



## Interactive HPC with Jupyter (3)

training course, 26+27.05.2021

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# WELCOME

- Hello !
- Workshop information (live document)
  - <https://gitlab.version.fz-juelich.de/hedgedoc/oo2I4aZHSKO5eIJJOLPk3w?view>
- Workshop interaction
  - Zoom chat
- Workshop repository
  - <https://gitlab.version.fz-juelich.de/jupyter4jsc/CoE-2021.05-jupyter4hpc>

# WELCOME

## Agenda

- day 1: JupyterLab Introduction

- 9:00 - 11:00
  - Welcome and Login
  - Introducing JupyterLab
- 11:00 - 11:30
  - Break
- 11:30 - 13:00
  - JupyterLab extensions tour
  - Customizing your environment

- day 2: Jupyterlab for HPC

- 9:00 - 11:00
  - Welcome and Login
  - Build your own kernels
  - Using JupyterLab as Proxy
- 11:00 - 11:30
  - Break
- 11:30 - 13:00
  - Utilizing supercomputers with JupyterLab
  - Jupyter-JSC under the hood

## Resources

HDF Cloud (OpenStack)

JUSUF (HPC cluster)

# PRE-WORKSHOP TODOS

## Register & Login

<https://judoor.fz-juelich.de>

**Join** the project „training2109“

→ Wait to get joined by the project PI

## Sign usage agreement

→ Wait for creation of HPC accounts

## Check Connected Services:

jupyter-jsc

The screenshot shows the Jülich Supercomputing Centre user portal. At the top, there's a navigation bar with 'Your account', 'Mentoring', a search bar, and 'Detailed Statistics'. The main content area is divided into several sections:

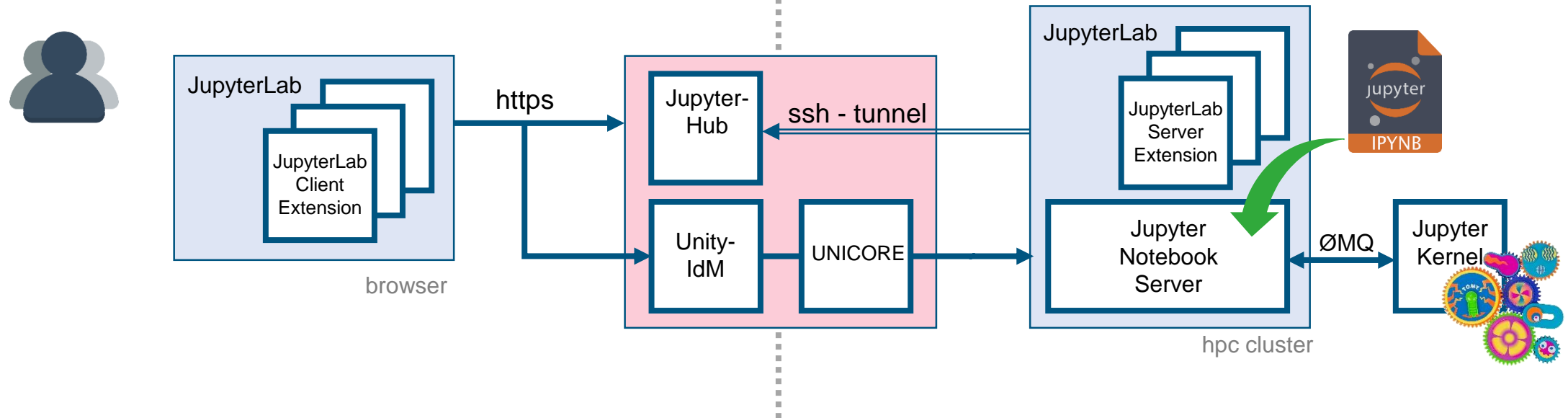
- Account:** Fields for Salutation, E-mail address (with an email icon), Telephone, and Address.
- Mentored projects:** A section for projects mentored by the user.
- Systems:** A table listing available systems:
  - judac:** Managed by SH-keys, with a green checkmark and the text 'Usage agreement confirmed on 18.04.2021'.
  - jusuf:** JUSUF\_CPU: training2109, with a red X and the text 'You need to sign the usage agreement to access this system'.
- Projects:** A section for projects, showing 'Interactive High-Performance Computing with Jupyter' with a green checkmark and the text 'training2109'.
- Software:** A section for software, showing 'trac', 'lview', 'jards', 'gitlab', and 'jupyter-jsc' with a green checkmark.
- Connected Services:** A section for connected services, showing 'trac', 'lview', 'jards', 'gitlab', and 'jupyter-jsc' with a green checkmark.

For more details, please visit

or <https://gitlab.version.fz-juelich.de/hedgedoc/oo2I4aZHSKO5eIJJOLPk3w?view#Pre-Workshop-Todos>  
<https://gitlab.version.fz-juelich.de/jupyter4jsc/CoE-2021.05-jupyter4hpc/-/tree/master/preparation>

# JUPYTER-JSC WEBSERVICE

Start your JupyterLab (the easy way)



# START JUPYTERLAB ON JUSUF

**Login to**

<https://jupyter-jsc.fz-juelich.de>

**Ensure** you are in the Group

CoE-Jupyter

**Name** your JupyterLab

e.g. „JUSUF\_batch“

**Add** new JupyterLab

**Configure** the new JupyterLab

Use Reservation

Runtime: 240

**Click „Start“**

<https://jupyter-jsc.fz-juelich.de>

Last login: 07:42:23 2021-05-26 (GMT)

j.goebbert@fz-juelich.de

Group (?):

CoE-Jupyter

Logout

JupyterLab

Name your JupyterLab

Add new JupyterLab

## JupyterLab Options

System JUSUF

Account goebbert1

Project training2109

Partition batch

Reservation praxe-jupyter-2021-04-22

Nodes [1, 1] 1

Runtime (min) [10, 240] 60

Show reservation info ? ☒

Start

Your server is starting up.

You will be redirected automatically when it's ready for you.

Request submitted to JUSUF for goebbert1:cjsc

Preparing environment on jsf101 ...

... port-forwarding established

... request-specific configuration generated

... disk quota in \$HOME checked

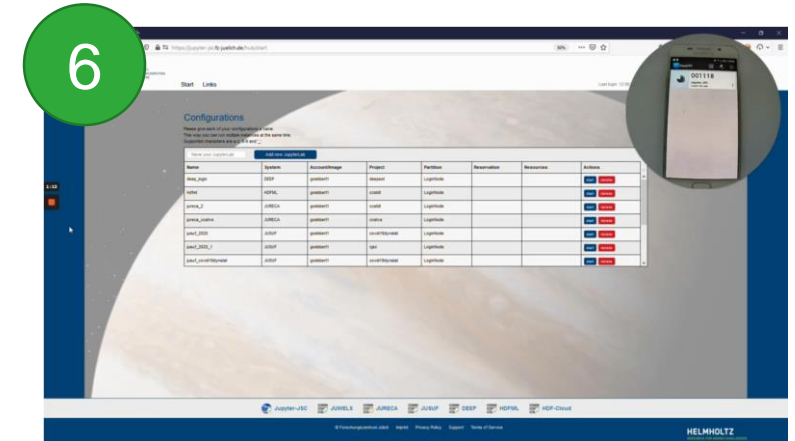
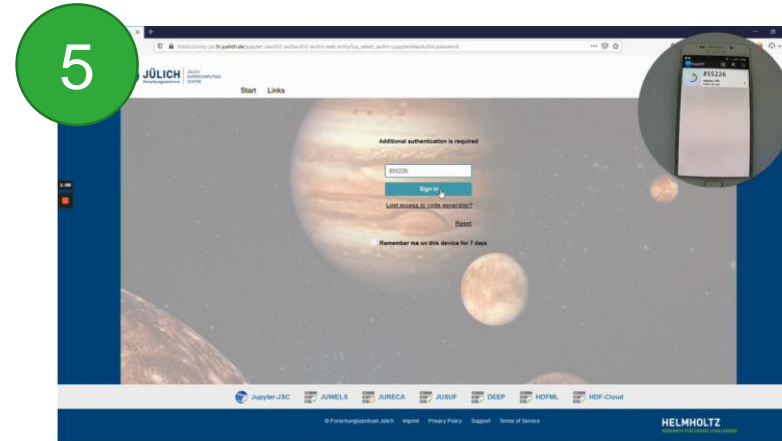
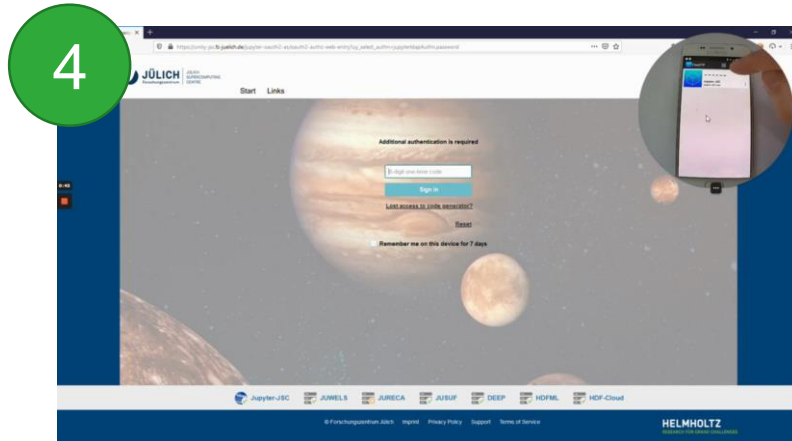
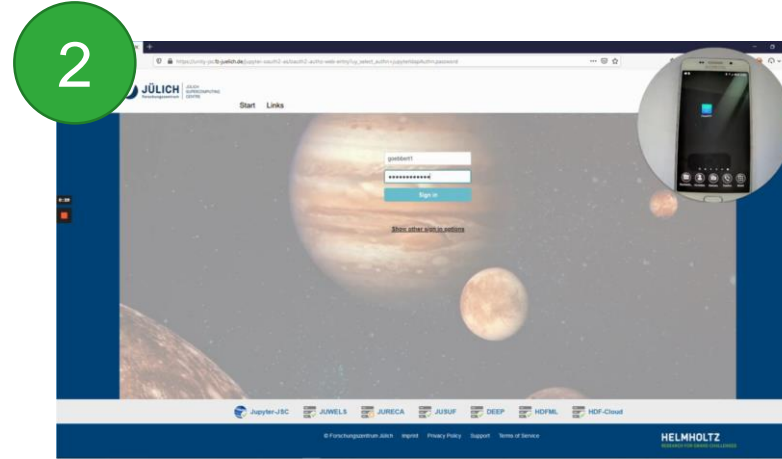
... modules loaded for JupyterCollection/2020.2.6

Starting JupyterLab. Waiting for an answer. This may take a few seconds.

Server ready at [/user/j.goebbert@fz-juelich.de/jusuf\\_login/](/user/j.goebbert@fz-juelich.de/jusuf_login/)

# 2-FACTOR AUTHENTICATION





# ENABLE 2FA FOR JUPYTER-JSC

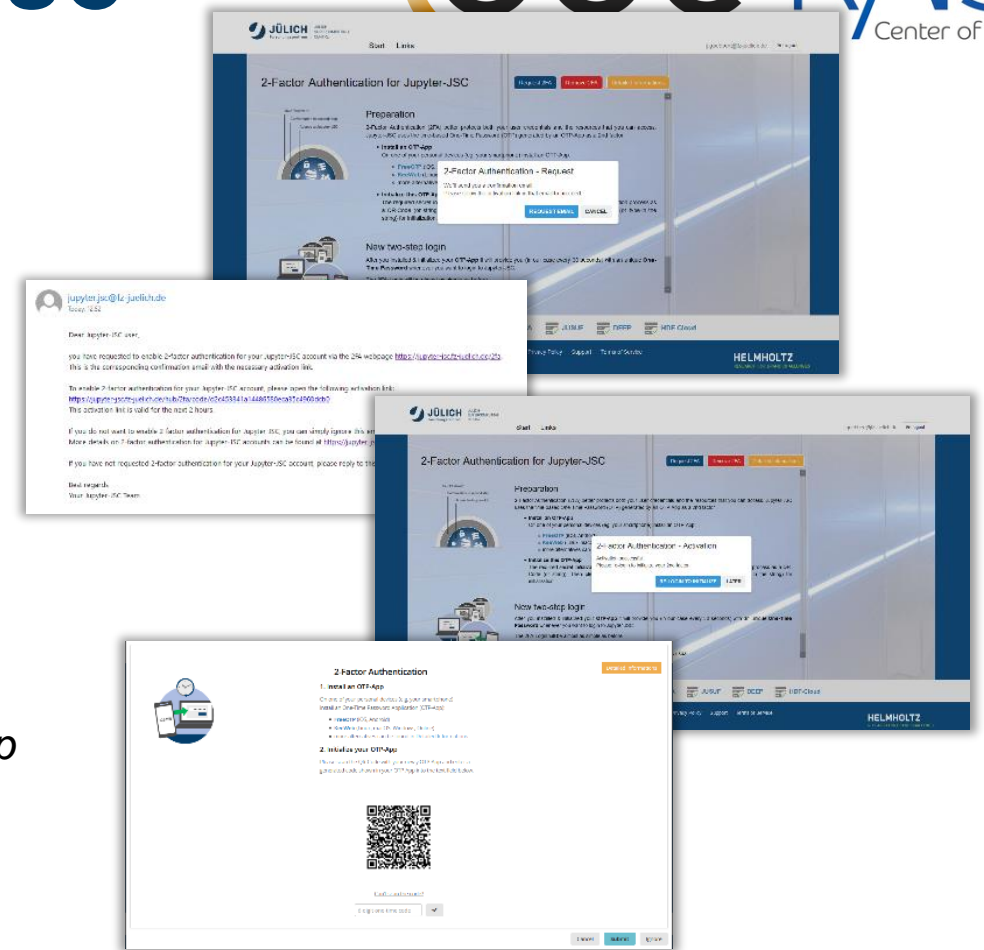
To get ready to use 2-Factor Authentication (2FA) for Jupyter-JSC you have to **prepare** it ONCE:

- (1) **request 2FA** for Jupyter-JSC,
  - (a) login to Jupyter-JSC
  - (b) visit <https://jupyter-jsc.fz-juelich.de/2fa> and request 2FA
  - (c) wait for a *confirmation emails* and click the provided *activation link*
- (2) **activate 2FA** for Jupyter-JSC,
  - (a) install an **OTP-App**, which supports the TOTP algorithm
  - (b) communicate the **secret initialization code** to this *OTP-App*
  - (c) test a first **one-time password** generated.

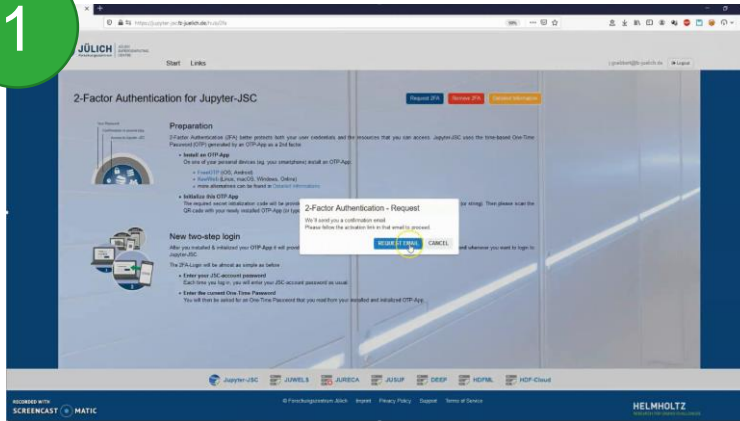
... and then 2FA is ready to be used next time you log in.

More details on <https://jupyter-jsc.fz-juelich.de/2fadetails>

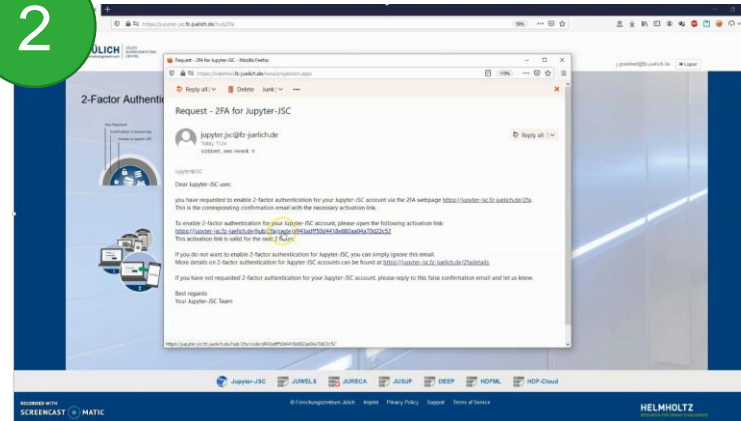
<https://jupyter-jsc.fz-juelich.de/2fa>



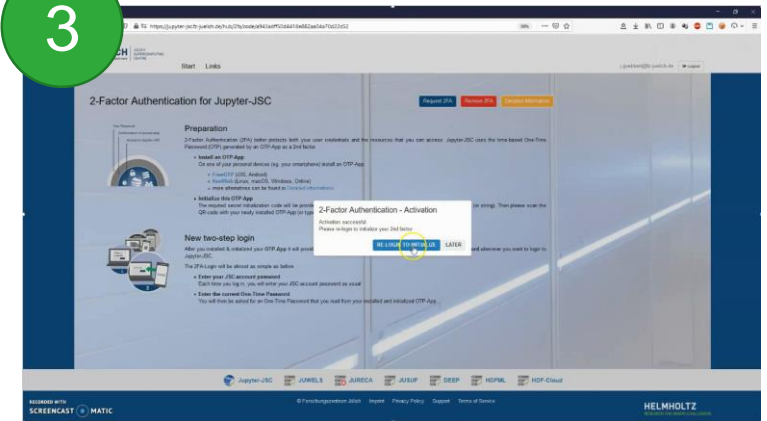
1



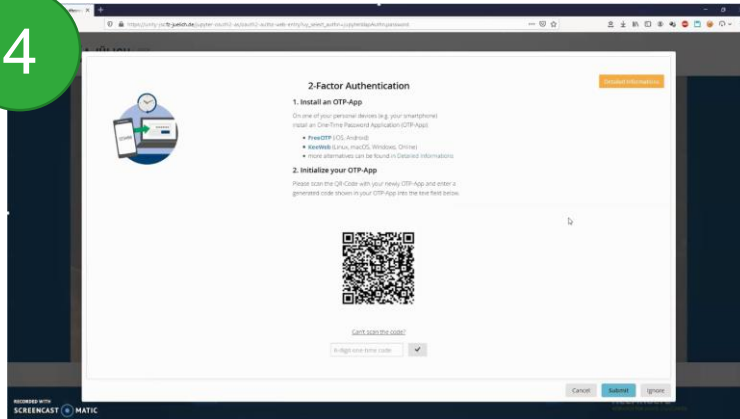
2



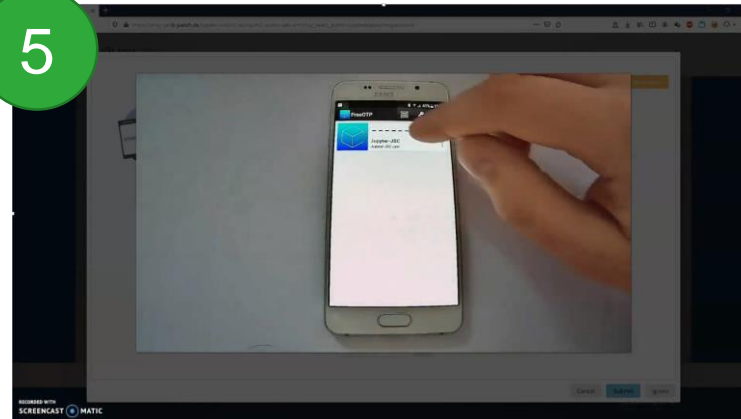
3



4



5



6

