

[PATCH 2/12] generic __ffs()

Source: <http://linux.derkeiler.com/Mailing-Lists/Kernel/2006-01/msg09684.html>

- *From:* mita@xxxxxxxxxxxxxxxxxxx (Akinobu Mita)
 - *Date:* Thu, 26 Jan 2006 12:30:50 +0900
-

This patch introduces the C-language equivalent of the function:
unsigned long __ffs(unsigned long word);

HAVE_ARCH__FFS_BITOPS is defined when the architecture has its own version of these functions.

This code largely copied from:
include/asm-sparc64/bitops.h

Index: 2.6-git/include/asm-generic/bitops.h

```
----- 2.6-git.orig/include/asm-generic/bitops.h 2006-01-25 19:14:08.000000000 +0900
+++ 2.6-git/include/asm-generic/bitops.h 2006-01-25 19:14:09.000000000 +0900
@@ -193,6 +193,43 @@
```

```
#endif /* HAVE_ARCH_NON_ATOMIC_BITOPS */
```

```
+ #ifndef HAVE_ARCH__FFS_BITOPS
+
+ /**
+ * __ffs - find first bit in word.
+ * @word: The word to search
+ *
+ * Returns 0..BITS_PER_LONG-1
+ * Undefined if no bit exists, so code should check against 0 first.
+ */
+ static inline unsigned long __ffs(unsigned long word)
+ {
+     int b = 0, s;
+
+     #if BITS_PER_LONG == 32
+     + s = 16; if (word << 16 != 0) s = 0; b += s; word >>= s;
+     + s = 8; if (word << 24 != 0) s = 0; b += s; word >>= s;
+     + s = 4; if (word << 28 != 0) s = 0; b += s; word >>= s;
+     + s = 2; if (word << 30 != 0) s = 0; b += s; word >>= s;
+     + s = 1; if (word << 31 != 0) s = 0; b += s;
+
+     + return b;
+ 
```

