
* Absoft Pro Fortran 2014 for Windows
* Release Notes
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* Version 14.0.6
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-- Fixed in 14.0.6

1) Default initialization in arrays of user defined types

-- Fixed in 14.0.5 ---

- 1) AbsoftTools SMP analyzer fails for source files with '(' characters in path
- 2) Compilation failure for IMPORT list with more than two items
- 3) IMPORT statements in FUNCTION interface hides intrinsic functions
- 4) SELECTED_CHAR_KIND in specification/initialization statements
- 5) AbsoftTools speed_math option not synced between Target and FORTRAN pages
- 6) BIND statement with COMMON names
- 7) AbsoftTools saving files in dual screen display mode
- 8) AbsoftTools projects saved dual screen mode do not reopen dual screen mode
- 9) Compiler drivers do not respect ordering of -Wl,--whole-archive options
- 10) Memory leak for TRIM() in ELSEIF condition, when condition is false
- 11) AbsoftTools Syntax Check command fails if install path has spaces
- 12) I Edit descriptor without W.D (extension) would not output a zero value
- 13) Code generation failure for array of allocatable components in COMMON
- 14) Error not caught for allocatable array in COMMON
- 15) AbsoftTools Clear All Bookmarks command in dual screen display mode

-- Fixed in 14.0.4 ---

- 1) OpenMP environment variables in AbsoftTools project files
- 2) Compilation failure with -Rp option
- 3) Compilation failure for INDEX intrinsic with KIND argument
- 4) Incorrect result for HYPOT intrinsic function
- 5) Parse error for STRUCTURE keyword outside declaration section
- 6) Code generation failure for vector shift optimization
- 7) ENCODE/DECODE statements now accept list directed format specification
- 8) AWE program hang if terminated during a READ statement
- 9) INTEGER constant conversion overflow with -i2 option
- 10) AbsoftTools hangs during Replace All in Files operation
- 11) AbsoftTools displays "file has been edited" after Replace All operation
- 12) Compiler drivers distinguish between source code errors and compiler failures
- 13) Calling STOP from AWE_addMenu subroutine causes application hang
- 14) Error when optional argument type function returns array passed to PRESENT()
- 15) CHARACTER declarations where LEN is specified with nested intrinsic functions
- 16) Memory fault with automatic deallocation of arrays with allocatable components
- 17) Memory leak with automatic deallocation of arrays with allocatable components
- 18) STDCALL ENTRY statements not exported correctly when building DLLs
- 19) Optimization failure for READ and WRITE using IOMSG= specifier

--- Fixed in 14.0.3 ---

- 1) TYPE statement with both PUBLIC and BIND(C) specifiers
- 2) PUBLIC objects appearing in BIND statement
- 3) Multiple AWE_FormDialog instances

- 4) AWE_AlertBox is not modal when called from primary FORTRAN thread
- 5) Race condition in AWE_writeXYPlot, AWE_writeBarChar, AWE_writePieChart
- 6) AbsoftTools File and Edit menu actions not disabled on launch
- 7) Spurious ANSI compatibility warning
- 8) Code generation for allocatable local in RECURSIVE routine with -s
- 9) Debug line info and error line reporting for C preprocessed files
- 10) COMPILER_OPTIONS() INTRINSIC function
- 11) New -use_vctools option uses Visual Studio linker for link phase

--- Fixed in 14.0.2 ---

- 1) Default mono space font added to Fx3 and AbsoftTools
- 2) Significant Fx3 interface response time improvement
- 3) Compiler no longer tries to open files matching ".mod*"
- 4) Compilation failure for inlining INDEX intrinsic
- 5) Incorrect debug information for PROCEDURE pointers in modules
- 6) Added new AWE_clearXYPlot() routine to AWE libraries

--- Fixed in 14.0.1 ---

- 1) Fx3 command parsing for 64 bit break point addresses
- 2) CMPLX/DCMPLX intrinsic with mixed type constant arguments
- 3) Legacy ENCODE/DECODE transfer length limit increased
- 4) ENCODE/DECODE code generation error
- 5) Code generation with pointer checking (-Rp) and optimization

--- New In Absoft Pro Fortran 2014 ---

- Absoft Window Environment AWE-Chart
- Absoft Window Environment AWE-Plot
- Absoft Window Environment AWE-Form
- Enhanced AVX Instruction set performance
- Support for 999 continuation lines
- F2003 - ABSTRACT INTERFACE
- F2003 - PROCEDURE pointers
- F2003 - enhanced TYPE initialization
- F2003 - POINTER bounds remapping
- F2003 - recognizes ASYNCHRONOUS I/O specifiers
- F2008 - empty CONTAINS section
- F2008 - BESSEL_J0, BESSEL_J1, and BESSEL_JN intrinsics
- F2008 - BESSEL_Y0, BESSEL_Y1, and BESSEL_YN intrinsics
- F2008 - BGE, BGT, BLE, and BLT intrinsics
- F2008 - DSHIFTL and DSHIFTR intrinsics
- F2008 - SHIFTA, SHIFTL and SHIFTR intrinsics
- F2008 - MASKL, MASKR and MERGE_BITS intrinsics
- F2008 - EFC_SCALED, GAMMA and LOG_GAMMA intrinsics
- F2008 - EXECUTE_COMMAND_LINE intrinsic
- F2008 - IS_IOSTAT_END and IS_IOSTAT_EOF intrinsics
- F2008 - SELECTED_CHAR_KIND intrinsic

---Implementation Notes ---

- 1) VAL intrinsic and CHARACTER arguments.

When the compiler encounters a CHARACTER variable or expression as the argument to a VAL intrinsic, it passes the address of the storage for the string. This may not be the desired behavior when interfacing with a C or C++ routine. If a C/C++ routine expects C/C++ char value, the appropriate way to pass a CHARACTER*1 FORTRAN variable (or a single character inside a larger FORTRAN CHARACTER expression) is to use the ICHAR function along with the VAL intrinsic. The following example illustrates this:

```
PROGRAM MAIN
CHARACTER*1 fortran_char_variable
fortran_char_variable = 'A'
CALL c_routine(VAL(ICHAR(fortran_char_variable)))
END
```

---NOTES ON 14.0 Windows Series ---

1) Absoft FORTRAN 77 Extension GLOBAL DEFINE obsolete

Support for the GLOBAL DEFINE extension has been removed from the 14.0 and later compilers. The functionality provided by this extension has been replaced by Fortran 90 modules. Converting code that uses the obsolete extension is a straight forward process. A small example is given below:

OLD CODE:

```
GLOBAL DEFINE
  INTEGER MAX_ITEMS
  INTEGER MAX_RESULTS
  PARAMETER (MAX_ITEMS = 100)
  PARAMETER (MAX_RESULTS = 500)
END

PROGRAM MAIN
IMPLICIT NONE
END
```

NEW CODE:

```
MODULE GLOBAL_DEFINE
  INTEGER MAX_ITEMS
  INTEGER MAX_RESULTS
  PARAMETER (MAX_ITEMS = 100)
  PARAMETER (MAX_RESULTS = 500)
END MODULE GLOBAL_DEFINE

PROGRAM MAIN
USE GLOBAL_DEFINE
IMPLICIT NONE
END
```

2) Parallel Makes Disabled

The current version of the Cygwin cygwin1.dll (1.7.25) does not provide the required pipe/fifo support to enable parallel makes using the Absoft amake2 program. As a result, parallel makes are disabled during installation by means of a registry entry.

If a future version of the cygwin1.dll with enhanced pipe/fifo support is released, parallel makes can be reenabled as follows:

- a) From the Absoft Pro Fortran 2014 sub-menu in your Windows Start menu, select Development Command Prompt (32bit) and enter this command:

```
amake2 --pmake-enable
```

(Note: on Windows 8, Windows 7 and Windows Vista, you will need to launch the Development Command Prompt with administrator privileges.)

Use this steps to undo this modification:

- a) From the Absoft Pro Fortran 2014 sub-menu in your Windows Start menu, select Development Command Prompt (32bit) and enter this command:

```
amake2 --pmake-disable
```

(Note: on Windows 8, Windows 7 and Windows Vista, you will need to launch the Development Command Prompt with administrator privileges.)

- 3) Change in name decoration from 10.0 and earlier releases.

Users upgrading to Pro Fortran 14.0 from releases prior to 10.1 should be aware that the default name mangling and source code case sensitivity options were changed in release 10.1 and these changes remain in place for Pro Fortran 14.0. By default, all source code identifiers are folded to lower case and external routine names are output with a single underscore appended. This change applies to both Fortran 77 and Fortran 95 compilation modes.

The following option sets can be used to match the behavior of earlier Absoft compilers

Code compiled by previous Absoft f77 compiler drivers:

```
-YEXT_NAMES=ASIS -YEXT_SFX=""
```

Code compiled by previous Absoft f90 and f95 compiler drivers:

```
-YEXT_NAMES=UCS -YEXT_SFX=""
```

- 4) Debugging 64 bit programs with the Fx Debugger:

You can only debug 64 bit programs on a 64 bit system running a 64 bit version of Windows.

The Fx debugger requires that the 64 bit version of Microsoft's Debug Information Access Dll (msdia80.dll) be registered with the system. If you have Microsoft Visual Studio installed, this will have been done during the installation of that product. If not, you will need to do the following before you can debug 64 bit executable programs:

- a) From the Absoft Pro Fortran 2014 sub-menu in your Windows

Start menu, select Development Command Prompt (64bit). On Windows 7 and Windows Vista, you will need to launch the Development Command Prompt with administrator privileges.

b) Enter `cd bin64`

c) Enter `reg_msdia64.bat`

Note: you only need to do this procedure once.

5) Building mixed C and Fortran code.

While Pro Fortran 2014 (v14.0) does not include a C compiler, the Absoft Tools development environment does support integration with the Microsoft C/C++ compiler. After one of the supported Microsoft C/C++ development environments has been installed, Absoft Tools IDE will automatically invoke the Microsoft C/C++ compiler to compile any C or C++ files added to a project.

The Microsoft C/C++ compiler is available at no cost as part of these two packages:

Microsoft ® Visual Studio Express 2012
Microsoft ® Windows Platform SDK 7.1.

Both of these packages can be downloaded from the Microsoft web site. For supporting both 32 and 64 bit C development, Absoft recommends using the Microsoft ® Windows Platform SDK 7.1.

Absoft Pro Fortran 2014 also supports the same level integration with the retail version of Microsoft Visual Studio 2008, Microsoft Visual Studio 2010, and Microsoft Visual Studio 2012.

6) Installing the Absoft Common License Manager as a Windows Service.

If you have purchased an Absoft network license and wish to run the license manager on Windows, you will need to install the license manager as a Windows service. After installing the the Absoft Pro Fortran 2014 package, run the Absoft License Manager Service installer from the CD Browser or by opening the folder named Absoft License Manager and running the program named `setup_absoft_license_manager_service.exe`.

To remove the license manger as a Windows service, run the Absoft License Manager uninstall program from the Uninstaller menu located in the Absoft Pro Fortran 2014 entry in the Windows Start Menu.

Further information on the Absoft license manager can be found in the Absoft License Management.pdf document located in `C:\Absoft14.0\doc`.