How and Why You Should Become a Kernel Hacker

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Introduction
Only Three Essential Requirements

- Genuine interest
- Common sense
- Willing to work hard
Kernel Hacking Myths

Myth: Kernel hacking is bizarrely difficult and mysterious.

Reality: It’s just software.
Kernel Hacking Myths

Myth: Kernel hackers are mutant super geniuses.

Reality: There are a few of those, but most are just good engineers.
How – Getting Started

• Dreaded mailing list: lkml

• Books

• Online resources
How – Getting Started

• Learn C
• Become familiar with kernel build environment
• Test and submit bug reports
How – Getting Started

• Fix bugs

• Scratch an itch

• Try many ideas
How – Getting Started

- Get the Basics Right!
- Coding Style
- Patch Submission
How – Getting Started

- Seek Mentors
- Follow Your Interests
- Initial learning curve is steep: be persistent!
How – Technical Tips

• Keep it simple
• Read the code of good programmers
• Review others’ code

“I always listen for what I can leave out” -- Miles Davis
How – Technical Tips

Study Kernel Primitives

• Locking
• Modes, contexts
• Timers
• Data structures
• Library code
How - Process Tips

• Don’t defend bad code

• Show, don’t tell

“Talk is cheap. Show me the code.” -- Linus
How - Process Tips

- Incremental changes
- Small, logically contained patches
- Release early and often
- Respond to feedback
How - Process Tips

- Respect maintainer decisions
- Encourage contributions
- Mentor & delegate
How - Social Tips

• Kernel community is a relic of USENET culture
• Getting flamed is an occupational hazard
• No excuse to do it to others
• Majority are professional
How - Social Tips

• If you find yourself arguing with Alan Cox, you’re *probably* wrong

• Demonstrate your ideas and politely defend them if needed

• When you’re wrong, admit it and move on
Resources

- “Being a Moron on linux-kernel”
- LWN
- KernelTrap
- Documentation directory
- Online books ("ldd3")
- The perfect patch
- GIT for kernel hackers
- Kernel Mentors
- Kernel Newbies
- LXR