



## lbinstall: The LHCb Software Installer

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# Why ?

Until now we had **install\_project.py**, with many limitations including:

- Metadata format does not allow string checks (**html** format)
- Custom metadata and package content not allowing fine grained dependency management

Our requirements are not fulfilled by standard package managers:

- Need to install as a **user**
- Need to install multiple platforms/arch in one location (**cvmfs**)

*We couldn't (and the HSF neither) find an existing tool we could use.*

We are now using **RPM packages** for LHCb projects and LCG dependencies, allowing:

- fine grained package management (even for externals)
- dependency information embedded in the packages
- use of the repository management tools from yum (createrepo)

With our requirements, the packages are not **standard** rpms:

- We craft the dependencies manually
- We do not use the architecture field to allow install on any machine
- The versions are in the name of the RPMs, to allow for multiple installations

**yum** (default on centos) can be used to install in /opt

- but you still need to be root on the machine
- does not support multiple installations on the same machine

We therefore wrote **lbininstall** a small installer that:

- can install from standard yum repositories
- downloads and extracts the RPMs where needed
- is a simple python package in PyPi  
(i.e. `pip install lbininstall` is the way to bootstrap the system).

As from LCG 88, we do not produce **install\_project.py** tar files

- LCG does not support CMT any more, which was needed to produce them
- **lbininstall** is therefore the new default

For more information:

- <https://twiki.cern.ch/twiki/bin/view/LHCb/SoftwareInstallation>
- <https://gitlab.cern.ch/lhcb-core/lbininstall>

We have an improved installer for the new software stacks.

- All stacks up to **LCG 68** should be installed with **install\_project.py**
- All stacks between **LCG 68** and **LCG 86** can be installed with **both**
- All stacks from **LCG 87** should be installed with **lbinstall**

However please note that **CVMFS** remains the simplest way to access to the LHCb Software !

- it is supported on many platforms
- it is updated regularly and is used for productions
- c.f. <https://cernvm.cern.ch/portal/filesystem/quickstart>