

Launch a Red Hat-based EC2 instance in AWS, and connect to it using Git Bash or terminal with the following command:

Update all system packages to the latest versions.

3. Install Apache Web Server

Install Apache and start it.

```
yum install httpd -y
```

```
systemctl enable httpd
```

```
systemctl start httpd
```

```

root@node01:~# cat /etc/hosts
127.0.0.1 localhost
::1 localhost

root@node01:~# cat /etc/hosts.allow
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[illegible]

4. Install PHP and Extensions

Install PHP and extensions needed for web and database interaction.

```
dnf install php php-mysqlnd -y
```

```
systemctl restart httpd
```

```
[root@ip-172-31-30-132 ~]# dnf install php-mysqldb -y
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use "rhc" or "subscription-manager" to register.
Last metadata expiration check: 0:01:25 ago on Tue Jul 1 04:41:26 2025.
Dependencies resolved.
Package Architecture Version Repository Size
Installing:
php-mysqldb x86_64 8.1.10-1.el10_0 rhel-10-appstream-rhel-rpm 8.1 k
Installing dependencies:
php x86_64 8.1.10-1.el10_0 rhel-10-appstream-rhel-rpm 1.0 M
php-common x86_64 8.1.10-1.el10_0 rhel-10-appstream-rhel-rpm 399 k
php-curl x86_64 8.1.10-1.el10_0 rhel-10-appstream-rhel-rpm 14 k
php-ctype x86_64 8.1.10-1.el10_0 rhel-10-appstream-rhel-rpm 727 k
Installing weak dependencies:
php-cli x86_64 8.1.10-1.el10_0 rhel-10-appstream-rhel-rpm 89 k
php-fpm x86_64 8.1.10-1.el10_0 rhel-10-appstream-rhel-rpm 1.9 M
php-gd x86_64 8.1.10-1.el10_0 rhel-10-appstream-rhel-rpm 362 k
php-mbstring x86_64 8.1.10-1.el10_0 rhel-10-appstream-rhel-rpm 368 k
php-pecl-zip x86_64 8.1.10-1.el10_0 rhel-10-appstream-rhel-rpm 231 k

Transaction Summary
Install 12 Packages
Total download size: 8.8 M
Downloaded Packages:
(1/12): openssl-system-1.26.3-1.el10_march.rpm 200 kB/s | 14 kB 00:00
(2/12): libicu-71.1-10.el10_0.x86_64.rpm 2.8 MB/s | 130 kB 00:00
(3/12): php-8.1.10-1.el10_0.x86_64.rpm 602 kB/s | 8.1 MB 00:00
(4/12): php-common-8.1.10-1.el10_0.x86_64.rpm 13 MB/s | 1.0 MB 00:00
(5/12): php-curl-8.1.10-1.el10_0.x86_64.rpm 22 MB/s | 147 kB 00:00
(6/12): php-ctype-8.1.10-1.el10_0.x86_64.rpm 27 MB/s | 522 kB 00:00
(7/12): php-mysqldb-8.1.10-1.el10_0.x86_64.rpm 9.5 MB/s | 142 kB 00:00
(8/12): php-fpm-8.1.10-1.el10_0.x86_64.rpm 11 MB/s | 1.9 MB 00:00
(9/12): php-gd-8.1.10-1.el10_0.x86_64.rpm 39 MB/s | 368 kB 00:00
(10/12): php-mbstring-8.1.10-1.el10_0.x86_64.rpm 8.4 MB/s | 89 kB 00:00
(11/12): php-pecl-zip-8.1.10-1.el10_0.x86_64.rpm 13 MB/s | 151 kB 00:00
(12/12): php-cli-8.1.10-1.el10_0.x86_64.rpm 28 MB/s | 3.6 MB 00:00

Total
Running transaction check
Transaction check succeeded.
```

5. Install and Start MariaDB (MySQL)

Install and start the MariaDB database server.

`dnf install mariadb-server -y`

`systemctl enable mariadb`

`systemctl start mariadb`

```
[root@ip-172-31-30-132 ~]# yum install mariadb-server -y
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use "rhc" or "subscription-manager" to register.
Last metadata expiration check: 0:05:42 ago on Tue Jul 1 04:41:26 2025.
Dependencies resolved.
Package Architecture Version Repository Size
Installing:
mariadb-server x86_64 1:10.11.11-1.el10 rhel-10-appstream-rhel-rpm 9.9 M
Installing dependencies:
mariadb x86_64 1:10.11.11-1.el10 rhel-10-appstream-rhel-rpm 1.6 M
mariadb-common x86_64 1:10.11.11-1.el10 rhel-10-appstream-rhel-rpm 36 k
mariadb-common-c x86_64 1:4-4-1.el10 rhel-10-bases-rhel-rpm 231 k
mariadb-common-c-utf8 x86_64 1:4-4-1.el10 rhel-10-bases-rhel-rpm 11 k
mariadb-strings x86_64 1:10.11.11-1.el10 rhel-10-appstream-rhel-rpm 262 k
mysql-metainstall x86_64 1:0.11.2.el10 rhel-10-appstream-rhel-rpm 79 k
perl-DBD-MariaDB x86_64 1:2.2.10-1.el10 rhel-10-appstream-rhel-rpm 140 k
perl-DBI x86_64 1:0.641-26.el10 rhel-10-appstream-rhel-rpm 717 k
perl-DBD-mysql x86_64 1:2.0030.01-1.el10 rhel-10-appstream-rhel-rpm 232 k
perl-DBD-percona x86_64 1:2.42.112-1.el10_0 rhel-10-appstream-rhel-rpm 47 k
perl-DBD-Sybase x86_64 1:2.5122.1.el10_0 rhel-10-appstream-rhel-rpm 18 k
Installing weak dependencies:
mariadb-backup x86_64 1:10.11.11-1.el10 rhel-10-appstream-rhel-rpm 6.6 M
mariadb-client-utf8 x86_64 1:10.11.11-1.el10 rhel-10-appstream-rhel-rpm 41 k
mariadb-libs x86_64 1:10.11.11-1.el10 rhel-10-appstream-rhel-rpm 18 k
mariadb-server-utf8 x86_64 1:10.11.11-1.el10 rhel-10-appstream-rhel-rpm 262 k

Transaction Summary
Install 17 Packages
Total download size: 20 M
Downloaded Packages:
(1/17): mariadb-server-10.11.11-1.el10_0.x86_64.rpm 4.5 MB/s | 202 kB 00:00
(2/17): mariadb-server-10.11.11-1.el10_march.rpm 13 MB/s | 267 kB 00:00
(3/17): mariadb-10.11.11-1.el10_0.x86_64.rpm 20 MB/s | 1.0 MB 00:00
(4/17): perl-DBD-MariaDB-1.21.10.el10.x86_64.rpm 9.8 MB/s | 100 kB 00:00
(5/17): perl-DBI-2.0.0-1.el10_0.x86_64.rpm 17 MB/s | 272 kB 00:00
(6/17): mariadb-server-10.11.11-1.el10_0.x86_64.rpm 10 MB/s | 9.9 MB 00:00
(7/17): perl-DBD-mysql-2.0030.01-1.el10_march.rpm 4.4 MB/s | 235 kB 00:00
(8/17): mariadb-client-utf8-10.11.11-1.el10_0.x86_64.rpm 5.3 MB/s | 41 kB 00:00
(9/17): mariadb-common-10.11.11-1.el10_march.rpm 2.3 MB/s | 36 kB 00:00
(10/17): mariadb-libs-10.11.11-1.el10_0.x86_64.rpm 2.1 MB/s | 18 kB 00:00
(11/17): mariadb-backup-10.11.11-1.el10_0.x86_64.rpm 2.1 MB/s | 6.6 MB 00:00
(12/17): mysql-metainstall-0.11.2-1.el10_march.rpm 1.0 MB/s | 39 kB 00:00
```

6. Secure MySQL Installation

Run the security script to set a root password and remove test data.

`mysql_secure_installation`

```

[root@ip-172-31-10-112 ~]# mysql_secure_installation

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

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

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

Setting the root password or using the unix_socket ensures that nobody
can log into the MariaDB root user without the proper authorization.

You already have your root account protected, so you can safely answer 'n'.

Switch to unix_socket authentication [Y/n] y
Unloaded successfully!
Reloading privilege tables...
... Success!

You already have your root account protected, so you can safely answer 'n'.

Change the root password? [Y/n] y
New password:
Re-enter new password:
Password updated successfully!
Reloading privilege tables...
... Success!

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

Remove anonymous users? [Y/n] n
... skipping.

Normally, root should only be allowed to connect from 'localhost'. This
ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] n
... skipping.

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

Remove test database and access to it? [Y/n] n

```

7. Create a PHP Info Page

Create a PHP file to confirm Apache + PHP is working.

```
echo "<?php phpinfo(); ?>" > /var/www/html/info.php
```

Open your browser and navigate to <http://<your-ec2-ip>/info.php>

```

Complete!
[root@ip-172-31-10-112 ~]# systemctl restart httpd
[root@ip-172-31-10-112 ~]# echo "<?php phpinfo(); ?>" > /var/www/html/info.php
[root@ip-172-31-10-112 ~]# |

```

PHP Version 8.3.19	
System	Linux ip-172-31-10-112 ip-172-31-10-112.compute-1.amazonaws.com 5.12.0-55.18.1.el9_0.x86_64 SMP PREEMPT_DYNAMIC Mon Jun 18 03:03:01 EDT 2025 x86_64
Build Date	Mon 12 2024 13:39:37
Build System	Red Hat Enterprise Linux release 9.0 (Cougatan)
Build Provider	Red Hat, Inc.
Computer	gcc (GCC) 14.2.1 20240110 (Red Hat 14.2.1-7)
Architecture	x86_64
Server API	FFPM/8.3.19
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc
Loaded Configuration File	/etc/php.ini
Scan this dir for additional .ini files	/etc/php.d
Additional .ini files parsed	/etc/php.d/00-opcache.ini, /etc/php.d/00-bcmath.ini, /etc/php.d/00-calendar.ini, /etc/php.d/00-ctype.ini, /etc/php.d/00-curl.ini, /etc/php.d/00-dom.ini, /etc/php.d/00-ffi.ini, /etc/php.d/00-fileinfo.ini, /etc/php.d/00-ftp.ini, /etc/php.d/00-gd.ini, /etc/php.d/00-gettext.ini, /etc/php.d/00-gmp.ini, /etc/php.d/00-gnupg.ini, /etc/php.d/00-iconv.ini, /etc/php.d/00-intl.ini, /etc/php.d/00-ldap.ini, /etc/php.d/00-libxml.ini, /etc/php.d/00-mbstring.ini, /etc/php.d/00-mcrypt.ini, /etc/php.d/00-mysqlnd.ini, /etc/php.d/00-pdo.ini, /etc/php.d/00-pdo_mysql.ini, /etc/php.d/00-pdo_pgsql.ini, /etc/php.d/00-pdo_sqlite.ini, /etc/php.d/00-posix.ini, /etc/php.d/00-redis.ini, /etc/php.d/00-session.ini, /etc/php.d/00-shmop.ini, /etc/php.d/00-simplexml.ini, /etc/php.d/00-sockets.ini, /etc/php.d/00-sysvmsg.ini, /etc/php.d/00-sysvsem.ini, /etc/php.d/00-sysvshm.ini, /etc/php.d/00-tidy.ini, /etc/php.d/00-tokenizer.ini, /etc/php.d/00-xml.ini, /etc/php.d/00-xmlrpc.ini, /etc/php.d/00-xsl.ini, /etc/php.d/00-zip.ini, /etc/php.d/00-zlib.ini
PHP API	20240831
PHP Extension	20240831
Zend Extension Build	AP020240831.NTFS
PHP Extension Build	AP020240831.NTFS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	provided by mbstring
Zend Max Execution Timers	disabled
IPv6 Support	enabled

8. Install phpMyAdmin Manually

Download, extract, and configure phpMyAdmin manually.

```
cd /var/www/html
```

```
dnf install wget -y
```

```
wget https://files.phpmyadmin.net/phpMyAdmin/5.2.1/phpMyAdmin-5.2.1-all-languages.tar.gz
```

```
tar -xzf phpMyAdmin-5.2.1-all-languages.tar.gz
```

```
mv phpMyAdmin-5.2.1-all-languages phpmyadmin
```

```
chown -R apache:apache phpmyadmin
```

```
cp phpmyadmin/config.sample.inc.php phpmyadmin/config.inc.php
```

```
vim phpmyadmin/config.inc.php (Set blowfish_secret and move strict_types=1 under <?php)
```

```
Complete!
[root@ip-172-31-10-112 html]# wget https://files.phpmyadmin.net/phpMyAdmin/5.2.1/phpMyAdmin-5.2.1-all-languages.tar.gz
--2025-07-01 04:54:57-- https://files.phpmyadmin.net/phpMyAdmin/5.2.1/phpMyAdmin-5.2.1-all-languages.tar.gz
Resolving files.phpmyadmin.net (files.phpmyadmin.net)... 79.127.235.52, 79.127.235.11, 207.211.208.184, ...
Connecting to files.phpmyadmin.net (files.phpmyadmin.net)|79.127.235.52|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 13041998 (12M) [application/octet-stream]
Saving to: 'phpMyAdmin-5.2.1-all-languages.tar.gz'

phpMyAdmin-5.2.1-all-languages.tar.gz 42%[=====
```

```
[root@ip-172-31-10-112 html]# tar -xzf phpMyAdmin-5.2.1-all-languages.tar.gz
[root@ip-172-31-10-112 html]# mv phpMyAdmin-5.2.1-all-languages phpmyadmin
[root@ip-172-31-10-112 html]# rm phpMyAdmin-5.2.1-all-languages.tar.gz
rm: remove regular file 'phpMyAdmin-5.2.1-all-languages.tar.gz'? y
[root@ip-172-31-10-112 html]# chown -R apache:apache phpmyadmin
[root@ip-172-31-10-112 html]# |
```

```

root@ip-172-31-10-112:/var/www/html
<?php
/*
 * phpMyAdmin sample configuration, you can use it as base for
 * your own configuration. For more information see the README file
 *
 * All directives are explained in documentation in the doc/ folder
 * or at <http://docs.phpmyadmin.net/>.
 */

declare(strict_types=1);

/*
 * This is needed for cookie based authentication to encrypt the cookie.
 * blowfish_secret is a 32-byte long string of random bytes. See FAQ 2.10.
 */
$config['blowfish_secret'] = 'MyString0ndaw00s12345';

/*
 * Servers configuration
 */
$M = 0;

/*
 * First server
 */
/*
 * Authentication type */
$config['servers'][$M]['auth_type'] = 'cookie';
/*
 * Server parameters */
$config['servers'][$M]['host'] = 'localhost';
$config['servers'][$M]['connect_type'] = 'tcp';
$config['servers'][$M]['compress'] = false;
$config['servers'][$M]['allow_remote_login'] = false;

/*
 * phpMyAdmin configuration storage settings.
 */
/*
 * User used to manipulate with storage */
$config['servers'][$M]['controluser'] = 'pma';
$config['servers'][$M]['controlport'] = '3306';
$config['servers'][$M]['controlsocket'] = 'pma';

/*
 * Storage database and tables */
$config['servers'][$M]['pma_db'] = 'phpmyadmin';
$config['servers'][$M]['pma_table'] = 'pma_tables';
$config['servers'][$M]['pma_table_data'] = 'pma_tables_data';
$config['servers'][$M]['pma_table_indexes'] = 'pma_indexes';
$config['servers'][$M]['pma_table_columns'] = 'pma_columns';
$config['servers'][$M]['pma_table_rows'] = 'pma_rows';
$config['servers'][$M]['pma_table_partitions'] = 'pma_partitions';
$config['servers'][$M]['pma_table_indexes'] = 'pma_indexes';
$config['servers'][$M]['pma_table_indexes'] = 'pma_indexes';
$config['servers'][$M]['recent'] = 'pma_recent';

```

Note: Since root login is working, creating an additional MySQL user for phpMyAdmin was not required

9. Access phpMyAdmin in Browser

Open your browser and navigate to:

`http://<your-ec2-ip>/phpmyadmin`

