

DNA methylation workshop -preparations

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Preworkshop setup

These steps are required to get you started with the account setup and DNA methylation data analysis. If you already have R and RStudio installed on your laptop then you can start with the DNA methylation packages installation as explained under “R and RStudio”. However, Inorder for this workshop to go smooth and avoid installation of packages in R (that takes a lot of time), I instead have setup everything at NSC in Maria Lerm’s group project *NAISS 2023/5-510* .

Follow the steps below:

Step1. NSC account application

- please request a membership to this project: **NAISS 2023/5-510** at NSC

Request membership to project

Go to SUPR’s project membership request function to request membership in the NAISS 2023/5-510. If SUPR requests that you log in, use Alternative 1: Login Using SWAMID, select “Linköping University” as your login provider and log in using your LiU student account. Press the Request button on the NAISS 2023/5-510 On the next page, write “workshop” in the “Message to the PI” box and press Request Membership.

Request an account on the resource

Once your membership has been approved, you will get emails from NSC /SNIC that “You have been added to the following project in SUPR:” Follow the instructions and check this link <https://supr.naiss.se/account/> by logging in. Go the account tab and click “**Request Account on Tetralith @ NSC**”. As shown below.

NAISS SUPR

Start / Accounts

Accounts

Accounts in this context are the login accounts that you use to login to the resources provided

Existing Accounts

No accounts present in SUPR.

Note: If a centre has not yet linked your SUPR identity to its local identity, accounts at that centre are not shown here.

If you have a question or a problem report about an account at a centre, use the [support page](#) for the right centre/resource.

Account Requests

Possible Centre Account Requests

Use the button below to request an account at the centre. The account will give you access to a resource at the centre that you have allocations on.


[Request Account at PDC](#) [Request Account at UPPMAX](#)

Possible Resource Account Request

Use the button below to request an account on the resource. The account will give you access to a resource.

[Request Account on Tetralith @ NSC](#)

You will get emails with your user id, and instructions to setup passport and two factor authentication on your phone. (see some screenshots as an example)


National Supercomputer Centre at Linköping University

NSC Express / Accounts


System
[Login](#)
NSC Web
[Front Page](#)
[Getting Access](#)
Support Email
support@nsc.liu.se
Feedback
[Give Feedback](#)

Login to Set Password and Two-Factor Authentication for Account

You need to login via SUPR and confirm "Prove My Identity to NSC" there. You will then get back to NSC Express to set password and two-factor authentication on tetralith.

Setting your password and two-factor authentication in SUPR itself will not set your password and two-factor authentication on tetralith at NSC, as they are separate.

Login via SUPR



Start / Prove Your Identity to NSC

Prove Your Identity to NSC


Support
Logout
 Logged in as:
 Hans Lundquist
 (hans.lundquist@liu.se)

NSC has requested that you prove your identity in SUPR:

The information about you from SUPR will be used to log you in to NSC Express.

If you confirm using the button below, SUPR will tell NSC that you are **Hans Lundquist** and will provide information about you to the centre.

Prove My Identity to NSC


National Supercomputer Centre at Linköping University

NSC Express / Accounts

Functions
[Summary](#)
[Projects](#)
[Project Applications](#)
[Groups](#)
[Accounts](#)
[Subscriptions](#)
[Job Accounting](#)
System
[Logout](#)
NSC Web
[Front Page](#)
[Getting Access](#)
Support Email
support@nsc.liu.se

Set Password and Two-Factor Authentication for x_hanlu on tetralith

You are now logged in to NSC Express.

Two-factor authentication at NSC clusters uses TOTP, so you need a TOTP app installed on your phone or similar device.

Open the authentication app, choose to add a new secret, and use the "Scan a barcode" option (or similar) to scan the secret shown below. If you cannot scan using the camera, you can instead choose to enter the secret shown as text further down. Make sure that nobody else sees or photographs this page while you are doing this.

To make sure that the right secret has been scanned or entered, you will then have to enter the current verification code (6 digits) shown by the app in the field below.

Choose the password you will use to login as **x_hanlu** on tetralith. Please select a good, unique password that you do not use at other sites or services.

Read and follow instructions here

Step2. ThinLinc

We will use ThinLinc (a remote desktop) to run graphical applications on NSC.

To install ThinLinc go to <https://www.cendio.com/> and choose the appropriate link for your operating system from **Download the ThinLinc client!** link. To start ThinLinc open the application and enter the following:

Server: tetralith.nsc.liu.se

Användarnamn: your username

Lösenord: your password

Login to NSC

Once login is successful, open terminal, and write the commands below.

- if you have macOS we will OPEN Terminal
- if you have windows we will OPEN Gitbash

Great you are all set for now !!

```
# Login to NSC  
ssh -X x_USERNAME@tetralith.nsc.liu.se
```

R and RStudio (optional)

- If you have R already installed in your own computer, you can as an alternative try to install the packages required for analysis yourself. Though its more time consuming and laborious, therefore we go with step1 and step2.
- please make sure you have a version not older than 4.0.
- To install R statistical software go to the [r-project.org](https://www.r-project.org) and choose the appropriate link for your operating system.
- To install RStudio go to posit.co and choose the appropriate link for your operating system.

Packages to install:

```
install.packages("rmarkdown")  install.packages("ChAMP")  install.packages("minfi")  in-  
install.packages("limma")
```