

AOCC 3.2 Release Notes

AOCC 3.2 is based on the LLVM™ 13 compiler infrastructure (llvm.org, 4 October 2021) and includes bug fixes and support for other new features as follows:

New Features/Enhancements

Infrastructure

Address, Memory, Thread and Safe stack sanitization support for Flang

Compliance to Standards

- Improved OpenMP 4.5 support for Fortran; the clauses ‘depend, use_device_ptr’ and directives ‘do, ordered, task and parallel’ are supported.
- Improved F2008 support. The Value attribute is permitted for non-allocatable non-pointer non-coarray.
- AOCC Flang debuggability is upgraded to support the Dwarf 5 standards.

Flang

- (NO)FREEFORM pragma is supported.
- Debuggability support for Fortran Namelist and macros.

Errata

- Comments used in ‘#include’ statements in Fortran no longer cause warnings.
- Fixed bugs in namelist support for Fortran.
- Fixed ICE while initializing Fortran double dimensional array of derived types
- Errors in reduction kernels for Fortran quad and complex variables are fixed
- Fortran Min/Max fixed to take an array as the first argument.
- Fixed compiler error with Fortran subroutines using abstract data type
- Fixed ICE with # as continuation mark for Fortran
- Fixed bug to support char length > 38 with Fortran OMP 4.5 target
- Fixed bug to support Fortran complex variable reduction in nested loop in OMP 4.5
- Fixed issue with ‘!\$omp parallel do reduction (.or.:)’ in OMP 4.5 for Fortran
- Fixed issue with pointer assignment on target device on OMP 4.5 Fortran target
- Fixed issue using atan() and atan2() routines inside Fortran OMP 4.5 target
- Fixed to support detecting Fortran OMP 4.5 target with omp_target_is_present()
- Issue with target function calls from within Fortran OMP 4.5 target region is addressed.
- Issue with using in_reduction(..) with OMP 4.5 Fortran target is addressed
- Fortran issue with OMP 4.5 reduction without target offloading is addressed
- Fixed Flang compilation issue when BIND and SAVE attributes are used together

- In Fortran, private variable passed to OMP 4.5 parallel region was not private within the parallel region. Fixed now
- Fixed Flang error in reading namelist from a stream (array)
- Provided Partial support for nowait clause with target update for OMP 4.5 in Fortran
- Fixed the Issue with Flang in defining derived data type having multi dimension arrays
- Fixed OMP 4.5 *if* clause in Flang to work with OMP target parallel region.
- Fixed issues with F2008 G0 edit descriptor
- Capitalization in Fortran programs was not supported by Flang. Now fixed
- Fixed the run time failures when using Fortran function pointers inside OMP regions
- Runtime while calling type bound procedures is addressed in Flang
- Flang compilation issue when allocatable array defined in a module with SAVE attribute is referenced in OMP parallel do region with static scheduling. Fixed now
- Fixed Flang debuggability to provide information on compiler options to debugger tools
- Addressed debuggability issues displaying Fortran block data values