

I am a new user - Quick Start

Please note: If you have absolutely no time at all, read at least this page. Investing some time here will save you much time later.

First, the basics:

- In order to access and use the cluster, you need an account. Accounts are organized in “projects”. Quite frequently, your institute will already have a project, and if that's the case, they can easily create an account for you. Ask for the key word “BIAS”.
- Creating an account should automatically subscribe you to the Cluster-News mailing list, where important announcements (for example maintenance periods), are announced. Did you receive a confirmation mail?
- Did you already change your password? You can change your password using the command `passwd`.
- Just requesting lots of resources and starting sequential program at the cluster without any parallelization will NOT make it run faster — it will just make everybody wait (including you). Read the docs.
- Consider the cluster system as a tool to facilitate your research. Mastering any tool takes time. Consider attending one of our introductory talks and also read this Cluster Handbook. It will save your time as well.

About the cluster system

In order to meet the University's demand for computing resources with a lot of CPUs and memory, LUIS as part of the services provided also runs a Linux cluster system that is well-equipped to run parallel jobs. Scientists of the Leibniz University and students either working for an LUH institute or attending a lecture that makes use of scientific computing methods can use the cluster free of charge.

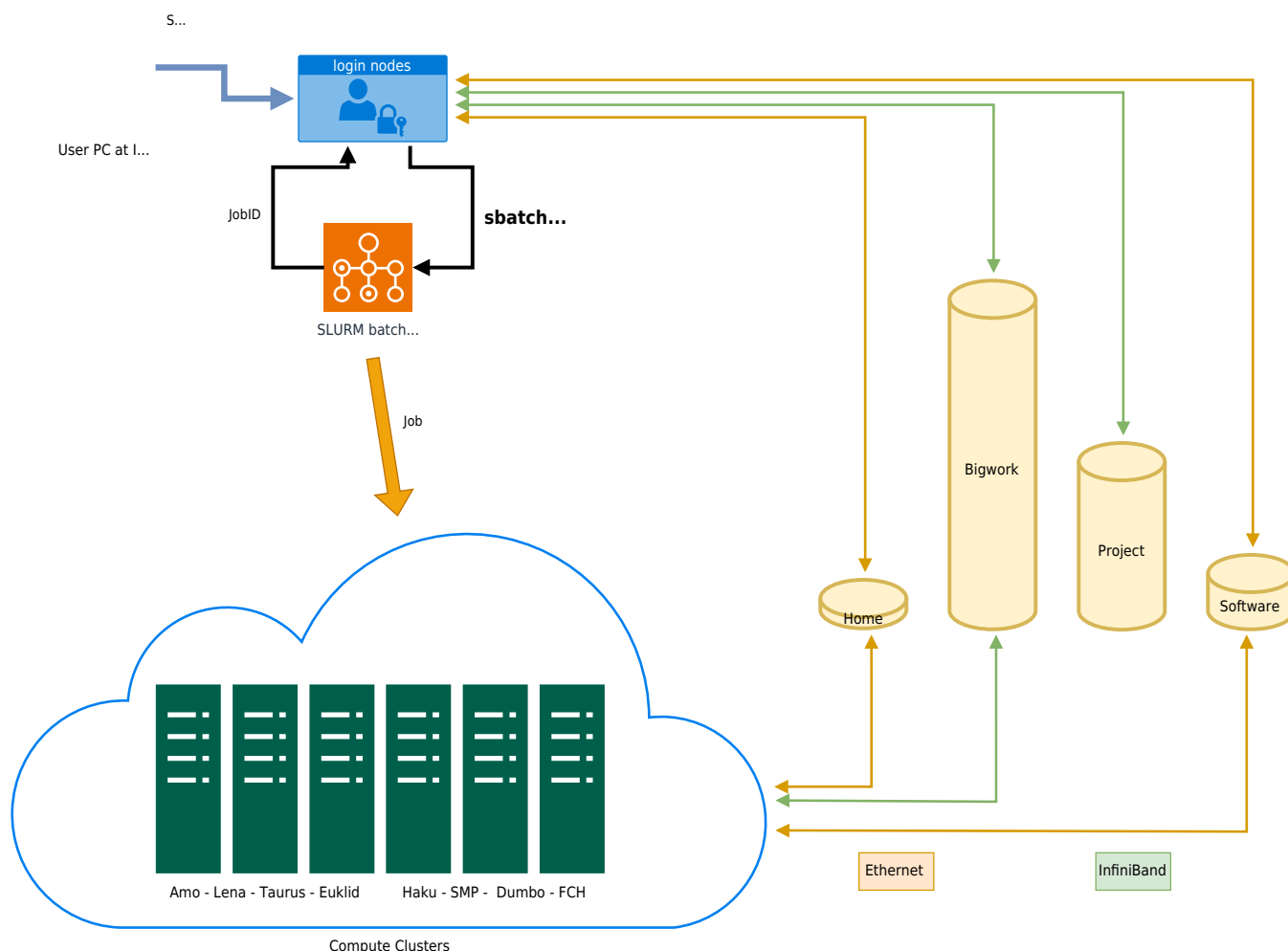


Fig. 1: Sketch of the main user-relevant components of the cluster system

Resources of the cluster system are largely a DFG major instrumentation. Therefore rules¹⁾ for DFG major instrumentation apply when using the cluster system. Project leaders of your EDV-Project bear responsibility to comply with the DFG rules.

Getting access when your institute does not yet have a project

In case no project yet exists at your institute: a project is the frame in which you and others will manage accounts and get permission to use the cluster. To apply for a project and check the formal prerequisites and conditions, check

<https://www.luis.uni-hannover.de/en/services/computing/scientific-computing> (the application form itself is called ORG.BEN.4). Basically, the person responsible for the project is responsible for the accounts they create.

Due to the long-term character of a project, the manager will usually be someone holding a permanent position at an institute. Someone doing a bachelor's or master's thesis ("temporary work" in this consideration) may get an account within such a project. Students can only get an account while working at an institute.

Once the project has been approved, the project manager can log in to the [BIAS](#) website and create accounts (usernames). Usernames should reflect the real name of the user, and the email addresses used should point to the real users and also need to be allocated within the .uni-hannover.de domain.

Note that user accounting on BIAS is not part of the service *Scientific Computing* and thus not part of the cluster system.

What the cluster system may be used for

Parts of the cluster system are DFG major instrumentation, thus rules for DFG major instrumentation apply when using the cluster system. Furthermore software licenses are valid for research and teaching only. Accordingly the cluster system must only be used for research and teaching activities.

Accessing the computing power of a cluster

The cluster system contains the compute resources listed on this page: [Computing Hardware](#). To access these nodes, you will need to generate so-called batch jobs, either by submitting a text file containing the job description or by configuring a job using the OpenOnDemand web portal we provide.

IMPORTANT: If you just log in to the cluster and run your programs directly on the login nodes (login.cluster.uni-hannover.de), you will only use a small fraction of the power available. You'll also experience and generate all kinds of problems for yourself and others, depending on what you and other users do on the same login node.

So it is mandatory to submit batch job to the SLURM resource manager (see the corresponding chapter of this documentation) or use the OpenOnDemand web portal <https://login.cluster.uni-hannover.de> to create these jobs. Using the login nodes to compute stuff is *absolutely not* the way you should do your work. To protect other users and keep the login nodes free for interactive command-line use, anything that tries to use more than 1800 cpu seconds on a login node will get killed automatically. The power of the cluster lies in the computing capabilities *behind* the login nodes, so please learn how to use them. It is, of course, okay to check out small things on a login node. But you should never try to run a real computation there.

Some institutes have a certain need for immediate job execution and priority. If certain conditions are met, they can ask to integrate their own hardware into cluster system in a service called [Forschungscluster-Housing](#) (FCH). Hardware in this service is reserved for the respective institute, usually during work days between eight o'clock in the morning and eight o'clock in the evening. At night-time and on weekends, all cluster users have access to these resources, which means that jobs that ask for less than 12 hours of wall time have a high chance of running on an FCH node overnight. Jobs with less than 60 hours can run on such a node during the weekend. So if you get directed to a machine that does not fit the name scheme of our main clusters, during off-hours, that is most likely an FCH node. For information about placing your institute's hardware into FCH, please get in touch with us.

¹⁾
www.dfg.de

From:

<https://docs.cluster.uni-hannover.de/> - **Cluster Docs**

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https://docs.cluster.uni-hannover.de/doku.php/guide/about_the_cluster_system

Last update: **2025/01/27 09:29**

