

Re: mmap returns incorrect data

Source: <http://linux.derkeiler.com/Mailing-Lists/Kernel/2004-04/6590.html>

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Date: 04/30/04

Date: Fri, 30 Apr 2004 00:47:05 +0100
To: marcus hall <marcus@tuells.org>

On Thu, Apr 29, 2004 at 05:12:43PM -0600, marcus hall wrote:

> *I have a system based on 2.5.59 kernel for arm. This system was previously
> running OK with all filesystems on a stratoflash chip, but I have recently
> moved the filesystems to a compact flash chip. Some filesystems are
> cramfs, and some have changed from jffs2 to ext3 along with the move.*

You really don't want to use ext3 on CF unless you want to wear the flash quickly. Just because a filesystem has journaling does not mean that its suitable for flash (in fact, it may be far worse for flash than its non-journaled counterpart, as in this case.)

> *I am having trouble with ldconfig not recognizing some files as being valid.
> The files that cause the problem are files that are on an ext3 filesystem
> on the CF. Other files on a cramfs filesystem seem to work reliably.
> It seems that ldconfig mmap()s the file into its address space, and what
> it sees doesn't match what is in the file. If I pre-read the file before
> running ldconfig, so that the contents get into the cache, then ldconfig
> proceeds normally.*

This is an IDE driver bug – it performs PIO but does not ensure that the individual pages are properly flushed to RAM before telling the kernel that the IO is complete. (If someone wants to disagree, look at how `rd.c` does `flush_dcache_page`, and see previous discussions on lkml concerning this.)

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Russell King
Linux kernel 2.6 ARM Linux - <http://www.arm.linux.org.uk/>
maintainer of: 2.6 PCMCIA - <http://pcmcia.arm.linux.org.uk/>
2.6 Serial core

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