EUDAT AND SECURITY

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Attribution: EUDAT – www.eudat.eu
Roles and Responsibilities

- Part-time EUDAT Security Officer
  - Deputy Security Officer: Ralph Niederberger from Jülich
  - Risk management
  - Security development
  - Incident handling, CSIRT
  - Liaison with sites and peer infrastructures
- Head of Security at CSC - IT Center for Science Ltd.
  - CSC is also partner of GÉANT, PRACE and EGI
  - Similar responsibilities as above
  - In charge of ISO 27001 etc. compliance
    - Achieved certification 2013
- GnuPg key: 0x5ABD602C (available on key servers)
  - I’m happy to sign the key of all WISE people if you show me your ID
- Also happy to link in with you, I’m the only Urpo Kaila at LinkedIn ;)
- Located (mostly) in Espoo and Helsinki, Finland
- Interests: Best practices in information security, security and usability, privacy, security management and leadership
CSC offers IT support and resources for research, education, culture and administration.

CSC provides Finland’s widest selection of scientific software and databases and Finland’s most powerful supercomputing environment that researchers can use via the Funet network.

CSC - IT Center for Science Ltd. is a state-owned, non-profit company administered by the Ministry of Education and Culture.

www.csc.fi
CSC – a reliable partner

- CSC complies to requirements and best practices on information security
  - national requirements (Raised Information Security Level)
  - audited several times
  - international standards
    - ISO/IEC 27001:2013 certificate
    - covers all CSC's ICT platforms, datacenters and long-term preservation
    - to be enlarged to cover new services
- The certification ensures that CSC has the ability to manage, lead and continuously improve the information security of its services
- Peering also on security with national and international partners
- In case of security incidents or other security matters: security@csc.fi
EUDAT - A truly pan-European Infrastructure

EUDAT offers common data services, supporting multiple research communities as well as individuals, through a geographically distributed, resilient network of 35 European organisations.

Our vision is to enable European researchers and practitioners from any research discipline to preserve, find, access, and process data in a trusted environment, as part of a Collaborative Data Infrastructure.
EUDAT services are designed, built and implemented based on user community requirements.
EUDAT B2 SERVICE SUITE

- EUDAT offers a **complete set of research data services, expertise and technology solutions** to all European scientists and researchers.

- These **shared services and storage resources** are **distributed across 15 European countries**.

- Data are safely stored alongside some of Europe’s most powerful supercomputers.
B2 SERVICE SUITE

B2DROP
Sync and Exchange Research Data

B2SHARE
Store and Share Research Data

B2SAFE
Replicate Research Data Safely

B2STAGE
Get Data to Computation

B2FIND
Find Research Data

http://www.eudat.eu/services
a pan-European initiative building a sustainable cross-disciplinary and cross-national data infrastructure providing a set of shared services for accessing and preserving research data

supporting multiple research communities by working closely with them to deliver these technical services as part of the EUDAT Collaborative Data Infrastructure (CDI)
B2DROP
EUDAT’s Personal Cloud Storage Service

B2DROP is a **secure and trusted** data exchange service for researchers and scientists to keep their research data **synchronized** and up-to-date and to exchange with others.
An ideal solution for researchers and scientists to:

- **Store and exchange** data with colleagues and team members, including research data not finalized for publishing
- **share data** with fine-grained access controls
- **synchronize multiple versions** of data across different devices

**Features:**

- 20GB storage per user
- Living objects, so no PIDs
- Versioning and offline use
- Desktop synchronisation
Where is B2DROP in the B2 Service suite?

B2DROP lets you transfer data stored on B2DROP to other B2 services.
What can users do?

Users can

- have access to 20GB of storage space for research data
- access and manage files from any device and any location
- define with whom to exchange data, for how long and how
Mount your folder - Linux

You can mount B2DROP with NAUTILUS:
1. Select "Go to File → Connect to server"
2. Type in: 
davs://b2drop.eudat.eu/remote.php/webdav
3. Login with your username (e-mail address) and password.

Mounting via davfs is also possible, but it requires sudo access.

```
sudo apt-get install davfs2
mkdir oc
sudo mount.davfs https://b2drop.eudat.eu/remote.php/webdav/ oc
```

Login with your username (e-mail address) and password
To unmount use the following command:

```
sudo umount.davfs oc
```

The instructions above have been tested on Ubuntu but they should work for every Linux distribution supporting the NAUTILUS or GNOME file system.
How & Where are my data stored

- B2DROP is hosted at the Jülich Supercomputing Centre
- Daily backups of all files in B2DROP are taken and kept on tape.
- Underlying technology is ownCloud 7
B2SHARE

B2SHARE is a user-friendly, reliable and trustworthy way for researchers, scientific communities and scientists to store and share small-scale research data from diverse contexts.
A winning solution for researchers, scientists and communities to:

- **store data safely** at a trusted and certified data centre
- **preserve data** to guarantee long-term persistence
- **control access** and **share data** with colleagues and the world

**Features:**
- metadata management
- permanent PIDs
- Open Access support

b2share.eudat.eu
B2SAFE

B2SAFE is a robust, safe and highly available service which allows community and departmental repositories to implement data management policies on research data across multiple administrative domains in a trustworthy manner.
The ideal solution for communities with no facility for archival to:

- **replicate research data** into secure data stores
- **archive and preserve** research data in the long-term
- bring data close to **powerful compute resources**
- **co-locate** data with different communities
- benefit from **economies of scale**

**Features:**

- large-scale storage
- robust and highly available
- permanent PIDs
B2STAGE

B2STAGE is a **reliable, efficient, light-weight and easy-to-use** service to **transfer research data sets** between EUDAT storage resources and high-performance computing (HPC) workspaces.
Facilitating communities to:

- move large amounts of data between data stores and high-performance compute resources
- re-ingest computational results back into EUDAT
- deposit large data sets onto EUDAT resources for long-term preservation

Features:

- high-speed transfer
- reliable and light-weight
- manages permanent PIDs
B2FIND

B2FIND is a simple, user-friendly metadata catalogue of research data collections stored in EUDAT data centres and other repositories.
A metadata catalogue service to:

- **seek data objects and collections** using powerful metadata searches
- **catalogue community data** by means of selected **metadata**
- **browse through multi-disciplinary data collections** **filtered** by content, provenance and temporal keywords

**Features:**
- simple to use
- standards-based
- comprehensive catalogue
Building blocks of EUDAT security

- Identifying assets to be protected
  - The services and the infrastructure
  - The reputation of the project, sites and the community – and the researcher
- A security policy/ security plan
- Risk assessments
- Security controls according to best practices
- Security guidelines (with pointers to EGI guidelines)
  - Incident handling
  - Vulnerability management
- A CSIRT team
Persistent XSS

The system has a persistent XSS vulnerability. The attacker can run code on the victim browser.

Affects: Group name

• Create a new group with name:`<script>alert(1)</script>Pen test`

The code will also run on the computer of the victim

Insecure cipher suites enabled

The service supports insecure cipher suites in HTTPS interfaces. For example, service supports RC4,
EUDAT Security items per 10/2015

- Defined security policy, security roles and core security guidelines
  - Security officer, deputy security officer roles
  - CSIRT team
  - Incident handling procedure

- Proactive security vulnerability scans for services and infrastructure
  - Port scans & application vulnerability scans
    - Included hosts b2share, eudat-aai, etc
    - Critical vulnerabilities found and fixed

- Warnings on vulnerabilities for sites

- B2ACCESS/Unity first security assessment

- Preparing joint IT security workshop/training with other infrastructures for site security officers
  - PRACE, GÉANT, EGI et al.
EUDAT sites and user communities can differ vastly in
  - Security requirements
  - Security culture
  - Security maturity
  - Preferences on how to balance between security and usability
  - Technical and service related maturity

Cultural differences also affect the way security is managed
- Technology and type of organisations affect too

But, we have also many very common denominators
- The researchers/research groups have a growing need for truly resilient IT services
- IT technologies adapted
- Risks
- Security controls
- International well known best security practices

Identifying the EUDAT security landscape
It is very important for us to constantly share information and skills on
- Risks and related controls (technical & operational)
- Incidents and vulnerabilities
- Best practices

There is a lot of noise and disinformation about InfoSec
- Due issues in communication and sometimes also due economical and/or political motives
- Be always critical when listening to ‘security experts’
- CSIRTS and cyber authorities can sometimes have an agenda of their own

Management commitment to security can be difficult but it is always crucial

No current compliance framework is (yet) optimal for RI’s
A wish list for next steps in collaboration on security

- An update of the SCI framework
- Joint (technical and operational) security training which truly meet the needs of different sites and infrastructures
  - For security officers
  - For site security officers
  - For admins and service managers
- Compete for funding and with services - cooperate on security
- Joint coordination and development of
  - CSIRT activities
  - Peer reviews of site/RI security
  - A site visit program
Thank you very much for your attention!

All comments appreciated, either now (if we have time) or later on, during this workshop, per email (urpo.kaila@csc.fi) or by site visits.

www.eudat.eu