

Vera C. Rubin Observatory

Conda Packaging Status

Kian-Tat Lim



U.S. DEPARTMENT OF
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DMTN-110 (GCM)

- Describes current situation
- Fixes for handling multiple environments: implemented
- Proposes methods for handling third-party packages
 - Some recipes created to build packages not already in conda/pip

DMTN-138 (v/u-bvan-1)

- Points out that we need to use conda-forge recipes
- conda-forge is better than maintaining our own channel
- Linking safely against C++ packages requires conda compilers
- Proposes other things not yet accepted

Matthew Becker wrote conda-forge recipes for building a Science Pipelines official release as a single conda package

Also updates sconUtils to use conda compilers

Builds stack using traditional "eups distrib install", including third-parties (using manifest.remap)

Good for simplified stack installation (single "application" style)

Not so good for developers; conda-forge is not designed for daily/weekly builds

Nate Lust's scipipe_conda

Makes conda and the conda environment (without third-parties) into an eups package

Useful to see how environments can be built and handled

Increases dependence on eups

Reimplements conda environment activation because of eups limitations

Overlaps with envconfig functionality

Next Step: Toolset Environment

For developers, provides some benefits at relatively low cost

Packages git, git-lfs, eups, lsstsw (deploy, rebuild, envconfig), repos, scon, and sconUtils

Changes very infrequently

Works with standard conda environment management (activation, stacking)

Science Pipelines conda environment *with all third-parties* is stacked on top of toolset by envconfig

Drop-dead date is **2020-03-31** for inclusion in v20 release

Key Issues

All third-parties now have recipes but:

- PropertySet allows case-sensitive keys; newer versions of cfitsio (including the one in conda-forge, 3.47) uppercase all keys
 - Also potential problems with long keys
- eigen in conda-forge does not have our patch for cholmod though the next minor release will

Problems were seen in the past with linking with macOS compilers; we think these are resolved but more testing needs to be done

envconfig integration

Simplify builds; currently:

- Jenkins Groovy and ci-scripts shell scripts
- lsstsw shell scripts and lsst_build Python scripts
- eupspkg shell and Python scripts

Smaller, incremental improvements, **not** from-scratch reengineering

Start with Jenkins:

- Look into using more standard Jenkins configurations; GitHub Actions
- But semantic versioning is likely the biggest bang for the buck
 - Avoid rebuilding dependencies when interfaces remain constant