Priorities for Chapel 1.15

Chapel Team, Cray Inc.
Chapel version 1.14
October 6, 2016
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Top Priorities

- **Language Features**
  - complete initializers, copy constructors
  - complete draft of error-handling
  - address array rewrite performance regressions
  - implement array views

- **Locality/Memory Improvements**
  - NUMA-aware domains and arrays
  - NUMA-aware memory allocation (including for ugni)
  - HBM support

- **Performance Improvements**
  - single-locale: get LCALS to parity with reference, improve shootouts
  - multi-locale: close in on ref versions of ISx, MiniMD/CoMD, LULESH
  - continue closing significant memory leaks

- **Refocus effort on IPE (REPL) and compiler v2 strategy**
Additional Priorities

- Explore Chapel use in data analytics, machine learning
- Distributed associative domains/arrays
- Continue to grow and improve libraries
- Pursue data-centric locality features
- Support partial reductions
- Retire muxed tasking in favor of qthreads
- Implement package manager
- Clean up dark corners of the compiler
- Improve vectorization
- Support non-transitive module ‘use’s
Non-Code Priorities

- Complete Debian Package
- Start multi-locale cluster performance testing
- Launch user-facing issue tracker
- Expand Users Guide
- Reduce sporadic failures in testing
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