

IBM Education Assistance for z/OS V2R1

Item: Validation to C11

C11 Alignment Related Support

Element/Component: Language Environment



Agenda

- Trademarks
- Presentation Objectives
- Overview
- Usage & Invocation
- Migration & Coexistence Considerations
- Presentation Summary
- Appendix



Trademarks

- See url <http://www.ibm.com/legal/copytrade.shtml> for a list of trademarks.



Presentation Objectives

- Explain the work of Language Environment to make some of its functions conform to ISO/IEC 9899:2011 (C11).



Overview

- Problem Statement / Need Addressed
 - The latest C language standard (currently known as C11) has changed some wording and added in some requirements from the library. So Language Environment needs to be validated to verify if it is already compliant with the standard. If not, changes would be made to make Language Environment compliant with C11.
- Solution
 - Modify parts of the C runtime library to make them conform to the standard.
- Benefit / Value
 - Some parts of Language Environment are compliant with C11.



Usage & Invocation

- The following functions are made compliant when the environment variable `_EDC_SUSV3=2` is set
 - `log()`, `logf()`, `logl()`
 - `log10()`, `log10f()`, `log10l()`
 - `log1p()`, `log1pf()`, `log1pl()`
 - `log2()`, `log2f()`, `log2l()`
 - `pow()`, `powl()`



Usage & Invocation

- ISO/IEC 9899:2011(C11) introduces a new header file `<stdalign.h>`, which defines following macros:
 - `alignas`
 - `alignof`
 - `__alignas_is_defined`
 - `__alignof_is_defined`
- To use `stdalign.h`, compile source code with language level EXTC1X.



Migration & Coexistence Considerations

- The existing behavior that is for POLE errors is unchanged. To request the C11 POLE error behavior set `_EDC_SUSV3=2`.



Presentation Summary

- Some parts of Language Environment are compliant with C11.



Appendix

- Publication references:

- z/OS XL C/C++ Programming Guide SC09-4765
- z/OS XL C/C++ Runtime Library Reference SA22-7821

