Conda and Fermi: A User's Perspective

Joe Asercion, Fermi Science Support Center, NASA/GSFC

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- Included in all versions of Anaconda, Anaconda Enterprise, Anaconda Repository, and Miniconda
- Meant for use with *any* language, not just python
- Conda is currently the only place one can obtain the latest version of the Fermitools built for public distribution by the Fermi Science Support Center

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Environment Hierarchy

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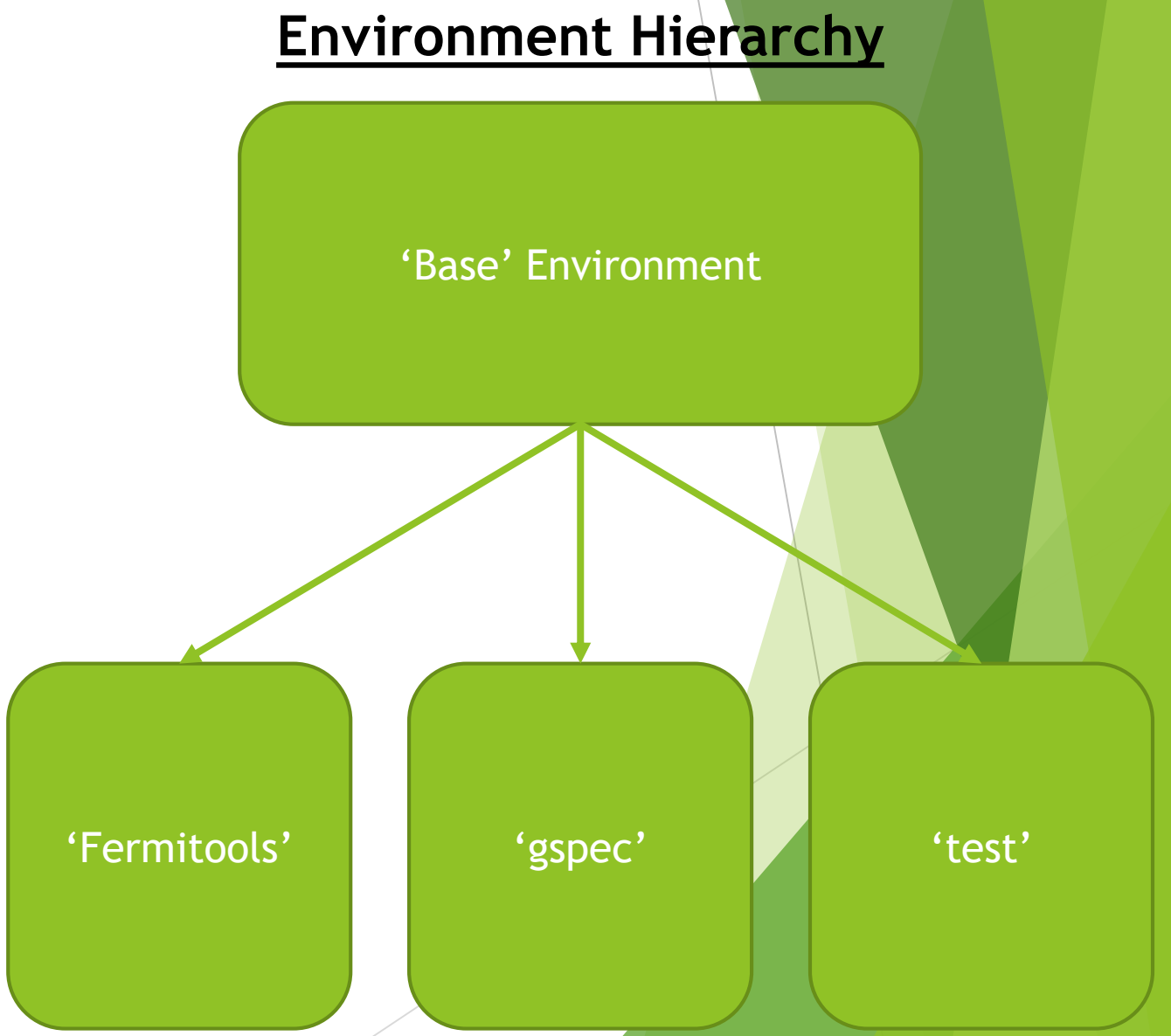

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- Previous releases used `source activate ${ENVIRONMENT NAME}`
  - This has been deprecated as of conda version 4.4
  - `conda activate` is faster, more universal across OS's and shells, and reduces the chance of collisions with python virtualenvs

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- Solution: Use bash
  - “But I cannot. I swore a life debt to tcsh/csh.”
  - To use the fermitools in a tcsh/csh environment, you **need to source the activation script directly**. This is detailed in the Fermitools wiki: https://github.com/fermi-lat/Fermitools-conda/wiki/Installation-Instructions

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- Updating an existing installation is similar
  - `conda update fermitools`
- What does the above incantation mean?

Breaking down a conda command

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conda create -n fermi -c conda-forge/label/cf201901 -c fermi fermitools
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`-c` is shorthand for the ‘channel’ flag. This section of the command tells conda to search for the requested packages in the `conda-forge/label/cf201901` and `fermi` anaconda cloud channels.

The order of these commands matters. Conda assigns search priority from right to left. Therefore, `fermi` will be searched first for packages/dependencies. If they are not found there conda will then search `conda-forge/label/cf201901`

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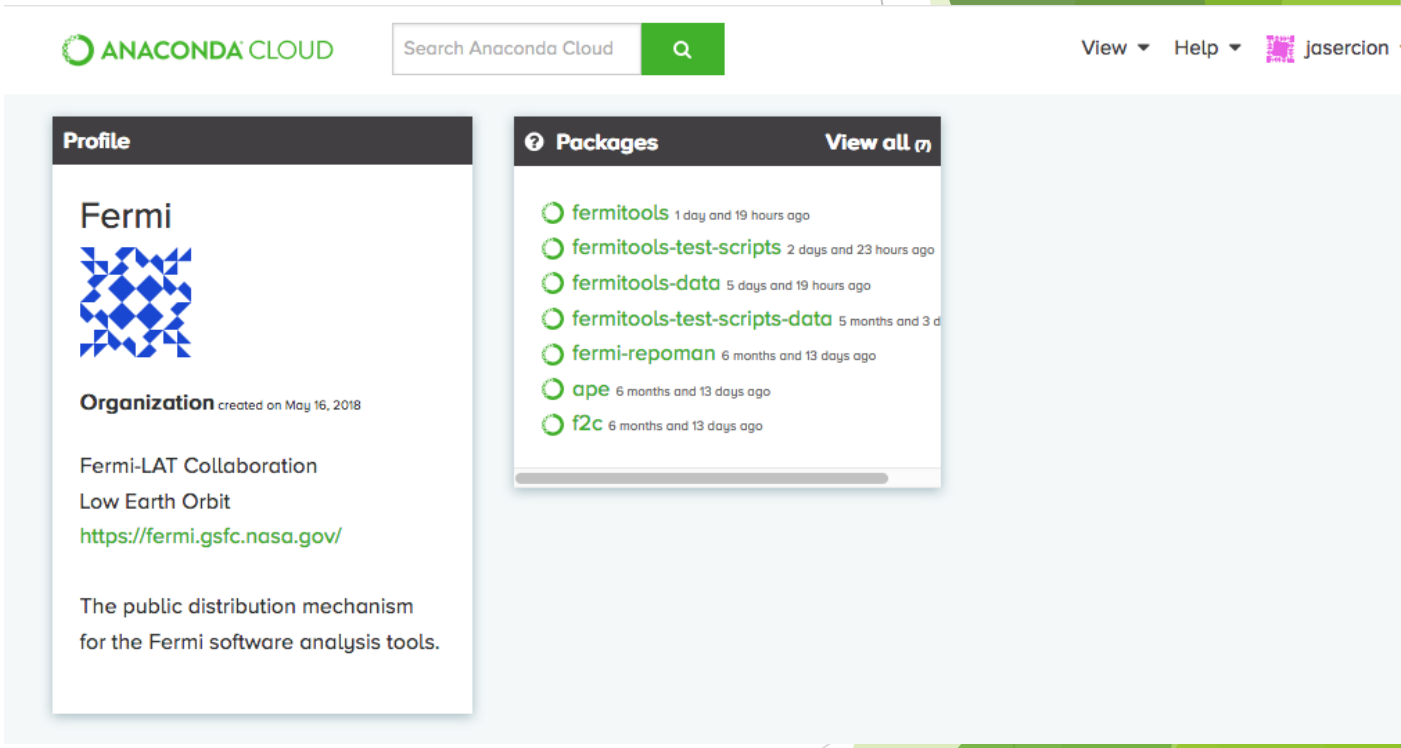
Package to install into the new environment

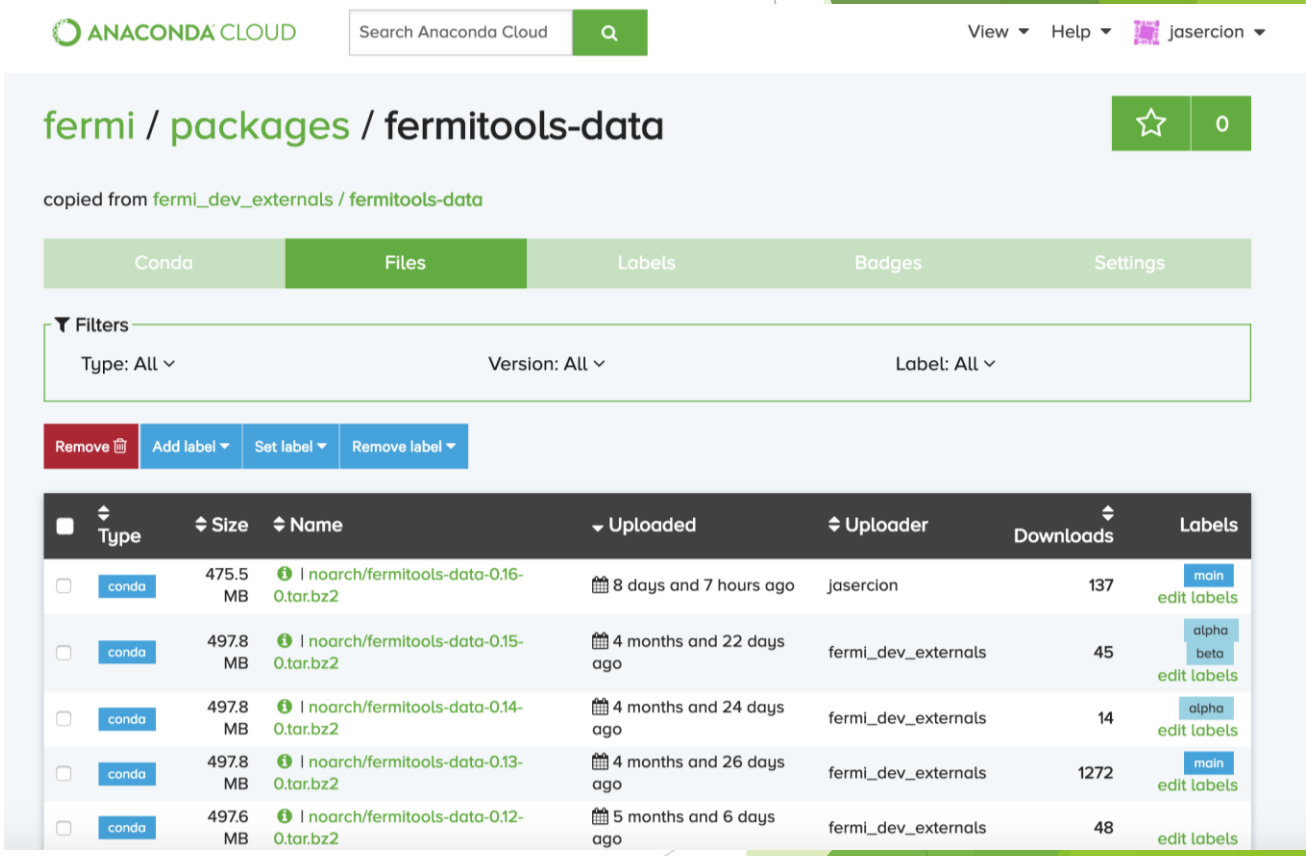
Distribution

- Anaconda Cloud is the primary distribution mechanism for the Conda Package manager. Organizations can have dedicated channels to distribute software built and packaged using Conda Build.
- Hosting for public projects are free. Private plans are available for a fee.
- Fermi has its own organization (the Fermi Channel) which distributes software which is developed and maintained directly by the Fermi Science Support Center
- Conda-Forge is another such organization.



Anaconda Cloud Channels

- Channels organize packages by the user or group of users (Organization) that uploaded them.
- Label help differentiate different packages hosted in a channel, effectively creating ‘sub-channels’.
- Label checking in Conda is strict. Including a label tag in a conda install or update command will search for matching packages with that label alone.



Fermitools Wiki

Home

Edit | New Page

Don Horner edited this page on Apr 9 · 24 revisions

Welcome to the Fermitools Wiki!

The purpose of this wiki is to detail the structure and use of the new Fermitools conda distribution system. If you would like to jump right to setting up and using the Fermitools, checkout the Quickstart Guide or other helpful links below:

- Fermitools Quickstart Guide
- Installation Instructions
- The Fermitools and Conda
- Analysis Tutorials (nasa.gov)
- User Notes
- Developer Notes
- Tester Notes
- Troubleshooting
- Error Reporting
- Release Notes
- How to Analyze Fermi Data

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- Contributing to the Fermitools
- Error Reporting
- Fermitools Roadmap
- Installation Instructions
- Quickstart Guide
- Release Notes
- Testing the Fermitools
- The Fermitools and Conda
- Troubleshooting
- User Notes

https://github.com/fermi-lat/fermitools-conda/wiki

Putting Conda to work: Updating Fermipy

```
(fermi) [fermi@e6eda106213d ~]$ conda list fermipy
# packages in environment at /opt/anaconda/envs/fermi:
#
# Name                    Version                   Build  Channel
fermipy                   0.17.3                   py27_1000    conda-forge/label/cf201901
(fermi) [fermi@e6eda106213d ~]$
```

Putting Conda to work: Updating Fermipy

```
(fermi) [fermi@e6eda106213d ~]$ conda update fermipy
Collecting package metadata: done
Solving environment: done

## Package Plan ##

  environment location: /opt/anaconda/envs/fermi

  added / updated specs:
    - fermipy


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    certifi-2019.3.9           |           py27_0         149 KB  conda-forge
    fermipy-0.17.4             |           py27_0        10.6 MB  conda-forge
    openssl-1.0.2r             |      h14c3975_0         3.1 MB  conda-forge
    ------------------------------------------------------------
                                           Total:        13.9 MB

The following packages will be UPDATED:

  ca-certificates    conda-forge/label/cf201901::ca-certif~ --> conda-forge::ca-certificates-2019.3.9-hecc5488_0
  certifi            conda-forge/label/cf201901::certifi-2~ --> conda-forge::certifi-2019.3.9-py27_0
  fermipy            conda-forge/label/cf201901::fermipy-0~ --> conda-forge::fermipy-0.17.4-py27_0
  libgcc-ng          conda-forge/label/cf201901::libgcc-ng~ --> pkgs/main::libgcc-ng-8.2.0-hdf63c60_1
  openssl            conda-forge/label/cf201901::openssl-1~ --> conda-forge::openssl-1.0.2r-h14c3975_0


Proceed ([y]/n)?
```

Did it work?

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The curious can download the tarball directly from the host Anaconda channel. This can be unpacked and inspected.

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Tracker	Tools
Fermitools-conda	General Fermitools Issues
Likelihood	gtbkg gtdiffrsp gtexpcube2 gtexpmap gtfindsrc gtlike gtltcube gtltsum gtmodel gtpsf gtsrcmaps gtsrcprob gttsmap
SolarSystemTools	gtexphpsun gtltcubesun gtltsumsun gtsuntemp
pyBurstAnalysisGUI	gtburst
burstFit	gtburstfit
dataSubselector	gtmktime gtselect gtvcut
evtbin	gtbin gtbindef
irfs	gtirfs
modelEditor	modeleditor
pointlike	pypsf
pyExposure	gtexposure
pulsarDb	gtephem gtophase
pulsePhase	gtophase
observationSim	gtobssim
orbitSim	gtorbsim
rspgen	gtrspgen
sourceIdentify	gtsrcid
timeSystem	gtbary

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- **Fermi Science Support Center Helpdesk:** fermihelp@milkyway.gsfc.nasa.gov

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SolarSystemTools	gtexphpsun gtltcubesun gtltsumsun gtsuntemp
pyBurstAnalysisGUI	gtburst
burstFit	gtburstfit
dataSubselector	gtmktime gtselect gtvcut
evtbin	gtbin gtbindef
irfs	gtirfs
modelEditor	modeleditor
pointlike	pypsf
pyExposure	gtexposure
pulsarDb	gtephem gtophase
pulsePhase	gtophase
observationSim	gtobssim
orbitSim	gtorbsim
rspgen	gtrspgen
sourceIdentify	gtsrcid
timeSystem	gtbary