Other Miscellaneous Notable Changes

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Outline

- Change in License/Contributor’s Agreement
- Notable Process Improvements
- Documentation Improvements
- Notable Bug Fixes
- Major Commits by non-Cray Contributors
- Notable Test System Improvements
- Notable Performance Testing Improvements
Change in License/Contributor’s Agreement

Background:
- Chapel has traditionally used a BSD license
- Contributors have had to sign a Cray-custom agreement
  - rationale: legally protect the code base (BSD has no standard agreement)
  - effect: required users to review non-standard form; some balked completely

This Effort:
- Changed license and contributor agreement to Apache 2.0
  - similarly permissive license to BSD, but legally stronger
  - comes with a bundled contributor’s agreement (individual and organization)

Impact:
- Requires developers under the previous agreement to renew
- We’ve now received contributor agreements from some developers who had previously been unable to sign them
Notable Process Improvements

- Migrated from SVN/SourceForge to Git/GitHub
- Converted testing from crontabs to Jenkins
- Began using Travis for pre-commit sanity checks
- Began using Coverity scan to catch code quality issues
- Started tracking tasks in Pivotal
- Created/Owned a Chapel project in OpenHUB
- Added a script to help build multiple CHPL* configurations
- Added copyrights to sources in git
  - previously, tacked them on at time-of-release
Documentation Improvements

- Added new READMEs for
  - associative domain/array set operations
  - querying an array’s local sublocale
  - using auxiliary I/O capabilities and curl
  - the current set of supported file/directory library routines
  - using Chapel with KNC

- Several other improvements and updates to the language specification and READMEs
Notable Bug Fixes

- Fixed a bug in constructors for nested records
- Fixed a bug with uint(32) literals > max(int(32))
- Fixed a bug in supporting uppercase binary/hex literals
  - e.g., 0B01101101, or 0XBABE1055
- Fixed a bug relating to ‘ref’ intents and varargs functions
- Fixed a bug in which param bool sizes were not preserved
- Fixed a bug relating to shared ‘noinit’ declarations
- Added a missing overload of writef()
- Fixed a race in member() for associative domains
- Fixed some bugs in the GMP module
Major Commits by non-Cray Contributors

- Some of the aforementioned file/directory utilities
- Optimization to cache remote data, including…
  - draft memory consistency interfaces
  - draft non-blocking communication interface
  - remote prefetch capability (currently aimed at developers)
- Partial instantiation support in function resolution
  - resulted in compile-time improvements
- `readstring()` routine for reading bytes into a string
- Improved I/O failure messages
- Refactoring of task-local data into a structure
- Fixes to Coverity/Clang Static Analyzer complaints
Notable Test System Improvements

- Added the ability to create C-based tests
- Added the ability for .execopts files to redirect stdin
- Automatically squash internal module line#s for .bad files
- Log top CPU consumers when tests time out
- Added the notion of a /tmp directory for testing
- Changed memory leaks accounting to include strings
- Improved the ability to have config-specific .good files
Notable Performance Testing Improvements

- Added the ability to use various external timers
- Embedded enabled graph sets in the graph page’s URL
  - simplifies sharing suites of graphs across users
- Removed duplicate checkboxes from the set of graphs
- Fixed the support for annotating multiple graph series
- Run just one trial for tests with higher-than-default timeout
- Fixed a bug in which data from multiple trials was lost
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