



# Tech Info Library

## System 7.0.1: System Crashes with 68000 Accelerators

Revised: 12/14/92  
Security: Everyone

System 7.0.1: System Crashes with 68000 Accelerators

Article Created: 28 October 1992

TOPIC -----

I have an accelerator card with a 68020 installed in my Macintosh Plus. After installing System 7.0.1, I'm getting system crashes at start up. What's happening?

DISCUSSION -----

There's code that causes problems on 68000 computers with 68020/68030 accelerators. This same problem afflicts the 7.0 Tune Up. A different implementation works fine in 7.0. But neither the 7.0, nor the 7.0.1 version would handle a case of a 68000 accelerated by a 68040.

This code has some other problems. Apparently SwapSerialClock is a valid selector on 68000 computers, but on an accelerated 68000 computer there's no way to call it. Presumably, if the table gets set up correctly, it would solve this problem.

Finally, there's a related problem. The 7.0.1 implementation of FlushInstructionCache (\_HWPriv with a selector of 1) just calls jFlushCache. This simplifies things since there's only one implementation of FlushInstructionCache to worry about. But vCacheFlush is never patched correctly if a different CPU from the one supported by the ROM is installed.

The table of selector functions is referenced by the instruction:

```
MOVE.L  emHwPrivTable(A0),A0; Point A0 to the hwPriv jump vector table
```

It appears that such a table never gets set up on 68000 computers. In the following instruction, the immediate value #0 gets updated with the correct value for the size of the table.

```
SelectorNum CMPI.W #0,D0 ; Is the selector in range? (gets filled in
```

at install time)

Since CPUFlag indicates we're no longer running on a 68000 computer, it falls through to the preceding instruction. Because no table gets installed, the instruction determines that the selector is out of range, and branches off to tryTheROM. Since there's no HWPriv in ROM on an SE, for example, this defaults to \_Unimplemented.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10886