

Rubin Observatory

Build, Packaging, and Test Plans

DMLT Face-to-Face | Virtual | September 15 - 17, 2020



Overall Goals

- Simplify installations
- Simplify dependency management
- Simplify and speed up release process

Conda

- Manages most third-party dependencies (except those under active development by Rubin staff)
- Moving to meta-package specification of environment
 - Allows users to "add-on" packages easily
 - Two or three levels:
 - Inequalities for certain packages, otherwise free
 - (Optional) Fixed direct dependency versions for better reproducibility
 - Pinned (at build level) for production
 - Can use semver rather than unordered hash
 - Reduces frequency of version number updates in lsstsw/newinstall/etc.
 - Inconsistencies discovered upstream by conda-forge automation
- Progress: meta-package merged, finishing up usage

Isstinstall

- Simplified installation and management of environment
 - Environment linked to product's eups tag
- eups from conda-forge
- Progress: in review

Software Products

- Group multiple packages into larger products
 - Science Pipelines Libraries underlying all productions
 - Each production/payload, along with its wholly-owned associated packages, is its own product
- Potentially simplifies dependencies
- Potentially speeds up releases; allows releases of individual products
- Aligns with DMTN-104 (product tree)
- Progress:
 - Currently investigating implementation using additional level of dependency specification (beyond conda, eups table, cfg)
 - Issues with build and source-repo-tagging tooling

Jenkins Simplification

- Currently jobs trigger pipelines which are described in Groovy scripts using calls to a shared set of utility functions
- The utility functions can be quite complex, and the scripts layered on them even more so
- Pulling the logic out into separate shell (or Python) scripts that can be executed manually outside the Jenkins environment (allows debugging)
- Reducing the use of Docker containers purely for isolating individual processes (speeds up execution)
- Remaining jobs should be very simple and maintainable
- Progress: release process being tested on separate Jenkins instance

Separate Build and Run Environments

- Move build-only packages like sconUtils into a separate product or environment
- May need a new package for .cfg build specifications
- Is everyone who runs also a developer?

Resources

- Brian's work is winding down; he will move off to DESC + Firefly/RSP
- Primarily Gabriele working on this with occasional assist from K-T
- Hoping for slow but steady progress