



# JUWELS BOOSTER ONBOARDING

## ISC24 TUTORIAL *SESSION 1B*

12 May 2024 | Andreas Herten | Jülich Supercomputing Centre, Forschungszentrum Jülich

# Accessing JUWELS Booster

- Everything listed on GitHub repo of tutorial:

<https://go.fzj.de/mg-gh><sup>1</sup>

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<sup>1</sup>Unshortened link: <https://github.com/FZJ-JSC/tutorial-multi-gpu/>

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- 2 Join training2414 project  
→ <https://go.fzj.de/mg-jd>
- 3 Accept usage agreement
- 4 Wait 15 minutes ⚙️
- 5 Access system via Jupyter 3.6  
*JUWELS, training2414, LoginNodeBooster*  
→ [jupyter-jsc.fz-juelich.de](https://jupyter-jsc.fz-juelich.de)
- 6 Source course environment in a Jupyter Shell  
\$ `source $PROJECT_training2414/env.sh`
- 7 Gather course material  
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JuDoor Login

https://judoor.fz-juelich.de/login?show=/projects/join/training2216

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You need to login in order to visit that page.

**Portal for managing accounts, projects and resources at JSC.**

Login using JSC account

Username

Password

[Login](#) [Register](#) [Reset password](#)

Login with e-mail callback

Login mail address

A confirmation email to confirm your identity will be sent to this address.

[Send identification mail](#)

Send join request to project

https://judoor.fz-juelich.de/projects/join/training2216

JU Your account

xyhert1

# Send join request to project

Do you want to send a project join request to the **training2216** project?

The following information will be given to the PI and PA of the project: Dr. Andreas Herten, **xyhert1**, **an@email.address.com**

Optional additional information for the PI and PA

I'm attending the tutorial on Multi-GPU Computing and am excited to start. LET ME IN ALREADY!

Send join request to project.

**training2414**

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Forschungszentrum Jülich, JSC

Contact Support  
JuDoor Requests

Member of the Helmholtz Association

12 May 2024

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[go.fzj.de/mg-jd](https://go.fzj.de/mg-jd) and [jupyter-jsc.fz-juelich.de](https://jupyter-jsc.fz-juelich.de)

Jupyter-JSC

https://jupyter-jsc.fz-juelich.de/hub/login?next=%2Fhub%2Fhome

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Start Links Documentation

## Next-Generation Notebook Interface

We are pleased to bring "Supercomputing in your browser". Jupyter-JSC gives access to JupyterLab, a web-based interactive development environment for Jupyter notebooks, code, and data. JupyterLab is flexible: configure and arrange the user interface to support a wide range of workflows in data science, scientific computing, and machine learning. JupyterLab is extensible and modular: write plugins that add new components and integrate with existing ones. [Read more.](#)

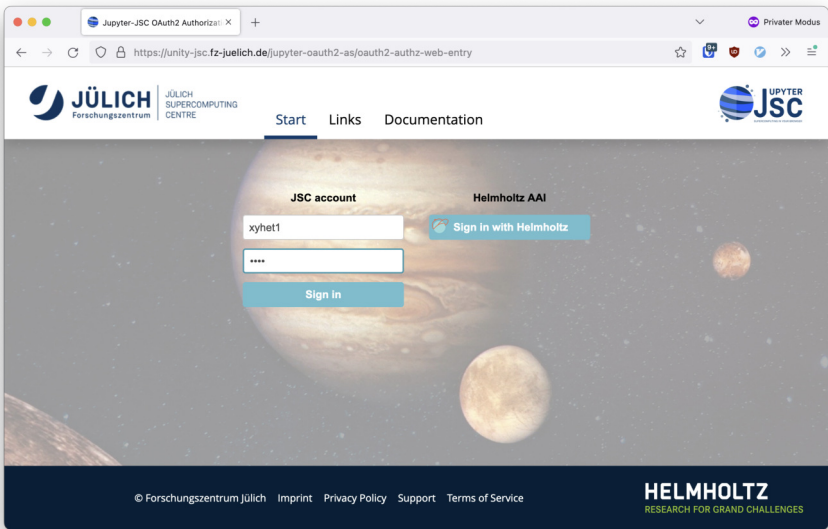
resources. These can be JUWELS, JURECA, JUSUF, HDFML or DEEP's login or compute nodes or even the HDF cloud - depending on the computing resources available to you.

Please use your JSC account to log in or register if you have not already done so. It's also possible to log in via Helmholtz AAI.

Login Register

Jupyter-JSC JUWELS JURECA JUSUF DEEP HDFML HDF-Cloud





Jupyter-JSC

https://jupyter-jsc.fz-juelich.de/hub/home

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UPYTER Jsc







sample-user ▾


**Start** Links JSC Status Documentation

# JupyterLabs

You can configure your existing JupyterLabs by expanding the corresponding table row.

	Name	System	Partition	Project	Status	Actions
+	NEW JUPYTERLAB					

Jupyter-JSC 75  JUWELS 83  JURECA 66  JUSUF 5  DEEP 3  HDFML 1 

HDF-Cloud 13 

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**HELMHOLTZ**  
RESEARCH FOR GRAND CHALLENGES

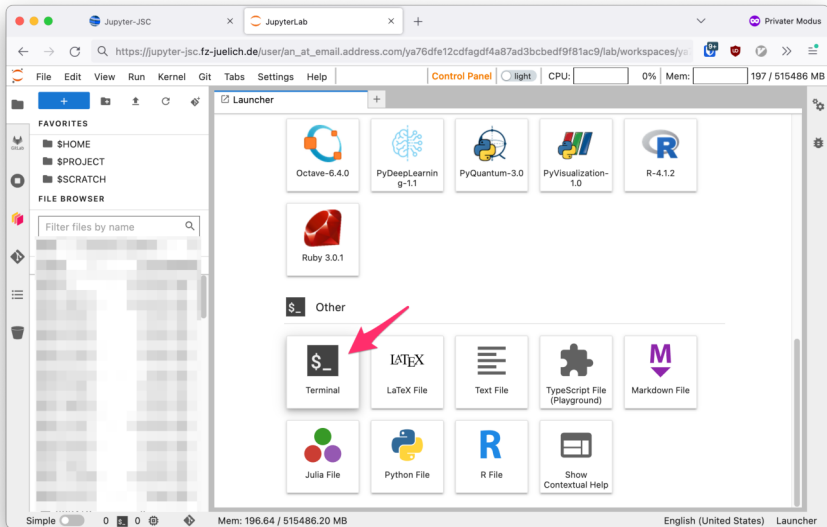
Jupyter-JSC

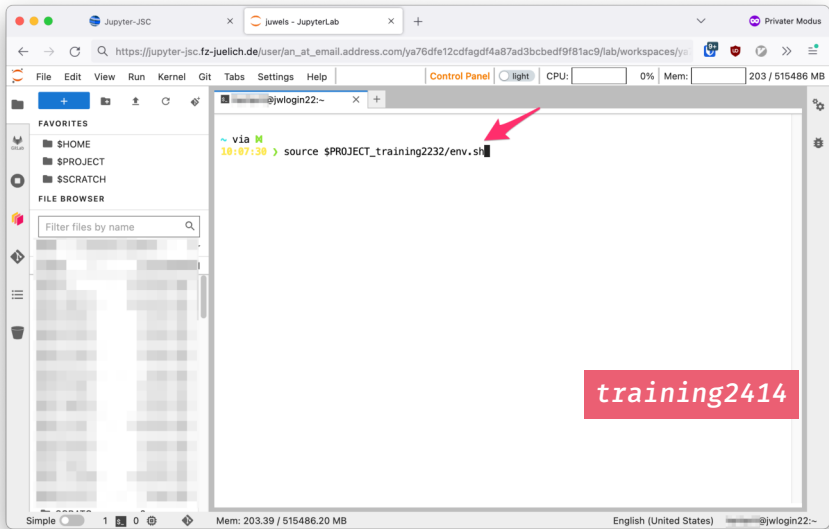
https://jupyter-jsc.fz-juelich.de/hub/home

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	Name	System	Partition	Project	Status	Actions
+	NEW JUPYTERLAB					
Lab Config	Name	sc23tut				
Resources	Version	JupyterLab - 3.6				
Kernels and Extensions	System	JUWELS				
	Account	user1				
	Project	training2332				
	Partition	LoginNodeBooster				
<div>▶ Start</div>						

training2414





Jupyter-JSC juwels - JupyterLab

https://jupyter-jsc.fz-juelich.de/user/an\_at\_email.address.com/ya76dfe12cdfagdf4a87ad3bcbedf9f81ac9/lab/workspaces/ya...

File Edit View Run Kernel Git Tabs Settings Help Control Panel light CPU: 0% Mem: 204 / 515486 MB

FAVORITES

- \$HOME
- \$PROJECT
- \$SCRATCH

FILE BROWSER

Filter files by name

@jwlogin22:~

```
~ via M
10:07:30 > source $PROJECT_training2232/env.sh
The following modules were not unloaded:
(Use "module --force purge" to unload all):

1) Stages/2022

This stage is in construction. Thanks for being an early adopter! If you are
missing some software you'd like to have, please contact support at sc@fz-juelich.de

The following have been reloaded with a version change:
1) Stages/2022 => Stages/2023

*****
Welcome to the SC22 Tutorial on Multi-GPU Computing for Exascale!
Submit a job to the batch system with `JSC_SUBMIT_CMD`
The value of JSC_SUBMIT_CMD is:
srun --partition booster --cpu-bind=sockets --gres=gpu:4 --time 0:10:00 --pty
Some modules have been loaded into the environment. See them with
`module list`.
Synchronize the master material folder to your own by calling
`jsc-material-sync`
*****

~ took 7s via M
10:09:31 > 
```

Simple 1 0 Mem: 203.66 / 515486.20 MB English (United States) @jwlogin22:~

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# Profiling Tools

- Extra Credits: Prepare for *Profiling Session*
  - Download **Nsight Systems** now; install!
- <https://developer.nvidia.com/nsight-systems/get-started>
- Also: Via package manager [developer.download.nvidia.com/devtools/repos](https://developer.download.nvidia.com/devtools/repos)



# SSH Login

# SSH Login

- Login with SSH available
- We recommend Jupyter JSC: easier, more features
- Add SSH key via JuDoor to JUWELS Booster
- **Important:** from clause (limits connections to be from defined sources)
- Example

```
from="80.146.183.0/24" ssh-ed25519 AddddACadsfzaC1lZDI1NTE5AAAAAsa  
# coarser: from="80.144.0.0/13"
```

→ SSH: `ssh user1@juwels-booster.fz-juelich.de`

- Help at [apps.fz-juelich.de/jsc/hps/juwels/access.html](https://apps.fz-juelich.de/jsc/hps/juwels/access.html)

JupyterLab Dr. Andreas Herten

https://judoor.fz-juelich.de/account/a/JSC\_LDAP/xyhert1/

**JU** Your account Germany xyhert1


## Systems

**juwels** [Manage SSH-keys](#) Usage agreement confirmed on 21.03.2019

JUWELS: **training2216** JUWELS\_BOOSTER: **training2216** JUWELS\_GPUS: **training2216**

[Show Home Quota](#)

## Projects

 **Training 2216** **training2216**

[Join a project](#)

## Software

[Request access to restricted software](#)

1 - JupyterLab SSH keys on juwels

https://judoor.fz-juelich.de/account/a/JSC\_LDAP/.../system/juwels/add\_ssh\_key

**JU** Your account xyhert1

### Upload SSH public keys

To use our systems your public key options have to include a **from=**-clause to restrict the usage of the key to your personal IP address range.  
Your current IP address is **46.183.103.8**. See **the documentation** for more information.

☐ Remove all other existing public keys.

Your public key and options string

```
from="46.183.103.8" ssh-ed25519  
AddddACadsfzaC1lZDI1NTE5AAAAAsadf5yDS3Sht52425D0gV0AWzu52hnxiIO92Ynksadfijr3bDq
```

Paste the content of your **.pub**-file here or upload a file below.

Your public key file	Additional public key options
<input type="text"/> <input type="button" value="Browse"/>	<input type="text" value='e.g. from="46.183.103.8",...'/>