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Participating in the LHCb volunteer computing project

Thank you for taking part in our project. ! This guide will help you installing the necessary software on your computer.

What do you need :

- BOINC
- VirtualBox

In order to run properly, this project also requires :

- at least 10 GB of disk space
- at least 2 GB of RAM
- an internet connection. There will be a 350-400 MB download the first time the project will run.

Installing VirtualBox

VirtualBox is the software that will manage the virtual machine. It can be downloaded here. You only need the base software, under **VirtualBox platform packages**.

We recommend that you also install the **VirtualBox Extensions** (on the same page) in order to be able to access the virtual machine (for debugging purposes).

Installing BOINC

BOINC will take care of getting all the required project files and launching the application. Download and install it.

You can find here the BOINC user manual

If you are using Fedora, you can get the error "cannot connect to local core client" when you try to start the manager.

To fix it, copy the RPC password hash and give it the correct ownership:

```
sudo cp /var/lib/boinc/gui_rpc_auth.cfg /home/YourUserName
sudo chown YourUserName : YourUserName /home/YourUserName/gui_rpc_auth.cfg
chmod 664 /home/YourUserName/gui_rpc_auth.cfg
```

Instruct the BOINC client to start at boot

```
sudo systemctl enable boinc-client
sudo systemctl start boinc-client
```

Join the project through the BOINC Client

1) Create an account

- 2) Select the LHCb application from the LHCathome preferences page
- 3) Select the percentage of CPU Time you want to use, from the computing preferences page
 - Default is 100%, your computer can get stuck.
- 4) Launch the BOINC client and click on **Add Project** > and select **LHCathome**
 - Project URL is <https://lhathome.cern.ch/lhathome/>.
 - Enter your account informations.

The project should then be registered into the BOINC client and launch its first task !

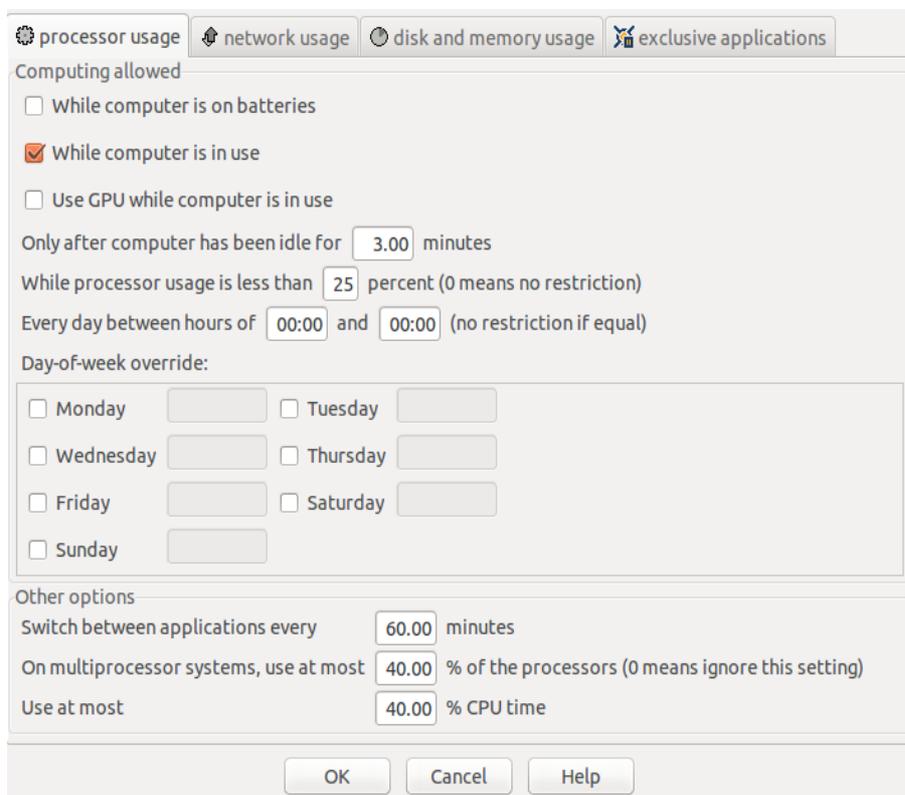
If you do not get any task, then it is possible that the BOINC team wants you to run also some test applications so go back to the LHCathome preferences and tick the option "Run test applications"

If you have any question, please, write a message to the [message board](#)

Computing preferences

You can customize the way BOINC will be using your computer from the BOINC manager, under **Tools > Computing Preferences**.

For example, you can specify a daily schedule and/or to suspend when the machines is in use. You can set the number of processors or the CPU time you want to use:



You can set the **Computing Preferences** also from your account on the page: [Computing Preferences](#).

Computing preferences

These settings apply to all computers using this account except

- computers where you have set preferences locally using the BOINC Manager
- Android devices

| Computing | |
|---|-------------------------------------|
| Usage limits | |
| Use at most | 40% of the CPUs |
| Use at most | 40% of CPU time |
| When to suspend | |
| Suspend when computer is on battery | <input checked="" type="checkbox"/> |
| Suspend when computer is in use | <input type="checkbox"/> |
| Suspend GPU computing when computer is in use | <input checked="" type="checkbox"/> |
| 'In use' means mouse/keyboard input in last | 3 minutes |
| Suspend when no mouse/keyboard input in last | -- minutes |
| Suspend when non-BOINC CPU usage is above | 25% |
| Compute only between | -- |
| Other | |
| Store at least | 0.1 days of work |
| Store up to an additional | 0.5 days of work |
| Switch between tasks every | 60 minutes |
| Request tasks to checkpoint at most every | 60 seconds |
| Disk | |
| Use no more than | -- GB |
| Leave at least | 1 GB free |
| Use no more than | 90% of total |
| Memory | |
| When computer is in use, use at most | 50% |
| When computer is not in use, use at most | 90% |
| Leave non-GPU tasks in memory while suspended | <input type="checkbox"/> |
| Page/swap file: use at most | 75% |

⚠ For laptop users : BOINC computing preferences are set by default to run tasks even on battery. You probably don't want that, make sure to uncheck **Do work while on battery**.

⚠ Important: BOINC computing preferences are set by default to use 100% of CPUs and 100% of the CPU Time. You probably don't want that, make sure to set the correct number/amount before to start requiring tasks.

FAQ / Troubleshooting

See the FAQ for questions and problems not listed here.

This topic: LHCb > BOINCVolunteersGuide

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