



JUWELS BOOSTER ONBOARDING SC TUTORIAL *SESSION 1B*

14 November 2022 | Andreas Herten | Jülich Supercomputing Centre, Forschungszentrum Jülich

Accessing JUWELS Booster

- Everything listed on GitHub repo of tutorial:


`go.fzj.de/sc22-mg-gh`¹

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

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- 1 Create JSC account at JuDoor
- 2 Join training2232 project
→ go.fzj.de/sc22-mg-jd
- 3 Accept usage agreement
- 4 Wait 15 minutes 
- 5 Access system via Jupyter 3.4
→ jupyter-jsc.fz-juelich.de
- 6 Source course environment in a Jupyter Shell
\$ `source $PROJECT_training2232/env.sh`
- 7 Gather course material
\$ `jsc-material-sync`

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- Please start process now
- We'll repeat the following steps in the first hands-on session

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JuDoor Login

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

JU JuDoor Login

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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 ☆ 9+ 🔒 🔒 🔒 >> ☰

JU

Your account

🌐 xyhert1 ▾ ➡

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CENTRE

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.

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Forschungszentrum Jülich, JSC

Contact Support

JuDoor Requests

Member of the Helmholtz Association

14 November 2022

Slide 214

go.fzj.de/sc21-mg-jd and jupyter-jsc.fz-juelich.de

Jupyter-JSC

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

Privater Modus

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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 OAuth2 Authorizati X +

https://unity-jsc.fz-juelich.de/jupyter-oauth2-as/oauth2-authz-web-entry

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UPYTER Jsc

Start Links Documentation

JSC account

xyhet1

Sign in

Helmholtz AAI

Sign in with Helmholtz

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HELMHOLTZ
RESEARCH FOR GRAND CHALLENGES

Jupyter-JSC x + Privater Modus

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

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an_at_email.address.com

JUPYTER Jsc

JupyterLabs

JupyterLabs + New

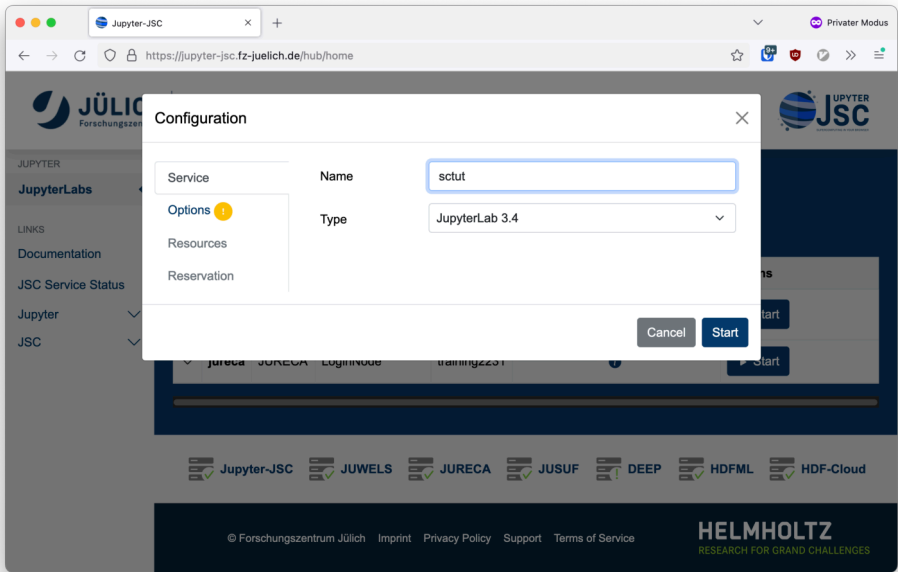
You can configure your existing JupyterLabs by expanding the corresponding table row.

	Name	System	Partition	Project	Status	Actions
∨	jwb-login	JUWELS	LoginNodeBooster	training2223	i	▶ Start
∨	jureca	JURECA	LoginNode	training2231	i	▶ Start

Jupyter-JSC JUWELS JURECA JUSUF DEEP HDFML HDF-Cloud

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HELMHOLTZ RESEARCH FOR GRAND CHALLENGES



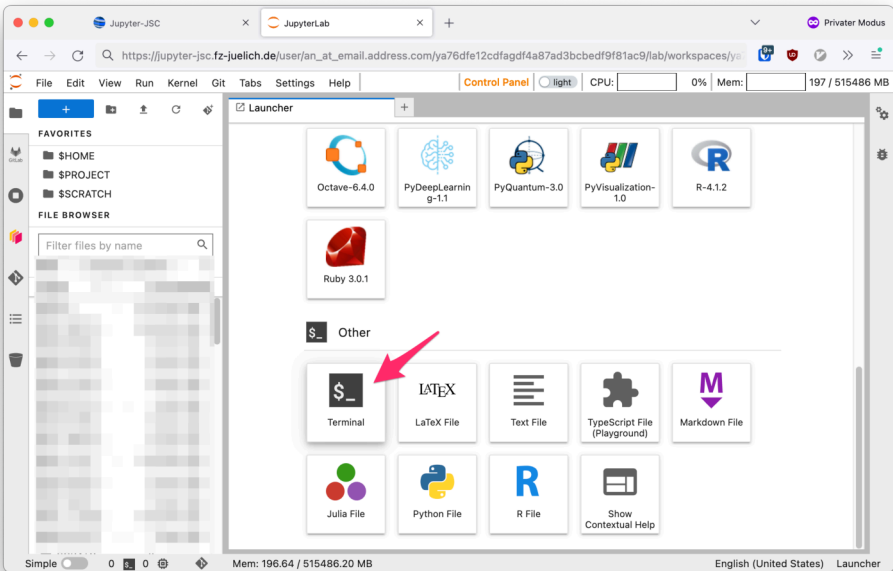
Configuration dialog box for Jupyter-JSC, overlaid on the Jupyter-JSC web interface.

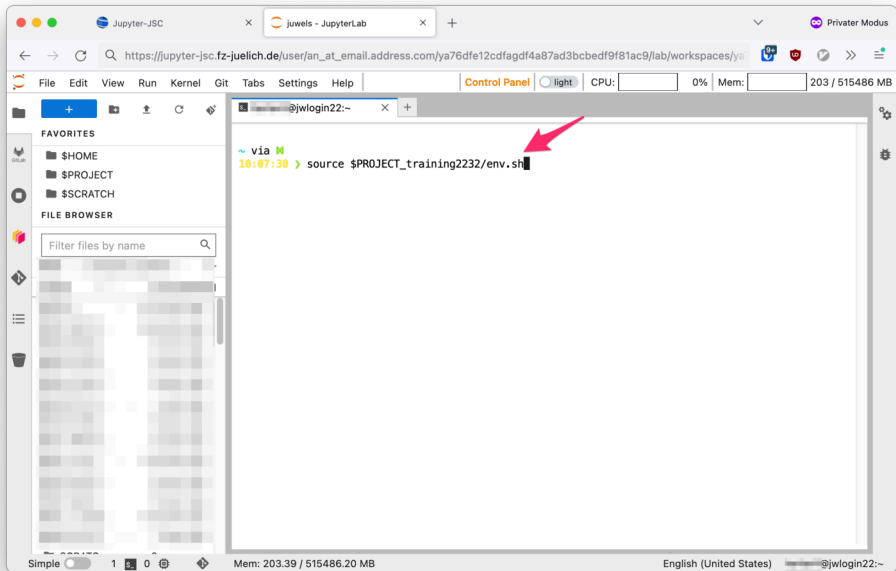
The dialog box contains the following configuration options:

- Service:** Jupyter-JSC
- System:** JUWELS
- Account:** xyhert1
- Project:** training2232
- Partition:** LoginNodeBooster

Buttons: Cancel, Start

The background interface shows the Jupyter-JSC logo, navigation links (JUPYTER, JupyterLabs, LINKS, Documentation, JSC Service Status, Jupyter, JSC), and a footer with the Helmholtz Association logo and contact information.





JupyterLab interface showing a terminal window with the following output:

```
~ 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 > █
```

Bottom status bar: 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!
- developer.nvidia.com/gameworksdownload#?dn=nsight-systems-2022-4
- Also: Via package manager 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="140.221.247.0/24" ssh-ed25519 AddddACadsfzaC1lZDI1NTE5AAAAsa
```

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

- Help at 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  
AddddACadsfzaC1IZDI1NTE5AAAAasdf5yDS3Sht52425D0gV0AWzu52hnxilO92Ynksadfijr3bDq
```

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", ...'/>