

LUMI Support and Documentation

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Distributed nature of support

LUMI

- 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
    - From the moment your account is created on LUMI
  - European Federation Platform helpdesk for their services (L1 and basic L2?)
  - 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
    - Requires a EuroHPC project though
  - AI-specific support also coming through the AI factories and MINERVA
  - The EuroHPC Centres of Excellence play a role in porting and support of specific applications
- No support channel can offer you a free "Research Software Engineer".

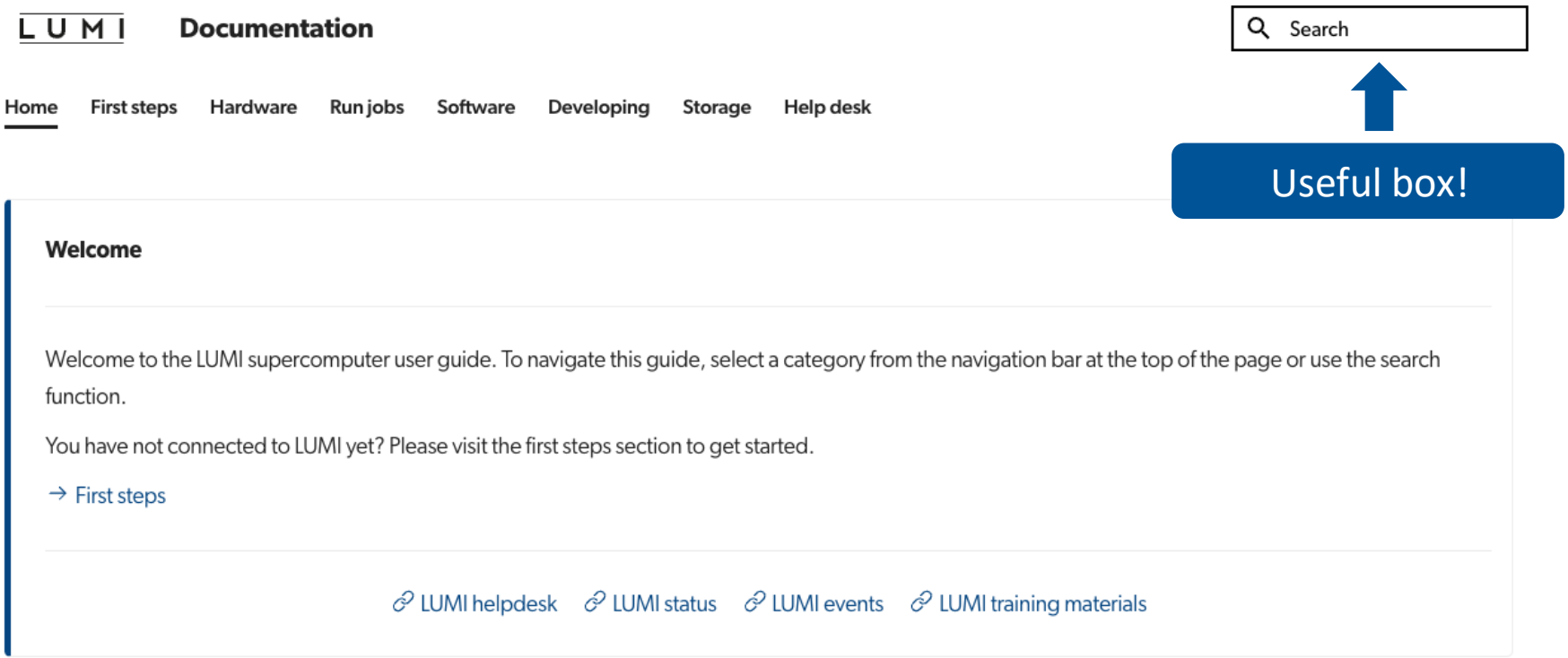
Support level 0: Take a training

LUMI

- System-specific trainings
  - LUST with HPE and AMD organise trainings
    - 2-day general introductory trainings and a 2-day AI-on-LUMI rather introductory training
    - 3-4 day advanced training and the Performance Analysis and Optimisation workshops: how to run efficiently and to development and profiling tools
    - Announcements on lumi-supercomputer.eu/events and various mailing lists
    - Training materials on 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 organises some about AI on LUMI (mostly PyTorch)
  - EuroHPC is also setting up AI support projects (AI factories and Minerva)
- Awaiting a new EuroHPC training initiative to succeed PRACE…

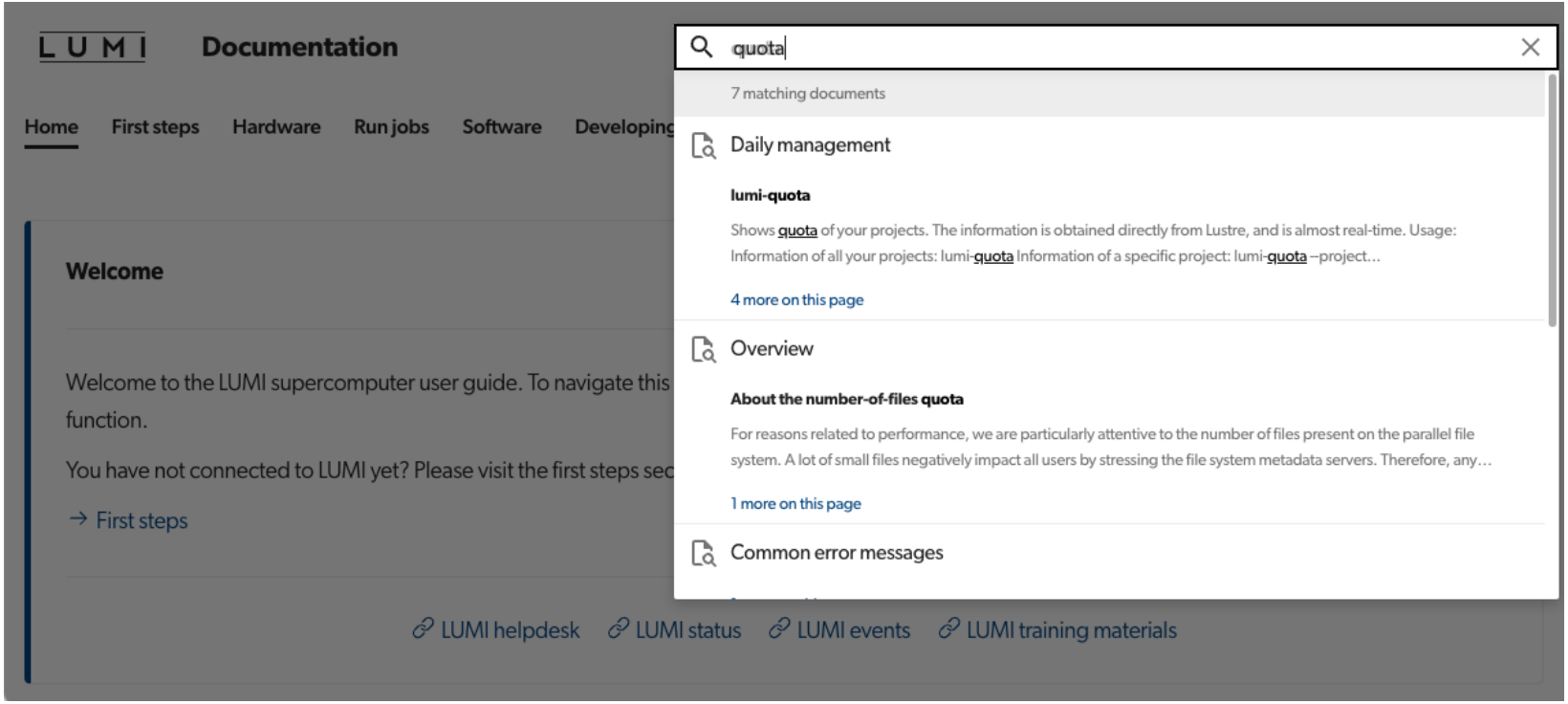
Support level 0: Check the docs (1)

- Main documentation at docs.lumi-supercomputer.eu



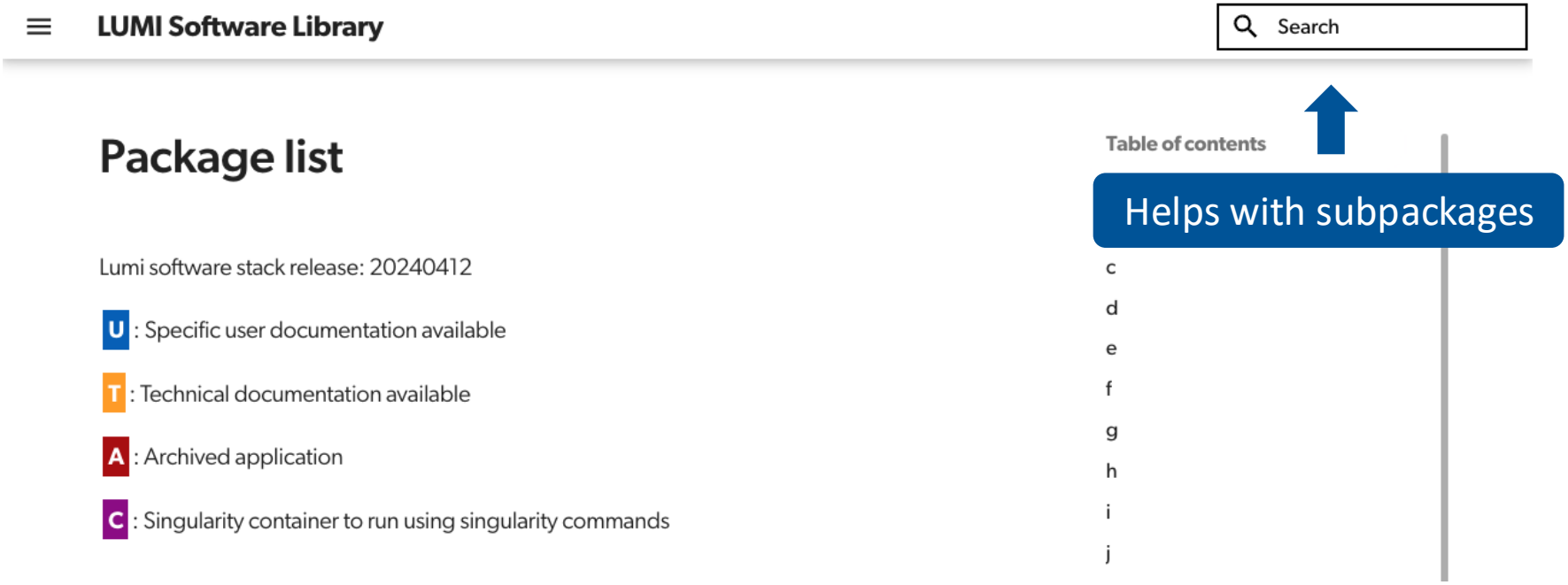
Support level 0: Check the docs (2)

- Main documentation at docs.lumi-supercomputer.eu



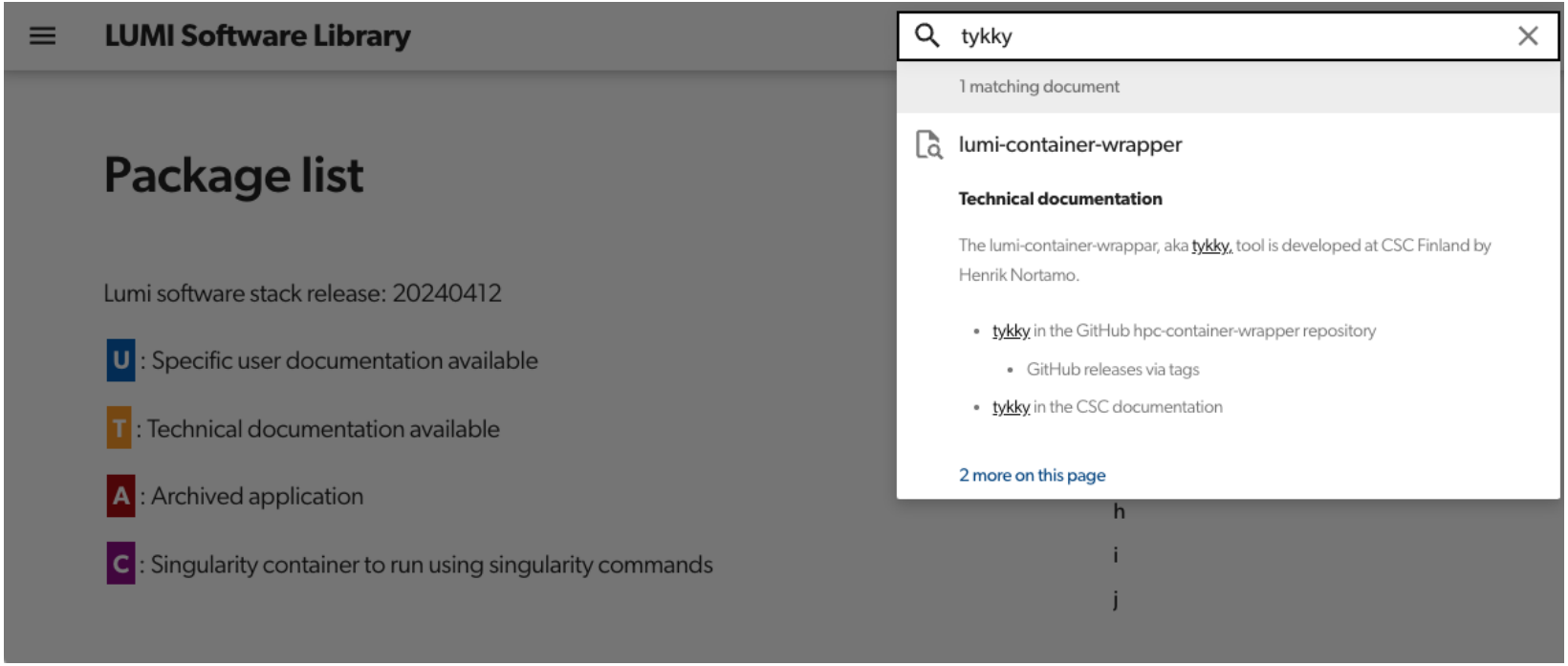
Support level 0: Check the docs (3)

- Software overview on lumi-supercomputer.github.io/LUMI-EasyBuild-docs



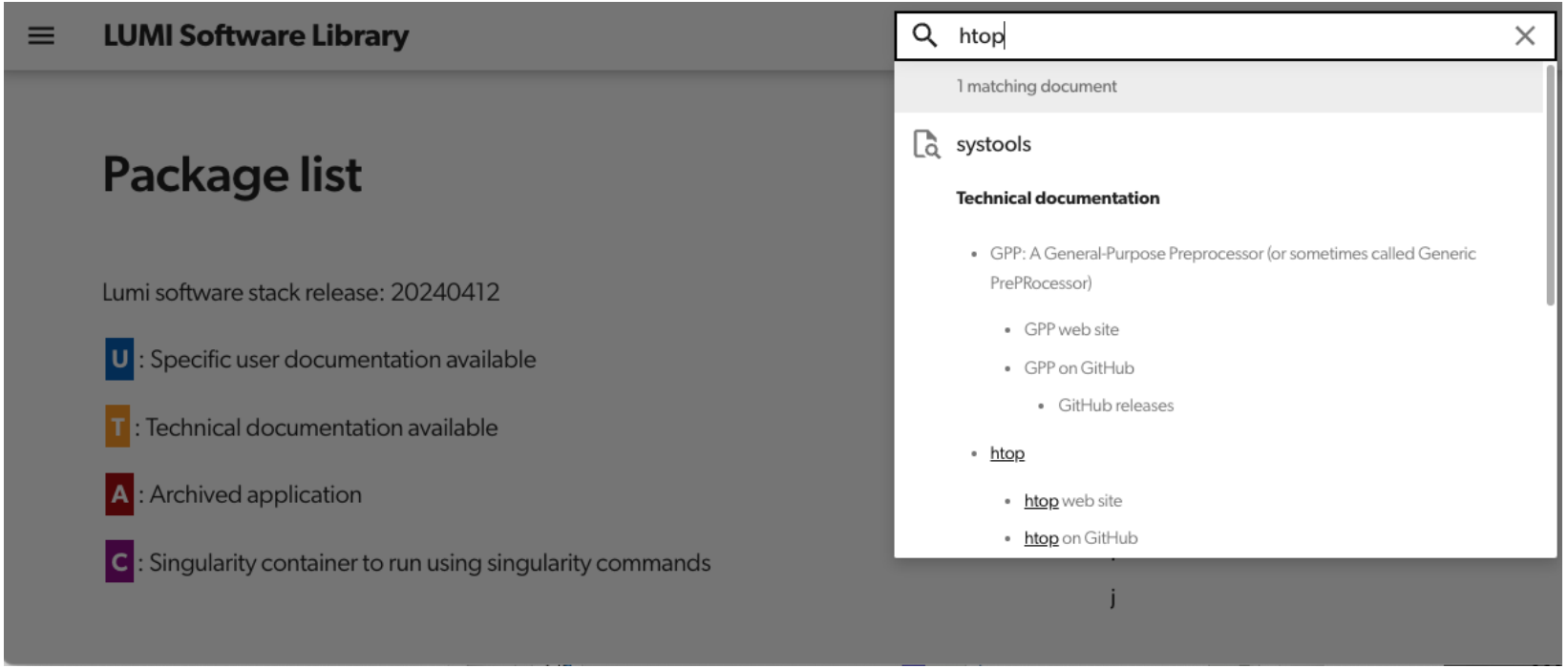
Support level 0: Check the docs (4)

- Software overview on lumi-supercomputer.github.io/LUMI-EasyBuild-docs



Support level 0: Check the docs (5)

- Software overview on lumi-supercomputer.github.io/LUMI-EasyBuild-docs



Support level 0: Your colleagues

LUMI

- 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!

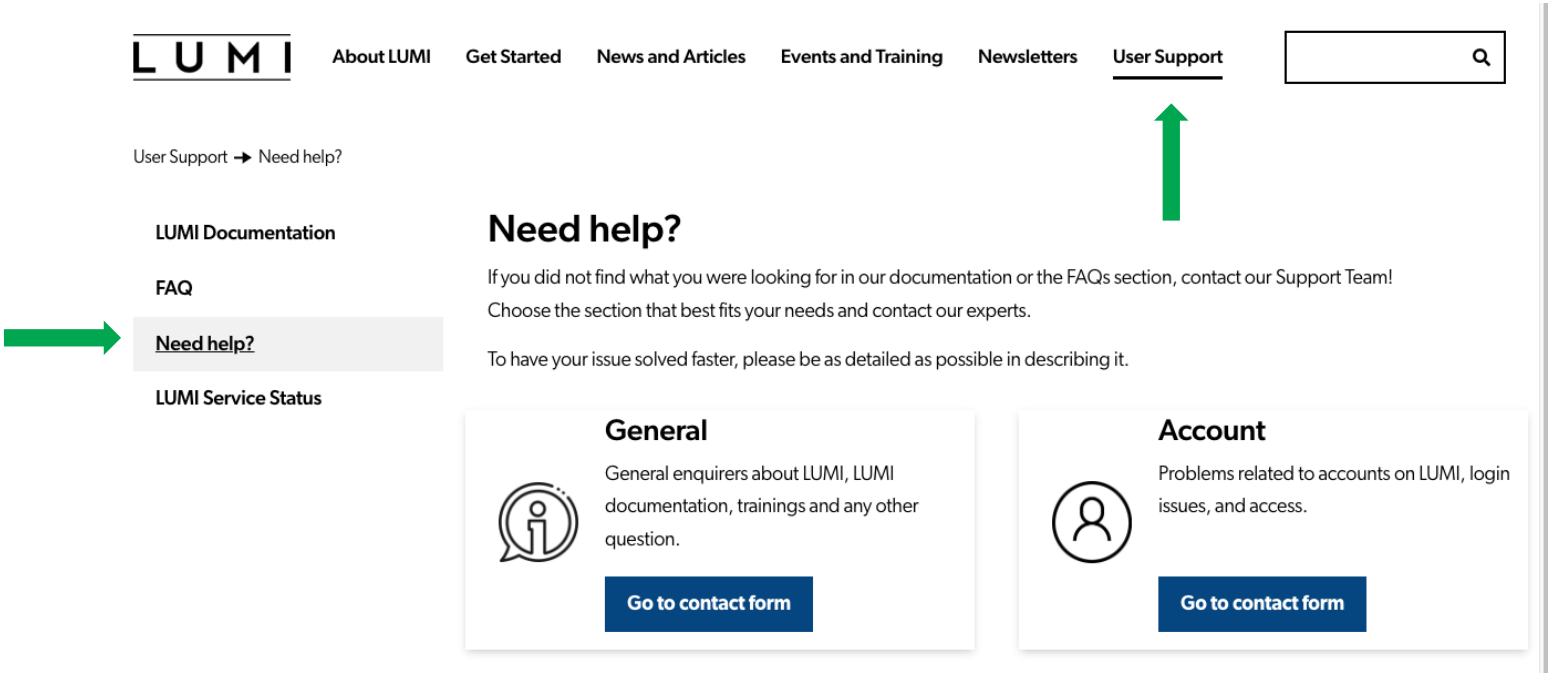
L1 and basic L2 support: LUST (1)

LUMI

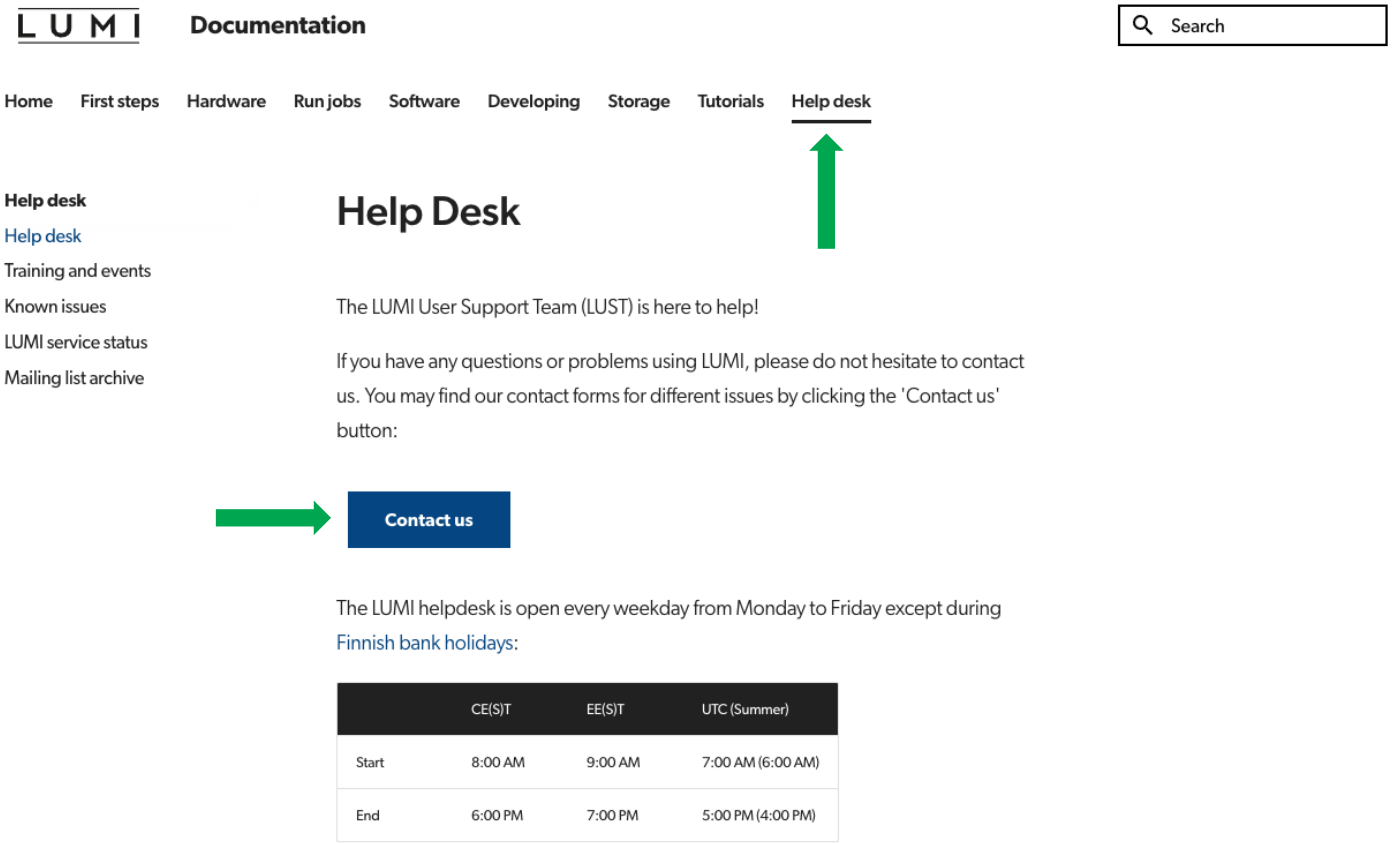
- LUST: LUMI User Support Team
- 10 FTE spread over the LUMI consortium countries, but work as a team
  - Coordinated by CSC
  - You'll not necessarily be helped by someone from your own country but by the person who is most familiar with your problem
- Some problems get passed on to HPE or AMD
- Work hours Monday-Friday 8:00-18:00 Brusssels time for first response (so 7:00-17:00 Tallinn time)
- 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
- Please do not use the email address to open a new ticket



L1 and basic L2 support: LUST (3)



How not to write a ticket

LUMI

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

LUMI

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

LUMI

- 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.
- Do not reopen old tickets with new issues as that will slow down processing

Subject line is important

LUMI

- 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

LUMI

- 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 geographical 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)

LUMI

- 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!

LUMI

- Quoting from 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.
  - Prompty 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

LUMI

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

LUMI

- 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 (helpdesk@my-eurohpc.eu for EuroHPC once you have a project or access@eurohpc-ju.europa.eu before that)
  Login problems afterwards => LUST
- File quota => LUST
  Billing units => Your local resource allocator (helpdesk@my-eurohpc.eu for EuroHPC federation projects)
- LUST cannot do much complete software installations but often can give hints and do some of the work. But we can only support fairly recent codes with a reasonably small number of dependencies.

What support can and cannot do (2)

LUMI

- 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)

LUMI

"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 I also have no reproducer for you. Tell me what's wrong.

What support can and cannot do (4)

LUMI

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.


LUMI
Questions?