

Proposed Priorities for Chapel 1.20

Chapel version 1.19

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Top Priorities for Chapel 1.20

- **Language Stability:**
 - **Initializers:** support for partial Instantiation
 - **Nilability:** complete design and implement if accepted
 - **Strings:** complete current plans for UTF-8 and byte strings
 - **List / Set types:** move current functionality out of domain / array types
- **Interoperability:** support for multi-locale libraries
- **Data Ingest & AI:** improved support and study (with CSV focus for ingest)
- **Performance:** studies and improvements, particularly for slices & const domains
- **LLVM back-end:** enable by default
- **Mason:** testing and namespace-related improvements
- **Shasta:** readiness for first systems shipping

Additional Priorities for Chapel 1.20

- **User Support**
- **Language Stabilization:**
 - **Overload Sets**
 - **Partial Reductions**
 - **Static vs. Dynamic type issues**
 - **Constrained Generics**
- **GPU Support:** via interoperability with GPU libraries and/or code generation
- **Vectorization**
- **Interoperability:** multidimensional Fortran, NumPy arrays
- **Compiler Performance**
- **Memory Leaks:** close remaining cases

Performance-Related Priorities for Chapel 1.20



- **Continue with Bale-driven optimizations**
 - Enable unordered compiler optimization by default
 - Flesh out unordered operation API
 - Port and tune additional Bale applications
 - Start on aggregation library and performance experiments
- **Continue Locality-oriented improvements**
 - Optimize slicing
 - Optimize communication for distributed fields in records/classes
 - Improve bulk transfer for distributed arrays
- **Tune comm=ofi performance**
- **Implement a task-resetting policy**



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This presentation may contain forward-looking statements that are based on our current expectations. Forward looking statements may include statements about our financial guidance and expected operating results, our opportunities and future potential, our product development and new product introduction plans, our ability to expand and penetrate our addressable markets and other statements that are not historical facts.

These statements are only predictions and actual results may materially vary from those projected. Please refer to Cray's documents filed with the SEC from time to time concerning factors that could affect the Company and these forward-looking statements.



THANK YOU

QUESTIONS?



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