Other Miscellaneous and Notable Changes

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Outline

- Packaging Improvements
- Tool Improvements
- Error Message Improvements
- Bug Fixes
Packaging Improvements
Packaging Improvements

- Can now source setchplenv.* scripts from anywhere
  - used to require being in $CHPL_HOME
- Retired CHPL_THREADS environment variable
- Renamed etc/ directory to highlight/
  - since all it contains is syntax highlighters
- Cray Chapel module now statically links ‘chpl’
Tool Improvements
Tool Improvements

- **Added folding for ‘vim’ users**
  - (contributed by Przemysław Leśniak)

- **Added ability to enable/disable ‘chplvis’ tracing**
  - (contributed by Phil Nelson)

- **Made ‘chpltags’ portable to older ‘ctags’ versions**
Error Message Improvements
Error Message Improvements

- Improved const checking for domains and arrays
- Variable decls over incomplete generics result in an error
- Stopped warning about serialized reductions – it’s OK
- Non-extern functions with no-op bodies generate an error
  - e.g., `proc foo(x: int);`
- Reduced printing of internal line numbers in error msgs
- Strings containing bad escape sequences cause an error
- Better message for values in `$CHPL_RT_NUM_THREADS_PER_LOCALE`
- Better messages for illegal/incorrect ‘use’ statements
- New error msg when naming fields within ‘with’ clauses
- Error message for ‘real*2’ suggesting ‘2*real’
Bug Fixes
Bug Fixes

- Reduce intents on forall loops over ranges now work
- Fixed zip() iteration over equivalent associative doms/arrs
- Fixed ability to declare a ‘ref’ to a domain or array
- Fixed bad resolution of overridden/overloaded methods
- Fixed a bug in which generic types printed incorrectly
- Fixed assignment between generic records bug
- Fixed bug with extern type decls in generic procedures
- Fixed isHomogeneousTuple*() for non-tuple arguments
- Fixed a bug with self-references in module ‘use’ lists
- Fixed runtime representations of boolean literals
More Bug Fixes

- Fixed a bug w.r.t. reduce intents and on-clauses
- Fixed a bug when returning tuples of arrays
- Fixed a bug when initializing near-maximally-sized arrays
- Fixed a bug in Block/Cyclic parallel iterators for arrays of arrays
- Fixed a bug in subtype checks handling transitivity
- Fixed bugs in default I/O routines for subclasses
- Fixed some Spawn module issues
- Made I/O functions more tolerant of EINTR
- Fixed bugs in which I/O routines ran on wrong locale
- Fixed a bug in formatted reads of digits
Even More Bug Fixes

- Fixed a bug preventing `channel.itemWriter()` from working
- Improved the handling of C escapes in string literals
- Fixed handling of escape chars in `compilerWarning/Error`
- Fixed nested, same-name modules, each with `main()`
- Fixed bug where Qthreads didn’t allocate enough storage
- Fixed line numbers reported for standalone iterators
- Fixed a bug in which records were not properly widened
- Fixed a bug in which [in]out records could be double-freed
- Fixed a bug in ‘chpldoc’s handling of mid-decl comments
- Fixed a bug when codegen failed to open files
Just a Few More Bug Fixes

- Made compiler resilient to userIDs with backslashes
- Fixed a bug with size assertions in SysCTypes
- Fixed chpl-venv path to use host, not target, platform
- Fixed line numbers for formal domain query expressions
- Fixed a bug in which sleep() could awaken tasks too soon
Cray-specific Bug Fixes

- Resolved a rare program hang in ‘ugini’ communication
- Fixed ‘ugini’ memory mis-registration under CLE 6.*
- Plugged a memory leak in ‘ugini’ for certain remote on’s
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