

## Re: [PATCH 2.6.21] cramfs: add cramfs Linear XIP

---

*Source:* <http://linux.derkeiler.com/Mailing-Lists/Kernel/2007-06/msg03325.html>

---

- *From:* Jörn Engel <[joern@xxxxxxxxxxxxxxxxx](mailto:joern@xxxxxxxxxxxxxxxxx)>
  - *Date:* Fri, 8 Jun 2007 15:10:09 +0200
- 

On Thu, 7 June 2007 22:15:19 +0100, Christoph Hellwig wrote:

With the `filemap_xip.c` helpers adding xip support to any filesystem is pretty trivial for the highlevel filesystem operations. The only interesting bit is the lowlevel code (the `get_xip_page` method and the others Carsten mentioned), but we need to do these lowlevel code in a generic and proper way anyway.

I'll try to hack up an xip prototype for jffs2 next week.

I'd absolutely love to see this code! However, it may be a little harder than you think.

XIP is basically limited to NOR flash. And the NOR interface is to simply map all flash to some physical memory area and interpret reads/writes to/from this area in a special way. Internally the flash chip is implementing a state machine that is controlled by writes and defines the data read.

Easiest case: `read_array` state. In this state, every address will return the flash content associated to that address on read. Pretty much any write will cause a transition to a different state, though. Any state other than `read_array` will return flash registers on any read.

In other words, writing to flash prohibits XIP, at least temporarily. A read-write xip flash filesystem needs to tear down any xip mapping before writing and have the flash chip return to `read_array` mode before setting up a new mapping.

If the underlying device consists of several chips or of chips that implement separate state machines for different areas of the chip (some Intel chips), only mappings belonging to the chip/area currently being written are affected. That should make quite a nice optimizations, although it can be ignored for a first shot.

Jörn

Re: [PATCH 2.6.21] cramfs: add cramfs Linear XIP

--

Joern's library part 12:

<http://physics.nist.gov/cuu/Units/binary.html>

-

To unsubscribe from this list: send the line "unsubscribe linux-kernel" in the body of a message to majordomo@xxxxxxxxxxxxxxxxx

More majordomo info at <http://vger.kernel.org/majordomo-info.html>

Please read the FAQ at <http://www.tux.org/lkml/>