

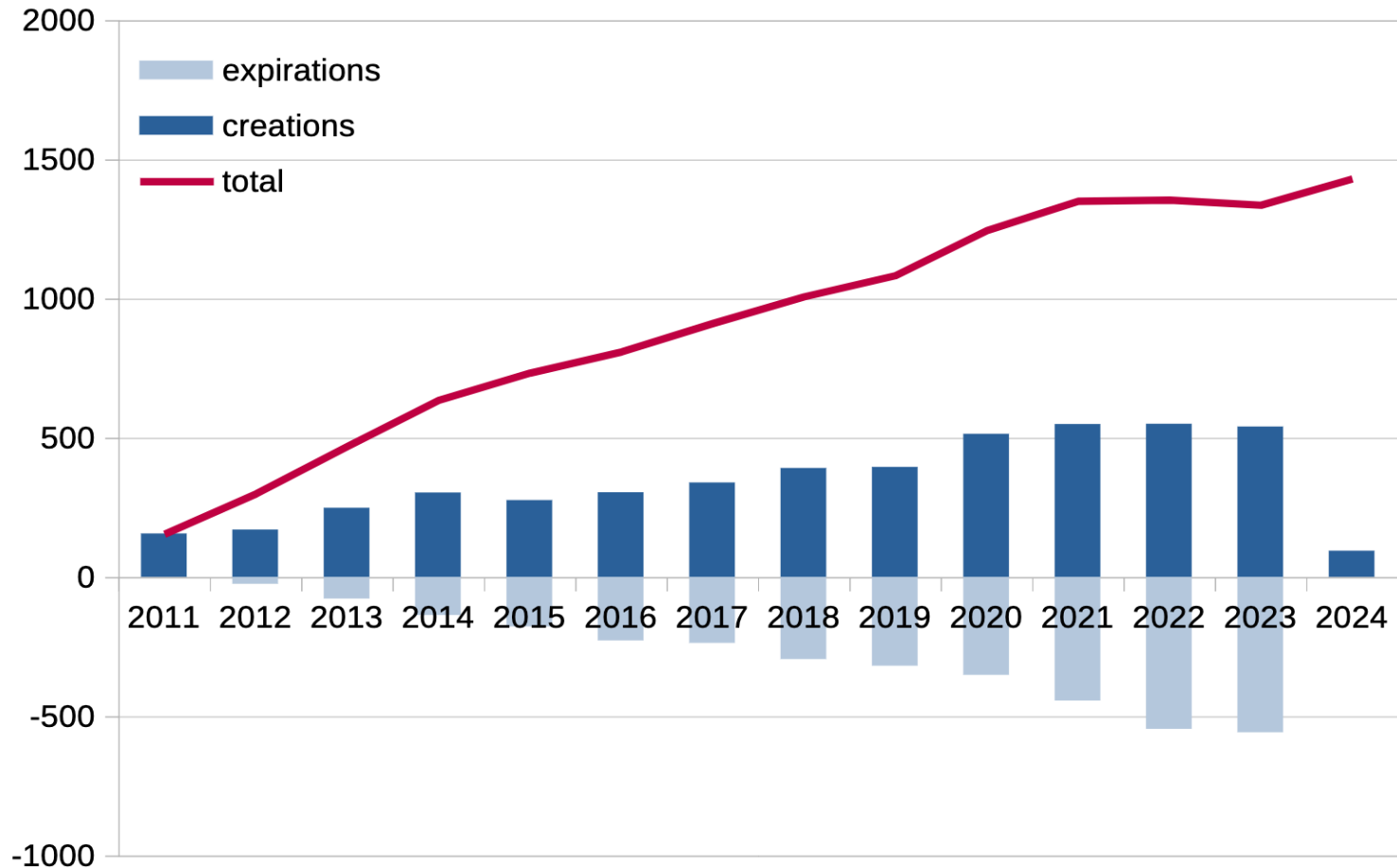
Help us help you!

The CÉCI sysadmins
CÉCI day 2024

Help "you": the CÉCI users



4900+ Accounts created since 2011



Help "us": the CÉCI sysadmins



UCLouvain: **CISM** (4.4)
ULiège: **nicadm** (1)
UNamur: **PTCI** (1.5)
UMons: **CMN** (1)
ULB: **HPC team** (2)
CÉCI: Logisticien (1.5)

~11.5

Help "us": the CÉCI sysadmins



**WE'RE
HIRING!**

<https://www.ceci-hpc.be>

Help "us": the CÉCI sysadmins



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Our goals

 provide as much uptime as possible

 accommodate a wide spectrum of jobs

 maximize resource utilization

 minimize turnaround for your jobs

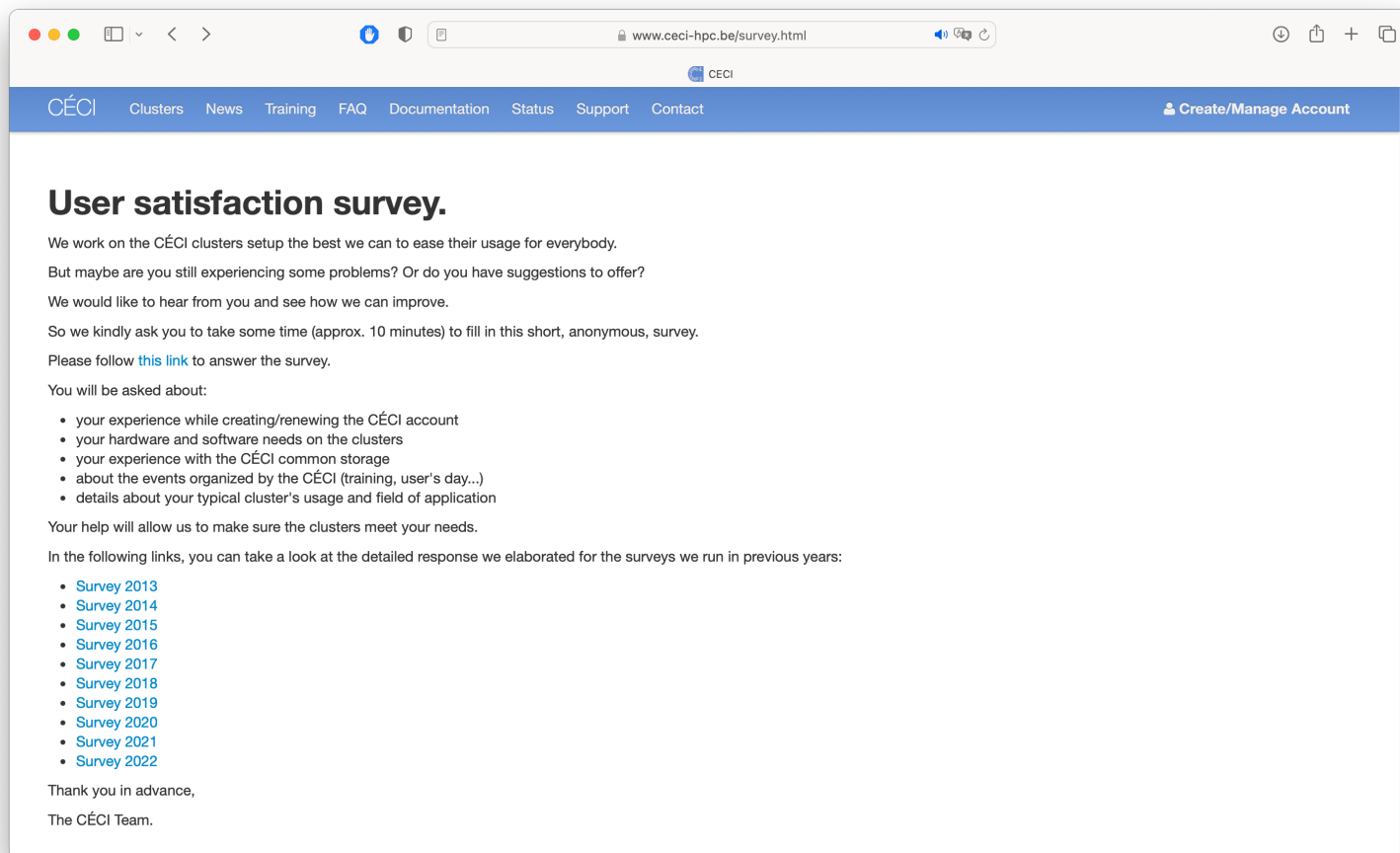


Our messages today

- we can only act on your problems if you report them
- how you request help really impacts the possible time to response
- there are certain tasks you can do by yourself
- wasting resources has an impact on the planet and on other's research
- certain workflows can lead to problems on HPC clusters

We can only act on your problems if you report them

- Via the annual satisfaction survey <https://www.cec-hpc.be/survey.html>



The screenshot shows a web browser window displaying the CÉCI user satisfaction survey page. The browser's address bar shows the URL www.cec-hpc.be/survey.html. The page has a blue header with the CÉCI logo and navigation links: Clusters, News, Training, FAQ, Documentation, Status, Support, and Contact. A 'Create/Manage Account' link is also present in the top right corner. The main content area features the title 'User satisfaction survey.' followed by a message from the CÉCI team. The message explains that they work on improving the clusters and asks for user feedback. It includes a list of topics to be covered in the survey, such as user experience, hardware/software needs, and common storage. A list of links for previous years' surveys (2013-2022) is provided at the bottom of the message. The page concludes with a thank you note and the CÉCI Team signature.

User satisfaction survey.

We work on the CÉCI clusters setup the best we can to ease their usage for everybody.
But maybe are you still experiencing some problems? Or do you have suggestions to offer?
We would like to hear from you and see how we can improve.
So we kindly ask you to take some time (approx. 10 minutes) to fill in this short, anonymous, survey.
Please follow [this link](#) to answer the survey.

You will be asked about:

- your experience while creating/renewing the CÉCI account
- your hardware and software needs on the clusters
- your experience with the CÉCI common storage
- about the events organized by the CÉCI (training, user's day...)
- details about your typical cluster's usage and field of application

Your help will allow us to make sure the clusters meet your needs.

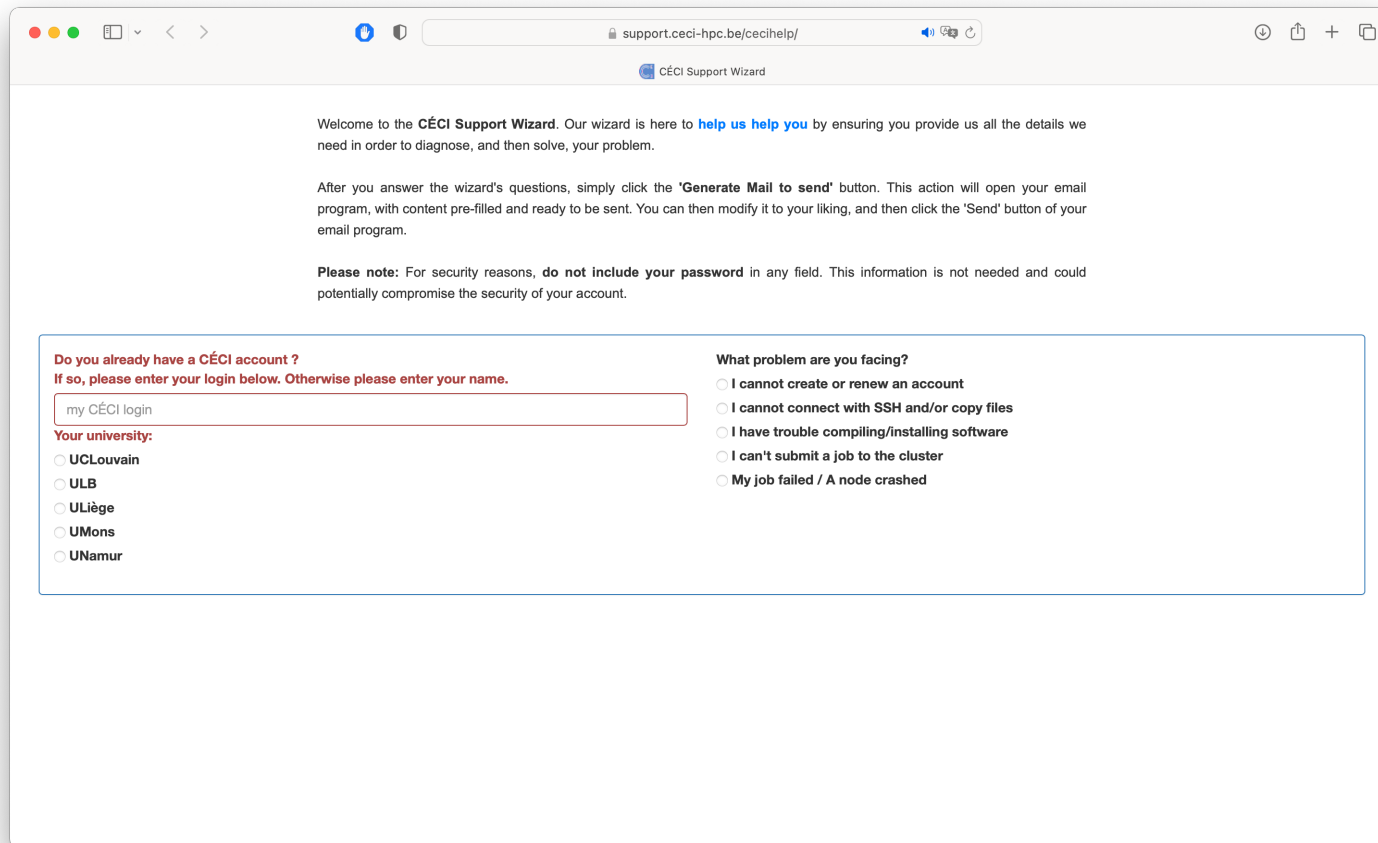
In the following links, you can take a look at the detailed response we elaborated for the surveys we run in previous years:

- [Survey 2013](#)
- [Survey 2014](#)
- [Survey 2015](#)
- [Survey 2016](#)
- [Survey 2017](#)
- [Survey 2018](#)
- [Survey 2019](#)
- [Survey 2020](#)
- [Survey 2021](#)
- [Survey 2022](#)

Thank you in advance,
The CÉCI Team.

We can only act on your problems if you report them

- Via the Support Wizard <https://support.ceci-hpc.be/cecihelp/>



The screenshot shows a web browser window with the URL support.ceci-hpc.be/cecihelp/. The page title is "CÉCI Support Wizard".

Welcome to the **CÉCI Support Wizard**. Our wizard is here to **help us help you** by ensuring you provide us all the details we need in order to diagnose, and then solve, your problem.

After you answer the wizard's questions, simply click the **'Generate Mail to send'** button. This action will open your email program, with content pre-filled and ready to be sent. You can then modify it to your liking, and then click the **'Send'** button of your email program.

Please note: For security reasons, **do not include your password** in any field. This information is not needed and could potentially compromise the security of your account.

Do you already have a CÉCI account ?
If so, please enter your login below. Otherwise please enter your name.

Your university:

- UCLouvain
- ULB
- ULiège
- UMons
- UNamur

What problem are you facing?

- I cannot create or renew an account
- I cannot connect with SSH and/or copy files
- I have trouble compiling/installing software
- I can't submit a job to the cluster
- My job failed / A node crashed

How you request help impacts the possible time to response

1. Start with **Due Diligence**

- Read the error message, try to find words you understand
- Check <http://www.ceci-hpc.be/status.html>

2. Use the **Correct Channel**: (support wizard unless stated otherwise)

3. State the **General Goal**; explain your intentions

4. Provide **Important Information**

- *Who*: what is your login?
- *What*: what job ID, what file, what modules?
- *When*: on which date, at what time?
- *Where*: which cluster, which directory?
- *Why*: what is the problem?

5. Give the **Exact Error** message you are facing

How you request help impacts the possible time to response

More info: <http://www.ceci-hpc.be/helpushelpyou.html>

The screenshot shows a YouTube video player interface. The video title is "Help us help you!" and it is from the channel "CECI and CISM HPC". The video has 97 views and was uploaded 1 year ago. The video description reads: "You are facing a problem and need help. We are here to help, but we also need you to help us help you. Here are 5 tips you can follow to make sure we can be as efficient as possible in solving your problem. ...more". The video player shows a progress bar at 0:04 / 2:51. To the right of the video player, there is a list of recommended videos from the same channel, including "Computing with Slurm", "Modules: How to find/use software on cluster", "Using a workflow manager to handle large amounts of jobs", "How to connect CECI clusters from Windows computer", "Connecting on CECI cluster with MobaXterm Windows", "Container solution for HPC: Singularity/Apptainer", "Introduction to compilers and compiling, and optimized...", and "Snakemake".

There are certain tasks you can do by yourself

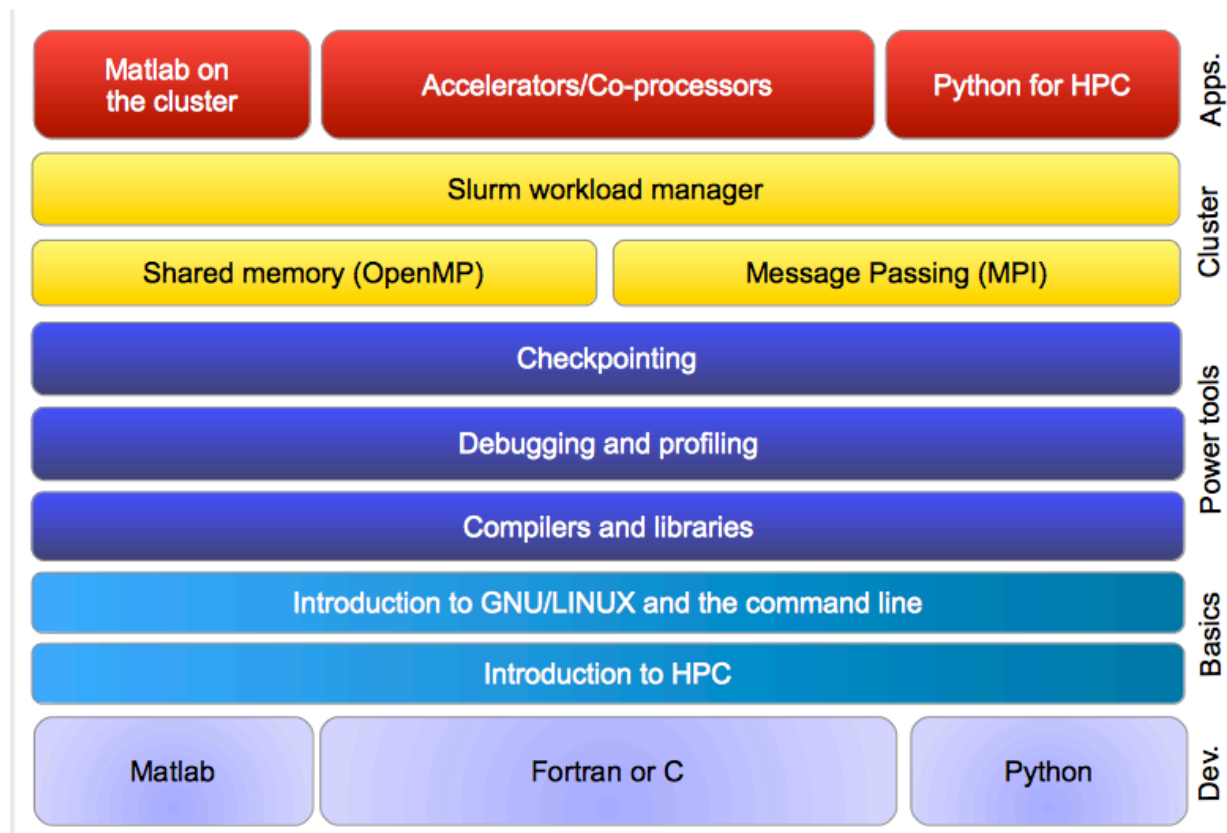
- installing software (modules included)
- changing permissions back after an error
- sharing files among users
- changing group ownership (not user ownership)
- joining a tier-1 project
- learning Linux
- ...



Lemaitre3: module load gameshell

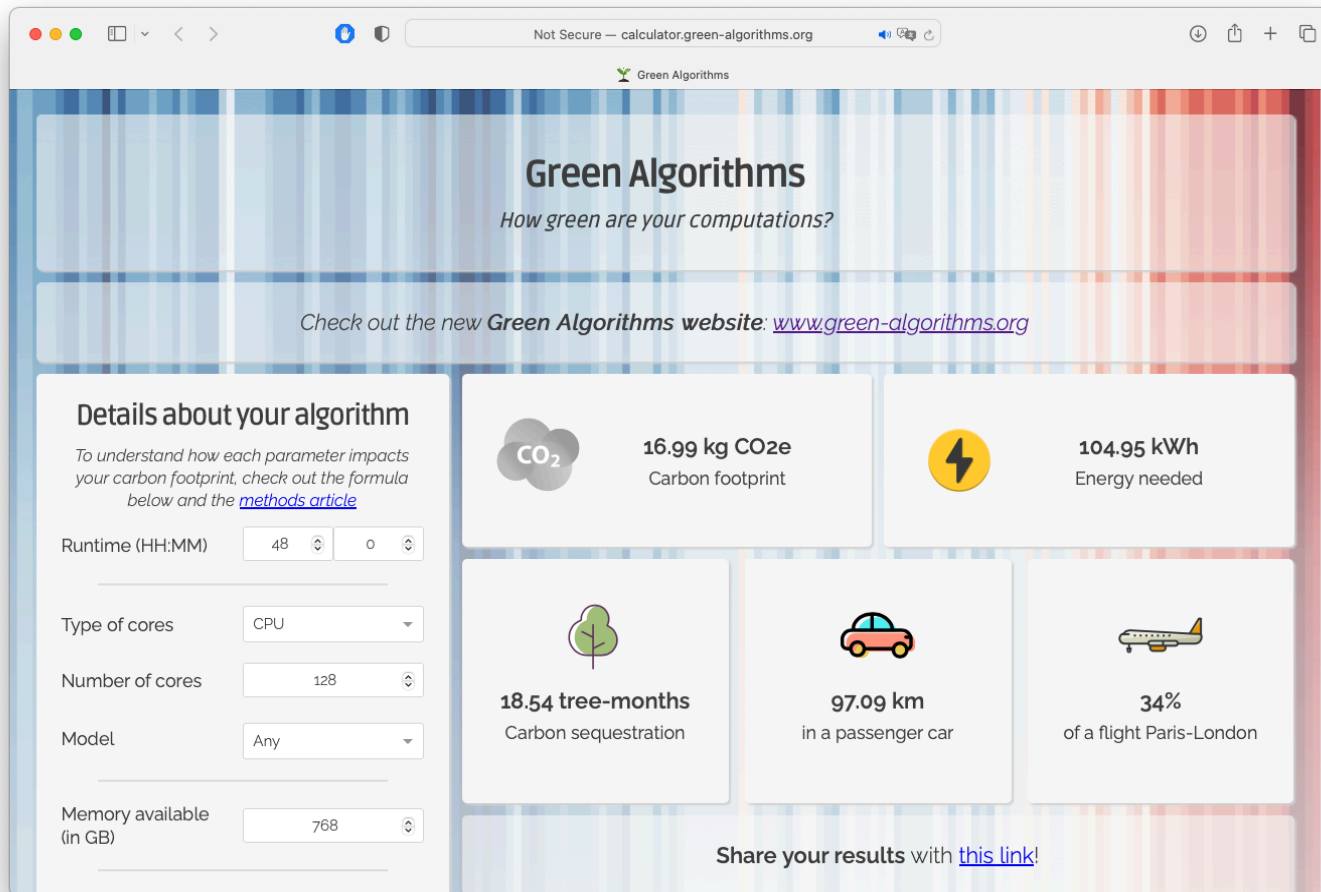
There are certain tasks you can do by yourself

<https://www.ceci-hpc.be/training.html> | <https://www.cism.ucl.ac.be/videos>



Wasting resources has an impact on the planet

More info: <http://calculator.green-algorithms.org>



Wasting resources has an impact on the planet

- jobs whose output is discarded because of misconfiguration
- jobs whose output is unsaved due to file manipulation error
- jobs whose results are lost because of hardware failure
- jobs not using the resources requested because of misconfiguration
- interactive jobs sitting idle
- jobs under-using resources due to bad scaling

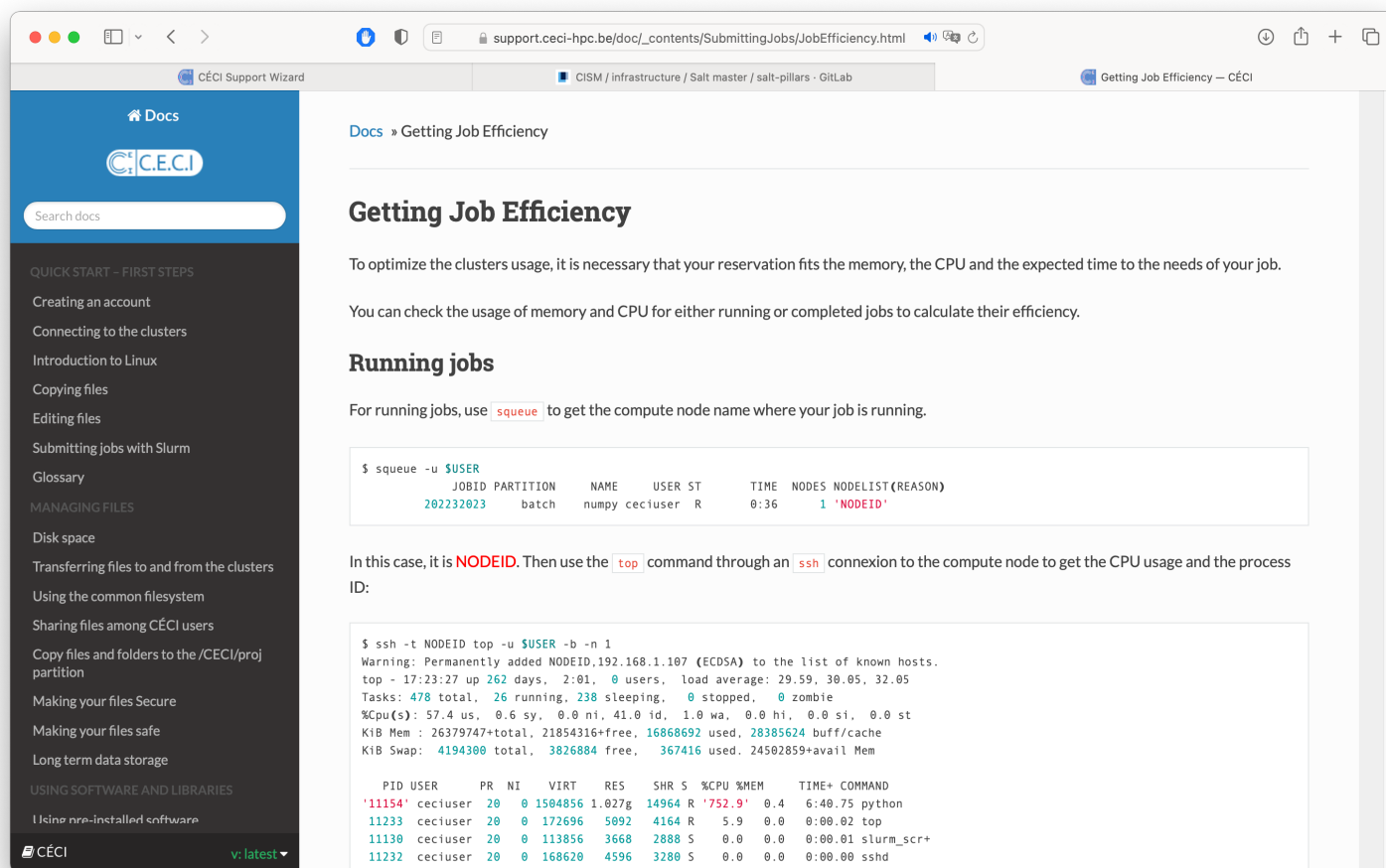
are negatively impacting the climate and your colleagues' research

$$P(\text{idle}) \approx \frac{1}{2} P(\text{running})$$

Wasting resources has an impact on the planet

So be considerate of the resources you ask for and use them.

https://www.ceci-hpc.be/job_efficiency



Docs » Getting Job Efficiency

Getting Job Efficiency

To optimize the clusters usage, it is necessary that your reservation fits the memory, the CPU and the expected time to the needs of your job.

You can check the usage of memory and CPU for either running or completed jobs to calculate their efficiency.

Running jobs

For running jobs, use `squeue` to get the compute node name where your job is running.

```
$ squeue -u $USER
```

JOBID	PARTITION	NAME	USER	ST	TIME	NODES	NODELIST(REASON)
202232023	batch	numpy	ceciuser	R	0:36	1	'NODEID'

In this case, it is **NODEID**. Then use the `top` command through an `ssh` connexion to the compute node to get the CPU usage and the process ID:

```
$ ssh -t NODEID top -u $USER -b -n 1
```

```
Warning: Permanently added NODEID,192.168.1.107 (ECDSA) to the list of known hosts.
top - 17:23:27 up 262 days, 2:01, 0 users, load average: 29.59, 30.05, 32.05
Tasks: 478 total, 26 running, 238 sleeping, 0 stopped, 0 zombie
%Cpu(s): 57.4 us, 0.6 sy, 0.0 ni, 41.0 id, 1.0 wa, 0.0 hi, 0.0 si, 0.0 st
KiB Mem : 26379747+total, 21854316+free, 16868692 used, 28385624 buff/cache
KiB Swap: 4194300 total, 3826884 free, 367416 used, 24502859+avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
11154	ceciuser	20	0	1504856	1.027g	14964	R	752.9	0.4	6:40.75	python
11233	ceciuser	20	0	172696	5092	4164	R	5.9	0.0	0:00.02	top
11130	ceciuser	20	0	113856	3668	2888	S	0.0	0.0	0:00.01	slurm_scr+
11232	ceciuser	20	0	168620	4596	3280	S	0.0	0.0	0:00.00	sshd

Certain workflows create problems on HPC clusters

- Running anything CPU-intensive on the head node
- Issuing too many requests to the scheduler
- Not testing first on a small scale
- Excessive and/or “bad” I/O on a parallel/network filesystem
- Storing a large number of small files
- Not double checking the email options

are example of user behavior that impacts other users' experience

So please

Help us help you!