
LAMP Stack

An Open-source Architecture for Web Based Applications

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Dixite
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Preface

Introduction

Most *web applications* share a basic architecture consisting of three basic tiers:

- *Web server* to serve static content such as images, static HyperText Markup Language (XHTML) pages, JavaScript and stylesheets. Refer to the Apache section to learn more.
- *Application Layer* to process business logic, like online order management. Refer to the PHP section to learn more.
- *Data Store* to hold persistent information. Refer to the MySQL section to learn more.

The Linux, Apache, MySQL, PHP (LAMP) stack can provide an *efficient* and *cost effective* open source architecture (refer to section 2 to learn more about open source) to build and run web applications. What is LAMP?

LAMP is a stack of open source software that includes the *GNU/Linux* operating system, *Apache Web server*, *MySQL* database and scripting languages Hypertext Preprocessor (PHP), Perl and/or Python.

Why LAMP-based architecture is important to your Enterprise?

1. *Lower Cost of Ownership*: Open source products typically not only have lower license costs, but also significantly reduce the operation costs that make up the total cost of ownership.
2. *Reliability and Performance*: A large community of users try and test open source software across a range of platforms before it is certified for production. When bugs are found, they are fixed quickly. Extensive public review as well as rapid development iteration has made open source software more reliable than closed source software.
3. *Security*: Open source software is out there in the open, a large community of users try it and pinpoint security issues. As a result open source software is more secure and suffer fewer vulnerability attacks than proprietary software.

Scope

The scope of this document is to cover the *reference architecture* of [Dixite](#), that is LAMP. Each component of the stack is briefly described, but a complete account of the individual components of the LAMP stack is beyond the scope of this document.

Document Conventions

When you read this document, certain words are represented in different fonts, typefaces, sizes and weights. This highlighting is systematic; different words are represented in the same style to indicate their inclusion in a specific category. The types of words that are represented this way include the following:

Element	Style
External URL	<i>Dixite Website</i> ↗ www.dixite.com Or Dixite Website
Important	<i>emphasized</i>

CONTENTS

CHAPTER 1	LAMP Components	5
1.1.	GNU/Linux	6
1.1.1.	Fast Facts	6
1.2.	MySQL	6
1.2.1.	Fast Facts	6
1.3.	Apache	6
1.3.1.	Fast Facts	6
1.4.	PHP	7
1.4.1.	Fast Facts	7
<hr/>		
CHAPTER 2	FAQ	8

CHAPTER 1

LAMP Components

As shown in the figure below, the LAMP stack includes GNU/Linux, Apache, MySQL and PHP. This chapter covers our reference architecture in more details by describing each individual component of the stack. In addition, for each component, we name our *key partner* and a *selected client* for whom we have implemented a LAMP-based solution.

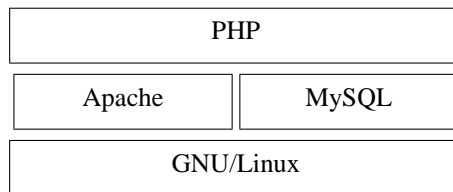


Figure 1.1: LAMP Stack

Table below provides a quick reference guide to Dixite partner for each individual component of the LAMP stack.

Component	Key Partner	URL
GNU/Linux	Novell	www.novell.be
Apache	MarkupWare	www.markupware.com
MySQL	MySQL	www.mysql.com
PHP	EZ Publish	www.ez.no

Table 1.1: Quick Reference to Dixite Partners

1.1 GNU/Linux

Originally developed in 1991 by Linus Travold, it has become de facto enterprise server for web applications due to its reliability and uptime. GNU/Linux is packaged, sold and supported by leading IT companies such as HP, IBM, Novell, Oracle and Redhat.

1.1.1 Fast Facts

Our system engineers have worked with various distributions of GNU/Linux including *Debian*, *Redhat* and *SuSe* since 1999.

- **Selected Client:** *Atos Origin* ↔ www.atos.be
- **Key Partner:** *Novell* ↔ www.novell.be

1.2 MySQL

MySQL database has grown the world's most popular open source database with over six million installations worldwide. MySQL serves as the *data store* in our reference architecture.

1.2.1 Fast Facts

Dixite experience with MySQL goes back to 1999 when MySQL had not been so popular yet. We have configured MySQL for high availability and performance as well as transactional aspects.

- **Selected Client:** *AuxiPress* ↔ www.auxipress.be
- **Key Partner:** *MySQL* ↔ www.mysql.com

1.3 Apache

Apache web server has been dominant web server since 1996. At Dixite, we have used the Apache web server on most of our projects since 1999. Apache is the web server of our reference architecture.

1.3.1 Fast Facts

We have implemented Apache based solutions for our clients with thousands of visitors per day. Over the past years, our developers have *installed*, *configured* and *secured* Apache Web server.

- **Selected Client:** *EuroLand* ↔ www.euroland.com
- **Key Partner:** *MarkupWare* ↔ www.markupware.com

1.4 PHP

PHP is a scripting languages for building dynamic web sites. They are often used to create powerful and yet intuitive web based applications that access backend systems, content management systems or databases. Since 1999, Dixite developers have been using PHP to build performant and scalable web portals. At Dixite, we use PHP to implement the application tier.

1.4.1 Fast Facts

At Dixite we have certified PHP programmers with years of experience with PHP and its related toolkits and frameworks. Our programmers have access to an extensive set of PHP libraries written by Dixite programmers over years. In addition, they have access to a wealth of materials and first class support provided by our partners.

- **Selected Client:** *Archange* ↗ www.reseau-archange.com
- **Key Partner:** *EZ Publish* ↗ www.ez.no

CHAPTER 2

FAQ

This section is provided in order to answer some Frequently Asked Questions (FAQ) and place the LAMP stack in the context of the open source software.

What is open source ?

According to Open Source Initiative (OSI), open source can be defined as follows:

Open source promotes software reliability and quality by supporting independent peer review and rapid evolution of source code.

Why is open source software important ?

The initial attraction that most users have to open source software is the cost of ownership and quality. In addition, open source program allow developers to study the source code, improve it (if required) and use it in their own programs. Contributors from around the world contribute to the open source community by offering translation, documentation, and bug reports.

What are Dixite contribution to the open source community ?

Dixite engineers and staff participate in open source projects; a good example of such projects is *SilkPage* ↗ silkpage.markupware.com. In addition, Dixite contributes to the open source community by contributing to open source foundations such as Free Software Foundation (FSF) and Apache Software Foundation (ASF).

Document Information

This document was typeset by the author using \LaTeX ¹.

Revision

Revision	Date	Modified Sections
0.1	04-06-2005	Initial Revision
0.2	24-06-2005	Added FAQ and Preface sections. Modified Lamp Components section and changed some typography elements.

Table 2.1: *Document Revision History*

Related Documents

Title	URL	Description
SPPOSS	www.dixite.com/docs/spposs	Software Production Process Using Open Source
LAMBoss	www.dixite.com/docs/lamboss	Software Architecture based on Linux, Apache/Tomcat, MySQL, JBoss

Table 2.2: *Related Documents*

¹ \LaTeX ↦ www.latex-project.org

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Acronyms

LAMP Linux, Apache, MySQL, PHP

URD User Requirement Document described in the *SPPOSS* document.

ESTIME Explore, Sketch, Typography, Imagery, Make-up, Execute is a methodology used for web site development. *URL* ↗ www.dixite.com/docs/estime

SPPOSS Software Production Process using Open Source Software is [Dixite](http://www.dixite.com/docs/spposs) approach to software development. *URL* ↗ www.dixite.com/docs/spposs

W3C World Wide Web The World Wide Web Consortium (W3C) develops interoperable technologies (specifications, guidelines, software, and tools) to lead the Web to its full potential. *URL* ↗ www.w3.org

XML Extensible Markup Language Extensible Markup Language (XML) is a simple, very flexible text format derived from SGML (ISO 8879). Originally designed to meet the challenges of large-scale electronic publishing, XML is also playing an increasingly important role in the exchange of a wide variety of data on the Web and elsewhere. *URL* ↗ www.w3.org/XML

XHTML HyperText Markup Language XHTML 2 is a general-purpose markup language designed for representing documents for a wide range of purposes across the World Wide Web. To this end it does not attempt to be all things to all people, supplying every possible markup idiom, but to supply a generally useful set of elements. *URL* ↗ www.w3.org/MarkUp

CSS Cascading Style Sheets is a simple mechanism for adding style (e.g. fonts, colors, spacing) to Web documents. *URL* ↗ www.w3.org/Style/CSS

WASP Web Standards Founded in 1998, The Web Standards Project (WaSP) fights for standards that reduce the cost and complexity of development while increasing the accessibility and long-term viability of any site published on the Web. We work with browser companies, authoring tool makers, and our peers to deliver the true power of standards to this medium. *URL* ↗ www.webstandards.org

PHP Hypertext Preprocessor is a widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML. *URL* ↗ www.php.net

GNU GNU's Not UNIX *URL* ↗ www.gnu.org

FSF Free Software Foundation *URL* ↗ www.fsf.org

ASF Apache Software Foundation *URL* ↗ www.apache.org

OSI Open Source Initiative *URL* ↗ www.opensource.org

FAQ Frequently Asked Questions