

A Brief *[early]* Legal History of the Linux Kernel Project

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Prologue

- "The life of the law has not been logic; it has been experience." (Holmes)
- Free software as *lex hackertoria*
- Linux as legal history
 - What is "Linux"?
 - What is "legal"?
 - Historiography/methodology

The AT&T/Unix problem

- *United States v. Western Electric* consent decree (1956)
- Bell Labs hackers invent Unix (1970s)
- AT&T licenses Unix to universities (1975)
- 1976 Copyright Act + 1980 amendment on software
- AT&T plans commercialization of Unix (USL, 1979)
- *United States v. AT&T* consent decree (1982)

Various pre-Linux responses

- Visions of unencumbered Unix with sources
 - GNU (RMS/FSF, 1983-)

- AT&T-free BSD (UCB CSRG, 1989-)
- Commercial Unices for x86
- Coherent (cheap binary-only Unix clone, ported to PC)
- Educational Unix clones with sources: Xinu (1984), Minix
- Tools to provide Unixlike environment on MS-DOS

Minix (Tanenbaum, 1987)

- No AT&T code; cheap, complete Unixlike system with sources
- Large net community contributing utilities & enhancements
- © Prentice-Hall
 - 2 copies for educational use; no commercial use
 - Online repos of full source distribution prohibited
 - ACK compiler: sources priced beyond student reach

Resentment over license restrictions

- Upgrading over net too difficult
 - AST provided patches, but users prohibited from distributing full interim releases
- Users prohibited from distributing improved versions of Minix except as patches and addons
 - Some evidence PH took legal action against violators

Misuse of community contributions

- AST incorporated user contributions into proprietary Minix without explicit permission
- US enters Berne (March 1989) → can no longer assume code without copyright notice is public domain
- PH accused of violating BSD-style licenses
- May 1991: PH asks AST to get contributors to mail signed CLAs or give explicit

public domain dedications

Minix → Linux

- Linux is the first working complete **free** Unixlike system
- Linus' legal model addresses Minix community concerns
- Explicitly states: no AT&T *or* Minix code
- "Unlike Minix ... available for free" → what's "free"?
 - Mix of free beer/GNU-ish freedom/anticommercialism
 - Releases/updates available on net for no price
 - Anyone can hack source and noncommercially redistribute
 - No one can commercially exploit contributors

Original Linux license (0.01-0.11)

- This kernel is (C) 1991 Linus Torvalds, but all or part of it may be redistributed provided you do the following:
 - Full source must be available (and free), if not with the distribution then at least on asking for it.
 - Copyright notices must be intact. (In fact, if you distribute only parts of it you may have to add copyrights, as there aren't (C)'s in all files.) Small partial excerpts may be copied without bothering with copyrights.
 - **You may not distribute this for a fee, not even "handling" costs.**

Linus switches to GPL

- 0.12 (1992-01-14): acks requests to make license "compatible with the GNU copyleft" by "removing the 'you may not distribute it for money condition'"
- Declares GPL effective Feb. 1992 unless "co-authors" object
- A year later Linus says he hasn't heard any complaints from other kernel developers

Why the GPL?

Release notes are unclear

- Linus later suggests: people shipping floppies asked if they could at least recoup costs
- FSF/GNU very influential regarding freedom to commercialize
- Early kernel hackers sympathetic to copyleft
- Prestige associated with GPL
- GCC seen as project model?
- Most utilities were from GNU (already GPL'd)

Can commercial distros exist?

- Post-GPL proposals for distribution/support businesses spark debates over legitimacy
 - GPL interpretation (only allows "reasonable" fee?)
 - Shouldn't profit without "giving back"
 - Cygnus-like models needed to thrive
 - Copyleft prevents monopoly profits
 - Get Linux to users without net/BBS access
- Linus ('92-'93): GPL places no limit on fees for distribution
 - Hopes customers notified Linux free of charge on net
 - Distros provide valuable service (increasing user base)
 - Money will motivate distros to do a good job
 - "I think" other major kernel hackers "tend to agree"

Scope of copyleft

- Original Linux license implies view that kernel/userland can coexist with conflicting GPL/non-GPL licenses
- Linus makes clear kernel copyleft does not extend to userspace programs making system calls (1992)
 - Doubts "legality" of other view, but unprincipled anyway
- Early '93: Linus says good policy reasons for commercial proprietary application software

Binary vs. source distribution

- GPL'd tools distributed with early Linux releases often not accompanied by (corresponding) source code

- At first, distribution-philosophy debate (Unix PD tradition)
- tytso calls for pragmatism: sources/patches should be uploaded where possible, but
 - Most users want binaries
 - New users forced to compile will just give up
 - Source easy to find; most diffs trivial
 - Unfair/impractical for achive maintainers to have to recompile binaries built by others

→ GPL compliance crisis

- RMS (5/92): FTP sites providing GCC executables without **full** source "alongside" binary violate GPL
 - Users need "easy access" to source code
 - Patches against GNU releases insufficient
- Tensions:
 - Excessive literalism in GPL interpretation can frustrate copyleft policy goals
 - Desire to DTRT (Linux chose GNU's license & heavily dependent on GNU for rapid growth)
 - Desire to improve user access to Linux

GPL source requirement

- Confusion about GPLv2 section 3
 - GPLv2 found to be more restrictive than GPLv1
 - GPLv1 (1989): noncommercial distributors can just provide "information you received as to where the corresponding source code may be obtained"
 - GPLv2 (1991): can pass on copy of offer
- RMS clarifies:
 - "Equivalent access" to source allows hosting by third party, as long as source available while binary is available
 - Comply by adjacent file explaining how to get the source

SLS (MacDonald, 8/92)

- First distro with installation program + package management
 - Collects binaries built by others + adds scripts
 - Sells floppies, available on net for free
- Accused of violating GPL (only including source for kernel; no GPL copy; no clear source offer)
- Does GPL require [commercial?] distributor to recompile from source (i.e. verify C&CS)?

SLS

- Recompile requirement would mean most FTP/BBS archives in violation
- Read "reasonable reliance on upstream" into corresponding source requirement
- MacDonald later clarifies: sources available on request (tytso: fulfills written offer requirement) and provides GPL copy
- MacDonald makes global license of distro copyleft

Yggdrasil (Richter, late '92)

- First directly-installable CDROM distro
- Refund policy accused of GPL violation ("further restriction")
 - If install unsuccessful, return for refund in 30 days "provided you delete any files copied from the CDROM"
 - Richter: no restriction since no one forced to ask for refund
- Keeps original "deletion" policy, but responds to criticisms:
 - Alpha/beta subscriber can keep CDs & get prorated refund of subscription fee
 - Limited support (not just charging for community's work)

Yggdrasil

- "Meta-GPL" so "competing derivative distributions" will be free software
- Derivative distro can't use Yggdrasil logo to misrepresent origin
 - Richter acknowledges potential for abuse "by hard wiring a trademark into every non-GPL program"

- Wants to prevent trademark abuse via distro license
- Pledges clearly-documented trivial procedure for nondestructive removal/replacement of trademarks

Linux and 386BSD

- In '91, 386BSD (Jolitz 4.3BSD port) well-known vaporware
- Confusion over:
 - whether 386BSD would be AT&T-encumbered or "free"
 - connection to BSDi's proprietary BSD/386
- Community around Linux not content to wait for 386BSD
- Ftp'able only by 3/92, when Linux is well-established

USL v. BSDi (4/92)

- Not publicized among hackers until amended complaint (7/92)
 - Adds UCB as defendant
 - Alleges 4.3BSD-NET2 contained AT&T code
- Did lawsuit help Linux prevail over free BSD Unices?
 - Linux already had head start when 386BSD appears
 - Lawsuit FUD disadvantaged 386BSD further
 - Limited borrowing of 386BSD code by Linux hackers?

Linux vs. 386BSD: licensing

- BSD did not want to use Linux GPL code in kernel/libc
- Nate Williams flamewar about Linux use of his BSD code (4/93)
 - Believes Linux changes are GPL'd and thus not usable by 386BSD/NetBSD
- But Linux changes apparently *are* distributed under BSD license as courtesy

Undocumented proprietary hardware

- Diamond refused to publish specs for Stealth graphics card, XFree86 team refused to sign NDAs

- *Sega v. Accolade* (Oct. 1992): disassembly of copyrighted object code is fair use if necessary for interoperability
- Should Linux include known workarounds?
 - Fear of legal reprisals by Diamond (*USL v. BSDi* effect)
 - Don't support undocumented hardware (influence of FSF Apple boycott); get Diamond to change
 - Don't drive away users who bought these cards

Thank you!

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