Install Apache, MariaDB, PHP

(LAMP) stack on Arch Linux 2016.

As you probably know, **LAMP** is the the acronym of **L**inux, **A**pache, **M**ySQL/**M**ariaDB, **P**HP/**P**erl/**P**yhton. For the purpose of this article, I will be using the following test machine.

- **Operating system:** Arch Linux 2016 64 bit server
- **IP Address:** 192.168.1.102/24
- **Hostname:** server

1. Update your Arch system

Run the following command as root user to update your Arch Linux:

```
pacman -Syu
```

2. Install Apache

After updating the system, install Apache web server using command:

```
pacman -S apache
```

Edit **/etc/httpd/conf/httpd.conf** file,

```
nano /etc/httpd/conf/httpd.conf
```

Search and comment out the following line if it is not already:

```
[...]
#LoadModule unique_id_module modules/mod_unique_id.so
[...]
```

Save an close the file.

Enable Apache service to start at boot and restart Apache service using commands:

```
systemctl enable httpd
systemctl restart httpd
```

You can verify whether Apache is running or not with command:

```
systemctl status httpd
```

Sample output:

```
● httpd.service - Apache Web Server
 Loaded: loaded (/usr/lib/systemd/system/httpd.service; disa
 Active: active (running) since Tue 2016-02-16 13:00:18 IST;
 Main PID: 1067 (httpd)
 Tasks: 82 (limit: 512)
 CGroup: /system.slice/httpd.service
 ├─1067 /usr/bin/httpd -k start -DFOREGROUND
 ├─1070 /usr/bin/httpd -k start -DFOREGROUND
 ├─1071 /usr/bin/httpd -k start -DFOREGROUND
 └─1072 /usr/bin/httpd -k start -DFOREGROUND

Feb 16 13:00:18 server systemd[1]: Started Apache Web Server
Feb 16 13:00:18 server httpd[1067]: AH00558: httpd: Could no
Hint: Some lines were ellipsized, use -l to show in full.
```

Apache server is ready to use.

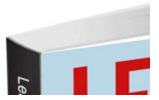
Test Apache

Let us create a sample page in the Apache root directory , i.e **/srv/http**.

```
nano /srv/http/index.html
```

Add the following line:

```
<html>
 <title>Welcome</title>
  <body>
   <h2>Welcome to OSTechNix test page</h2>
```

```
  </body>
</html>
```

Now, open your web browser and navigate to **http://localhost** or **http://IP-address**. You will be pleased with Apache server Test page.

3. Install MariaDB

Run the following command to install MariaDB:

```
pacman -S mysql
```

As you may know, MariaDB is now officially the default implementation of MySQL in Arch Linux since 2013. So, you will be asked whether to install MariaDB or Percona server, just hit enter and then type "Y" and press enter again. The default selection i.e MariaDB will be installed on your Arch Linux.

```
resolving dependencies...
looking for conflicting packages...

Packages (7) boost-libs-1.60.0-2 icu-56.1-2 jemalloc-4.0.4-1
 libmariadbclient-10.1.11-1 libxml2-2.9.3-1
 mariadb-clients-10.1.11-1 mariadb-10.1.11-1

Total Download Size: 30.68 MiB
Total Installed Size: 218.10 MiB

:: Proceed with installation? [Y/n] n
[root@server ~]# pacman -S mysql
:: There are 2 providers available for mysql:
```

```
:: Repository extra
 1) mariadb
:: Repository community
 2) percona-server

Enter a number (default=1): ## Press Enter

resolving dependencies...
looking for conflicting packages...

Packages (7) boost-libs-1.60.0-2 icu-56.1-2 jemalloc-4.0.4-1
 libmariadbclient-10.1.11-1 libxml2-2.9.3-1
 mariadb-clients-10.1.11-1 mariadb-10.1.11-1

Total Download Size: 30.68 MiB
Total Installed Size: 218.10 MiB

:: Proceed with installation? [Y/n] y
```

You need to initialize the MariaDB data directory prior to starting the service. To do so, run:

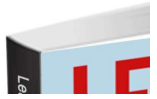
```
mysql_install_db --user=mysql --basedir=/usr --datadir=/var/
```

Then issue the following command to enable and start MariaDB service.

```
systemctl enable mysqld
systemctl start mysqld
```

You can verify whether MariaDb is running or not using command:

```
systemctl status mysqld
```

Sample output:


```
● mysqld.service - MariaDB database server
 Loaded: loaded (/usr/lib/systemd/system/mysqld.service; dis
 Active: active (running) since Tue 2016-02-16 13:19:50 IST;
 Process: 1406 ExecStartPost=/usr/bin/mysqld-post (code=exit
 Main PID: 1405 (mysqld)
 Tasks: 26 (limit: 512)
 CGroup: /system.slice/mysqld.service
 └─1405 /usr/bin/mysqld --pid-file=/run/mysqld/mysqld.pid

Feb 16 13:19:49 server mysqld[1405]: 2016-02-16 13:19:49 139
Feb 16 13:19:49 server mysqld[1405]: 2016-02-16 13:19:49 139
Feb 16 13:19:49 server mysqld[1405]: 2016-02-16 13:19:49 139
Feb 16 13:19:49 server mysqld[1405]: 2016-02-16 13:19:49 139
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Feb 16 13:19:49 server mysqld[1405]: 2016-02-16 13:19:49 139
Feb 16 13:19:49 server mysqld[1405]: 2016-02-16 13:19:49 139
Feb 16 13:19:49 server mysqld[1405]: 2016-02-16 13:19:49 139
Feb 16 13:19:49 server mysqld[1405]: Version: '10.1.11-Maria
Feb 16 13:19:50 server systemd[1]: Started MariaDB database
Hint: Some lines were ellipsized, use -l to show in full.
```

Setup MySQL/MariaDB root user password

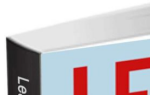
As you may know, It is recommended to setup a password for database root user.

Run the following command to setup MariaDB root user password:


```
mysql_secure_installation
```

Sample output:

```
NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR AL
 SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the cu
password for the root user. If you've just installed MariaDB
you haven't set the root password yet, the password will be
so you should just press enter here.

Enter current password for root (enter for none): ## Press E
OK, successfully used password, moving on...

Setting the root password ensures that nobody can log into t
root user without the proper authorisation.

Set root password? [Y/n]## Press Enter
New password:##  Enter password
Re-enter new password:  ## Re-enter password
Password updated successfully!
Reloading privilege tables..
 ... Success!

By default, a MariaDB installation has an anonymous user, al
to log into MariaDB without having to have a user account cr
them. This is intended only for testing, and to make the ins
go a bit smoother. You should remove them before moving into
production environment.

Remove anonymous users? [Y/n]## Press Enter
 ... Success!

Normally, root should only be allowed to connect from 'local
ensures that someone cannot guess at the root password from

Disallow root login remotely? [Y/n]## Press Enter
```

```
 ... Success!

By default, MariaDB comes with a database named 'test' that
access. This is also intended only for testing, and should b
before moving into a production environment.

Remove test database and access to it? [Y/n]## Press Enter
 - Dropping test database...
 ... Success!
 - Removing privileges on test database...
 ... Success!

Reloading the privilege tables will ensure that all changes
will take effect immediately.

Reload privilege tables now? [Y/n]## Press Enter
 ... Success!

Cleaning up...

All done! If you've completed all of the above steps, your M
installation should now be secure.

Thanks for using MariaDB!
```

MariaDB has been installed and ready to use.

4. Install PHP

To install PHP in Arch Linux, run:

```
pacman -S php php-apache
```

After PHP is installed, we need to configure Apache PHP module.

To do so, edit **/etc/httpd/conf/httpd.conf** file,

```
nano /etc/httpd/conf/httpd.conf
```

Find the following line and comment it out:

```
[...]
#LoadModule mpm_event_module modules/mod_mpm_event.so
[...]
```

Then, add the following lines at the bottom:

```
[...]
LoadModule mpm_prefork_module modules/mod_mpm_prefork.so
LoadModule php7_module modules/libphp7.so
AddHandler php7-script php
Include conf/extra/php7_module.conf
```

Save and close the file.

Test PHP

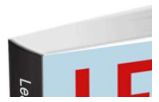
Now create a **test.php** file in the Apache root directory.

```
nano /srv/http/test.php
```

Add the following lines:

```
<?php
 phpinfo();
?>
```

Restart httpd service.



```
systemctl restart httpd
```

Open up your web browser and navigate to **http://ip-address/test.php**. You should the screen like below.

5. Install phpMyAdmin

phpMyAdmin is a graphical MySQL/MariaDB administration tool that can be used to create, edit and delete databases.

To install it, run:

```
pacman -S phpmyadmin php-mcrypt
```

After installing, edit **php.ini** file,

```
nano /etc/php/php.ini
```

Make sure the following lines are uncommented.

```
[...]
extension=bz2.so
extension=mcrypt.so
extension=mysqli.so
[...]
```

Save and close the file.

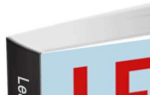
Next, create configuration file for phpMyAdmin,

```
nano /etc/httpd/conf/extra/phpmyadmin.conf
```

Add the following lines:

```
Alias /phpmyadmin "/usr/share/webapps/phpMyAdmin"
 <Directory "/usr/share/webapps/phpMyAdmin">
  DirectoryIndex index.php
  AllowOverride All
  Options FollowSymlinks
  Require all granted
 </Directory>
```

Then, open Apache configuration file,



```
nano /etc/httpd/conf/httpd.conf
```

Add the following line at the end:

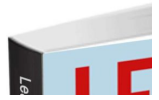
```
Include conf/extra/phpmyadmin.conf
```

Save and close the file. Restart httpd service.

```
systemctl restart httpd
```

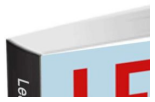
Test phpMyAdmin

Open your browser and navigate to **http://IP-Address/phpmyadmin**. You should see the following like screen. Enter the MySQL/MariaDB root username and it's password.



Here it is how my phpMyAdmin web console looks like.

You might see an error that says **"The configuration file now needs a secret passphrase (blowfish_secret)"** at the bottom of phpMyAdmin dashboard.



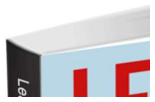
To get rid of this error, edit **/etc/webapps/phpmyadmin/config.inc.php** file,

```
nano /etc/webapps/phpmyadmin/config.inc.php
```

Find the following line and specify bluefish secret passphrase:

```
$cfg['blowfish_secret'] = 'Welc0me1'; /* YOU MUST FILL IN TH
```

```
/**
```

Here **Welc0me1** is my secret passphrase. Save and close the file. Restart Apache service.

```
systemctl restart httpd
```

The error will be gone now.

That's all for now. At this stage, you have a working LAMP stack, and is ready to host your websites.

If you want to use Nginx instead of Apache web server, refer the following article.

- **Installing and configuring Nginx, MySQL, PHP (LEMP) stack on Arch Linux 2016**

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Thanks for reading!

Cheers!!

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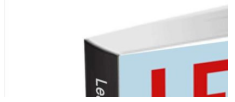

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