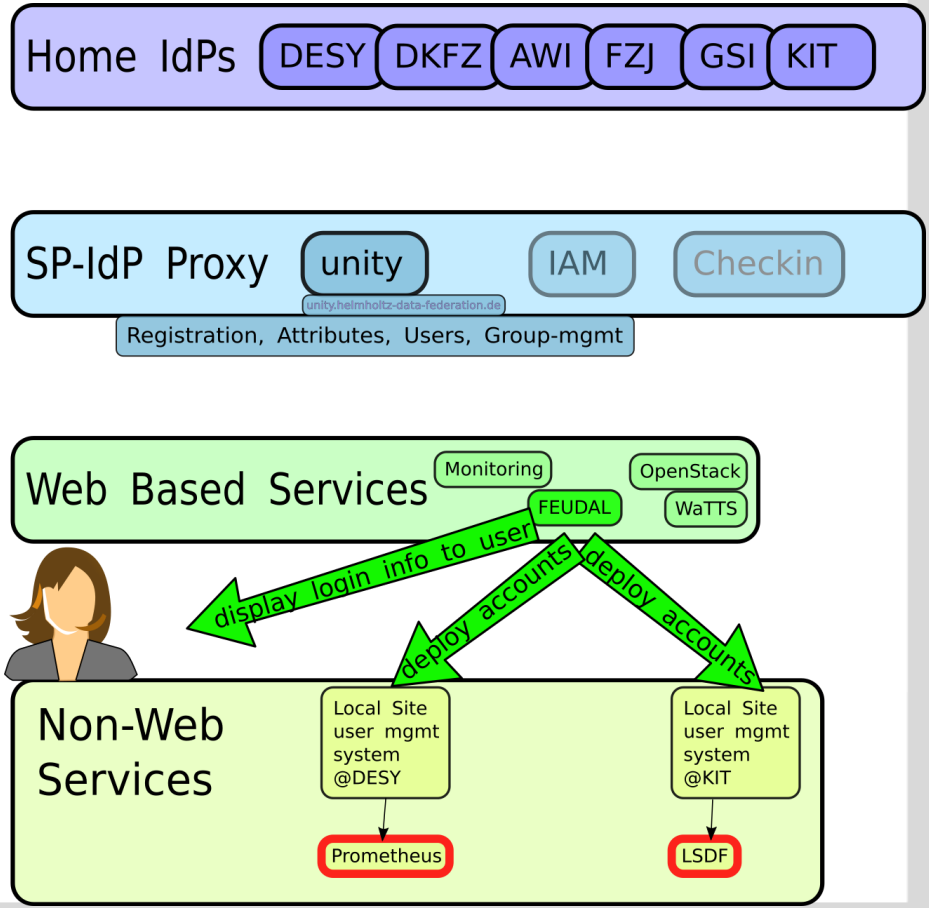
  - User can login straight into the end service



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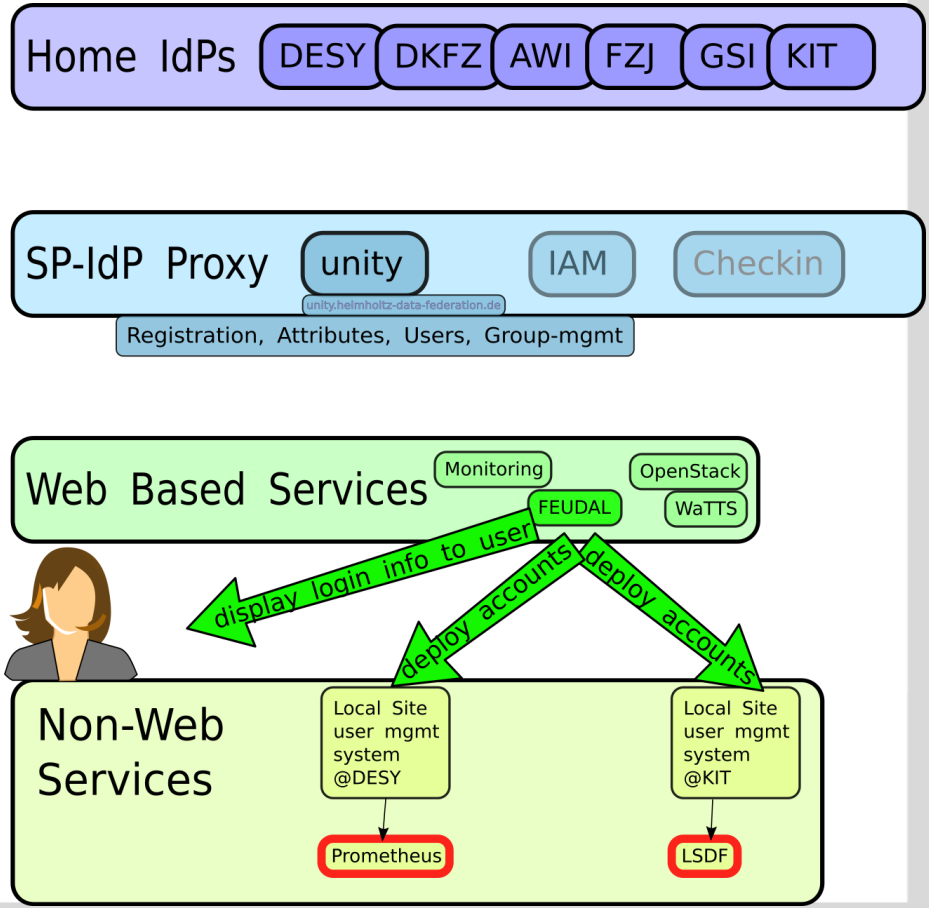
- Deprovisioning
  - Remove user credentials (e.g. security incident, ...)



Additional Demos

- OpenStack
- WaTTS

Wrap Up

- Single Sign On
- Web and non-web services
- Virtual Organisation / 3rd party group management: in progress
- A large range of services can be integrated
- Policy framework is in place

- Future work:
  - Support for AAI in REST APIs
  - Enhanced support for cmdline
  - Extend VO management capabilities