Proposed Priorities for Chapel 1.21

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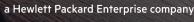


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Proposed Priorities for Chapel 1.21



- Language Stability: continue working toward 2.0 readiness (see next slide)
- Shasta: tune and optimize implementation
- User Support
- LLVM Back-end: enabled by default, explore vectorization
- GPUs: start exploring support via libraries and/or code generation
- Performance: multi-locale scalability and performance optimizations
- Compilation Time: reduce it
- Interoperability: improved support for multi-locale libraries, bytes, arrays
- Memory Leaks: reduce to zero

Language Stability Priorities for Chapel 1.21



- Modules and Namespaces: better support for programming "in the large"
- Switch to Zero-based Indexing by Default (?): if sufficient support
 - note: would only affect automatically-indexed types, not arrays
- Prototype Modules: commit to feature or replace with an alternative
- Constrained Generics: refine design and implement
- Point-of-Instantiation Rules: address current problematic points
- Expiring Value Semantics: refine design and implement
- Deprecate .size Synonyms (?): if sufficient support

Performance Priorities for Chapel 1.21



- Unordered Operations:
 - flesh out unordered atomic API
 - extend to POD types
 - tune implementation
 - explore aggregation library or optimizations
- Performance Portability: improve performance for non-Aries networks
- Slicing: complete optimization effort
- Distributed arrays: improve creation cost, privatization, field access overheads
- Locale mapping: explore process-per NUMA domain implementation

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