

Proposed Priorities for Chapel 1.16

Chapel Team, Cray Inc.
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Top Priorities

● Language Features

- complete initializers and deprecate constructors
- complete error-handling and start exercising in library modules
- support for partial reductions (and potentially replicated dimensions)
- drive toward “version 2.0” language implementation
 - goal: no breaking changes after version 2.0

● Performance / Scalability Improvements

- multi-locale: RA, stencil computations, MiniMD/CoMD, LULESH
- single-locale: vectorization, LCALS and CLBG improvements

● Portability Improvements

- further support for KNL / GPUs / AWS EC2 / Debian

● Compiler Improvements:

- Reduce compile-time for current compiler
- Strategy for next-gen compiler: IPE/REPL, separate compilation, ...



Additional Priorities

- Explore Chapel use in data analytics, machine learning
- Copy-free record returning / steals
- User-defined coercions / casts
- Distributed associative domains/arrays
- String improvements
- Data-centric locality features
- New libraries: parallel patterns, sort, internet / sockets (?)
- Implement package manager
- Drive memory leaks to zero
- Continue cleaning up dark corners of the compiler





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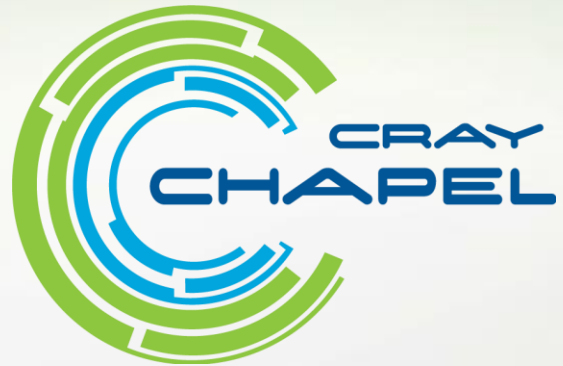
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