

LAMP Stacks



What is a LAMP stack?

A LAMP stack is used to create websites and web applications.

LAMP stands for:

- **L**inux: the operating system the server is hosted on
- **A**pache: the front-end for the server which processes requests
- **M**ySQL: stands for Structured Query Language, used for the database
- **P**HP: stands for PHP Hypertext Processor, acts as a server-side scripting language to run various tasks

Be aware of variants!

LAMP is **not limited** to being configured by the apps you saw

Apache can be subbed by Ngingx (LEMP)

MySQL can be subbed by multiple other database apps (ie PostgreSQL, MongoDB, MariaDB)


Linux and PHP still stay the same tho :)

Configs should be similar nonetheless my dear children (similar options, maybe implemented differently)

Apache

Apache manages user connections to a web server.

- Represented by the **apache2** package
- Used in conjunction with the other parts of the LAMP stack to make a fully functioning web application



Apache2 Ubuntu Default Page

ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in `/usr/share/doc/apache2/README.Debian.gz`**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```
/etc/apache2/
|-- apache2.conf
|   |-- ports.conf
|-- mods-enabled
|   |-- *.load
|   |-- *.conf
|-- conf-enabled
|   |-- *.conf
|-- sites-enabled
|   |-- *.conf
```

`/var/www/html`

This folder contains all the files that will be displayed on the web server. It is commonly referred to as the *root directory* for the web server (aka webroot).

- Check this folder for any unnecessary files

/etc/apache2/apache2.conf

- ServerSignature Off
 - Prevents users from seeing the server signature which may contain sensitive information
- ServerTokens Prod
 - Prevents users from getting information from server response headers

/etc/apache2/apache2.conf

<Directory />

AllowOverride None

Order deny,allow

LimitRequestBody 102400

Options -Indexes -Includes -FollowSymLinks -ExecCGI

</Directory>

- Disables directory listing, symlinks, and server-side includes, and CGI script execution
- Limits the request size
- Sets deny as priority for connections

MySQL

Serves as the database for storing information on the web server. A SQL (Structured Query Language) does what the name says. It allows for users to make structured requests to the database.

- e.g. a very simple request could be "SELECT student FROM class"
- Represented by the **mysql-server** package, but alternatives include postgresql, mariadb, and mongodb
- You will rarely encounter a case where you have to check the databases for sensitive information, but if you do, you should be able to search up how to use basic database checking commands in MySQL

Unstructured Query



Why are the Linux basic teachers so attractive



Google Search

I'm Feeling Lucky

Structured Query

```
mysql> SELECT name FROM teachers WHERE attractive=TRUE AND os='linuxbasic';
```

name
BenTu
Patrick
NOTGabe
Brendon
Nathaniel
BenLiu

```
6 rows in set (0.00 sec)
```

/etc/mysql/my.cnf

[mysqld]

bind-address=127.0.0.1

skip-show-database

[mysql]

local-infile=0

- bind-address restricts connections from remote hosts
- skip-show-database prevents the listing of all databases unless one has proper permissions
- local-infile prevents users from accessing the underlying filesystem

PHP

Scripting language used to run various tasks on a web server. Used mainly to create interactive/dynamic web pages.

- Represented by the **php7.0** package
- Is notoriously hard and annoying to use

/etc/php/7.0/apache2/php.ini

- `expose_php = Off`
 - Prevents server from returning headers
- `register_globals = Off`
 - Prevents PHP from creating variables automatically from HTML form parameters/cookie data
- `file_uploads = Off`
 - Prevents file uploads to server

Wordpress

Wordpress is a CMS (Content Management System) that allows users to create content without editing any HTML/CSS

- This is just an extension of a LAMP stack as it has extra functionality via a web interface
- Config file is at `/var/www/html/wp-config.php`
- If you connect to “localhost” or “127.0.0.1” in your web browser, you should be able to access the Wordpress site if it is configured
 - Adding “/wp-admin” to the end allows you to access the admin panel to manage the website