

Catalogs and MAF

NOTICE! The simulations packages have migrated to `rubin_sim` (https://github.com/lsst/rubin_sim) away from the `sims_*` or `lsst_sims` package. This means `lsst_sims` packages are NO LONGER SUPPORTED.

See https://github.com/lsst/rubin_sim for more information. `rubin_sim` includes all of the standard `lsst_sims` packages EXCEPT for `sims_catUtils` and `sims_GalsimInterface`, and imports are similar to the previous `lsst.sim.XXX` imports (`rubin_sim.XXX`) so your code should need very little modification.

Installing `rubin_sim` is significantly simpler than installing the `lsst_sims` packages. Installation instructions are given in the README of the `rubin_sim` package. Online documentation for the software package is at <https://rubin-sim.lsst.io>

Installing old `lsst_sims` packages

If you do need to install `lsst_sims` for whatever reason, the last available version is `sims_w_2021_19`, which should be installed with `w_2021_19` of the LSST DM software.

A report from a user building `sims_w_2021_19` suggest that you may need to do the following to get a successful build:

```
Running newinstall from the same tag (sims_w_2021_19) – see https://pipelines.lsst.io/install/newinstall.html for general newinstall.sh guidelines and requirements.
Let it build until it breaks on daf_butler
Then downgrade the 'click' package to a 7.x version
Then continuing the build (this is a problem with the sims_w_2021_19 build from DM .. they may have fixed the issue by now, so if your build doesn't break at daf_butler, it's fine!)
```

This means:

```
cd ~/lsst
curl -OL https://raw.githubusercontent.com/lsst/lsst/w.2021.19/scripts/newinstall.sh
bash newinstall.sh -ct
```

-- Set up the environment and install the `sims` packages.--

Source the appropriate shell script and use [eups](#) (see [here](#) for more info) to install the software and data. Easiest install is using `bash`.

```
source ~/lsst/loadLSST.bash
eups distrib install lsst_sims -t sims_w_2021_19
curl -sSL https://raw.githubusercontent.com/lsst/shebangtron/master/shebangtron | python
```

This will install all packages currently in the catalogs simulations framework (CatSim) and metrics analysis framework (MAF) and all dependencies. The installation should take on the order of 1 hour, with a final required installation size of 10GB.

Any of the individual packages and all their dependencies can be installed by replacing `lsst_sims` with the appropriate package name in the above code snippet (e.g. `sims_maf`). Installation is now complete. See package specific pages for documentation.

-- Setup installed packages--

You have now downloaded and built all of the packages in `lsst_sims`, with the command "`eups distrib install <packagename> -t <tag>`". These packages are designed to be totally self-contained. They have been built in the directories

```
$LSST_HOME/yourOperatingSystem/yourPackageName/
```

where `yourOperatingSystem` is 'DarwinX86' for Mac users and 'Linux64' for Linux users. In order to use the packages you installed, you must 'activate' them in your environment, which is essentially adding these directories to your `$PYTHONPATH`. This is done using

```
setup your_package_name -t your_package_tag
```

"setup <packagename> -t <tag>" is an eups command that activates the packages and their dependencies. `your_package_name` is the name of one of the packages you have installed (e.g. `sims_maf` or `sims_catUtils`). `your_package_tag` is a tag eups uses to keep track of the versions of each package you have built on your machine. This corresponds to the argument of '-t' in the 'eups distrib install' command above. So, if you wanted to setup the version of MAF you just downloaded, you would use

```
setup sims_maf -t sims_w_2021_19
```

When you setup a package, eups inspects it and determines what other packages it depends on. Eups will also setup those prerequisite packages, preferring versions tagged with the tag you specified and defaulting to versions with the tag 'current'. If you do not want to default to 'current', you can specify more than one tag.

```
setup sims_maf -t $USER -t sims_weekly_tag
```

will setup `sims_maf` and all of its dependencies, and then using versions matching the tags (resolved from left to right). This system of eups tags allows you to have multiple versions of the stack built on your system simultaneously. You will only ever be using the one that eups has setup. To see which versions of a package exist on your system (and which has been setup) use

```
eups list -v your_package_name
```

or

```
eups list -s
```

Known issues:

- If you have issues with installation, first check that your system meets the minimum requirements listed here: <https://pipelines.lsst.io/install/newinstall.html#prerequisites>. Note that you need cmake – if installation of 'mariadb' fails, you probably do not have cmake installed ('conda install cmake' is an easy way to get it).
- Check for other known issues here: <https://pipelines.lsst.io/known-issues.html#installation-issues>
- You can also search for similar problems on <https://community.lsst.org/>
- If you are having issues specifically with `pyephem` or `healpy` on a Mac, check for the existence of a `/Developer` directory. This directory is obsolete after upgrading to newer versions of XCode, but not removed by the XCode installer. Rename the `/Developer` directory and `pyephem` will install.
- If you are using your own python, be sure to check the [Using Your Own Python](#) page. In particular, on Linux, some `lsst_apps` packages will currently fail to build if the "nomkl" package is not installed in `anaconda`.
- On a Mac, make sure you have accepted the terms on XCode. You can do this by opening the `Xcode.app` (should be in your Applications folder).
- `git` can fail, complaining about not having an https helper. If your native git version is > 1.7, you can probably use that rather than the LSST installed git.
- If all else fails, it's usually an issue with some environment variables interfering with the installation. You can create a new user and install the stack there. You can quickly login/out of a new user account as follows: First make a new admin-level user in System Preferences->Users and Groups, and then click on your name in the top right hand corner of the screen. A drop-down menu should appear, offering you a choice of other users to log in as. You might have to toggle the check box in System Preferences->Users and Groups->Login Options first though.