AOCC 4.1 Release Notes

Advanced Micro Devices

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New Features/Enhancements

- Based on LLVM 16.0.3 release (llvm.org, 3rd May 2023)
- fPIC and fPIE options made default
- Default optimization level is -O2
- Compliance to C++17 standards by default
- Tuned for *AOCL-LibM (AMD Math Library) 4.1*
- Bit reproducibility support improved for C/C++ and Fortran compilation
- General improvements targeting compile time reduction
- New option in AOCC Optimization Report (AOR) tool to display the AOR.

Note: *As -fPIC and -fPIE options are default with AOCC 4.1, it will generate location independent code by default. Static libraries that are statically linked and not using -fPIC options so far must be rebuilt with AOCC 4.1 with these default options. Else, it could display a linker error. Alternatively, use the options -fno-PIC/-fno-PIE with AOCC 4.1 to disable generating location independent code.*

Bug Fixes

This release includes fixes to the following critical and known issues:

- Bug in Fortran 'call system'
- Debuggability errors for OpenMP outlined functions
- Using Fortran NULL intrinsic with MOLD argument
- Bug in Fortran to C transfer of string data
- Downgraded `-Implicit-int` and related errors to warning
- Floating point conversion from quadruple value to double precision
- Fortran compiler crash with `-Hqq`
- Fortran issue on procedure pointer definition
- Using BIND(C) Fortran attribute
- Using NOALIAS on Fortran allocation routines
- Issues with AOCC pre-requisite checks
- AOCC library path detection for OpenMP library
- AOCC Dwarf compatibility issues with GDB
- Debuggability issue with Fortran namelist
- Fortran allocatable variables with COPYIN clause
- Fortran allocatable component defined in a module
- Fortran NEAREST intrinsic when used inside an array
- Fortran issues with preprocessing specific string patterns
- Support to suppress Fortran IEEE warnings using environment variable AOCC_SUPPRESS_IEEE_WARNINGS
- Error generated for separate module procedure in Fortran when scalar dummy has value attribute