

## Inter-Office Memorandum

To	Distribution	Date	September 7, 1978
From	John Wick	Location	Palo Alto
Subject	Mesa 4.1 update	Organization	SDD/SD

# XEROX

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This memo summarizes the changes contained in Mesa 4.1. This is a maintenance release, and contains primarily bug fixes documented elsewhere (by SDSupport). There have been no changes to public interfaces since Mesa 4.0. However, there are a few highlights that are worth pointing out.

In the paragraphs below, numbers in square brackets refer to change requests maintained by SDSupport.

### Microcode

The Mesa 4.1 compiler now generates the BLTC instruction. This means that 4.1 BCDs are not backward compatible with 4.0; that is, the output of the 4.1 compiler will not run with 4.0 microcode. (However, 4.0 BCDs will run with 4.1 microcode, so there is no need to recompile.) Note that all Mesa 4.1 image files require 4.1 microcode. [4.0.148]

Users are strongly encouraged to update to the 4.1 microcode, as there is a rather nasty bug in the 4.0 signed compare instructions. [4.0.167]

### Compiler

There is one change in the semantics of relative pointers. To more closely parallel array subscripting, a relocated relative pointer is now automatically dereferenced. If  $b$  is a base pointer and  $p$  a relative pointer to  $Foo$ , the construct  $b[p]$  is now of type  $Foo$  instead of type POINTER TO  $Foo$ . (The compiler will point out all the constructs where an @ operator is needed or where an  $\uparrow$  should be removed.) [4.0.273]

The constructs FIRST and LAST now apply to (LONG) INTEGERS, CARDINALS, and CHARACTERS; they yield the minimum and maximum values, respectively. For example, LAST[`LONG INTEGER`] has the value 2147483647 ( $2^{31}-1$ ); these constructs should be used in place of MaxLongInteger and the like. [4.1.322]

### Binder

The binder now enforces quad-word code alignment. This will affect only systems running on the D0, although Alto/Mesa users may notice a very small increase in the size of packed code segments.

The binder now pauses when warnings are detected (under control of the /p switch).

### **Debugger**

The debugger has been updated to support Pilot on the D0. Alto users are unaffected by these extensions.

The string parameter passed to CallDebugger is now printed by the debugger; a 4.1 system (Mesa or BasicMesa) is required to use this feature. [4.0.26, 4.0.301]

### **Distribution:**

Mesa Users

Mesa Group