Richard Stallman:

The Organizer Of Free Software

Feng Liu

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Nancy Chislett

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Abstract

The Internet has became a most important part of our life today. Free software had colonized most hosts which have served us for a long time. It was Richard Stallman who created the word "free software" and who spread the idea of making software free. Today, we can say without Richard Stallman, the Internet may never be able to work as well as what it is like today. The free software movement also helped lots of students to learn software effectively. These are the reasons why Richard Stallman is so significant in the field of software.

1 Introduction

The Internet has became a most important part of our life today. Yet free softwares works as the bases of the Internet. For instance, a statistic from Netcraft Inc. [1], showed the record of the widely-used http server software on the Internet, from August 1995 to November 2007, there were about 68,155,320 (47.73%) hosts who ran a free http server software named Apache. Only about 53,017,735 (37.13%) hosts runs a commercial http server software from Microsoft.

One of the most important factors which led to the success of the Internet was the contribution from the Free Software Foundation, a non-commercial group founded by Richard Stallman. Stallman, as one of the most honorable "heroes" in the discipline of non-commercial software, created the definition of free software and the law for protecting free softwares. His work did not only made the Internet better, but also improved the development of software.

2 Free Software

To understand what Stallman has done, we must understand the definition of the term "Free Software". Free software is the software which is published under the protection of the GNU General Public License. The term "free" doesn't mean "free of charge", but means users have some freedoms. According to Stallman [2], users have rights(1) to run the program, for any purpose; (2) to study how the program works, and adapt it to [their] needs; (3) to redistribute

copies; (4) to improve the program, and release [their] improvements to the public (Stallman, 2002, p. 49). The term "Free Software" was created by Richard Stallman.

3 A breaf history of software developing

When Richard Stallman worked at the Artificial Intelligence Laboratory of MIT[1], the whole field of computer science believed in a "hacker[2]" culture. Being affected by this culture, programmers did development work just for fun. They shared the source codes of software so others could learn from the source codes and easily fix the mistakes in the software and add some new functions. Naturally, people who made any invention or innovation to a software would be very happy to publish their achievement to the public.

Later, being impacted by the commercialization, a lot of people from the MIT's AI Lab left the laboratory to cash in their knowledge for money. But they still published software with source codes. In early 1982, some of those people started to publish their softwares without source codes for more profit.

Stallman liked the earlier mode, which meant earning money while contributing to society. He was very angry at the guys who didn't share their codes. As Raymond [3] said, "It's around this time that Levy wrote *Hackers*. One of his prime informants was Richard M. Stallman (inventor of EMACS), a leading figure at the Lab and its most fanatical holdout against the commercialization

[1] also been called MIT's AI Lab.

[2] the term "hacker" here means persons who are very interested in computer and play with the computer programs. It has no relationship to the term "hacker" used by the popular media which means persons who crack the security system.

of Lab technology" (Raymond, 2000).

Stallman wanted to convert the situation. He started the Free Software Foundation. What he wanted was to develop a bunch of free software to substitute for the commercial softwares. He really had the talent of software developing. His products were much better than products from commercial companies. All of the Linux Operating Systems and some of the free UNIX Operating Systems distributions today contain the tools from Free Software Foundation.

4 Stallman's work developed the Internet

When the American government built the Internet, a big problem was the communication between machines. Because they couldn't rely on a single computer provider, they bought different models of computers. But at that time, different computers had different operating systems. Then the solution they got was to use a hardware-independent operating system. According to McKusick's (1999) article [4]:

> Choosing a single hardware vendor was impractical because of the widely varying computing needs of the research groups and the undesirability of depending on a single manufacturer. Thus, the planners at DARPA decided that the best solution was to unify at the operating systems level. After much discussion, Unix was chosen as a standard because of its proven portability.

After that, UNIX had been the most important operating system on the Internet and became a monopoly. In 1980s, the price of UNIX was $43,000.

That harmed the benefit of users. Stallman used the free software to fight against the monopoly. The Free Software Foundation, combined lots of hackers around the world, developed an operating system named Linux. Linux was

compatible with UNIX, and even better. According to Stallman (2002) [5], "We will make all improvements that are convenient, based on our experience with other operating systems. In particular, we plan to have longer file names, file version numbers, a crashproof file system, file name completion perhaps, terminal-independent display support, and perhaps eventually a Lisp-based window system through which several Lisp programs and ordinary Unix programs can share a screen" (p. 33).

Since Linux was free software, people who wanted to build their site on the Internet would choose Linux rather than UNIX. Also because Linux was much cheaper, there was more people who were able to build their sites. That was a very important reason why we had such a large amount of resources on the Internet. Linux is just one of the examples of free software. Actually, there are thousands of free software now. A lot of them are the indispensable tools for building a website.

5 Stallman's work improved the development of software

Stallman didn't only use GNU GPL to protect the softwares he wrote. He advertised the idea of sharing the softwares to the public. Stallman believed to open the secret in software was the best way to improve software. First, if there are any mistakes in the software, other programmers can easily repair it if they have the source code. Second, students are much easier to learn the principle

of softwares. To practice is a much effective way to learn software than just reading books.

Someone didn't believe there were people who were willing to help to make the free software better. In the book *Hackers: Heroes Of The Computer Revolution*, Levy (2001) [6] even said Richard Stallman was the last true hacker. But he was wrong. Stallman (2002) [5] said many programmers were unhappy about the commercialization of system software since it made them feel in conflict with other programmers (Stallman, 2002, p.35). And Stallman had found a lot of programmers to help him to make the free software better.

Some people are afraid that other companies may get the source code and make some changes then sell the software as their own work. Stallman's GNU GPL solved this problem perfectly. The whole things was a law document named GNU General Public License[3]. This document defines the meaning of free software and the rights and the responsibilities of people who write and use free softwares. GNU GPL set the seal on the basics of free software today.

6 Conclusion

Based on the factors we have talked about, we know Richard Stallman helped developing the Internet developed, and improved the development of software. He is really a significant person in the field of software.

[3] also known as GNU GPL

References

[1] Netcraft Inc.(2007), "November 2007 web server survey", http://news.netcraft.com/archives/2007/11/23/november_2007_web_server_survey.html.

[2] Stallman R.(2002), "Free software definition", In *Free software, free society: selected essays of Richard M. Stallman*, GNU Press, Boston, Massachusetts.

[3] Raymond, E.(2000), "A brief history of hackerdom", http://www.catb.org/ esr/writings/hacker-history/hacker-history.html

[4] McKusick, M.(1999), "Twenty years of Berkeley Unix: From AT&T-owned to freely redistributable", In Chris DiBona, Sam Ockman, and Mark Stone (Eds), *Open Sources: Voices from the Open Source Revolution*, O'Reilly and Associates, Cambridge, Massachusetts

[5] Stallman, R.(2002), "Gnu manifesto", In *Free software, free society: selected essays of Richard M. Stallman*, GNU Press, Boston, Massachusetts

[6] Levy, S.(2001), *Hackers: heroes of the computer revolution*, Penguin Books, New York