HUS Tietohallinto

User Guide

HUS ACAMEDIC

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PART 1 Basic use of HUS Acamedic

This part contains all the information you need to get started with HUS Acamedic. More detailed troubleshooting instructions, special cases and tips can be found in Part 2.

Support with problems

The HUS Acamedic team and ATK-apu help with problems related to basic functions and login, and advise on questions concerning user environments, data and access rights. For all questions related to the use of HUS Acamedic, you can contact us as follows:

- **HUS internal** users: the ATK-apu online service form
- **HUS external** users: tuki-acamedic@hus.fi
- **For questions related to billing and marketing,** you can contact acamedic@hus.fi

Emails and service requests are handled in the order they are received. Include in your support request as detailed a description of the problem as possible, including:

- **Username:** HUS1234567@hustietoallas.fi
- **User environment:** TietoallasTutkimusToisio X
- **Virtual desktop:** Windows/Linux, Multi-User/Single-User
- **Description of the problem:** What you were doing and which software you were using
- **Error message:** Copy the text of the error message or attach a screenshot of the problem. A good screenshot shows the entire browser window and the address bar. **Do not share screenshots of research data.**

Note: When contacting HUS Acamedic support, describe the problem as comprehensively as possible and take a screenshot of it so that the problem can be resolved as smoothly as possible.

Billing

HUS Acamedic invoices are generally sent monthly in arrears, based on actual usage. Holiday periods or staff changes may cause exceptions to the billing schedule. Itemised billing details can be provided to the study's contact person on separate request.

1 What is HUS Acamedic?

HUS Acamedic is a virtual processing environment that meets the requirements of the Secondary Use Act, in which researchers can securely process data in accordance with their data permit. The environment is closed: work is done without connections to external networks, and all data transfers are logged and monitored.

A separate HUS Acamedic user environment is created for each study. All users have a personal account; shared accounts cannot be used.

Note: To avoid login problems, always log in using your web browser's private browsing mode: InPrivate in Edge, Incognito in Chrome.

The principal investigator of the study orders the HUS Acamedic user environment

- for HUS internal studies, via the Researcher's Desktop (Tutkijan työpöytä)
- for external studies, via the HUS Asiointipalvelu ammattilaisille portal https://huspalveluportaali.powerappsportals.com/

User environments are not ready immediately after the order is placed; orders are reviewed in the order they are received before the environment is created. You will receive an email when the user environment is ready.

1.1 Key terminology

Term	Explanation
HUS Acamedic user environment	HUS Acamedic is a secure virtual processing environment. Each study has its own study-specific workspace, a separate user environment with no access to the data of other studies. You log in to HUS Acamedic at https://husanalytics.cloud.com/
HUS Tietoallas (Data Lake)	The HUS data ecosystem that brings HUS data together. The Data Lake is a separate system that only specifically designated HUS IT Management staff can access.
HUS Tietopalvelu (Data Services)	The HUS team of register data experts.
Findata and data permits	Findata grants data permits for combining data from multiple controllers. A permit for the use of register

	data is granted for each register study if the data is used without the patient's separate consent.
Tutkijan työpöytä (Researcher's Desktop)	The Researcher's Desktop is an application for applying for research permits, data permits and ethical review statements. HUS internal studies can also order HUS Acamedic user environments via the Researcher's Desktop.
HUS Asiointipalvelu ammattilaisulle (Service Portal for Professionals)	HUS Acamedic user environments for studies external to HUS are ordered in the service portal: https://huspalveluportaali.powerappsportals.com/
VD, Virtual Desktop	The virtual desktop through which HUS Acamedic user environments are used. Acamedic provides Windows and Linux virtual desktops. There are no connections to external networks from within Acamedic.
MFA	Multi-factor authentication. HUS Acamedic uses two separate MFA methods: Citrix MFA when logging in, and Microsoft MFA when switching research projects within Acamedic.
Import network drive	Read-only access. Data for use in the study is delivered to the Import network drive in Acamedic.
Research network drive	Read and write access. All research work is done on the Research network drive.
Export network drive	Read and write access. Research results are exported via the Export network drive.

2 Ordering and managing a user environment

In the HUS Asiointipalvelu ammattilaisille portal, you can order and manage HUS Acamedic user environments for studies that do not have a HUS research permit in the Researcher's Desktop or that have not been granted a data permit. You can also monitor the costs of user environments in the portal.

By default, user environment details are visible in the portal to the person who ordered it. If others need monitoring access (e.g. finance or project management), ask the HUS Acamedic team to add them via a support request.

In the portal, you can find user environments in the menu: **Services → Research, data and reporting services → HUS Acamedic – secure processing environment → User environments.**

Select the correct user environment from the **Active user environments** list to view its details.

On the User environment details page, you can see:

- Basic information about the user environment
- Billing information at the bottom of the page
- Communication with HUS Acamedic (Queries)
- The option to add attachments, such as an updated research permit or billing-related documents

2.1 Costs

HUS Acamedic licence fees are allocated separately to each authorised user. Removing unnecessary users from the environment reduces its costs. It is also recommended to remove users who have finished their work in the research group, or who no longer need access.

HUS employee	€34.78 / month / user
External to HUS	€52.08 / month / user
DevOps	€5.39 / month / user, ordered and activated separately per user

The amount of data also generates costs per user environment. Unnecessary data or duplicate files can also be deleted from the Import network drive by ordering the deletion separately via a support request. In this case, all files and folders to be deleted must be described precisely so that the deletion can be carried out.

The type of virtual workstation used also affects usage costs. Working on shared virtual workstations is cheaper, but the computing power is correspondingly lower. Always choose the workstation according to your actual needs.

If the study uses software suited to high-performance computing, such as Azure Machine Learning, consider carefully how the software is used. Azure Machine Learning enables

scalable processing of large datasets, and its use is significantly more expensive than the basic use of HUS Acamedic.

2.2 Billing

You can monitor HUS Acamedic costs in the HUS Asiointipalvelu ammattilaisille. HUS Acamedic is generally billed monthly in arrears, based on actual usage. Holiday periods may cause exceptions to the billing schedule.

2.3 Ending use

The Secondary Use Act requires the user environment and its data to be deleted within six months of the end of the study, unless other legislation or regulations require otherwise.

Notify us of termination via a support request and include the following information:

- Name of the user environment (TietoAllasTutkimusToisio XXXXXX)
- Date from which the termination takes effect
- Will the data be retained or can it be deleted?
- If retained: retention period (2 / 5 / 15 / 25 years)
- Data to be retained, gathered in a descriptively named folder on the Export drive

Transfer to another processing environment governed by the Secondary Use Act is possible with a notice period of one (1) month. Termination fee: 2 hours of work for small studies.

3 User accounts and access requests

The HUS Acamedic account is in the format

- HUS1234567@hustietoallas.fi for HUS internal employees
- EXT1234567@hustietoallas.fi / ext-firstname.lastname@hustietoallas.fi for external users

The accounts do not provide direct access to the HUS Tietoallas. The account is used to log in to the HUS Acamedic user environment. Accounts are always personal and can only be granted to a person named in the data permit and/or research permit.

To ensure the account application and granting process runs as smoothly as possible, please confirm with the principal investigator that your email address is the same as the one given in the research permit.

3.1 Authorisation process for HUS employees

Access rights are applied for personally. Authorisation for each user environment is applied for separately in Access Management (Käyttöoikeushallinta):

1	Log in to Access Management via MyApps in Eetteri
2	Select Create a new access request (Luo uusi käyttöoikeuspyyntö) and then Request an access package (Pyydä käyttöoikeuspakettia)
3	Search for and select the required access right by its name or by the name of the processing environment. Select all environments for which you need authorisation.
4	Define the validity period of the access right. The validity period may extend at most to the end of the research permit's validity.
5	Provide a justification for the access right and submit the request. User Management processes authorisations on weekdays in the order they are received.

Note: If you cannot see the names of HUS Acamedic environments in Access Management, you are not entitled to apply for authorisation via Access Management. In that case, apply for authorisation following the instructions for external researchers.

3.2 Authorisation process for external researchers

The authorisation process for researchers external to HUS has two phases. The applicant first registers in the HAG portal, after which the access rights application form is completed in the portal. If the user has already registered previously, they can proceed directly to phase two.

Phase 1: HAG registration

1	Log in at: https://hushag-sso.hus.fi/hagregistration/
2	Identify yourself via the Suomi.fi service.
3	Select your own organisation in the Partner organisation (Yhteistyöorganisaatio) field. Selecting a partner organisation is mandatory; registration will not succeed without it. If your organisation is not listed, select Other partner organisation (Muu yhteistyöorganisaatio).
4	Make sure the organisation selection is activated, then click Save (Tallenna).

Phase 2: Authorisation application

1	Complete the form: https://hushag-ig.hus.fi/hagregistration/requests/ Make sure that the organisation selection is also correctly recorded in the authorisation application.
2	Enter the correct user environment name in the form (in the format TietoAllasTutkimusToisio X). You can get the name from the study's principal investigator.
3	ATK-apu handles the authorisation. Authorisations are processed on weekdays in the order they are received.

Note: Incomplete authorisation requests will not be processed. Apply for access for yourself, and make sure that the user environment name entered in the application is correct.

3.3 Authorisation process for researchers outside the EU/EEA

If strong electronic identification cannot be performed, identification can be carried out through the HUS Acamedic product manager by providing a copy of a valid official identity document. Send a secure email to tuki-acamedic@hus.fi, include the study's principal investigator as a recipient, and include the following information in the authorisation application:

- I am applying for a HUS Acamedic user account and access to the user environment TietoAllasTutkimusToisio X.
- First name
- Last name
- Email address
- **Attachment:** A scanned image of a valid passport or identity card.

For the authorisation to be granted, the applicant's name must appear in the research permit, a non-disclosure agreement must be signed, and the principal investigator must have informed the applicant about use in accordance with the Secondary Use Act.

4 First login

When you receive your account and log in to HUS Acamedic for the first time, you will first receive your username and instructions for using HUS Acamedic by email. It is

recommended to log in and register your password in a private browsing window to avoid cookie and autofill problems during login. At your first login, you reset your password and register two MFA authenticators.

You can also follow these instructions if you have forgotten your password or your MFA device has been reset.

4.1 Setting or resetting your password

When you are taking a new account into use or have forgotten your password, follow these instructions:

1	Open your browser in private browsing mode and go to https://myaccount.microsoft.com
2	Select Forgotten my password. Enter the HUS1234567@hustietoallas.fi account you received as the account and enter the verification code shown on the screen.
3	Select how you want the verification code to be sent. The code is sent to your primary email address, which was provided with your access rights application.
4	Enter the verification code you received by email. Then set a new HUS Acamedic password.
5	After changing your password, test that you can log in at https://myaccount.microsoft.com using your HUS1234567@hustietoallas.fi account and the password you just set.

Note: There may sometimes be a short delay in the password change taking effect. In that case, wait a moment and try again. If the new password still does not work the following day, submit a support request to ATK-apu.

4.2 Microsoft MFA: Internal functions

Microsoft MFA authentication is used when switching research projects within HUS Acamedic or when using data transfer tools to move data into or out of the user environment. Register Microsoft MFA at the same time as you reset your password.

1	Open your browser in private browsing mode and go to https://aka.ms/mfasetup
2	In the login window, enter your account in the format HUS1234567@hustietoallas.fi and your password

3	Select + Add sign-in method and follow the instructions in the browser

Note: You cannot reset Microsoft MFA yourself. When changing phones, make sure you first register MFA on the new device before removing MFA from your old phone. If the MFA authenticator is no longer available, request an MFA reset from ATK-apu.

When registering a Microsoft MFA authenticator, always make sure when logging in that you are logging in to the correct account; for HUS Acamedic, this means a username in the format HUS1234567@hustietoallas.fi. If the page logs you in automatically, check the login account separately.

4.3 Citrix MFA: Logging in to HUS Acamedic

You need Citrix MFA to log in to HUS Acamedic. You need a smartphone to set up MFA.

1	Open your browser in private browsing mode and go to https://husanalytics.cloud.com
2	Select ”Don’t have a token?” and enter your HUS Acamedic account
3	Enter the verification code sent to your email. The subject of the message is ”Complete Your Device Registration”. Check your spam folder if you do not see the message.
4	Scan the QR code with your MFA app and complete the device registration.

Note: If the MFA code does not update or you cannot log in, you can re-register Citrix MFA yourself by removing the Citrix MFA registration from your authenticator app and setting up MFA again following these instructions.

You can now log in to HUS Acamedic using Citrix MFA at https://husanalytics.cloud.com. Enter your username and password, type the Citrix MFA code from your app in the Password Token field, and then select log in.

4.4 Logging in to HUS Acamedic

You log in to HUS Acamedic at https://husanalytics.cloud.com using your Acamedic username and password:

1	Open a new browser window in private browsing mode
2	Go to https://husanalytics.cloud.com

3	Enter your username and password, and the changing six-digit Citrix MFA code
4	Log in. After logging in, you will see the available virtual desktops.

4.5 Removal of the HUS Acamedic account and user environment authorisation

If a HUS internal user's employment ends, their HUS Acamedic account is deactivated at the same time. In that case, the account must be applied for again according to the instructions.

HUS Acamedic user environments are closed when the research permit/data permit expires, unless it is being renewed. The user environment does not disappear immediately, but its use is blocked. The user environment can be reactivated if the permit is renewed.

5 Using HUS Acamedic

In HUS Acamedic, research is done on virtual desktops, which you see on the start page immediately after logging in.

5.1 Virtual desktops

Each research group can use different virtual desktops (VD):

Windows 11 Multi-User	Shared Windows virtual desktop. Suitable for statistical analysis, programming and word processing. Office, SPSS, VS Code. More cost-effective than a single-user machine.
Windows 11 Single-User	The machine's full computing power is available to a single user only. Heavier Excel processing and Power BI use run more smoothly on this machine.
Windows 11 Single-User GPU	The GPU virtual workstation is intended only for use with imaging software.
Ubuntu Desktop Multi-User	Shared Linux virtual desktop. The machine's resources work well for basic, cost-effective use, as with the shared Windows resource.
Ubuntu Desktop Single-User	The machine's computing power is available to a single user only. Correspondingly, heavier computation and

	statistical analysis run more smoothly on this virtual desktop.

Some user environments have the Azure Machine Learning feature activated at additional cost. It makes additional computing power available on the virtual workstation as well, mainly for software used for coding.

There are some differences in software between the virtual desktops. Some software is available only in Windows or Linux environments, and some is available only on the Single-User desktop due to its greater computing capacity. An up-to-date software list is available on the HUS Acamedic website: https://acamedic.fi/

Virtual workstations are on standby during Finnish office hours, when starting the user environment is faster than outside office hours. Outside office hours, machines take longer to start. If the environment start-up gets stuck, you can force the session to restart with a Citrix restart. In the Citrix start view, select the stuck virtual workstation from the Manage (Toiminnanhallinta) menu and select Restart (Käynnistä uudelleen).

5.2 Timeout and saving

Note: Always save your work to the Research network drive. If work is saved only to the Temp folder, it will be lost when the session ends.

The user environment disconnects after 1.5 hours of inactivity. The session is fully closed no later than 1.5 hours after disconnection, at which point it is reset to its default state.

5.3 Switching research projects

If you have access to several studies and process the data of these studies in different user environments, switch from one environment to another with the Change Research Project tool.

Note: Activate Microsoft MFA for internal functions before using the project switching tool.

1	Log in to HUS Acamedic. Select Change Research Project.
2	Wait for the new browser window to load. Log in with your HUS Acamedic account.
3	Select the user environment from the drop-down menu. Click Change.

4	Monitor the progress of the switch; when the text ”success” appears in the window, the environment has been switched. Close only the browser window that opened inside the virtual workstation, not the entire browser.

5.4 Network drives

Import	Read-only access. Data is delivered here. Do not try to save files here.
Research	Read and write access. All research work is saved here. Backed up automatically.
Export	Read and write access. Used for exporting results.

Note: Always save your work to the Research network drive. The Temp folder is emptied when Acamedic is closed.

You can find the data you need by logging in to HUS Acamedic and opening File Explorer on the virtual desktop. In File Explorer, you will see the Import, Research and Export network drives on the left side of the window. Data delivered to the environment is in the Import folder. If the files are compressed, for example in zip format, extract them to the Research drive.

Data delivered to HUS Acamedic must not be downloaded to your own workstation for processing. All research data governed by the Secondary Use Act must always be processed in a secure user environment.

5.5 Backups

The Research network drive is backed up automatically

- Daily, retained for 14 days
- Weekly, retained for eight weeks
- Monthly, retained for six months

The Import network drive is not backed up, but logs of its use are retained for five years.

6 Handling data in HUS Acamedic

6.1 Importing data into HUS Acamedic, Data Upload

The Data Upload tool can be used to import data into HUS Acamedic. Only transfer data belonging to the study into the user environment. Do not process data from several

different studies in the same user environment. If the data to be imported contains folder structures, it is advisable to compress the files into ZIP format without password protection before importing. Otherwise, all files are imported as such into the root directory, and the original folder structure is not preserved.

The Data Upload tool is used via the Azure portal.

1	Open a browser window. There is no access to external networks from within HUS Acamedic, so open a completely new window outside the user environment.
2	Go to https://portal.azure.com and log in with your HUS Acamedic account. Use the Microsoft MFA code.
3	In the search bar, search for hfdtuzonesuploadsa or husfdtusecsubuploadsa (use the latter if the study started after 05/2024). Select **Storage Account → Containers**.
4	Find your group's container (the name starts with hfdtu and contains an abbreviation of the user environment name). Click Upload.
5	Drag and drop a file or browse for files. Remove any incorrect file using the three-dot menu before importing. Click Upload.
6	The files are then transferred automatically to the Import network drive within 12 hours.

Note: Files larger than 2 GB are not transferred automatically. Where possible, compress large files and split them into parts. Do not use encrypted compression.

6.2 Exporting data from HUS Acamedic, Data Download

Research results can be exported from the user environment using the Data Download tool. Please ensure the anonymity of results to be published. The Data Download tool cannot be used in environments that process genomic or imaging data. If the Data Download tool has not been activated in the user environment, you can request its activation via a support request.

1	Move the file to be exported directly to the root of the Export network drive, not into a folder.
2	Open a browser inside the HUS Acamedic environment. Go to: https://husfd-tu-datadownload-ui.azurewebsites.net

3	Click **Add → select the Secondary tile → Create → Browse**. Select the file from the Export folder.
4	Read the documentation, tick **I consent to above**, click **Next → Proceed**.
5	Monitor the status. The request changes to **Approved** status once the transfer succeeds. You will receive an email notification.
6	Download the file outside the HUS Acamedic environment via the Azure portal or via the direct link in the email.

Note: MFA for internal functions must be activated before using the Data Download tool.

7	Open a browser window. There is no access to external networks from within HUS Acamedic, so open a completely new window outside the user environment.
8	Go to https://portal.azure.com and log in with your HUS Acamedic account. Use the Microsoft MFA code.
9	In the search bar, search for hfdtuzonesdownloadsa or husfdtusecsubdownloadsa (use the latter if the study started after 07/2024). Select **Storage Account → Containers**.
10	Find your group's container (the name starts with hfdtu and contains an abbreviation of the user environment name). Select the container that ends with the abbreviation of your user environment name.
11	Find the file to download and click **Download**. The download starts immediately.

If the Data Download tool has not been activated in the environment, you can request its activation via a support request. If the user environment processes genomic or imaging data, you can request the file as a manual extraction via a support request as follows. In that case, move the file to be exported directly to the root of the Export network drive and state in the support request:

- Name of the user environment
- Requester's name and HUS Acamedic account
- File name

- File contents
- Purpose of the file or the recipient to whom it will be delivered
- Justification for exporting the file

6.3 Deleting data from the Import network drive

Deletion of files from the Import network drive must be requested separately via a support request. Include in the request:

- Requester's name and HUS Acamedic account
- User environment name in the format TietoAllasTutkimusToisio X
- Folders or files to be deleted, including their full names exactly as they appear on the Import network drive

6.4 Requesting new software

New software can be ordered via a support request; each request is assessed case by case. Send your software request as a support request: HUS internal users via the ATK-apu online service form, external users to tuki-acamedic@hus.fi. Include in the request:

- Requester's name and HUS Acamedic account
- User environment name in the format TietoAllasTutkimusToisio X
- The requested software, a link to its web page and the required version
- Any dependencies
- Licence information; mainly only software with a free licence can be installed in basic Acamedic
- Which virtual workstation the software is intended for: Windows or Ubuntu?

6.5 Azure Machine Learning

Azure Machine Learning is not part of the basic use of HUS Acamedic. It is ordered separately, and its costs are allocated to the research project. Azure Machine Learning is updated continuously; changes and a more detailed description are available in Microsoft's documentation (SDK v2): https://learn.microsoft.com/en-us/azure/machine-learning/

Note: Data should not be transferred separately to Azure Machine Learning. Read the data directly from the Import or Research network drive in your code. Save all results to the HUS Acamedic network drives, not to Azure Machine Learning.

7 HUS Acamedic in scientific publications

If you publish an article, abstract, poster or other publication that makes use of HUS Acamedic, please notify the HUS Acamedic team at acamedic@hus.fi.

Include in your message the title of the publication, the date, the author(s), the research project and the place of publication (link, if available).

Suggested acknowledgement in publications: "HUS Acamedic is a secure, scalable, virtual, audited processing environment. HUS Acamedic was utilized in this study. For further details, navigate here https://www.hus.fi/tutkimus-ja-opetus/tutkijan-palvelut/hus-acamedic-tietoturvallinen-kayttoymparisto"