Priorities for version 1.13

Chapel Team, Cray Inc.
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Top Priorities for 1.13

1. Memory management improvements
   ● automatic mem. mgmt, constructors/destructors/[no]init, array ref count fixes

2. Strings: get current work onto master; UTF-8 support

   ● complete LCALS study, NUMA, KNL, vectorization, leader-follower 2.0

4. Multi-locale performance/scalability
   ● data-centric locality, communication optimizations, optimize reductions

5. Continued focus on Twitter benchmark / data analytic computations

6. Compiler IR cleanup/refactoring/v2
   ● including additional work on IPE/REPL

7. Additional standard/numerical libraries
   ● BLAS, GSL, date/time, improved RNG, more FFTW(?), MPI(?), …

8. Array/domain improvements (assoc. improvements, array-as-vec)

9. Additional namespace improvements

10. Finish defining error-handling story (and start implementation?)
Top Process, Build/Test/Release Improvements

- Compatibility for Python 3 Users
- Support for Chapel packages on Debian/Fedora/…
- Additional web documentation
  - Users guide
  - Examples/primers on web (?)
- Jenkins support for testing a given branch / SHA
- Beef up use of / support for JIRA
- Ability to test examples in chpldoc comments
- Show nightly results as diffs against vanilla run (?)
  - goal: common failure results in 1 mail rather than #configs
Other Priorities

Ongoing Efforts:
- error message improvements
- compilation time improvements
- bug fixes
- Qthreads improvements (in conjunction with Sandia)
- review/submit shootout entry (upon completion of strings)

On deck:
- GPUs
- concepts
- task teams and collectives on same
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