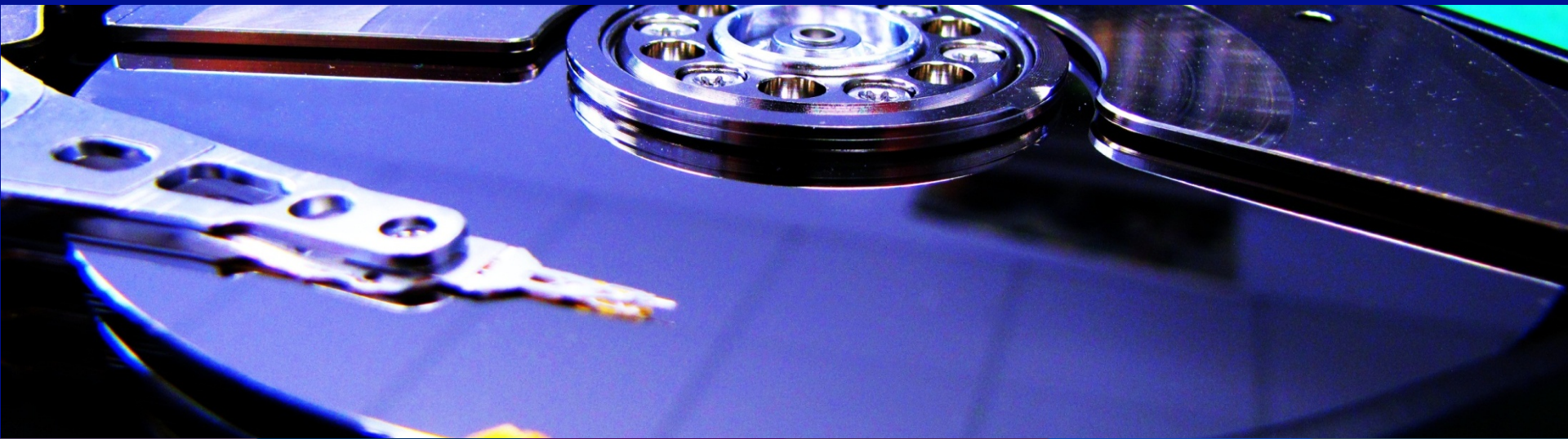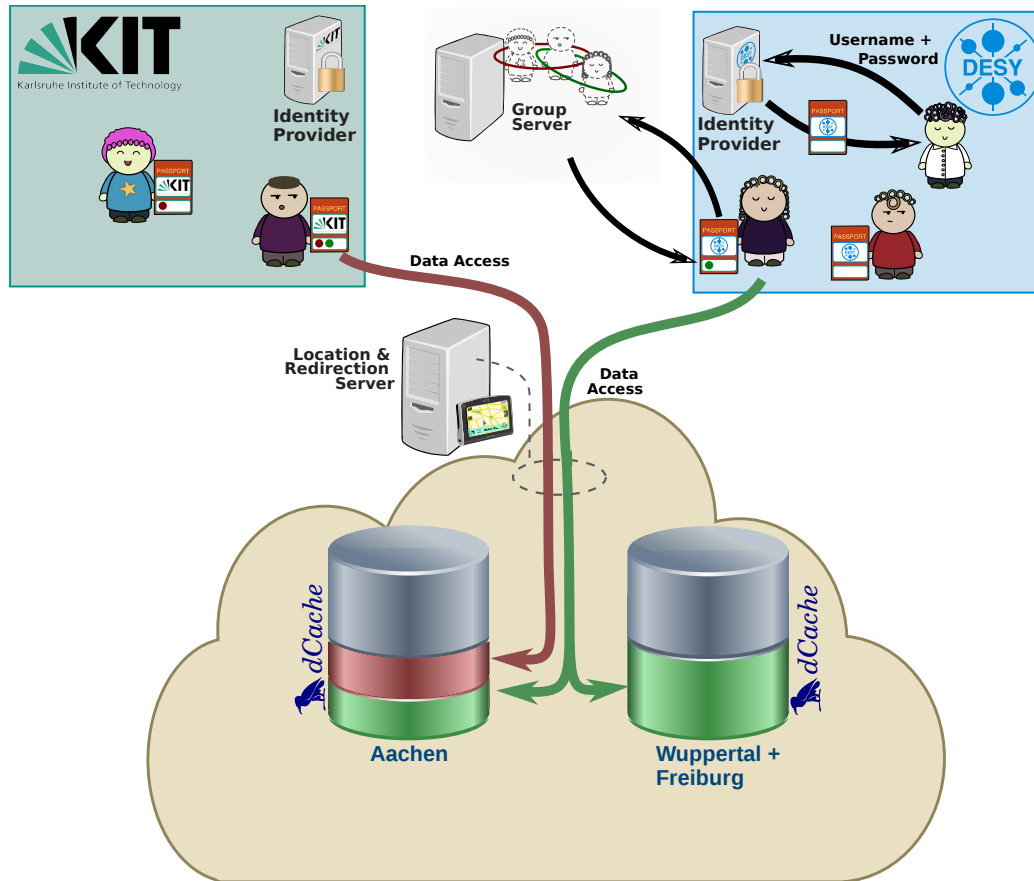# Data Services Integration Team

WP1 – Federated Identity
WP2 – Federated Storage

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LSDMA

WP1 and WP2: The vision

WP1: Federated Identity

WP1: second AAI workshop

- In collaboration with KIT, DESY organised the second AAI workshop (22-24 Jan) at DESY with contributions from:
    - AAI in Europe (David Kelsey)
    - AAI and legal issues (David Kelsey)
    - EduGain and Terena (Brook Schofield)
    - Humanities and AAI (Peter Gietz)

WP1: the IdPs

- KIT
  - Installed, configured the metadata handling.
- GSI
  - Idp.gsi.de installed. IdP is providing GSI identities in production.
  - A member of the DFN-test-AAI
  - Evaluating the framework contract with DFN GSI is evaluating the framework contract with DFN for the participation at the DFN-AAI in production.
- DESY
  - DESY allocated resources to install a Shibboleth or simpleSAMLPHP server to connect with the DFN test federation.

WP1: Group management

- Investigating underway into possible solutions to group management
  - Possibilities are Perun (http://perun.metacentrum.cz/web/) and UNITY.
- Jülich are keeping track and coordinating the progress of the UNITY software development. UNITY is the number one candidate for the envisioned LDSMA Group Management (Authorization) service.
- KIT will be supervising an intern from India (May-June 2014) who will work on a SAML plugin for UNITY for possible future integration of UNITY with LSDMA AAI.

WP1: services (KIT)

- Web portal
  - Installed and basic configuration
  - Started testing SAML Web SSO workflow with Shibboleth SP-protected simple web page, based on KIT test IdP.
- SLCS client
  - Investigated gridcertlib but abandoned since DFN doesn't support ECP. Now integrating DFN AAI support via the Portal Delegation feature of DFN SLCS.
- Command-line tool
  - Investigated using the ecp.pl script from CILogin; however this work has been suspended since DFN-AAI doesn't support ECP.

WP1: services (GSI)

- LSDMA wiki
  - LSDMA Web Pages moved from the general GSI wiki (wiki.gsi.de) to a separate instance under https://lsdma-wiki.gsi.de.
  - Service Provider implemented via libapache2_mod_auth_mellon.
  - Implementation of an Assertion-Consumer-Plugin for FOSWIKI.
- Communication with GSI communities:
  - CBM (Compressed Baryonic Matter) and PANDA (FAIR exp) are very interested in SAML technology. They need:
    - VO-central group-management;
    - VO-central IdP for homeless identities.
  - Internal presentations and awareness tutorials for SAML/DFN-AAI

WP1: community engagement

- Communication with GSI communities:
  - CBM (Compressed Baryonic Matter) and PANDA (FAIR exp) are very interested in SAML technology. They need:
    - VO-central group-management;
    - VO-central IdP for homeless identities.
  - Internal presentations and awareness tutorials for SAML/DFN-AAI

WP1: breaking news!

- EGI has a Federated Cloud initiative:
  - „The EGI Federated Cloud is a seamless grid of academic private clouds and virtualised resources, built around open standards and focusing on the requirements of the scientific community."
  - It has an Federated AAI work-package: investigate and coordinate Fed-AAI activity within EGI Federated Cloud.
- As of March, there is a new work-package lead: Paul Millar
- Already started:
  - Transition with previous incumbant, Björn Hagemeier.
  - In touch with key organisations and technology providers, such as Open Stack, IGTF, CERN, …
- Gives LSDMA a platform to ensure that our effort isn't in isolation and will integrate well with the rest of Europe, and beyond.

WP1: future work (GSI)

- DFN-AAI
  - Provinding the German "Datenschutzerklaerung" on the Web
  - Integration of the GSI internal Identity Management processes
- IdP
  - Migrating SimpleSamlPhp to Shibboleth to for ECP-Support
  - HA-for active/passive IdP-Cluster
  - Integration of IdP-Webpages in Corporate Design
  - Integration of GSI newly introduced smart card based Two-Factor-Credentials
- Service Provider: lsdma-wiki
  - Implementation of a web-based Self Service Process to map existing WikiUsers to DFN-AAI-Identities.

WP1: future work (KIT)

- Complete implementation of the portal-based SLCS client and to test it with DFN SLCS CA.

- Test the proxy generation with my test VOMS server.

- Start working with DESY on testing GridFTP transfer via Globus Online using OAuth and credential translation service.

WP1: future work (DESY)

- Setting up a proper IdP

- Helping evaluate group server when ready

- Enabling DESY storage (e.g., dCache) to be accessed via fed. IdP.

- Setup systems to allow KIT test Globus Online MyProxy-OAuth for authenticating via LSDMA-AAI
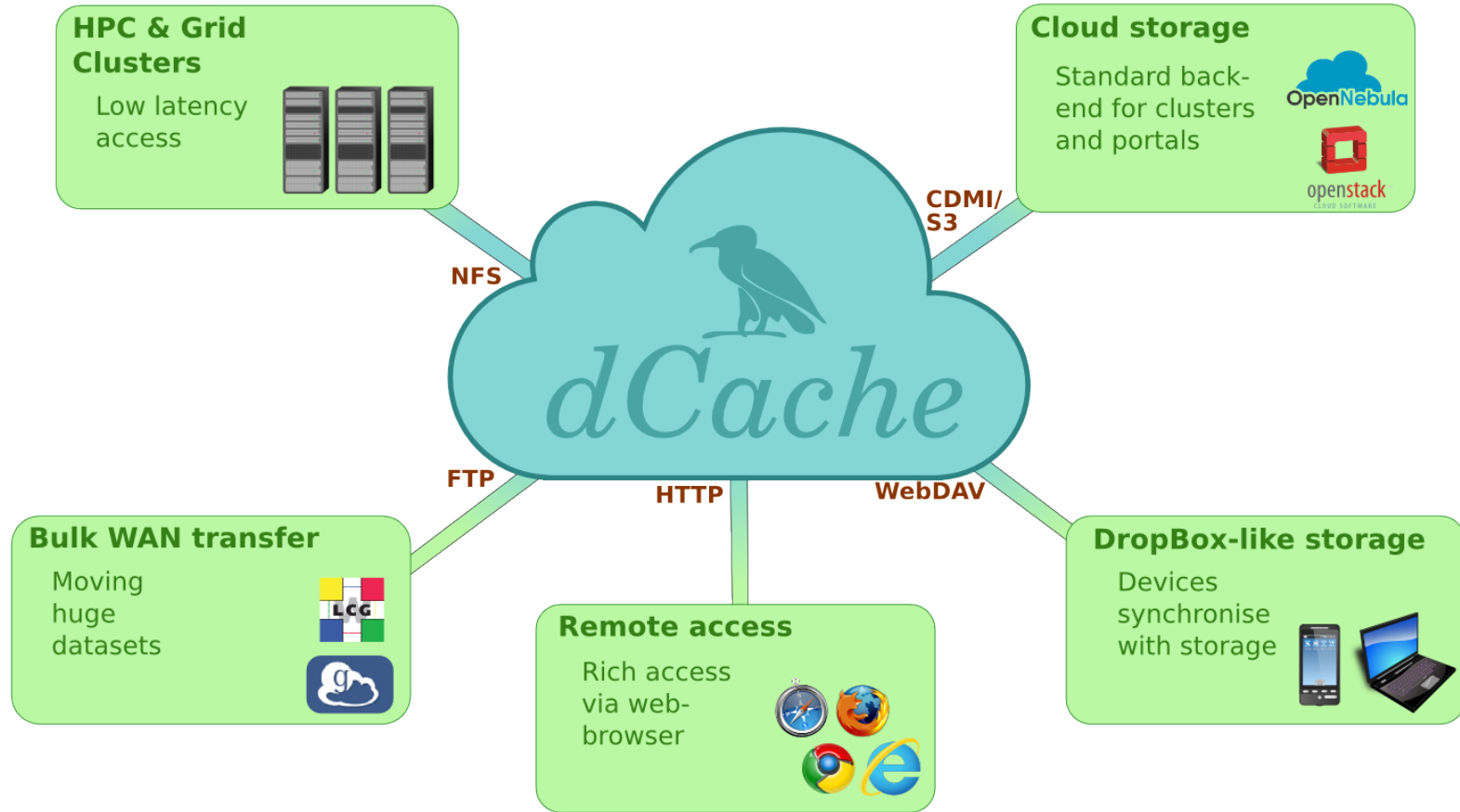
WP2: Federated Storage

WP2: Data Transfer Tools

- Finalised documentation on how to use GridFTP and GlobusOnline at KIT.

- Successfully transferred data between KIT's LSDF (Large Scale Data Facility) and external storage systems.

- Currently KIT are focusing high performance transfers using GlobusOnline between LSDF and LRZ Munich.

- dCache is adding support for more GridFTP commands to support new features that GlobusOnline is offering.

- Recently sites reported issues between dCache and GlobusOnline. dCache is investigating and will fix those (highest priority).

WP2: cloud management

HPC & Grid Clusters
Low latency access

Cloud storage
Standard back-end for clusters and portals

OpenNebula

openstack
CLOUD SOFTWARE

CDMI/S3

NFS

dCache

FTP

HTTP

WebDAV

Bulk WAN transfer
Moving huge datasets

LCG

Remote access
Rich access via web-browser

DropBox-like storage
Devices synchronise with storage

WP2: Cloud data management

- In cooperation with HTW Berlin, dCache is implementing the CDMI protocol to support cloud access (e.g. OpenStack). Currently we are focusing on the CDMI transfer features. Metadata operations will be done afterwards.

- CDMI in dCache is the prerequisite for the UNICORE people to work on their CDMI client; Jülich waiting on this support.

- DESY has been setting up a dCache cloud server, supporting WebDAV for now. As soon as CDMI is ready, it will be offered on that evaluation server.

- A while ago, dCache.org became member of the EGI-FedCloud initiative and will significantly contribute to their European Federated Cloud Storage (order 100Tbytes) provided through CDMI, GridFTP and http/WebDAV.

- dCache is evaluating running OwnCloud cloud software on top of dCache. This combines the advantages of OwnCloud (sharing, and syncing) with the data management features of dCache (Unlimited space, data migration between different storage media, SSD, disk, Tape, -> Managed data)

WP2: Database access from UNICORE

Jülich: A master student started the work on this thesis on the topic of "Database access in UNICORE". Initial work on collecting requirements, and investigating relevant technologies such as JDBC or Spring Data has been performed. As example databases, MySQL and Apache Cassandra (as a NoSQL database) will be considered. The thesis is expected to be finished in August 2014.

WP2: federated NFS access

- Initial investigation suggests that this is feasible with limitations:
  - Single location per directory (AFS-style) for example:

    `/data/`**`example-1.org`**`/path/to/data`

    `/data/`**`example-2.edu`**`/another/location/for/data`
  - Non-overlapping

    Single storage system per directory
- Activity is currently blocked on WP1 providing a non-web-based federated AAI solution

WP2: Federated data access via HTTP/WebDAV

- Mostly done by CERN (Fabrizio Furano)
- DESY provides a
    - Federation server (Documentation at federation.desy.de)
    - Evaluation dCache endpoint.
    - Integrated the http/WebDAV client (DAVIX) into the ROOT framework.
- The technology can go into production soon. All planned features are available.
- WLCG experiments are keen to investigate this solution.
- Now we have to integrate the German WLCG sites.

Thanks for listening!

Questions?

Paul Millar – DSIT WP 1 & 2. LSDMA AHM