PyBOMBS & CGRAN — An Introduction

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GNU Radio Conference 2016

Outline

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- No worries. We've got you covered.

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1. The GNU Radio Live DVD

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- Python 2.7
- And what else...
- Nope, that's it!

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Getting started with PyBOMBS

- Install PyBOMBS: `pip install pybombs`
- Optionally install PyBOMBS GUI: `pip install pybombs-qtgui`
- Next, run some magic commands that I'll skip for now.
- Let's just install GNU Radio and all major dependencies:
- `pybombs prefix init -a default -R gnuradio-default /home/mbr0wn/prefix/gnuradio`

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- Whoa, slow down hot shot. . .

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1 How do I even get started with GNU Radio?

2 PyBOMBS concepts

Why do I need a *prefix*?

- Standard Unix way (since probably even Marcus Leech started) is to install software either into `/usr` or `/usr/local`.
- Self-compiled software would go into the latter
- This is simple and understood, but has some problems:
    - No standard way to uninstall hand-installed software
    - Only one installation at a time possible
    - Always requires admin (sudo) privileges
- So how about we install it into some random directory in our home?
- `/home/mbr0wn/prefix/gnuradio` — The prefix!
- Solves all the problems above, except we now need to tell the system where to look for stuff (*environment variables* need setting)

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pybombs prefix init

- Show me that command again:
  ```
  pybombs
  prefix init
  --alias default
  --recipe gnuradio-default
  /home/mbr0wn/prefix/gnuradio
  ```
- Aah, I get it now. We install into `prefix/gnuradio`, and we use the rules defined in `gnuradio-default`.
- We call such definitions a *recipe*.

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So... recipes?

- Remember those magic commands I skipped? Here they are:
  ```
  $ pybombs recipes add gr-recipes
  git+https://github.com/gnuradio/gr-recipes.git
  $ pybombs recipes add gr-etcetera
  git+https://github.com/gnuradio/gr-etcetera.git
  ```
- These are part of most people's installation. (See PyBOMBS manual).
- Will install all default recipes.
- Let's take a quick look at one of those.

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How do I install things then?

- pyboms install [-p PREFIX] PACKAGE
- Let me show you.
- PREFIX is either an alias, or a full path.

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Why is PyBOMBS accessing my system?

- PyBOMBS is not a container replacement.
- It will use any means to get your system ready to build software (e.g., GNU Radio).
- Your system's package manager is one of those means.
- It might need elevated privileges. This is normal.
- Here's a nice trick: `pybombs install --deps-only gnuradio`