NX414 Compute Clusters Guide

SCITAS Documentation

- SCITAS Getting Started Guide
- Passwordless connection (public-private keys): SCITAS Guide
- Remote Intranet Access: Doc

Connecting to Clusters

Via Terminal

```
ssh izar.hpc.epfl.ch
```

Via VS Code

1. Click on the bottom left (stack of `<>`).
2. Select `Connect to Host`
3. Type `izar.hpc.epfl.ch` and use your login info.

Submitting Interactive Jobs

```
Sinteract -c 1 -m 4G -g gpu:1 -a nx-414 -q nx-414 -t 01:00:00
```

- `-c` : Number of CPU cores
- `-m` : System memory
- `-g` : Amount of GPU. Each group should allocate only one to avoid long queues.
- `-a` : Billing account
- `-q` : QOS
- `-t` : Time in `hh:mm:ss` format

Cancel a running interactive job with `CMD+D` or `Control+D`.

Submitting Batch Jobs

- Guide

Setting Up Python Environments

Using Python with `venv`

- Guide

Installing Miniconda3

Download Miniconda:

```
wget https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh -O miniconda_installer.sh
```

Start Installation:

```
bash miniconda_installer.sh
```

- Agree to the ToS
- Specify your installation directory
- Select 'yes' if you want to initialize conda automatically

Create a new conda environment:

```
conda create -n nx414 python=3.11
```

Activate the environment:

```
conda activate nx414
```

Jupyter Notebooks

- Guide

Step 1: Set Up a Jupyter Service

Connect to the cluster:

```
ssh izar.hpc.epfl.ch
```

Start an interactive job:

```
Sinteract -c 1 -m 4G -g gpu:1 -a nx-414 -q nx-414 -t 01:00:00
```

Activate your environment:

```
conda activate nx414
```

Start a Jupyter service:

```
jupyter notebook --no-browser --port=9000 --ip=$(hostname -i)
```

- Ensure port `9000` is free or use another
- Copy the second last terminal output line, e.g. `http://10.91.52.5:9999/tree?token=...`
- `10.91.52.5` : Address of the compute node

Step 2: Port Forwarding

On your local machine, open a terminal and run:

```
ssh -L <local_port>:<host_address>:<host_port> -l <username> izar.hpc.epfl.ch
```

Where:

- `<local_port>` : Available port on your machine
- `<host_address>` : Compute node address
- `<host_port>` : Port used by Jupyter

Example:

```
ssh -L 8888:10.91.52.5:9999 -l <username> izar.hpc.epfl.ch
```

To run it in the background, add `-f -N` flags.

Step 3: Connect to the Jupyter Server

On your browser, open:

```
http://localhost:<local_port>/tree?token=...
```

Make sure `<local_port>` matches Step 2. Example:

```
http://localhost:8888/tree?token=...
```