68040

	COLLABORATORS		
	TITLE : 68040		
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	REVISION HISTORY		
NUMBER	DATE	DESCRIPTION	NAME

Contents

Chapter 1

68040

1.1 68040.doc

```
               --Background--

               FPUControl()
```

1.2 68040.library/--Background--

```
    PURPOSE
```

This is the support library for 68040 based Amigas. Its purposes
are manifold:

```
- Fixes and workarounds for several programs that typically appear
  on 68040 based systems, mainly cache related.
- Replacement functions for exec.library CPU related functions.
- Loading and initialization of the FPSP68040 motorola software
  module for emulation of FPU instructions not natively supported
  by the 68040 internal FPU.
- Setup of the 68040 MMU and related functions of the exec library.
```

The last step is not done by the 68040.library directly but by the
mmu.library which is loaded by the 68040.library on startup.

Furthermore, this library provides user-callable functions. However,
even though they are documented, they shouldn't be called directly.
The recommended calling mechanism is not by using this library
directly, but by calling the same vector of the 680x0.library which
does the same independent of the CPU installed in your system.

1.3 68040.library/FPUControl

   NAME
FPUControl   -   control the generation of FPU exceptions

   SYNOPSIS
oldflags = FPUControl (flags , mask);
d0   d0   d1

ULONG FPUControl (ULONG , ULONG);

   FUNCTION
This function disables or enables various exceptions the 68040
FPU might generate. The purpose of this function is mainly to
enable workarounds for badly written software.

   INPUTS
flags - A ULONG bit mask of the exceptions to disable. A
    set bit disables the corresponding exception.
mask - A mask longword of the flags that are to be changed.
    A set bit indicates that the corresponding bit in
    flags mask is valid.

The following bits are currently defined:

FPUCtrlB_BSUN   0L   Disable the branch or set on unordered
      exception.
FPUCtrlB_INEX   1L   Disable the inexact result exception.
FPUCtrlB_DIVZ   2L   Disable the divide by zero exception.
FPUCtrlB_UNFL   3L   Disable the underflow exception.
FPUCtrlB_OVFL   4L   Disable the overflow exception.
FPUCtrlB_SNAN   5L   Disable the signalling NAN exception.
FPUCtrlB_OPERR   6L   Disable the operand error.

   RESULTS
the old settings of the exception mask.

   NOTES
This function should not be called directly. It is called indirectly
by the corresponding library function of the 680x0.library.

This function does not alter the FPU status at all, it does not
even touch the FPU. All it does is that it sets certain control
bits in the 68040 library base which are interpreted by the
exception vectors installed by this library.

Therefore, this library vector does nothing if someone altered the
FPU exception vectors manually.

   BUGS

   SEE ALSO
libraries/68040.h, libraries/680x0.h,
the Motorola 68040 manual.