



# Research data solutions

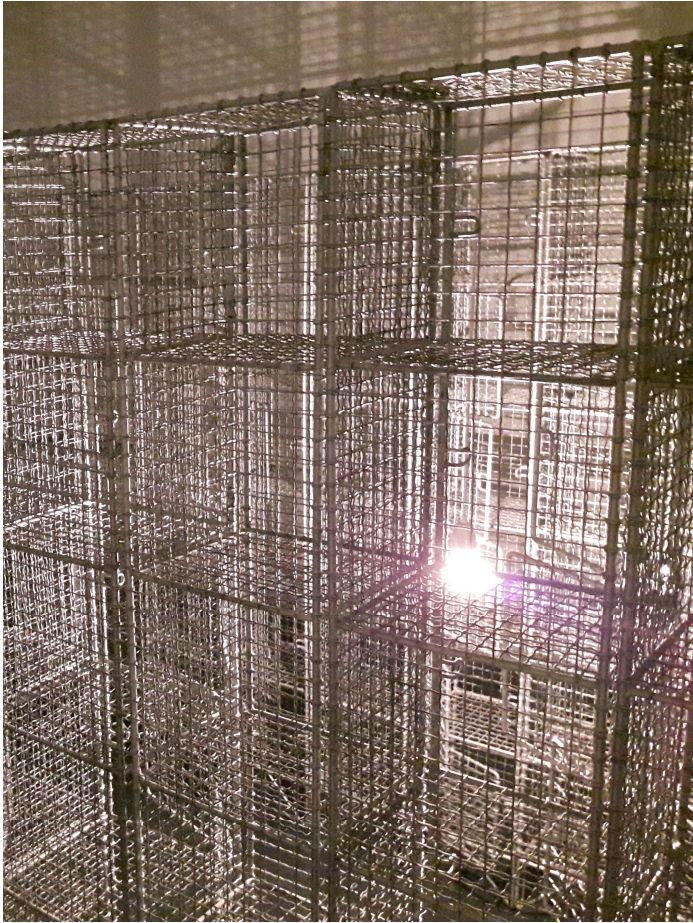
---

DATASUPPORT@HELSINKI.FI









# Storing your data

---

Checklist for ordering storage solutions:

- How much storage space is needed (in GB, TB or PB)?
- What type of data is stored and is it sensitive?
- Is the data stored for analysis and with what software?
- Is remote access to the data necessary?
- Who needs access to the data and is sharing it outside UH necessary?
- What is the available budget?

	Home Folder (Z-drive)	Group Folder (P-drive)
Capacity	50 GB (soon 100 GB)	10 GB - 10 TB
Operating System	Win, Mac, Linux (UH-Linux also has a separate network home directory)	Win, Mac, Linux
Access	Personal use (UH-account)	IAM-group (UH-accounts)
Backups	Hourly	Hourly
Physical location	UH premises	UH premises
How to obtain	All users have one by default.	UH employees can order by self-service. Access is controlled with IAM –groups.

# Home and Group folders



# Data storage for research groups

---

## **Dept (department group directory)**

- For large group storage needs, when regular group folder is inadequate
- Can be purchased on demand by research groups

## **CSC IDA**

- Up to 100 TB of space
- For stable data sets
- Free of charge, user must apply for space

## **Datacloud (UH object storage)**

- For research groups
- Nextcloud, a web browser based GUI
- Ceph cluster with S3 interface
- Possible to share data outside UH
- Very large capacity possible (Petabytes)
- Snapshots but no backup



# Cloud and collaboration

## Cloud storage

- OneDrive for Business
- HY EUDAT B2DROP (piloting phase)

## Version control

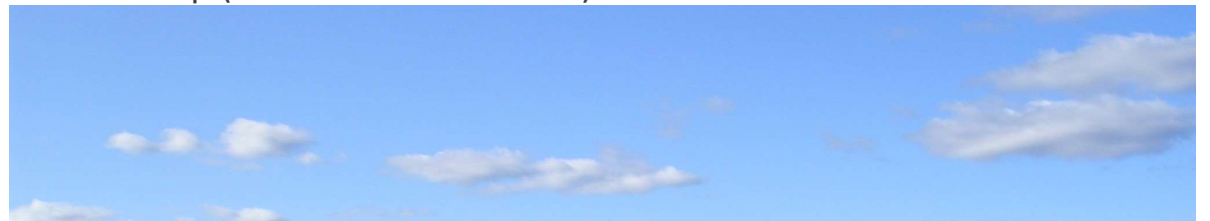
- Version.helsinki.fi – Gitlab

## Collaboration

- Microsoft Teams
- eDuuni
- Redcap

## Survey / Data gathering tool

- Redcap (for sensitive data also)





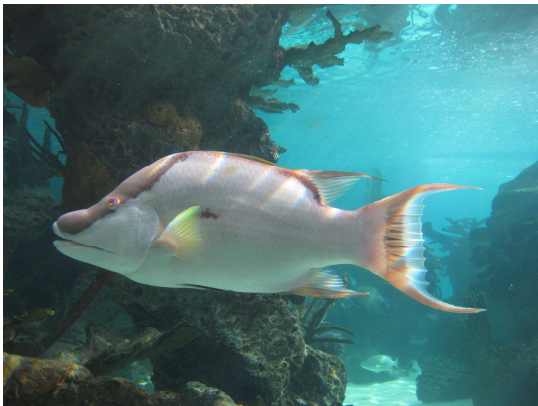
# Sensitive data: practical tips

---

- GDPR regulates every data which has people in it, not just sensitive material
- Collect only the data you need
- Take good care of the access control - who needs access and how long?
- Encrypt the data if possible
- The entire data processing workflow should be appropriate: Data should be accessed from UH workstations and not eg. private home computers, data should be stored only to suitable UH services, people who have access to the data should know the guidelines for managing it, etc.

# Sensitive data: low and medium risk

Guidelines define that UH Home and Group folders are suitable for following types of data:



- Data meant for internal use in UH
- Pseudonymized sensitive personal data
- Low and medium risk personal data
- Low and medium risk confidential data
- Third party commercial secrets with medium financial risk



# Sensitive data: Umpio (high risk)

---

- For high risk sensitive data
- Like group folder, but only available from a secure virtual Windows desktop (VDI)
- Two factor authentication
- Mainly for storage use, some software also available
- Backups taken every hour
- Remote access to any VDI Windows service requires Microsoft license upgrade A3E for non-employees



# Applications and computing

---

- A virtual desktop (VDI) can offer more options and resources than your physical computer
- A virtual server is recommended instead of a physical one for most use cases
- For non-employees, remote access to virtual Windows desktops and servers require additional licenses!
- For heavy computing needs, IT for Science provides services inside UH
- CSC offers virtual servers and high-end computing services also for non-UH collaboration



# Virtual Desktop (VDI)

---

- VMware Horizon environment
- Available Windows and Linux (Cubli) desktop, also with GPU
- Wide range of applications available
- Access to home and group directories
- The Windows desktop for employees has additional features and software
- Non-employees need the Microsoft 365 license upgrade for more features and remote use
- Secure desktop is available and required for access to Umpio



# Virtual desktops

---



Client computer



Virtual desktop



Server with virtual machine images

# Servers

---

## Virtual server

- Windows or Linux (RHEL, Ubuntu)
- For applications and services
- Up to 10 TB storage space
- Pricing depends on features
- Can accommodate sensitive data

## Physical server

- For high performance and large storage capacity needs
- Can hold sensitive data
- Needs maintenance
- Lifecycle 5 years





# Encryption

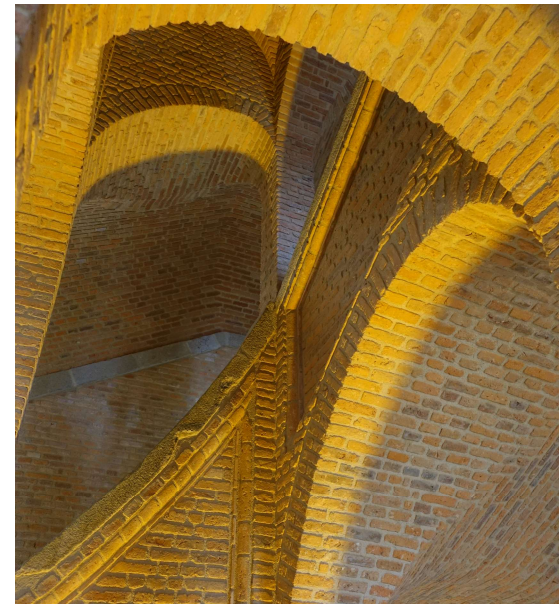
---

When transferring sensitive data, encryption is recommended.

Several options are available for different needs:

- 7-Zip (Encrypting local files and folders)
  - Cryptomator (Encrypting local files and folders)
  - S/MIME, GNUPG (Encrypting e-mail)
  - Microsoft Word & Excel (Encrypting documents)
  - Funet filesender (Encrypting a file transfer)
- 
- TIP: When encrypting files using a password, use long (20 characters) and complex passwords in order to protect your data! Don't use any words found from general languages.

The drives of UH Windows 10 computers are encrypted by default. For other operating systems Helpdesk will provide more information on encryption options.



# Removing the data

---

IT support will handle data erasure from any University owned devices:

- User action is not needed when the computer is disposed by UH IT support
- Removing data from UH services (home and group folders, servers etc.) on behalf of the user is not necessary but will be taken care of by the IT Center

User must take care to remove data from personally owned devices (USB-drives, disks, phones, etc.).

The Helpdesk website provides more instructions for the erasure of data.

Contact IT support if you need any help in removing sensitive or personal data!



# Contact information

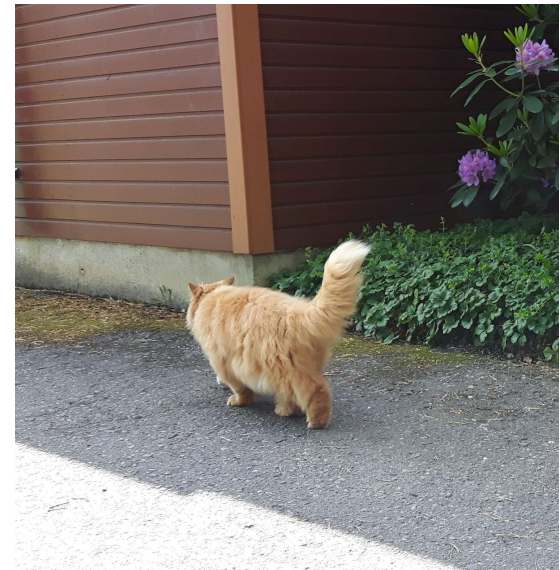
---

Services produced by University of Helsinki

- Data Support: <https://datasupport.helsinki.fi/>
- Helpdesk: <https://helpdesk.it.helsinki.fi>
- Email: [datasupport@helsinki.fi](mailto:datasupport@helsinki.fi)

CSC services:

- CSC customer portal: <https://my.csc.fi>
- Email: [servicedesk@csc.fi](mailto:servicedesk@csc.fi)







Thank you!

---

[DATASUPPORT@HELSINKI.FI](mailto:DATASUPPORT@HELSINKI.FI)