HPC user guide Marconi100

- Intro
- Become a user
- Access to the system
- Policy for password definition
- Accounting

Intro

CINECA is one of the Large Scale Facilities in Europe. Its hardware resources are the most powerful available in Italy and among the most powerful available in the world.

The HPC environment in CINECA is made of general purpose computers constantly maintained at the technological leading edge. They are integrated into a common working environment in order to make it simpler for the users the access, the everyday working and the portability of data and applications among different platforms.

Since April 2020, the main HPC system is MARCONI 100, the new nVIDIA accelerated partition of MARCONI.

Become a user

In order to get a "personal" username for the HPC systems in CINECA, you have to register to our UserDB portal (userdb.hpc.cineca.it).

Moreover, you need to be associated to a valid project, as a "Collaborator" or as a "Principal Investigator" (PI).

- **Collaborator**: ask the PI of the project to be associated to it (he/she can do it in the UserDB portal).
- **Principal Investigator**: you have to apply for a project or get HPC resources in some other ways.

At present, these are the ways you can get HPC resources (projects) on our HPC systems:

- **ISCRA Projects**: Researchers with an Italian University or an Italian Research Agency affiliation;
- **PRACE Projects**: European researchers;
- **HPC Europe Transnational Access Programme**;
- **Agreements**: Italian research Institutions, ask to superc@cineca.it;
- **General users and Industrial applications**: send a request to superc@cineca.it.

Whatever the way, you will be given the access information (login name and password) on the CINECA computers you intend to use and an account key referring to your project.

Access to the system

All the HPC Systems can be accessed with:

- **SSH**: The Secure Shell protocol allows data to be exchanged over a secure channel between two computers. SSH is typically used to log into a remote machine and execute commands (remote console), but it can also be used to run programs and transfer files. On Linux systems the ssh client is usually pre-loaded, on Windows systems you have to download and install it. You can get the instructions from this site.
- **RCM** for remote visualization: Remote Connection Manager is a client/server application to connect to HPC machines using graphical mode. A detailed description is reported in a specific document;
- **SCP** (Secure Copy), **SFTP** (SSH File Transfer Protocol): they are part of the SSH protocol and can be used to transfer data from/to the systems;
- **GridFTP**: a protocol that allows very efficient data transfer among different HPC platforms. A detailed description is reported in a specific document Globus Online.

All the systems share the same username/password. If you change the password on one system, it will be automatically changed on all of them (the propagation can take up to one hour). Use the passwd command to change the general password.

You can also connect to the system by "public key", to avoid typing the password at each login. For detailed info see the dedicated document.

On our systems you will login with one of the two shells: **bash** or **tcsh**. Contact the HPC support (superc@cineca.it) if you want to change your default login shell.
Policy for password definition

- The password has a validity of 3 months. You will receive a reminder 10 days before the expiration when you login.
- The new password has to be 10 characters long and contain at least 1 capital letter, 1 number and 1 special character (!"#$%&'()*+,-./;:<=>?@[\]^_`{|}~)
- The new password has to be different from the previous 5 ones.
- Any password change will be notified to the user by email

Accounting

Our HPC resources can be used on a "pay for use" basis.

Currently, the cost is based on elapsed time and the effective number of cores (reserved, not used!) by the batch jobs. In general, most tools and applications from our Software Catalog can be used free of charge even if the program is burdened with a licence. Only in a few cases, you need to register and pay an additional fee in order to access special applications. All the information are reported in the description of the specific application: see application-software-science. (TO BE UPDATED)

In order to run a batch job, a user must login to an HPC system using his/her username and password. The username must be associated with one or more active projects (Accounts) with available budgets.