

Re: 7.0 CURRENT kernel's ath driver causes page fault, kernel panic (debugging kernel)

Re: 7.0 CURRENT kernel's ath driver causes page fault, kernel panic (debugging kernel)

Source: <http://unix.derkeiler.com/Mailing-Lists/FreeBSD/current/2008-07/msg00366.html>

- *From:* "Garrett Cooper" <yanebsd@xxxxxxxxx>
 - *Date:* Sat, 19 Jul 2008 12:45:33 -0700
-

On Fri, Jul 18, 2008 at 5:29 PM, Edward Ruggeri <smallhand@xxxxxxxxxxxxxx> wrote:

On Fri, Jul 18, 2008 at 6:36 AM, Garrett Cooper <yanebsd@xxxxxxxxx> wrote:

Some notes:

1. *blinks*... I hope you mean 8-CURRENT, not 7-CURRENT. 7 hasn't been CURRENT for some months now (~6 months IIRC).

Oh my, I am an idiot. I'm using 7-STABLE, making this the wrong list to ask; sorry. I guess I could repost to freebsd-stable in addition to filing a PR. Would that be wise?

2. `pciconf -lv` might help with the PCI ID info. Then someone might be able to tie your card back to the appropriate chipset.

This gives me:

```
ath0@pci0:3:0:0: class=0x020000 card=0x058a1014 chip=0x1014168c
rev=0x01 hdr=0x00
vendor = 'Atheros Communications Inc.'
device = 'AR5212 Atheros AR5212 802.11abg wireless'
class = network
subclass = ethernet
class = base peripheral
```

I get 167 pages on google that contain `ar5212` and `0x1014168c` and `0x058a1014`. I only get one with `ar5006ex` instead of `ar5212`. I'm inclined to believe my Lenovo representative was wrong; she's just a sales rep and asked around about the part...

3. KDB, DDB, WITNESS and INVARIANTS support compiled into the kernel would be extremely helpful, if not required to debug your issue.

Re: 7.0 CURRENT kernel's ath driver causes page fault, kernel panic (debugging kernel)

Re: 7.0 CURRENT kernel's ath driver causes page fault, kernel panic (debugging kernel)

I'm currently recompiling the kernel with these debug options:

```
makeoptions DEBUG=-g # Build kernel with gdb(1) debug symbols
options KDB
options DDB
options INVARIANTS
options WITNESS
```

As soon as it's done compiling, I'll try reproducing the error. I've added "set dumpdev="/var/crash" in /etc/rc.conf.

As for the actual debug process, there's a spot in the dev handbook about it (<http://www.freebsd.org/doc/en/books/developers-handbook/kerneldebug.html>), but when I tried debugging my issue with NTFS and SMB I didn't really find it helpful to be honest...

Once I have a core dump, how should I proceed? Use kdb, and execute "list *[instruction pointer]" to find out what (NULL) pointer is being dereferenced? Run backtrace? If I post a PR, is it likely that someone can guide me through this? I'm fairly familiar with C, but my experience using debuggers is very limited...

You may also have to compile without SMP and with the 4BSD scheduler just to see whether or not it's an issue reproducible with the ULE scheduler, the driver, or something else...

After I get the dump with the current options (+ debug options), I'll try w/o SMP and ULE...

Hopefully this gets you started on the right path...
-Garrett

Thanks so much, Garrett!

No problem :).

The steps I just had you go through were to rule out the kernel scheduler and multiprocessing — 2 points that make debugging issues like these difficult. With all of the locking changes in 7-RELEASE, it's harder to track down driver bugs to some extent.

The error seems straightforward (albeit it may not sound like it)

Re: 7.0 CURRENT kernel's ath driver causes page fault, kernel panic (debugging kernel)

Re: 7.0 CURRENT kernel's ath driver causes page fault, kernel panic (debugging kernel)

though: it's an issue with how your card is interfacing with the driver.

–Garrett

freebsd-current@xxxxxxxxxxx mailing list

<http://lists.freebsd.org/mailman/listinfo/freebsd-current>

To unsubscribe, send any mail to "freebsd-current-unsubscribe@xxxxxxxxxxx"