

## Chapter 5

# Analysis of Free and Open Source Software (FOSS) Product in Web Based Client–Server Architecture

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### ABSTRACT

*Free and open source software (FOSS) differs from proprietary software. FOSS facilitates the design of various applications per the user's requirement. Web applications are not exceptional in this way. Web-based applications are mostly based on client server architecture. This article is an analytical study of FOSS products used in web-based client server architecture. This article will provide information about FOSS product such as FireFox (web browser), Apache (web server) and MySQL (RDBMS). These reveal that various FOSS products such as Apache server covers 65% of the market share, while MySQL covers 58.7% market share and hold the top-most rank.*

### INTRODUCTION

Free and open source software (FOSS) is one of the effective tools that can be easily utilized in business, research and academia. FOSS is a movement started way back in 1980 to provide reliable software at low cost/free of cost to the users (FOSS A General Introduction, 2018). This software could be used, modified, redistributed without any permission required. FOSS insists on ethical and moral importance of users' freedom and hence has strict norms on how to aggregate free and proprietary software together. The proprietary software provides the user right to use the software under certain conditions without

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any knowledge of how the software is designed and without any access to its source code (Andersson & Laurell, 2003).

FOSS consists two terms: “free” software and “open source” software. The Free Software Foundation (FSF, [www.fsf.org](http://www.fsf.org)) has introduced a definition of “free software”. ‘Free’ does not define software as ‘free’ in terms of free-of-cost, but in referring to the four freedoms of use to that software. The four freedoms means that it respects the users’ essential freedoms(Srinivasa & Deka, 2017) such as:

- Freedom to use for any purpose, including academic or industry (freedom 0)
- Freedom to modify the source code according your own need (freedom 1)
- Freedom to redistribute the code (freedom 2)
- Freedom to improve and release it for everyone use (freedom 3)

A program is called as a ‘free’ software if users have all stated freedoms(freedom 0 to 3). The General Public License (GPL) and Lesser General Public License(LGPL) are two well known licences which comply these definition (Andersson & Laurell, 2003). These freedoms are absolutely necessary not just for the individual users’ sake, but also for society because they promote social solidarity—that is, sharing and collaboration. They become even more important as our culture and life activities are increasingly digitized.

The term ‘open source’ gives nourish the sense of ‘freedom’ that makes it qualifying it: open for learning and sharing the knowledge for each and everyone (Wynants & Cornelis, 2005). The term “open source” rapidly became related to thoughts and arguments based only on practical values, such as making a powerful and reliable software. Most of the supporters of open source have come to it since then, and they make the same association.“Open” Source Software (OSS) has a pragmatic view on this matter and allows proprietary software to be easily aggregated with open source software. The distribution terms of open-source software must conform to the criteria discussed in reference (The open source definition (annotated), 2016). GPL, LGPL, BSD, MIT and MPL are some popular licenses, which conform to the definition.

These two terms (free and open source) are used for the unique development model and innovative distribution policy of software and often considered as the same thing (Feller and Fitzgerald, 2002; Feller, et al., 2005; Koch, 2005). Both the terms, free and open source is different with regards to the licenses to the respective software(Scacchi, 2007). ‘Free’ means freedom, not just free of cost. A software that is available free of cost called Freeware which may be copyrighted by its developer, who has the rights to modify, redistribute and improve in the future. Open source is a development methodology to allow the business use of free codes while free software is a social movement and promoted intellectual freedom. FOSS provides both free and open source software for the use of people. FOSS has drawn the attention of people from various backgrounds who have labelled it as an opportunistic software development model (Umarji, Sim & Lopes, 2008).

Undoubtedly, FOSS development has produced software of high quality and functionality. The Linux operating system has recently gained significant commercial success and great competitor to commercial operating systems such as Windows.

The IT and web landscape is really developing fast. IT vendors are most benefited from free and open source software. FOSS developers have a strong track record and market share in consulting and services and it stand to gain market share from the open source contracts. IT vendors that rely heavily on revenues from proprietary software that have strong competitors in the open source marketplace are most

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