Link:

<https://kb.ettus.com/Building_and_Installing_the_USRP_Open-Source_Toolchain_(UHD_and_GNU_Radio)_on_Linux#Building_and_installing_UHD_from_source_code>

Building and installing UHD from source code

UHD is open-source, and is hosted on GitHub. You can browse the code online at the link below, which points to version 3.14.0.0, which is the the latest release at the time of this writing.

* [UHD repository on GitHub](https://github.com/EttusResearch/uhd/tree/v3.14.0.0)

There are several good reasons to build GNU Radio from source code, especially for doing development and prototyping. It it enables an easy way to customize the location of the installation, and to install multiple UHD versions in parallel, and switch between them. It also provides much more flexibility in upgrading and downgrading versions, and allows the user to modify the code and create customized versions, which could possibly include a patch or other bug-fix.

To build UHD from source code, clone the GitHub repository, check out a branch or tagged release of the repository, and build and install. Please follow the steps below. Make sure that no USRP device is connected to the system at this point.

First, make a folder to hold the repository.

cd $HOME

mkdir workarea

cd workarea

Next, clone the repository and change into the cloned directory.

git clone https://github.com/EttusResearch/uhd

cd uhd

Next, checkout the desired UHD version. You can get a full listing of tagged releases by running the command:

git tag -l

*Example truncated output of git tag -l:*

$ git tag -l

...

release\_003\_009\_004

release\_003\_009\_005

release\_003\_010\_000\_000

**Note**: As of UHD Version 3.10.0.0, the versioning scheme has changed to be a quadruplet format. Each element and version will follow the format of: **Major.API.ABI.Patch**. Additional details on this versioning change can be found [here](https://files.ettus.com/manual/page_semver.html).

After identifying the version and corresponding release tag you need, check it out:

# Example: For UHD 3.9.5:

git checkout release\_003\_009\_005

# Example: For UHD 3.14.0.0

git checkout v3.14.0.0

Next, create a build folder within the repository, invoke CMake and build UHD.

cd host

mkdir build

cd build

cmake ../

make

Next, you can optionally run some basic tests to verify that the build process completed properly.

make test

Next, install UHD, using the default install prefix, which will install UHD under the /usr/local/lib folder. You need to run this as root due to the permissions on that folder.

sudo make install

Next, update the system's shared library cache.

sudo ldconfig

Finally, make sure that the LD\_LIBRARY\_PATH environment variable is defined and includes the folder under which UHD was installed. Most commonly, you can add the line below to the end of your $HOME/.bashrc file:

export LD\_LIBRARY\_PATH=/usr/local/lib

On Fedora 22/23/24/25 you will need to set the LD\_LIBRARY\_PATH to /usr/local/lib64.

export LD\_LIBRARY\_PATH=/usr/local/lib64

If the LD\_LIBRARY\_PATH environment variable is already defined with other folders in your $HOME/.bashrc file, then add the line below to the end of your $HOME/.bashrc file to preserve the current settings.

export LD\_LIBRARY\_PATH=$LD\_LIBRARY\_PATH:/usr/local/lib

For Fedora 21/22/23/24/25

export LD\_LIBRARY\_PATH=$LD\_LIBRARY\_PATH:/usr/local/lib64

For this change to take effect, you will need to close the current terminal window, and open a new terminal.

At this point, UHD should be installed and ready to use. You can quickly test this, with no USRP device attached, by running uhd\_find\_devices. You should see something similar to the following.

linux; GNU C++ version 4.8.4; Boost\_105400; UHD\_003.010.000.HEAD-0-g6e1ac3fc

No UHD Devices Found