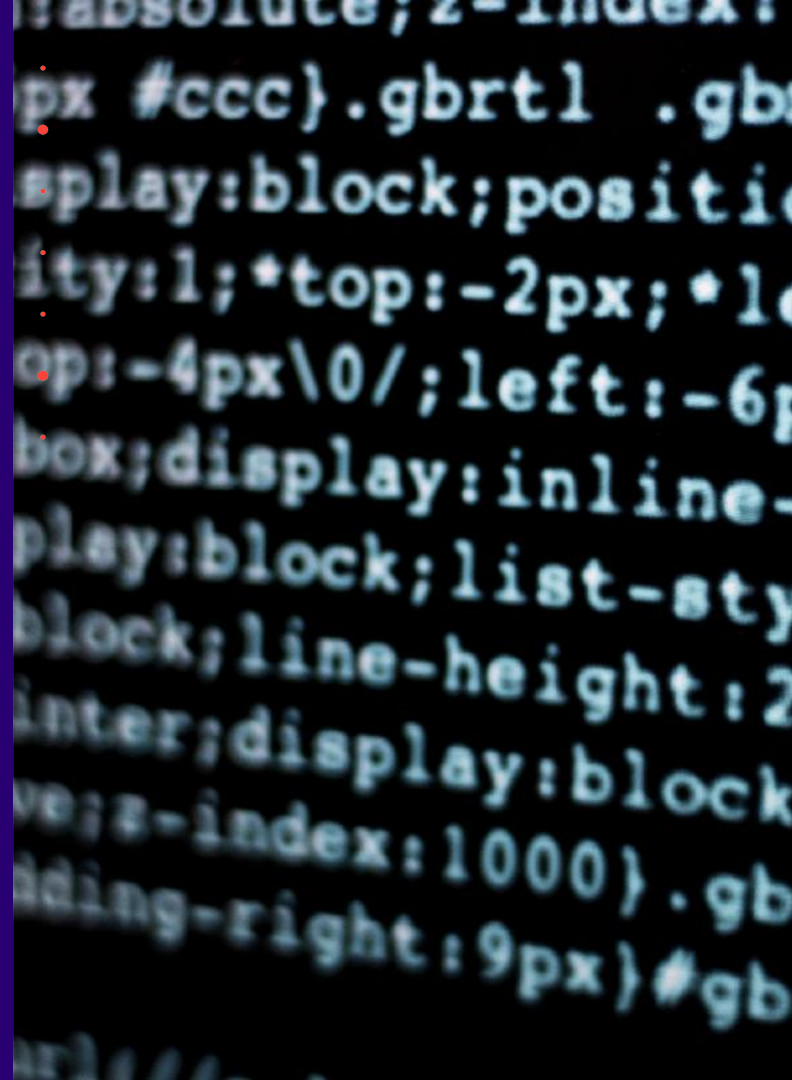


# Open Source in Enterprise Environments

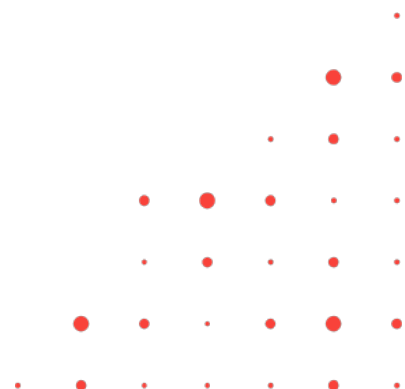
Where Are We Now and What Is Our Way Forward?

Peter N. M. Hansteen, Tietoenvy Create Cloud, Norway



# Free and Open Source vs Enterprise and Business: The Bad Old Days

- Open source, free software and enterprise IT environments have both been around for quite a while
- Open source seen as amateurish, at best an academic exercise
- Proper products sold as binary-only
- “Windows NT is the future”
- PC architecture and other proprietary tech was only way forward



# Then, The Internet Happened

- The Internet happened
- *All* Internet connected products used the TCP/IP reference implementation from BSD Unix *because they could* – under a free license
- The free code was industrial grade or better
- Linux started implementing their own stack around 2000, followed by Microsoft
- BSD now has 3 major free variants, FreeBSD, NetBSD, OpenBSD still actively developed – see **What every IT person needs to know about OpenBSD** for more
- Linux became the highest profile open source project

# The War on Linux and the Proliferation of Open Source Tools

- A PR campaign by the dominant desktop software maker, backed with lawsuits by proxy over rights to Unix source
- At the same time, the likes of Apple, Cisco, Netscaler (later acquired by Citrix) and Sun Microsystems (later acquired by Oracle) open sourced products or based products on (forks of) open source such as FreeBSD, Linux
- Developers took up free tools and operating systems
- The lawsuits ended with the litigant going bankrupt (see <http://groklaw.net/> for detailed history)

# On to the Present: We All Use...

In modern settings,

*Software is developed on Macs,  
deployed on a cloud somewhere,  
which more likely than not runs on Linux.*

- Your software likely pulls in open source dependencies (from github.com or other places)
- You more likely than not use open source tools
- The client side tends to tablets and phones (of which 3.1 billion run Linux-based Android), and then there's Apple (much BSD)
- These days even Microsoft donates to the likes of the OpenBSD Foundation (for OpenSSH and other things)

# Security: QA Your Supply Chain, Exercise the Right to Repair

“Open source can never be secure” vs “given enough eyes, all bugs are shallow”

*Actually both are wrong.*

Keep in mind

**The Solarwinds supply chain incident aka SUNBURST (2020)**

**Several open source component supply chain incidents (2020 onwards)**

**Blind trust versus the right to read (and educate yourself) and the right to repair**

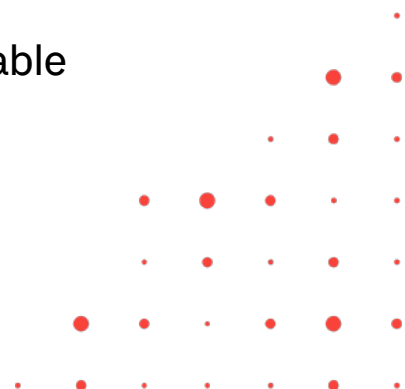
**QA your supply chain.** *You may choose to trust, but you still need to verify.*

# Contributing - Cooperating on Maintenance

The most common approach is to just use, keep a low profile.

If you want to productify you can

- **Grab and fork, sell hardware:** eg Netscaler, forked FreeBSD, now based on end of life version
- **Grab and fork, sell hardware, keep sync with your upstream:** Like Apple, which upstreams to FreeBSD, also see [opensource.apple.com](https://opensource.apple.com)
- **Open source everything, sell support:** RedHat, SuSE and others are profitable based on this



# Code you produce, can it be open sourced?

## **Decide what code is both good enough to publish and useful elsewhere**

If the code

1. Was developed by yourself and cleared by your organization as such
2. Is high enough quality that you dare show it to others
3. Does not reveal core aspects of your clients' business
4. Is likely to be useful elsewhere too
5. Would be nice to have exposed to other sets of eyes in order to identify bugs and fix them

Then yes. Your next adventure: choosing a license.



# Policies and Processes - Do You Have Them?

Keep in mind that

**A license is an assertion of authority.** Specifies who, if anybody, can change and distribute. The default is no. Code has been rewritten for license reasons.

**Procedures and policies, you need them.** Check your contractual obligations. Make sure all stakeholders agree

**Keep it simple, for your own sake.** Use a well known license.

Check [opensource.org](https://opensource.org) for useful options. Different “Open source” licenses may have mutually incompatible terms.

Just like with crypto, *don't just write your own.*

**When in need, call in Legal (but make sure they understand the issues).** As in, dynamic vs static linking may be relevant

-> Open Source is about productivity and quality of product (and life)

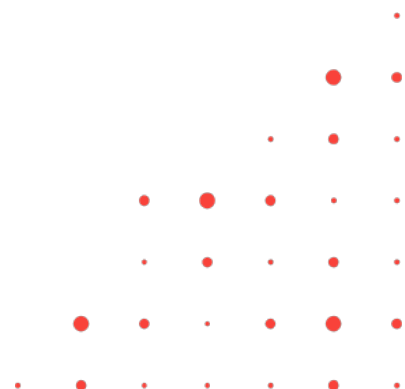
# The Way Forward - The Work Goes On

Today, software and the society depends critically on open source software.

I would love to hear about your experience.

Discuss here,

or send me email ([nix@nxdomain.no](mailto:nix@nxdomain.no))



# Resources

- All things open source (including an almost encyclopedic collection of licenses) at [The Open Source Initiative](#)
- Wikipedia: [Berkeley Software Distribution](#) about where the Internet came from
- [The GNU Operating System](#), supported by [The Free Software Foundation](#)
- The [FreeBSD](#) operating system project
- [Open Source at Apple](#)
- Peter Hansteen: [What every IT person needs to know about OpenBSD Part 1: How it all started](#),  
[What every IT person needs to know about OpenBSD Part 2: Why use OpenBSD?](#),  
[What every IT person needs to know about OpenBSD Part 3: That packet filter \(or the whole shebang in the raw at \[bsdly.blogspot.com\]\(#\)\)](#)

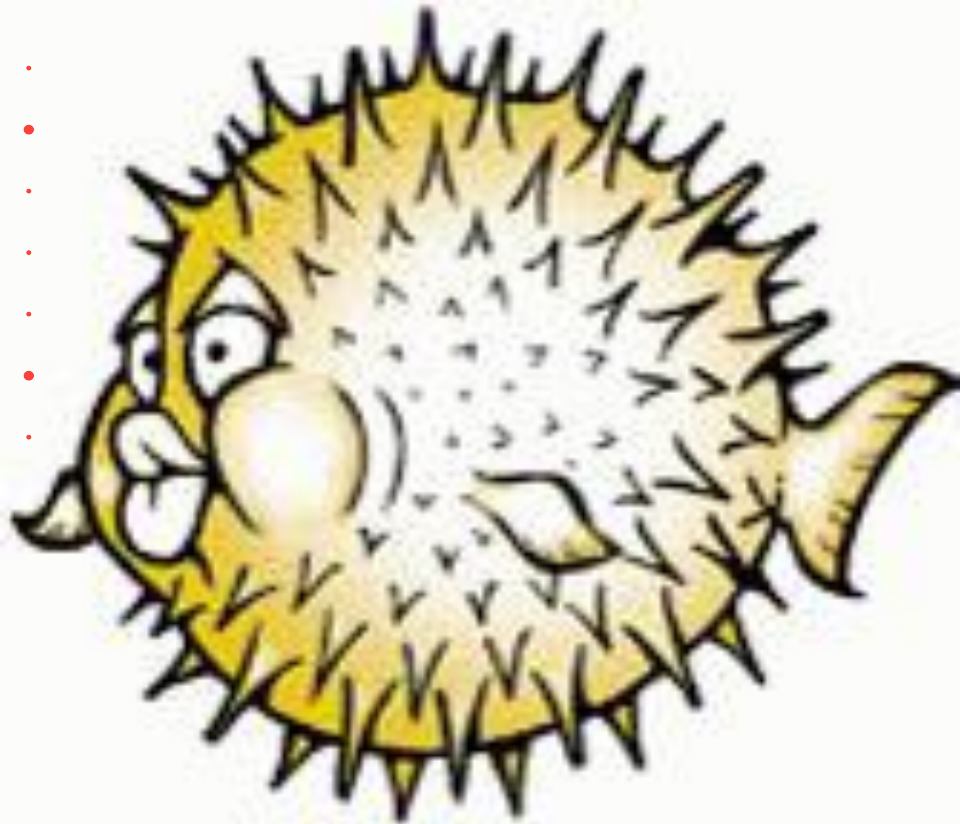
# Appendix: License Complexity by Word Count

License	Word Count	Reading Level	Reading Time
1-clause BSD License	160	College Graduate	35s
2-clause BSD License	191	College Graduate	42s
3-clause BSD License	220	College Graduate	48s
GNU GPL v2.0	2964	College Graduate	10m47s
GNU GPL v3.0	5608	College Graduate	20m30s
Apache License v2.0	1677	College Graduate	5m44s
Microsoft 365 Developer program license	4803	College Graduate	17m28s
Microsoft Windows 11 OS license terms	5766	College Graduate	20m58
Oracle End User License Agreement	2554	College Graduate	9m17s
Adobe End-User License Agreement	450	College Graduate	1m38s
Apple Licensed Application End User License Agreement	1524	College Graduate	5m32s

Licenses from [opensource.org](https://opensource.org) + vendors, measurements from [wordcounter.net](https://wordcounter.net)

Thank you

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o long, and thank  
r all the passwor