

Open-source software: what is all the fuss?



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What is open-source software?

Open-source software is a means of distributing software whereby users can copy, modify and distribute the software freely, so long as the distribution of the software complies with specific licence restrictions. In order to understand this model of software distribution, and its restrictions, it is important to first grasp some basic software concepts.

“Source code” and “object code” are different, yet interrelated aspects of a software program. Source code refers to the instructions (or lines of code) entered by the software developer into a programming language. Source code forms the basis from which an executable program can be made. A computer, however, requires the software program instructions in object code – which comprises of binary information (1s and 0s) that is processed by the computer’s microprocessor in order to perform the desired functions. A compiler converts the instructions entered by the developer in the source code into object code.

Due to the complexity of binary information, object code cannot be easily modified, altered or decompiled by programmers if a consumer wants to change the functionality of the software. Functionality is usually altered by manipulating the source code of the software. Consequently, software vendors usually only release the object code versions of their software to consumers as a means of protecting their intellectual property. This is known as the “closed-source” model of software distribution. As you may now have guessed, “open-source” software refers to software that is provided with (or at least the option to obtain) the source code of the software. This allows the consumer to modify and improve the software for their own purposes, and subject to various restrictions which will be discussed below, distribute the modified software.

Copyright, licensing and open-source software

The source code and object code of a software program are regarded as literary works under Australian copyright law.¹ The original programmer of the open-source software is generally the owner of the copyright² and has the exclusive right to control any copying, reproduction or adaptation of the software. The copyright owner can, however, permit others to exercise any or all of the exclusive rights by licence.

Open-source software is generally distributed to consumers under the terms of a general public

licence (GPL). A common GPL used to distribute open-source software is the GNU GPL.³ The GNU GPL was intended by its creators to guarantee the freedom to share and modify free software.⁴ The preamble to the GNU GPL states that “free” refers to freedom and not price.⁵ While the price will often be free, this need not necessarily be the case.⁶

The central aim of the licence, and the whole open-source software movement, is to provide a mechanism to allow consumers to freely alter and modify software in any way they desire. However, if the consumer chooses to distribute the original version of the open-source software, or the modified version they have created, the licence requires that they provide the source code with the executable object code version of the software.⁷ Consequently, if a distributor fails to distribute the source code, or make it readily available free of royalties,⁸ they have gone outside the terms of the licence and can be liable for infringement of the copyright in the software.⁹

Validity of general public licences

The validity and enforceability of the GNU GPL was tested in a European Court in April 2004. The case was brought by the chair of The Netfilter Project against Sitecom, which had used one of the Netfilter products licensed under the GNU GPL to develop a wireless router product.¹⁰ The Munich District Court in Germany made an order requiring Sitecom to fully comply with all the conditions of the GNU GPL – including the requirement to distribute the Netfilter source code free of royalties to its customers.¹¹ It is believed that this was the first case in which a judge has ruled on the validity of the GNU GPL.¹²

The business of open-source software

The open-source software concept began in the early 1980s, when the Free Software Foundation was attempting to create a free version of Unix, which was a proprietary closed-source operating system developed by AT&T.¹³

Eventually, in 1991, Linus Torvalds developed a new operating system, called “Linux”, which adopted the open-source model of software distribution.¹⁴ Despite the fact that customers can legally obtain Linux (and its variants) for free, many reputable firms have proven that a profitable business can still be built around open-source software.

Companies such as IBM, NEC, Intel, Hewlett-Packard, Fujitsu and Hitachi have realised that a lot of money can be made indirectly off Linux by providing support services to maintain and optimise the software, selling hardware loaded with Linux, or writing proprietary software that runs on Linux.¹⁵

The sums of money involved are not insignificant, with IBM leading the way with a reported \$2 billion in Linux related revenues in 2003.¹⁶

Governments around the world, including various Australian commonwealth, state and territory governments, have pushed for the adoption of open-source alternatives to expensive proprietary software.¹⁷

Due to the commercial viability of open-source alternatives to proprietary software, and the increasing willingness of governments, businesses and individuals to consider open-source software, Microsoft has lowered some of its prices, arguably in response to the very real threat of open-source alternatives to its software.¹⁸

The open-source software movement, however, has experienced several setbacks.

Linux came under serious threat in March 2003 when the SCO Group (SCO) (purporting to be the owner of the Unix proprietary software) sued IBM for breach of copyright for the use of fragments of Unix code within the Linux software distributed by IBM.¹⁹ SCO even attempted to sue large corporate users of Linux software, including DaimlerChrysler, albeit largely unsuccessfully.²⁰

The situation was further complicated by the fact that Novell, a previous owner of the Unix software, has asserted that they in fact still owned the rights to the specific parts of the Unix code that IBM was allegedly infringing.²¹ IBM and SCO are due in court on 15 September 2004, where IBM will argue for the dismissal of SCO’s suit and attempt to obtain a declaration that it is not infringing SCO’s copyright.²²

Conclusion

The open-source model of software distribution provides a significant and viable alternative to the proprietary closed-source model of distribution that has dominated the software market.

While the legal enforceability of the GNU GPL, or any other general public licence, has yet to be tested in an Australian Court,²³ the Munich District Court decision provides at least some legal credibility to the open-source model of software distribution. ■

(footnotes on page 19)

Mr Downer: There is our aid program, a large proportion of it goes to countries in the Asia-Pacific Region, Papua New Guinea, the South Pacific, and countries like Tonga, Samoa and Vanuatu. We put a lot of aid into Indochina – Vietnam, Cambodia and Laos, as well as into Indonesia (the second largest recipient of Australian aid). We help them also through building commercial links. For example we have negotiated Free Trade Agreements with Thailand, Singapore and we are talking about the possibility of a Free Trade Agreement with Malaysia.

Rosalyn: In relation to Pauline Hanson, do you think the perception of Australia in the Asia-Pacific Region has changed since she has gone?

Mr Downer: People never talk about it anymore. Whereas when I was first Foreign Minister for three years they always asked about her. Governments obviously knew she was not part of the Australian government. That was not true of the media in Thailand and Hong Kong – it was a big problem in those two countries.

Rosalyn: What would you say would be a highlight of your parliamentary career?

Mr Downer: Certainly being the Foreign Minister. While I have been the Foreign Minister, the liberation of East Timor, settling civil war in Bougainville, assisting the Solomon Islands to repair and rebuild. We have actually made a pretty small contribution but we have made a contribution to the liberation of Iraq.

Rosalyn: I have heard that no interview with an Australian politician is complete without a question on Iraq. So can you please tell me what the capital of Iraq is?

Mr Downer: Baghdad. I have even been there.

Rosalyn: Thank you Mr Downer for your time. ■



On the trail of fraud: Answer (continued from page 10)

The fraud was committed by Andrew Handy.

There was a fatal flaw in his account of John Sneezy leaving the building late Monday night: he alleged that he saw John Sneezy depart the building with a handful of blank cheques in his hand.

One question: if Sneezy was going to steal blank cheques, why would he be carry them out in the open for anyone to see?

It was Handy who in fact stole the blank cheques during his cleaning rounds late at night and negotiated them into the bank account that he opened in a false name.

Andrew Handy opened the bank account at FBC Bank one week ago, so that it would coincide with the departure of John Sneezy. Handy even opened the account in the name of "SneezeWell" in an attempt to cast suspicion upon John Sneezy. All documentation provided to FBC Bank by Handy was forged, and he used a false name of "Simon Reginald Smith" when opening the account. The bank cheque request was another attempt to cloud the paper trail: "JS Trust" was another false name intended to implicate John Sneezy once again, via his initials.

A mareva injunction against Andrew Handy is successful in restraining him from dealing with the stolen funds and provides the foundation for proceedings to be initiated for recovery.

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1. Provided the code meets certain criteria such as originality and substantiality. See *Star Micronics Pty Ltd v Five Star Computers Pty Ltd* (1990) 18 IPR 225; *Computer Edge Pty Ltd v Apple Computer Inc* (1986) 161 CLR 171.
2. An author (such as a programmer) may not be the owner of the copyright if the work was produced in the course of employment (s35(6) Copyright Act 1968) or if the copyright has been assigned by writing (s196 Copyright Act 1968).
3. Pronounced "guh-noo", GNU is a recursive acronym for "GNU's Not UNIX". See <http://www.gnu.org/>.
4. GNU Public Licence Preamble. See <http://www.gnu.org/copyleft/gpl.html>.
5. *Ibid.*
6. *Ibid.*
7. GNU Public Licence, Section 3. See <http://www.gnu.org/copyleft/gpl.html>.
8. Distributors can, however, charge for the cost price of physically distributing the source code.
9. Ben Kremer, "Open-Source Software: What Is It, And How Does It Work?" (2004) *Computers & Law* (March) 16, 17.
10. Linda Sherriff, "Court Slaps Injunction on GPL Infringer", *The Register*, 21 April 2004. See http://www.theregister.co.uk/2004/04/21/licence_germany/.
11. Kym Beeston, "Open Source GPL Licence does have bite to its bark", (2004) *Computers & Law* (June) 18. For a English summary of the Munich District Court decision, see http://www.oii.ox.ac.uk/resources/feedback/OIIFB_GPL2_20040903.pdf.
12. *Ibid.*
13. David Wheeler, "History of Unix, Linux, and Open Source/free software". See <http://www.dwheeler.com/secure-programs/Secure-Programs-HOWTO/history.html>.
14. *Ibid.*
15. Roger Parloff, "Gunning for Linux" (2004) 149(10) *Fortune* 88, 89.
16. *Ibid.*
17. Paul Festa, "Governments push open-source software", CNET News.com, 29 August 2001, see <http://news.com.com/2100-1001-272299.html?legacy=cnet>; Rodney Gedda, "ACT passes open source law" *Computerworld*, 11 December 2003, see <http://www.computerworld.com.au/index.php?id=792934018&fp=16&fpid=0>.
18. David Kilpatrick, "How the open-source world plans to smack down Microsoft, and Oracle, and . . ." (2004) 149(4) *Fortune* 92.
19. *Ibid.*
20. Stephen Shankland, "SCO flops in DaimlerChrysler Unix lawsuit", CNET News.com, 21 July 2004. See http://zdnet.com.com/2100-1104_2-5278572.html.
21. Parloff, note 15 above, 89. Remarkably, a critical appendix to the contract of sale to the then purchaser (whom SCO later bought Unix from) contained a "typo" that stated that "all copyrights" were excluded from the sale.
22. Stephen Shankland, "SCO-IBM Legal Hearing Postponed" CNET News.com, 29 July 2004. See http://zdnet.com.com/2110-1104_2-5288936.html.
23. To the best of this author's knowledge.