Trilinos Release Improvement Issues

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Trilinos Release Improvement Issues

- Branch early vs. branch late
- Release-related testing
- Improved release processes
- Improved release-related activities
- Managing late release branching

See:
Trilinos/doc/DevGuide/TrilinosSoftwareEngineeringImprovements/*.tex

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Branch Early vs. Branch Late

- Last minute changes before a release *always* happen:
  - End of FY deliverables
  - Porting work
  - “Cleaning up” (code, documentation, etc.) ..

- Reasons to branch as late as possible:
  - Difficulty merging changes between branches
  - Results in reduced testing of all types (APP Trilinos Integration, nightly testing, etc.)

- Reasons to give some time between branch and release dates:
  - Buffer for portability problems (3 days should be plenty)
  - Allow for new non-release development activity to continue?

    => No: These are rare and can be done on a temp local git branches

- Mitigation strategies for problems with late branching

  => Stay tuned …

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Release-Related Testing

- Create release-like tarballs every night:
  - Mark non-release packages
    - Add a release/non-release column in TriinosPackages.cmake
  - Disabling and excluding non-release code
    - PACKAGE_EXCLUDE_FROM_RELEASE(...).
  - Do installation testing using release-like tarball
    - Untar release tarball (not from working dir)
    - Do installation testing procedure:
      - Build and install headers and libraries
      - Configure tests/examples against installed headers and libs
- Perform this testing every night
  - Different enable configurations
  - Just one platform should be enough
- Come release time you are ready to go!

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Improved Release Process

- Avoid branching until just days before initial release (3-4 days)
- Minimize the changes on the release branch (just change one file)
  - Change Trilinos_version.h and that is it!
- Auto package versioning

  return “MyPackage in Trilinos “ TRILINOS_VERSION;
- Minimize changes for minor releases
  - Major bugs only

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Release-Related Activities

- Tasks to complete before the release branch is created
  - Implement all functionality for the upcoming release
  - Keep all documentation and examples for “up to date
  - Do all code “clean ups”
  - Define files/dirs to exclude from next release tarball,
  - Promote “Experimental” Code to “Stable” Code weeks before branch date
  - Add new test platforms weeks before branch datea
  - Keep “Stable” code in a releasable state
  - Perform ports and acceptance tests with Trilinos Dev (APP tests).
  - Create the release branch only a few days (3 days max) before putting out release

- Tasks to complete after the release branch is created
  - Change the version in Trilnos version.h. (All other logic is automatic)
  - Fix serious defects only
  - (Optional) Final round of ports and acceptance tests against APPs
  - Create the final tag.
  - Release the code as the auto-generated tarball.
  - Fix other bugs and do minor releases

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Managing Late Release Branching

- Incremental refactoring
  - Develop a new feature “under the hood”
  - Okay to release but users still will not use
  - See “Daily Deployment” in “Extreme Programming: 2nd edition”
- Disable new features
  - Just exclude the key files from the release tarball
- Temporary local git repositories
  - Big changes incompatible with the imminent release

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