



# University of Luxembourg High Performance Computing

## Acceptable Use Policy

### Updated policy Aug. 9th, 2022

#### Introduction

The University of Luxembourg operates since 2007 a large academic HPC facility which remains the reference implementation within the country, offering a cutting-edge research infrastructure to Luxembourg public research while serving as edge access to the upcoming Euro-HPC Luxembourg supercomputer. Special focus was laid on the development of large computing power combined with huge data storage capacity to accelerate the research performed in intensive computing and large-scale data analytics (Big Data).

The University extends access to its HPC resources (including facilities, services and HPC experts) to its students, staff, research partners (including scientific staff of national public organizations and external partners for the duration of joint research projects) and to industrial partners.

All users of UL HPC resources and PIs must abide by the following policies.

#### Computing systems use

Use of UL HPC computing resources should be used only for work directly related to the projects for which the resources were requested and granted, and primarily to advance University's missions of education and research. Use of UL HPC computing resources for personal activities is prohibited.

The UL HPC Team maintains up-to-date documentation<sup>1</sup> on its computational resources and their proper use, and provides regular training and constant support to users. Users assume the responsibility for following the documentation, training sessions and best practice guides in order to understand the proper and considerate use of the UL HPC computing resources.

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<sup>1</sup> ULHPC Technical documentation: <https://hpc-docs.uni.lu>  
ULHPC Tutorials: <https://ulhpc-tutorials.readthedocs.io>

The frontend (access) nodes of the UL HPC clusters are reserved for data transfer to/from the clusters, preparation of job submissions to the queueing system and checking the status of computational jobs. The frontend nodes must not be used for compute or I/O bound processes. Processes inappropriate to execute on the access nodes may be killed and the user notified.

UL HPC computing resources are shared by a wide user base and are managed by the queueing system (Slurm workload manager), which schedules and allocates these resources primarily based on a fair-share mechanism. Large scale experiments involving either large individual jobs or many smaller jobs launched in rapid succession must be done with the guidance and prior approval of the UL HPC Team. Users should provide job walltimes appropriate to the requirements of the computational tasks executed, allowing the workload manager to generate optimal job schedules. Computational tasks that impact the good functioning for the platform or the user experience may be terminated and the user notified.

Users must comply with resource limits as defined in the queueing system and/or communicated by the UL HPC Team. If possible, you should plan large scale experiments during off-load periods (night-time or week-ends).

Users are prohibited from running applications for personal gain on UL HPC resources such as applications that mine cryptocurrency.

Users repeatedly violating these policies may be denied access to UL HPC facilities.

## **Software use**

UL HPC provides on its clusters a rich user software environment with both domain-specific codes and general purpose development tools enabling teaching, research and innovation work across a wide set of computational fields. Open-source, community and commercial tools are provided for the benefit of all users, however some licenses can belong to specific user groups (see below).

Users can bring their own software and use them on UL HPC resources provided that all software has been appropriately acquired and is used according to their corresponding software license agreements. Users are not allowed to access software licenses belonging to other groups without explicit approval from the group PI.

Users must not intentionally introduce or use malicious software on UL HPC facilities, including but not limited to viruses, worms, ransomware, etc.

## **Data use**

Use of UL HPC data storage resources (file systems, data storage tiers, backup, etc.) should be used only for work directly related to the projects for which the resources were requested and granted, and primarily to advance University's missions of education and research. Use of UL HPC data resources for personal activities is prohibited.

The UL HPC Team maintains up-to-date documentation on its data storage resources and their proper use, and provides regular training and support to users. Users assume the responsibility for following the documentation, training sessions and best practice guides in order to understand the proper and considerate use of the UL HPC data storage resources.

Authors/generators/owners of information or data are responsible for its correct categorization as sensitive or non-sensitive. Owners of sensitive information are responsible for its secure handling, transmission, processing, storage, and disposal on the UL HPC systems. The UL HPC Team recommends use of encryption to protect the data from unauthorized access. Data Protection inquiries, especially as regards sensitive information processing can be directed to the Data Protection Officer: [https://www.en.uni.lu/university/data\\_protection/data\\_protection\\_officer](https://www.en.uni.lu/university/data_protection/data_protection_officer).

Users are prohibited from intentionally accessing, modifying or deleting data they do not own or have not been granted explicit permission to access.

Users are responsible to ensure the appropriate level of protection, backup and integrity checks on their critical data and applications. It is their responsibility to set appropriate access controls for the data they bring, process and generate on UL HPC facilities.

In the event of system failure or malicious actions, UL HPC makes no guarantee against loss of data or that user or project data can be recovered nor that it cannot be accessed, changed, or deleted by another individual.

## **User and PI responsibilities**

Users are accountable for their actions. Misuse of UL HPC resources or noncompliance with the Acceptable Use Policy can lead to temporary or permanent disabling of accounts, and administrative or legal actions.

- University of Luxembourg students and staff are granted UL HPC User Accounts on simple request, for the duration of their studies or respective contracts at the University.
- External scientific and research partners are granted UL HPC User Accounts with confirmation of a University PI or their named delegate, for the duration of the joint collaboration.
- Industry partners as commercial users of HPC resources are granted UL HPC User Accounts for the duration of the contract established with the University.
- Users are only allowed one account per person.
- Sharing of user credentials (including but not limited to the User Account password, Private keys and their passphrases) is strictly prohibited.
- Users are provided with a strong password for their Account when it is created. When changing this password, users must choose a strong password that should be unique to their UL HPC User Account.
- Users should inform the HPC Team promptly of any changes in their contact information (email, affiliation, etc.).
- Users must never try to circumvent login procedures on any UL HPC resource or otherwise attempt to gain access where they are not allowed.
- Users must never deliberately scan or probe any information resource without prior authorization.
- Users may be attached to a Project upon request of the PI of that Project or their named delegate.
- Users may be detached from a Project upon request of PI of that Project or their named delegate.
- PI's or their named delegate are responsible for notifying the UL HPC Team when project users should be deactivated due to the departure of the user or termination of the project.
- The PI is responsible for executing a Project, authorizing Users to participate on the project and utilization of the computational resources in order to achieve the Project's aims and objectives.
- PIs and users agree to ensure that all publications or other outputs, which involved the use of UL HPC resources credit them appropriately as described below under "Crediting UL HPC".
- PIs agree to provide on request reports detailing their and their Users' accomplishments achieved with involvement of UL HPC resources and expertise.
- Information regarding important UL HPC activities, including facility and service availability and upgrades, training, software environment notifications are communicated to the user community via the [hpc-users@uni.lu](mailto:hpc-users@uni.lu) mailing list. Users may unsubscribe from the mailing list, but still assume the responsibility for the information contained therein.

## Crediting UL HPC:

- Mention the UL HPC facility in an acknowledgment section of a publication:

Acknowledgment: The experiments presented in this paper were carried out using the HPC facilities of the University of Luxembourg ~\cite{VCPKVO\_HPCCT22} {\small -- see \url{<https://hpc.uni.lu>}}

- Cite the reference article whenever it is appropriate. BiBTeX entry:

```
@InProceedings{VCPKVO_HPCCT22,
  author = {S. Varrette and H. Cartiaux and S. Peter and E. Kieffer and T. Valette and A. Olloh},
  title = {{Management of an Academic HPC \& Research Computing Facility: The ULHPC Experience 2.0}},
  booktitle = {Proc. of the 6th ACM High Performance Computing and Cluster Technologies Conf. (HPCCT 2022)},
  year = {2022},
  month = {July},
  address = {Fuzhou, China},
  isbn = {978-1-4503-9664-6},
  publisher = {Association for Computing Machinery (ACM)},
}
```

- Tag your publication once registered on Orbilu ([orbilu.uni.lu](https://orbilu.uni.lu)): in the “Research Center” field, enter ULHPC and select the “University of Luxembourg: High Performance Computing (ULHPC)” entry in the proposed list.

## Personal information agreement

UL HPC retains the right to monitor all activities on its facilities.

Users acknowledge that data regarding their activity on UL HPC facilities will be collected. The data is collected (e.g. by the Slurm workload manager) for utilization accounting and reporting purposes, and for the purpose of understanding typical patterns of user’s behavior on the system in order to further improve the services provided by UL HPC. Another goal is to identify intrusions, misuse, security incidents or illegal actions in order to protect UL HPC users and facilities..

Users agree that this data may be processed to extract information contributing to the above stated purposes.

Users agree that their name, surname, email address, affiliation, work place and phone numbers are processed by the UL HPC Team in order to provide HPC and associated services.

Further information about Data Protection can be found at:

[https://www.en.uni.lu/university/data\\_protection](https://www.en.uni.lu/university/data_protection)

Data Protection inquiries can be directed to the Data Protection Officer:

[https://www.en.uni.lu/university/data\\_protection/data\\_protection\\_officer](https://www.en.uni.lu/university/data_protection/data_protection_officer)

### **Warranty disclaimer**

UL HPC facilities are provided to users without any warranty or commitment to a particular service level. UL HPC accepts no responsibility for the performance of its services, nor for the correctness or completeness of any outputs and results obtained while using its facilities.

### **Limitations to applicability**

This policy may be subordinate to a contract or other higher level document governing relations between the user and UL HPC. In case such a document exists, particular items of this policy may be void.

University of Luxembourg documents that take precedence (non-exhaustive list):

- University of Luxembourg IT Acceptable Use Policy  
[https://service.uni.lu/sp?id=kb\\_article&sysparm\\_article=KB0010360](https://service.uni.lu/sp?id=kb_article&sysparm_article=KB0010360)

### **Definition of terms**

- Account password: Password providing an user authentication to various services provided by UL HPC.
- Batch/Queueing system: System used to schedule and execute computational tasks of the users (encapsulated in jobs), allocating the computational

resources necessary to complete these tasks. The generic term “Resource and Job Management Software (RJMS)” is also used to qualify this system. UL HPC clusters rely on the [Slurm](#) workload manager as queueing (batch) system.

- HPC resources: computer time, software libraries and tools including licences, data storage capacity as well as HPC expertise.
- UL HPC facilities, UL HPC systems: Collection of systems dedicated to High Performance Computing, which include UL HPC compute clusters (Iris, Aion), data storage, networks and support infrastructure.
- Passphrase: Password used to protect a private key.
- Project: A set of activities and efforts to achieve aims and objectives approved by UL PIs.
- Primary Investigator (PI): A person responsible for a Project in order to achieve approved aims and objectives.
- Private key: A file containing the private part of a key pair. The private key along with its public part is used to encrypt information exchanged during authentication to UL HPC systems and is essential for access to UL HPC resources. The private key must be protected with a passphrase.
- User: A person holding a UL HPC user account.
- User account: Account assigned to a user to access and utilize resources provided by UL HPC.
- UL: University of Luxembourg.
- UL HPC: University of Luxembourg High Performance Computing.

## Document revisions

| Date       | Description of changes   |
|------------|--|
| 2020-02-15 | Initial version of the new release.  |
| 2022-08-09 | Updated reference article to cite when crediting the ULHPC, links to the technical documentation and tutorials |