

# LUMI

A white wolf is the central focus, standing in a futuristic, blue-toned digital environment. The background is filled with vertical light beams, floating particles, and a grid-like pattern, creating a high-tech, cybernetic atmosphere. The wolf is looking slightly to the right of the viewer.

## LUMI Support and Documentation

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# Distributed nature of support

- Distributed support system partly mirroring the distributed allocations model
- Allocations: Support comes from the organisation that granted the allocation
  - Everything related to getting access to the system and billing units
- LUMI User Support Team offers L1 and basic L2 support (but not for allocations)
  - Via web forms on [lumi-supercomputer.eu/user-support/need-help](https://lumi-supercomputer.eu/user-support/need-help)
  - From the moment your account is created on LUMI
- Local organisations may offer additional support to their users
- EuroHPC has granted the EPICURE project to set up a network for advanced L2 and L3 support across EuroHPC centres
- In principle the EuroHPC Centres of Excellence should play a role in porting and support of specific applications
- No support channel can offer you a free “Research Software Engineer”.

# Support level 0: Take a training

- System-specific trainings
  - LUST with HPE and AMD organise trainings
    - 1- or 2-day introductory trainings
    - 4-day comprehensive with more attention on how to run efficiently and to development and profiling tools
    - Announcements on [lumi-supercomputer.eu/events](https://lumi-supercomputer.eu/events) and various mailing lists
    - Training materials on [lumi-supercomputer.github.io/LUMI-training-materials](https://lumi-supercomputer.github.io/LUMI-training-materials)
  - There may be local LUMI introductory trainings also
- Application-specific trainings
  - Should come from the EuroHPC centres of excellence and other organisations
- Combined: Application-on-system trainings
  - Small target group, but LUST may organise some about AI on LUMI in the future
- Awaiting a new EuroHPC training initiative to succeed PRACE...

# Support level 0: Check the docs (1)

L U M I

- Main documentation at [docs.lumi-supercomputer.eu](https://docs.lumi-supercomputer.eu)

L U M I Documentation

Home First steps Hardware Run jobs Software Developing Storage Help desk

🔍 Search



Useful box!

## Welcome

Welcome to the LUMI supercomputer user guide. To navigate this guide, select a category from the navigation bar at the top of the page or use the search function.

You have not connected to LUMI yet? Please visit the first steps section to get started.

→ [First steps](#)

[🔗 LUMI helpdesk](#) [🔗 LUMI status](#) [🔗 LUMI events](#) [🔗 LUMI training materials](#)



# Support level 0: Check the docs (2)

- Main documentation at [docs.lumi-supercomputer.eu](https://docs.lumi-supercomputer.eu)

The screenshot displays the LUMI Documentation website. At the top left, the 'LUMI Documentation' logo is visible. A navigation menu includes 'Home', 'First steps', 'Hardware', 'Run jobs', 'Software', and 'Developing'. The main content area features a 'Welcome' section with introductory text and a link to 'First steps'. A search bar is open, showing the query 'quota' and 7 matching documents. The search results list 'Daily management', 'Overview', and 'Common error messages'. The 'Daily management' result includes a sub-section for 'lumi-quota' with a brief description and a link to '4 more on this page'. The 'Overview' result includes a sub-section for 'About the number-of-files quota' with a brief description and a link to '1 more on this page'. At the bottom of the page, there are links for 'LUMI helpdesk', 'LUMI status', 'LUMI events', and 'LUMI training materials'.

**LUMI Documentation**

Home First steps Hardware Run jobs Software Developing

**Welcome**

Welcome to the LUMI supercomputer user guide. To navigate this function.

You have not connected to LUMI yet? Please visit the first steps section

→ First steps

Search: quota

7 matching documents

- Daily management
  - lumi-quota**
  - Shows **quota** of your projects. The information is obtained directly from Lustre, and is almost real-time. Usage: Information of all your projects: lumi-**quota** | Information of a specific project: lumi-**quota**-project...
  - 4 more on this page
- Overview
  - About the number-of-files quota**
  - For reasons related to performance, we are particularly attentive to the number of files present on the parallel file system. A lot of small files negatively impact all users by stressing the file system metadata servers. Therefore, any...
  - 1 more on this page
- Common error messages

LUMI helpdesk LUMI status LUMI events LUMI training materials

# Support level 0: Check the docs (3)

L U M I

- Software overview on [lumi-supercomputer.github.io/LUMI-EasyBuild-docs](https://lumi-supercomputer.github.io/LUMI-EasyBuild-docs)

☰ **LUMI Software Library**

## Package list

Lumi software stack release: 20240412

- U**: Specific user documentation available
- T**: Technical documentation available
- A**: Archived application
- C**: Singularity container to run using singularity commands

Table of contents

Helps with subpackages

c  
d  
e  
f  
g  
h  
i  
j

# Support level 0: Check the docs (4)

L U M I

- Software overview on [lumi-supercomputer.github.io/LUMI-EasyBuild-docs](https://lumi-supercomputer.github.io/LUMI-EasyBuild-docs)

The screenshot shows the LUMI Software Library interface. On the left, there is a sidebar with a hamburger menu icon and the text "LUMI Software Library". Below this is a "Package list" section with the text "Lumi software stack release: 20240412". There are four colored boxes with letters: a blue box with 'U', a yellow box with 'T', a red box with 'A', and a purple box with 'C'. Each box is followed by a colon and a description: "Specific user documentation available", "Technical documentation available", "Archived application", and "Singularity container to run using singularity commands".

On the right, a search modal is open. The search bar contains the text "tykky". Below the search bar, it says "1 matching document". The search result is for "lumi-container-wrapper". Underneath, there is a section titled "Technical documentation" with the text: "The lumi-container-wrappar, aka tykky, tool is developed at CSC Finland by Henrik Nortamo." Below this text is a bulleted list: "• tykky in the GitHub hpc-container-wrapper repository" (with a sub-bullet "• GitHub releases via tags") and "• tykky in the CSC documentation". At the bottom of the search modal, it says "2 more on this page".

# Support level 0: Check the docs (5)

L U M I

- Software overview on [lumi-supercomputer.github.io/LUMI-EasyBuild-docs](https://lumi-supercomputer.github.io/LUMI-EasyBuild-docs)

The screenshot displays the LUMI Software Library interface. On the left, there is a sidebar with a hamburger menu icon and the text "LUMI Software Library". Below this, the heading "Package list" is visible. Underneath, it says "Lumi software stack release: 20240412". There are four colored boxes with letters: a blue box with 'U', a yellow box with 'T', a red box with 'A', and a purple box with 'C'. Each box is followed by a colon and a description: 'U : Specific user documentation available', 'T : Technical documentation available', 'A : Archived application', and 'C : Singularity container to run using singularity commands'. On the right side of the interface, a search bar is open with the text "htop" entered. Below the search bar, it says "1 matching document". There is a document icon next to the word "systools". Below that, the heading "Technical documentation" is shown. Underneath, there is a bulleted list. The first item is "GPP: A General-Purpose Preprocessor (or sometimes called Generic PreProcessor)", which has three sub-items: "GPP web site", "GPP on GitHub", and "GitHub releases". The second item is "htop", which has two sub-items: "htop web site" and "htop on GitHub".



# Support level 0: Check status

- Downtimes and major issues are communicated via e-mail to all users
  - So please read mails that you receive from us.
- And there is also the [LUMI Service Status page](#)
  - Everything announced in those emails and sometimes more...
- Check these sources if you cannot log on to the system. It might be down.

# Support level 0: Your colleagues

- A LUMI project is a coherent research project in which (often) multiple people collaborate
- So your colleagues may have run in the same problem already and have a solution
- Support teams are not there to deal with your team's communication problems
  - Nothing worse than having the same question asked multiple times from the same project
- Equally bad: Contact multiple help desks with the same question without telling
- Similarly, if you want to know what your colleagues are doing, talk to them and not to the support team
  - Resources are reported per project and not per team member!
- Onsite presence at LUMI events and courses are an excellent opportunity to network with more remote colleagues and learn from them!

# L1 and basic L2 support: LUST (1)

L U M I

- LUST: LUMI User Support Team
- 10 FTE spread over the LUMI consortium countries, but work as a team
  - Coordinated by CSC
  - You'll not necessarily be helped by someone from your own country but by the person who is most familiar with your problem
- Some problems get passed on to HPE or AMD
- Work hours Monday-Friday 9:00-19:00 Helsinki time for first response
- LUMI support members are regular users on the system!
  - Strict security policies: very few people have root access on LUMI and these went through a background check.
  - Necessary as some projects work with confidential data

# L1 and basic L2 support: LUST (2)

- Contact: [lumi-supercomputer.eu/user-support/need-help](https://lumi-supercomputer.eu/user-support/need-help)
- Please do not use the email address to open a new ticket

**L U M I** About LUMI Get Started News and Articles Events and Training Newsletters User Support

User Support → Need help?

LUMI Documentation

FAQ

**Need help?**

LUMI Service Status

## Need help?

If you did not find what you were looking for in our documentation or the FAQs section, contact our Support Team!  
Choose the section that best fits your needs and contact our experts.

To have your issue solved faster, please be as detailed as possible in describing it.

### General

General enquirers about LUMI, LUMI documentation, trainings and any other question.

[Go to contact form](#)

### Account

Problems related to accounts on LUMI, login issues, and access.

[Go to contact form](#)

# L1 and basic L2 support: LUST (3)

L U M I

L U M I Documentation

Home First steps Hardware Run jobs Software Developing Storage Help desk

## Help desk

[Help desk](#)

[Training and events](#)

[Known issues](#)

[LUMI service status](#)

[Mailing list archive](#)

## Help Desk



The LUMI User Support Team (LUST) is here to help!

If you have any questions or problems using LUMI, please do not hesitate to contact us. You may find our contact forms for different issues by clicking the 'Contact us' button:



[Contact us](#)

The LUMI helpdesk is open every weekday from Monday to Friday except during [Finnish bank holidays](#):

	CE(S)T	EE(S)T	UTC (Summer)
Start	8:00 AM	9:00 AM	7:00 AM (6:00 AM)
End	6:00 PM	7:00 PM	5:00 PM (4:00 PM)

# How not to write a ticket

L U M I

Subject: Problems on LUMI



Too vague. All we see is a number and a subject...

Hi,

I have problems logging in on LUMI. Can you help me?

Thanks,

L. U.



We're not clairvoyants. There are 100s of reasons for not being able to log in, some of them not even related to LUMI so we really need more information.

Priority: High – It affects severely my work  
Help desk replies within the hour and gets an out-of-office reply...



# Improved version

L U M I

Subject: Userid ul cannot login anymore using Windows Powershell ssh command

Hi,

Since this week (tried yesterday morning and today) I cannot login anymore to LUMI with my userid ul (in project\_465000000). It still worked approximately a week ago and I see no changes in my .ssh directory on my PC. I am using the ssh command provided in Windows Powershell. The error I get is:

```
ssh lumi
```

```
ul@lumi: Permission denied (publickey,gssapi-keyex,gssapi-with-mic,password,hostbased)
```

I use the same key on our local cluster and there I can login.

Thank you in advance for any help or advice on how to solve this,

U.L.

# 1 ticket = 1 issue = 1 ticket

- Don't bundle multiple very different issues in a single ticket. E.g., an Lmod issue, Slurm issue and compiler issue.
- Don't submit multiple tickets for a single issue just because you didn't want to search for the previous mail
  - Keep emails from the help desk (not only to reply, but also as later on in case you get the same error again...)
  - Tell us if you could not reply to the previous mail so that we can search for the ticket (and use the same email address)
- Avoid reusing subject lines for new tickets. Something must be different?
- Avoid reopening tickets that have been closed long ago. When closed in error, reply immediately to reopen.
- Do not reopen old tickets with new issues as that will slow down processing

# Subject line is important

- We have two identifiers: mail address and subject (and in some overviews only the subject)
  - Use consistently the same mail address for tickets, and preferably your company/university mail address and not some private one
  - Make sure your subject line is already descriptive and likely unique. We use the subject line to distinguish between tickets we're dealing with, so make sure that it can easily be distinguished from others.
- Include relevant keywords, e.g.,
  - Userid and way of logging in for login problems
  - Names of software packages for software installations or crashes
- E.g.,
  - User abcdefgh cannot log in via web interface
  - ICON installation needs libxml2
  - VASP produces MPI error message when using more than 1024 ranks

# Think with us

- Provide information to understand who you are: Name, userid (certainly for login problems), project (LUST only knows LUMI project numbers, not local or EuroHPC project numbers)
- For login or data transfer problems, your client environment is also often important to diagnose the problem.
  - And this includes the location.
- What software did you use, and how was it installed?
- Environment:
  - Which modules are you using?
  - Do you have special stuff in `.bashrc` or `.profile`?
  - For problems running jobs: the batch script

# Think with us (2)

- What worked so far? If it ever worked, was this before a system update?
- What do you think you have changed?
- What did you already try to solve the problem?
- How can we reproduce the problem? A simple and quick reproducer speeds up the time to answer your ticket!
  - And we cannot reproduce problems with licensed software (unless it is a LUMI license)
- LUST and local help desk members know a lot about LUMI but are usually not researchers in your field so cannot help you with correcting input files etc.
  - And crashes are often related to wrong use of the package!
- The LUST and local help desk members know a lot about LUMI but cannot know or solve everything and may need to pass your problem to other instances!

# Beware of the XY-problem!

- Quoting from [xyproblem.info](https://xyproblem.info):
  - User wants to do X.
  - User doesn't know how to do X, but thinks Y is a good first step.
  - User doesn't know how to do Y either and gets stuck.
  - User asks for help with Y.
  - Help desk tries to help user with Y, but is confused because Y seems like a strange problem to want to solve.
  - After much interaction and wasted time, it finally becomes clear that the user really wants help with X, and that Y wasn't even a suitable solution for X.
- So
  - Describe your original problem and intent.
  - Promptly provide information when the help desk asks you, even if you think it is irrelevant.
  - If some solutions are ruled out, share why as this may provide additional information about what you really want.



# Help desk restrictions

Help desk team members have no elevated privileges on LUMI

- We cannot access user files (unless we are made member of the project)
- Cannot install or modify system packages or settings
  - And even sysadmins won't usually do that as any change beneficial for you may have adverse effects for other users or for the system
- Cannot extend walltime of jobs
  - Requests are never granted, even not if the extended wall time would still be within the limits of the partition
- The LUST is in close contact with the sysadmins, but they are busy people also and will not promptly deal with any problem

# What support can and cannot do

- The LUST help desk does not replace a good introductory HPC course nor is it a search engine for the documentation
- First steps in getting a userid => Your resource allocator (but [access@eurohpc-ju.europa.eu](mailto:access@eurohpc-ju.europa.eu) or [lumi-customer-accounts@csc.fi](mailto:lumi-customer-accounts@csc.fi) for EuroHPC)  
Login problems afterwards => LUST
- File quota => LUST  
Billing units => Your local resource allocator ([access@eurohpc-ju.europa.eu](mailto:access@eurohpc-ju.europa.eu) for EuroHPC, [lumi-customer-accounts@csc.fi](mailto:lumi-customer-accounts@csc.fi) cannot increase you allocation unless approved by EuroHPC)
- LUST cannot do much complete software installations but often can give hints and do some of the work.

# What support can and cannot do (2)

- The LUST can help with questions regarding compute and storage use
  - LUST: L1 and basic L2 (basically things that can be done in hours)
  - More advanced support has to come from other channels
- The LUST can help with analysing the source of crashes or poor performance
  - But it requires a significant effort from your side also
- But LUST is not there to debug or further develop code for you
- The LUST has some resources for work on porting and optimizing AMD GPU codes via porting calls and hackathons
- LUST cannot solve just any problem in one day or one week
- LUST cannot do your science or solve your science problems

# What support can and cannot do (3)

L U M I

“LUST did not support me well as they could not solve my compiler problems.”

I want to simulate hydroxypropylcellulose in GROMACS. How do I set this up?

My code crashes with error message “...” but I cannot give you the code because it is proprietary and also have no reproducer for you. Tell me what’s wrong.

# What support can and cannot do (4)

Supercomputer support is there to **support** you in the computational aspects of your work related to the supercomputer but not to take over your work.