

What is Radioconda?

Many open-source software tools exist that make the world of radio more accessible to domain experts, hobbyists, and the general public. Unfortunately, simply discovering, installing, and running that software is often a pain. **Radioconda is our solution to the common difficulty of accessing the software radio ecosystem.**

- ▶ Radioconda is a collection of radio-related software packages built from open-source recipes for Windows, macOS, and Linux
- ▶ The Radioconda installer bundles those packages in a single download
- ▶ Radioconda is built upon conda-forge, the largest community-maintained collection of packages using the conda package format
- ▶ Like conda-forge, anyone is free to use and contribute to Radioconda
- ▶ The Radioconda installers have been downloaded over 110,000 times in the past year, and over 350,000 times since the first release 5 years ago

Getting Radioconda

Visit github.com/radioconda/radioconda-installer, chose your platform, and download the installer:

OS	Architecture	Installer Type	Download
Linux	x86_64 (amd64)	Command-line	radioconda-Linux-x86_64.sh
Linux	aarch64 (arm64)	Command-line	radioconda-Linux-aarch64.sh
Linux	ppc64le (POWER8/9)	Command-line	radioconda-Linux-ppc64le.sh
macOS	x86_64 (Intel)	Command-line	radioconda-MacOSX-x86_64.sh
macOS	x86_64 (Intel)	Graphical	radioconda-MacOSX-x86_64.pkg
macOS	arm64 (Apple Silicon)	Command-line	radioconda-MacOSX-arm64.sh
macOS	arm64 (Apple Silicon)	Graphical	radioconda-MacOSX-arm64.pkg
Windows	x86_64 (amd64)	Graphical	radioconda-Windows-x86_64.exe

For a graphical install, just double-click the installer file.

For a command line install, open a terminal and run the script:

```
$ bash radioconda-x-Linux-x86_64.sh # or similar for other platforms
```

Using Radioconda

1. Activate the radioconda environment:

- ▶ (Windows) Open the "radioconda Prompt"
- ▶ (Linux/macOS) Open a terminal, then:

```
$ conda activate base  
(base) $
```

2. Run the program that you want:

```
(base) $ gnuradio-companion  
(base) $ gqrx  
(base) $ SoapySDRUtil --find
```

3. Get other software you need:

```
(base) $ conda install jupyterlab pytorch ty
```

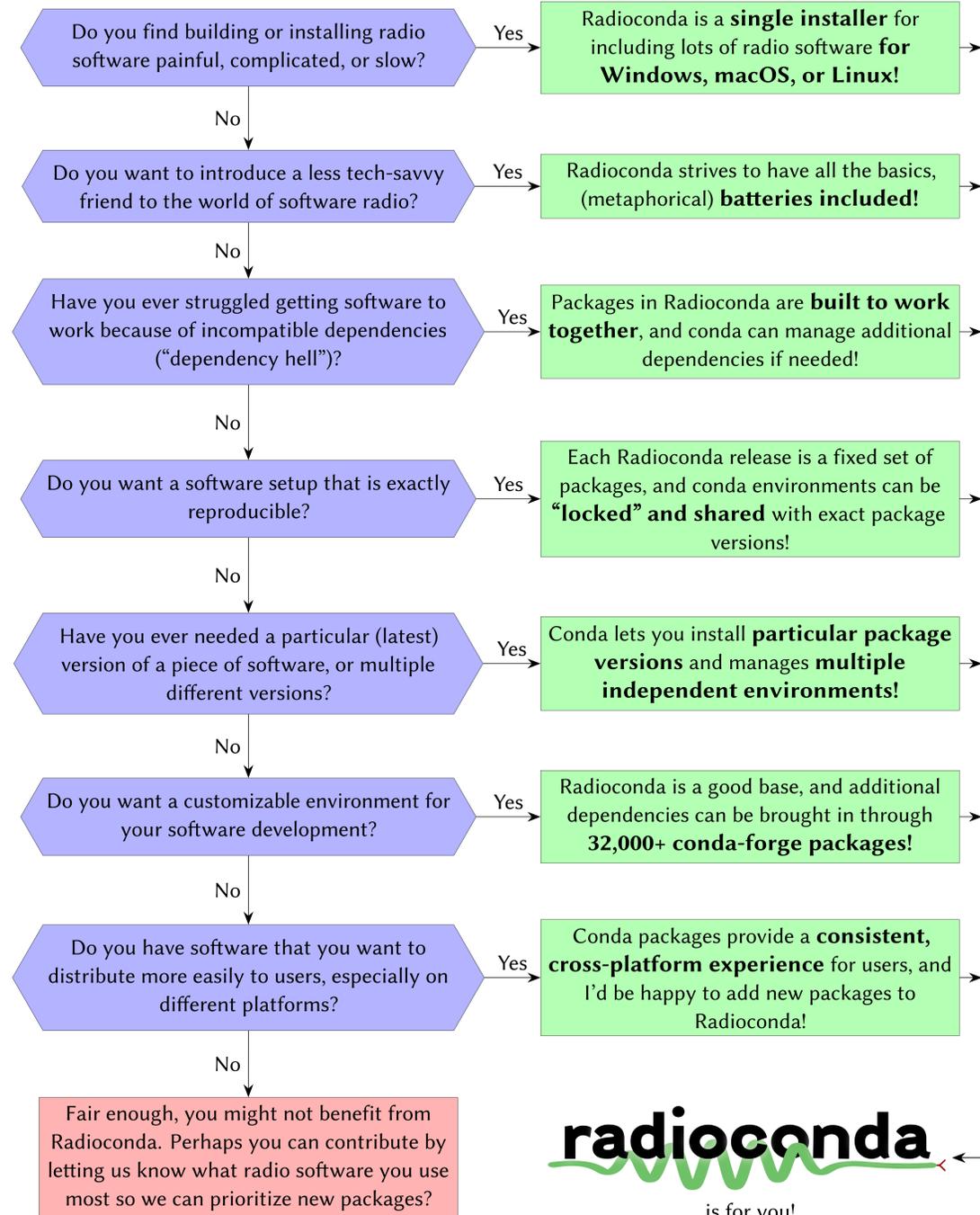
4. Create and activate an independent environment:

```
(base) $ conda create -n myenv gnuradio rtl-sdr python=3.13 ipython  
(base) $ conda activate myenv  
(myenv) $ ipython
```

For general conda usage, consult the official user guide:

docs.conda.io/projects/conda/en/latest/user-guide/index.html

Why might you be interested in Radioconda?




is for you!

Why conda when ___ exists?

Other package managers, proper containers and virtualization, or even bundled applications: they're all very useful in their own right! These days, we even prefer pixi (pixi.prefix.dev) over conda for managing conda packages. Still, we think Radioconda is worth a look. It's just so convenient to have everything in one place. You can have the latest releases, in lightweight environments, on all of your computers. The conda-forge community is fantastic and welcoming, and that provides easy access to so many additional packages and tooling for creating your own packages. From beginner to expert, the conda ecosystem has exactly what you need.

Packages included in Radioconda... so far

GNU Radio and its out-of-tree (OOT) modules

- ▶ gnuradio (core, grc, qtgui, soapy, uhd, video-sdl, zeromq)
- ▶ gnuradio- (adsb, dect2, filerepeater, foo, fosphor, funcube, gpredict-doppler, hermeslite2, hpsdr, ieee802_11, ieee802_15_4, inspector, iqbalance, iridium, isdbt, leo, lora_sdr, m2k, osmosdr, paint, radar, rds, satellites, tempest)

Radio hardware libraries

- ▶ airspy/airspyhf
- ▶ bladerf
- ▶ hackrf
- ▶ libiio/pyadi-iio
- ▶ libad9361-iio
- ▶ libm2k
- ▶ limesuite
- ▶ mirisdr
- ▶ rtl-sdr
- ▶ uhd

Everything else

- ▶ digital_rf
- ▶ ephem
- ▶ gnss-sdr
- ▶ gqrx
- ▶ hamlib
- ▶ inspectrum
- ▶ m17-cxx-demod
- ▶ numpy/scipy
- ▶ pyfda
- ▶ python/ipython

SoapySDR hardware abstraction

- ▶ soapysdr
- ▶ soapysdr-module- (airspy, audio, bladerf, fcdpp, hackrf, netsdr, lms7, plutosdr, redpitaya, remote, rtlsdr, uhd, volk-converters)

Let us know what you would like to see in Radioconda!

Radioconda has a good foundation for software-defined radio, but we'd love expand to make it more useful for more people.

- ▶ What radio or radio-adjacent software do you use that you think would be a good addition to Radioconda?
- ▶ What software would you like to see packaged because it's particularly hard or annoying to install?
- ▶ We're also always open to contributors: let us know if you would like to get involved in Radioconda!

Email rvo1z@mit.edu with your suggestions or submit an issue at github.com/radioconda/radioconda-installer.

Here are some packages that are already on our radar for inclusion:

Amateur radio

- ▶ ka9q-radio
- ▶ ka9q-web
- ▶ WSJT-X
- ▶ WsprDaemon

General interest

- ▶ AIS-catcher
- ▶ readsb
- ▶ rtl_433
- ▶ SatDump

Citizen science

- ▶ chirpsounder2
- ▶ Radio JOVE
- ▶ srt-py

Hardware libraries

- ▶ HydraSDR RF0ne
- ▶ RX-888
- ▶ SDRplay