

Priorities for Chapel 1.15

Chapel Team, Cray Inc.

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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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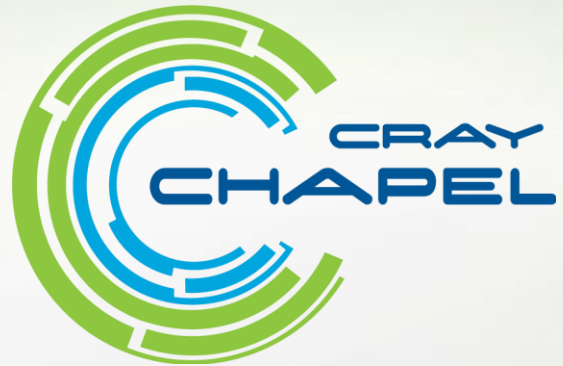
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