

Re: PXE Loader register dump

Source: <http://unix.derkeiler.com/Mailing-Lists/FreeBSD/current/2005-08/0046.html>

From: John Baldwin (*jhb_at_FreeBSD.org*)

Date: 08/01/05

To: freebsd-current@freebsd.org

Date: Mon, 1 Aug 2005 16:02:18 -0400

On Sunday 31 July 2005 02:01 pm, Bjoern A. Zeeb wrote:

> Hi,
>
> using a new sk(4) for pxe booting in an amd64 machine
> I get following...
>
> ----- hand transcribed -----
> SK-98xx PXE v1.12 (20031021)
> ...
> Pre-boot eXecution Environment (PXE) v2.1
> ...
> PXE Loader 1.00
>
> Building the boot loader arguments
> Relocating the loader and the BTX
> Starting the BTX loader
>
> int=0000000d err=0000001a efl=00030046 eip=000003f7
> eax=00000000 ebx=00000028 ecx=00000000 edx=00000000
> esi=00000028 edi=00000028 ebp=00000398 esp=00000392
> ca=9a57 ds=9936 es=8fc0 fs=0033 gs=0033 ss=8dff
> cs:eip=cc 8b c8 67 8b 15 02 00-00 00 c1 e8 07 75 03 03
> d1 c3 ee 83 e1 7f 81 c9-80 00 eb f3 b8 00 00 cd
> ss:esp=7b 03 28 00 c0 8f a6 03-98 25 a5 03 ff 8d 00 00
> 26 01 00 00 b0 03 52 1b-28 00 c0 8f 00 00 d4 03
> BTX halted
> ----- /end -----
>
> I think the same pxeboot had worked fine before with nve(4)
> (though nve wasn't able to mount root then).

Hmm, the BIOS executed a breakpoint for some reason:

```
00000000 CC int3
00000001 8BC8 mov cx,ax
00000003 678B1502000000 mov dx,[dword 0x2]
0000000A C1E807 shr ax,0x7
```

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```
0000000D 7503 jnz 0x12
0000000F 03D1 add dx,cx
00000011 C3 ret
00000012 EE out dx,al
00000013 83E17F and cx,byte +0x7f
00000016 81C98000 or cx,0x80
0000001A EBF3 jmp short 0xf
0000001C B80000 mov ax,0x0
0000001F CD db 0xCD
```

It's possible to hack BTX to not fault on breakpoints. Actually, it looks like it is supposed to just keep going when it hits a breakpoint. Hmm, unfortunately it looks like you got a GP#, not a breakpoint trap. Well, there are various reasons why that could happen, but I'm not sure exactly why you are getting a GP#.

--

John Baldwin <jhb@FreeBSD.org> <>< <http://www.FreeBSD.org/~jhb/>
"Power Users Use the Power to Serve" = <http://www.FreeBSD.org>

freebsd-current@freebsd.org mailing list

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