Proposed Priorities for Chapel 1.19

Chapel Team, Cray Inc.
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Top Priorities

- Complete initializers: init=, type aliases, noinit
- More delete-free work: lifetime checking, nil checking
- Improved interoperability with Python, C, Fortran, C++
- Performance improvements
- Enable LLVM back-end by default
  - explore support for vectorization
- Continued support for AI workflows
- Runtime support for libfabric / OFI
- Namespace improvements
- Compiler performance improvements
Other Priorities

- **Big ticket items:**
  - GPU support
    - via direct code generation
    - via GPU libraries
  - Constrained generics
  - Partial reductions
  - Array-as-vec improvements (via a separate type?)

- **Focused efforts:**
  - UTF-8 string interfaces
  - Shape preservation of range loop expressions / promotions
  - Further HDF5 / NetCDF improvements
  - Atomics use cstdlib by default (?)
  - Incorporate GASNet-Ex

- **User support**
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