Writing Device Drivers Under Linux

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Who Am I?

- Started working Linux Kernel since 1991
- Implemented POSIX Job control in Linux
- Rewrote Linux tty layer
- Maintainer and Author of...
  - serial driver
  - Comtrol Rocketport driver

What will we talk about today?

- Writing device drivers for Linux!
  - Many different kinds of device drivers
  - character devices, block devices, tty devices, etc.
- An introduction to Kernel programming

Logistics

- Breaks in the morning and in the afternoon
  - 10:30am to 11:00am
  - 3pm to 3:30pm
- Lunch (provided) 12:30 to 1:30pm
- Tutorial sessions end at 5pm

Class Schedule

- 9:30-11:00am
  - Introduction, Logistics, etc.
  - Introduction to Linux kernel programming
- 11:00-11:30am BREAK
- 11:30-12:30pm
  - Character Devices
  - TTY devices

Class Schedule, II

- 12:30-1:30pm Lunch!
- 1:30-3:00pm
  - Block devices
  - SCSI devices
- 3:00-3:30pm Break
- 3:30-5:30pm
  - Network devices (skeleton.c)
  - Other issues/questions

A Quick History of Linux

- Summer 1991 -- Linus starts work on Linux
- September '91 -- Linux 0.01 released
  - Source code only
- November '91 -- Linux 0.10 released
  - i386 IDE/Floppy driver
  - No SCSI

Early Linux History, cont.

- January '92 -- Linux 0.12 released
  - When Linux first became really popular
  - POSIX job control, virtual memory
- Febuary 1992 -- comp.os.linux created
  - 858 YES votes, 5 NO votes
- March 1992 -- 386 BSD 0.0 released

Linux starts getting serious

- March '92 -- Linux 0.95 released
  - Shared library support
- May '92 -- X11 port to Linux released
- July '92 -- TCP/IP support added

Linux 1.0

- Released March 14, 1994
- First "production" kernel
- Networking finally stable
- Development continued in Linux version 1.1.xx development branch

Linux 1.2

- Released March 8, 1995
- Loadable kernel modules
- ELF-format binaries
- More device drivers, incl. PCMCIA support
- Ports to other platforms in progress

Linux 2.0

- Released June 9, 1996
- Multi-Platform support
- Performance enhancements
- Appletalk and IPX support

Linux 2.1

- Current development branch
- What does the future hold instore?
  - Better SMP support
  - More performance improvements
  - More device drivers