

Introduction to LAMP Technology

Introduction [1]

- LAMP is a model of web service stacks, named as an acronym of the names of its original four open-source components:
 - the Linux operating system
 - the Apache HTTP Server
 - the MySQL relational database management system (RDBMS), and
 - the PHP programming language.
- The LAMP components are largely interchangeable and not limited to the original selection. As a solution stack, LAMP is suitable for building dynamic web sites and web applications.
- complete software stack is available free of cost
- The components of the LAMP stack are present in the software repositories of most Linux distributions, providing a LAMP stack with some automation.

Software components [1]

- **Linux**

- Linux is a Unix-like computer operating system assembled under the model of free and open source software development and distribution.

- **Apache**

- The role of LAMP's web server has been traditionally supplied by Apache, and has since included other web servers.
- Apache is developed and maintained by an open community of developers under the auspices of the *Apache Software Foundation*.
- It is free and open-source ***cross-platform web server*** software.

Software components [1]

- **Apache**

- HTTP server and proxy features

- Loadable Dynamic Modules
 - Multiple Request Processing modes (MPMs) including [Event-based/Async](#), Threaded and Prefork.
 - Highly scalable (easily handles [more than 10,000 simultaneous connections](#))
 - Handling of static files, index files, auto-indexing and content negotiation
 - [Reverse proxy](#) with caching^[17]
 - [Load balancing](#)^[18] with in-band health checks
 - Multiple load balancing mechanisms
 - [Fault tolerance](#) and Failover with automatic recovery
 - [WebSocket](#), [FastCGI](#), [SCGI](#), [AJP](#) and [uWSGI](#) support with caching
 - Dynamic configuration^[19]
 - [TLS/SSL](#) with [SNI](#) and [OCSP stapling](#) support, via [OpenSSL](#).
 - Name- and IP address-based virtual servers
 - [IPv6](#)-compatible
 - [HTTP/2](#) protocol support
 - [gzip](#) compression and decompression
 - URL rewriting^[21]

Software components [1]

- **Apache**
 - HTTP server and proxy features
 - Headers^[22] and content^{[23][24]} rewriting
 - Concurrent connection limiting
 - Request processing rate limiting
 - Server Side Includes^[25]
 - IP address-based geolocation
 - User and Session tracking^[26]
 - Embedded Perl, PHP and Lua scripting
 - CGI support^[27]
 - public_html per-user web-pages^[28]
 - Real-time status views^[30]
 - XML support^[31]
 - FTP support (by a separate module)

Software components [1]

- **MySQL and alternatives**

- MySQL's original role as the LAMP's relational database management system (RDBMS) has since been alternately provisioned by other RDBMSs such as MariaDB or PostgreSQL, or even NoSQL databases such as MongoDB.
- MySQL is a multithreaded, multi-user, SQL database management system.

Software components [1]

- **PHP**

- PHP's role as the LAMP's application programming language has also been performed by other languages such as Perl and Python.
- PHP is a ***server-side scripting language*** designed for web development but also used as a general-purpose programming language.
- PHP code is ***interpreted*** by a web server via a PHP processor module, which generates the resulting web page.
- PHP commands can optionally be embedded directly into an HTML source document rather than calling an external file to process data.
- It has also evolved to include a command-line interface capability and can be used in standalone graphical applications.
- PHP is free software released under the terms ***of PHP License***, which is incompatible with the GNU General Public License (GPL) due to the restrictions PHP License places on the usage of the term PHP.

BENEFITS OF LAMP [2]

- **Easy To Code**

- Developers love to code on LAMP as it is comparatively bug free and time relaxing. Developers find it easy to code with PHP and MySQL.

- **Easy to Deploy**

- It is the deployment factor of a web application that is little tricky, especially when the programming language does not easily integrated with server and database. But, in case of LAMP, no such problem occurs as PHP is an open source programming and this makes it feasible to expand LAMP web applications.

- **Cost Factor**

- As every layer in LAMP stack is open source, therefore the project can be achieved with effective development and hardware costs.
- So, at initial level, startup costs can be cut down.
- Moreover , there are many other open source projects are available in LAMP stack such as Joomla, Drupal, OS Commerce and many more. Chose a suitable open source option , customize and deploy a project depending upon the requirements. This brings project cost further down.

Installation, Understanding and setting of various configuration files of LAMP stack

- Refer the Practical 1 (A) pdf file.

References

1. [https://en.wikipedia.org/wiki/LAMP \(software bundle\)](https://en.wikipedia.org/wiki/LAMP_(software_bundle))
2. <http://www.talentelgia.com/adoption-of-lamp-technology-and-its-benefits/>

Thank you....