Chapter I

Open Source Software Basics: An Overview of a Revolutionary Research Context

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Abstract

The open source software (OSS) development area of research presents a fresh and generous domain for analysis and study. In line with this, it is important to have a high-level understanding of the “open source phenomenon” before being able to delve deeper into specific niches of research. OSS presents a rich picture and because of that, both academics and practitioners have shown intense interest in producing high-quality literature. This chapter provides an initial understanding of what OSS is and how it has come to be the exciting research platform that it is today, attracting attention from various sources. In addition, we take an overview of the research streams that have formed in recent years, and the basic findings of attempts made to transfer lessons from OSS to other research areas.

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Open Source Software at a Glance

Open source software (OSS) has received growing attention in recent years from various perspectives. The thriving numbers behind OSS adoption and contribution have captured the attention of academic research that, in the past years, has been trying to decipher the phenomenon of OSS, its relation to already-conducted research, and its implications for new research opportunities.

OSS has a definition that focuses on specific characteristics that software has to serve in order to be labeled as “open source.” The Open Source Initiative (OSI) is a nonprofit corporation dedicated to managing and promoting the OSS definition for the good of the community; thus, acting as the official organization behind OSS. Based on the OSS definition provided by OSI, any software that has the characteristics listed below is considered to be OSS, and vice versa:

- Free redistribution
- Access to source code
- Derived works allowed under the same license
- Integrity of the author’s source code
- No discrimination against persons or groups
- No discrimination against fields of endeavor
- Distribution of license
- License must not be specific to a product
- License must not restrict other software
- License must be technology-neutral

The current OSS landscape presents a very interesting picture. Although the idea behind OSS dates back to the 1960s and the UNIX era in the 1980s, the official term of OSS was coined in 1998 and, at the same time, the OSI was created. Since then, the OSS movement has evolved at a very fast pace. Prime examples of successful OSS projects include operating systems (Linux, FreeBSD, OpenBSD, NetBSD), Web browsers (Firefox, Konqueror), graphical environments (KDE, Gnome), productivity applications (OpenOffice), programming languages and infrastructure (Apache, MySQL), and development tools (GNU toolchain, Eclipse). These widely accepted OSS endeavors show that, today, a wide range of OSS applications are available and they present a viable and robust alternative to proprietary software solutions.

In addition to the presence of prime examples in the OSS environment, the plethora of OSS projects is impressive. Project support sites are online environments that