

Deploying Dynamic Webserver using LAMP in Amazon-Linux

Introduction:

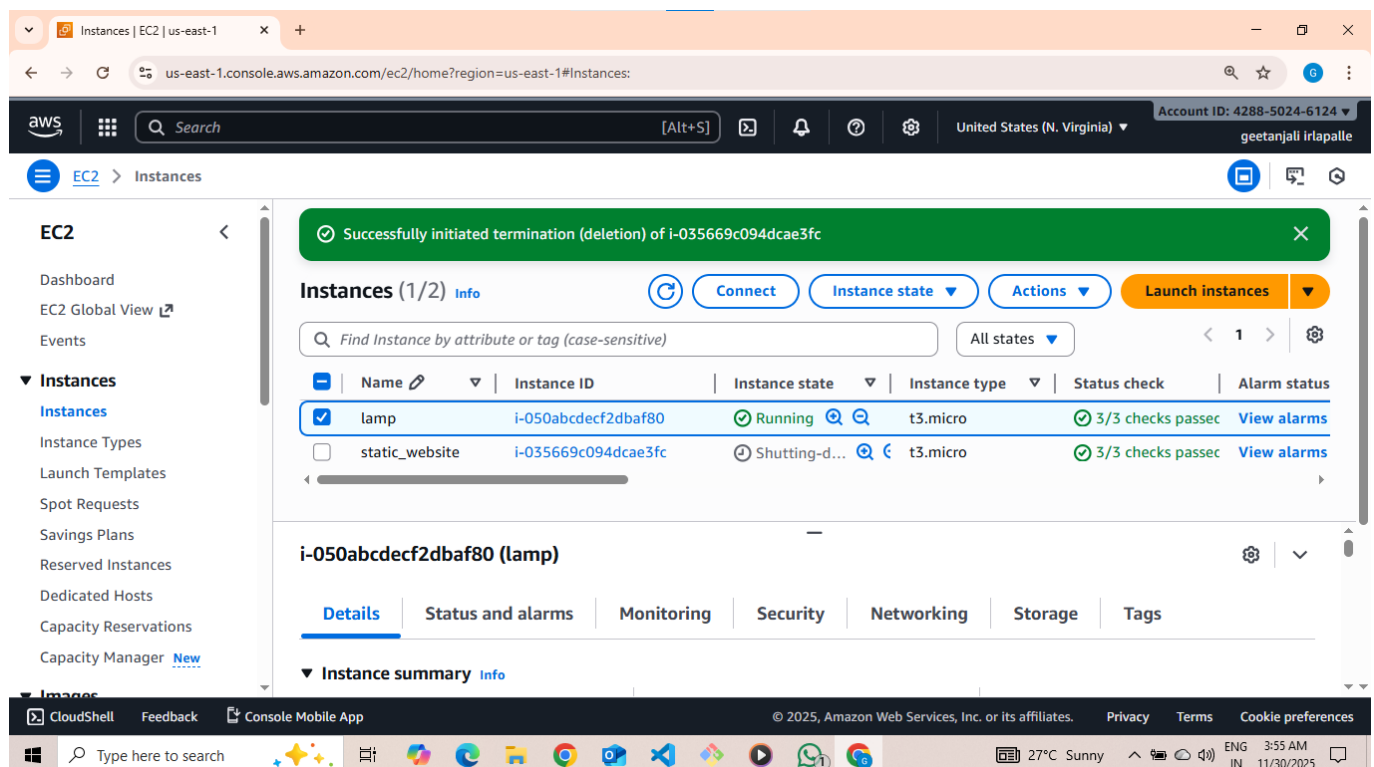
This project display how to set up and deploy a dynamic web server using the LAMP (Linux, Apache, MySQL, PHP) in Amazon Linux. The LAMP stack is one of the most widely used open-source solutions for hosting dynamic websites and web application. ☐ Linux – Operating system (Ubuntu / Amazon- linux)

☐ Apache – Web server to serve Http request ☐ MySQL / Mariadb – Database server to store application data

☐ PHP – Server-side scripting language for dynamic content

Step of deployment

Step1: Linux ec2 instance



Step2 : Connect the ec2 instances and updates the packages

The screenshot shows the AWS Management Console interface for connecting to an EC2 instance. The browser address bar shows the URL: `us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ConnectToInstance:instanceId=i-050abcdecf2dbaf80`. The console header includes the AWS logo, a search bar, and navigation links. The main content area is titled 'Connect to instance' and provides instructions for connecting to the instance using the browser-based client. It lists the Instance ID as `i-050abcdecf2dbaf80 (lamp)` and provides a list of steps: 1. Open an SSH client. 2. Locate your private key file. The key used to launch this instance is `server-key.pem`. 3. Run this command, if necessary, to ensure your key is not publicly viewable: `chmod 400 "server-key.pem"`. 4. Connect to your instance using its Public DNS: `ec2-3-236-232-9.compute-1.amazonaws.com`. A green notification bubble indicates 'Command copied'. Below the steps, a note states: 'Note: In most cases, the guessed username is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.' The console footer includes links for CloudShell, Feedback, Console Mobile App, and copyright information for Amazon Web Services, Inc. or its affiliates. The system tray at the bottom shows the date and time as 3:56 AM on 11/30/2025.

Step3: Install package manager httpd-

The screenshot shows a terminal window with the prompt `ec2-user@ip-172-31-64-21:~`. The user has executed the command `ssh -i "server-key.pem" ec2-user@ec2-3-236-232-9.compute-1.amazonaws.com`. The terminal output shows the SSH connection process, including the warning: 'Warning: Permanently added 'ec2-3-236-232-9.compute-1.amazonaws.com' (ED25519) to the list of known hosts.' The terminal then displays the Amazon Linux 2023 logo and the URL `https://aws.amazon.com/linux/amazon-linux-2023`. The prompt is now `[ec2-user@ip-172-31-64-21 ~]$`. The system tray at the bottom shows the date and time as 3:57 AM on 11/30/2025.

Step4: Check the instances Start ,enable, status httpd instances

Step5: Install the mariadb105-server database

Step6: Check the mariadb 105-server start ,enable ,status.

```
ec2-user@ip-172-31-64-21:~  
CPU: 92ms  
CGroup: /system.slice/httpd.service  
├─25567 /usr/sbin/httpd -DFOREGROUND  
├─25568 /usr/sbin/httpd -DFOREGROUND  
├─25569 /usr/sbin/httpd -DFOREGROUND  
├─25570 /usr/sbin/httpd -DFOREGROUND  
└─25571 /usr/sbin/httpd -DFOREGROUND  
Nov 30 11:59:04 ip-172-31-64-21.ec2.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...  
Nov 30 11:59:04 ip-172-31-64-21.ec2.internal systemd[1]: Started httpd.service - The Apache HTTP Server.  
Nov 30 11:59:04 ip-172-31-64-21.ec2.internal httpd[25567]: Server configured, listening on: port 80  
[ec2-user@ip-172-31-64-21 ~]$ sudo yum install mariadb105-server  
Last metadata expiration check: 0:02:45 ago on Sun Nov 30 11:57:52 2025.  
Dependencies resolved.  
=====
```

Package	Architecture	Version	Repository	Size
Installing:				
mariadb105-server	x86_64	3:10.5.29-1.amzn2023.0.1	amazonlinux	10 M
Installing dependencies:				
mariadb-connector-c	x86_64	3.3.10-1.amzn2023.0.1	amazonlinux	211 k
mariadb-connector-c-config	x86_64	3.3.10-1.amzn2023.0.1	amazonlinux	9.9 k
mariadb105	x86_64	3:10.5.29-1.amzn2023.0.1	amazonlinux	1.5 M
mariadb105-common	x86_64	3:10.5.29-1.amzn2023.0.1	amazonlinux	28 k
mariadb105-errmsg	x86_64	3:10.5.29-1.amzn2023.0.1	amazonlinux	212 k
mysql-selinux	noarch	1.0.4-2.amzn2023.0.3	amazonlinux	36 k
perl-B	x86_64	1.80-477.amzn2023.0.7	amazonlinux	177 k
perl-DBD-MariaDB	x86_64	1.22-1.amzn2023.0.4	amazonlinux	153 k
perl-DBI	x86_64	1.643-7.amzn2023.0.3	amazonlinux	700 k
perl-Data-Dumper	x86_64	2.174-460.amzn2023.0.2	amazonlinux	55 k
perl-File-Copy	noarch	2.34-477.amzn2023.0.7	amazonlinux	20 k
perl-FileHandle	noarch	2.03-477.amzn2023.0.7	amazonlinux	15 k
perl-Math-BigInt	noarch	1:1.9998.39-2.amzn2023.0.2	amazonlinux	202 k
perl-Math-BigRat	noarch	0.2624-500.amzn2023.0.2	amazonlinux	42 k
perl-Math-Complex	noarch	1.59-477.amzn2023.0.7	amazonlinux	46 k
perl-Sys-Hostname	x86_64	1.23-477.amzn2023.0.7	amazonlinux	16 k
perl-base	noarch	2.27-477.amzn2023.0.7	amazonlinux	16 k
Installing weak dependencies:				
mariadb105-backup	x86_64	3:10.5.29-1.amzn2023.0.1	amazonlinux	6.0 M
mariadb105-cracklib-password-check	x86_64	3:10.5.29-1.amzn2023.0.1	amazonlinux	13 k
mariadb105-gssapi-server	x86_64	3:10.5.29-1.amzn2023.0.1	amazonlinux	15 k
mariadb105-server-utils	x86_64	3:10.5.29-1.amzn2023.0.1	amazonlinux	207 k

```
Transaction Summary  
-----  
Install 22 Packages  
Total download size: 20 M  
Installed size: 117 M  
Is this ok [y/N]:  
Type here to search  
26°C Sunny  
ENG 4:00 AM  
IN 11/30/2025
```

Step7: Install php and extension

```
ec2-user@ip-172-31-64-21:~  
Verifying : perl-Data-Dumper-2.174-460.amzn2023.0.2.x86_64 15/22  
Verifying : perl-File-Copy-2.34-477.amzn2023.0.7.noarch 16/22  
Verifying : perl-FileHandle-2.03-477.amzn2023.0.7.noarch 17/22  
Verifying : perl-Math-BigInt-1:1.9998.39-2.amzn2023.0.2.noarch 18/22  
Verifying : perl-Math-BigRat-0.2624-500.amzn2023.0.2.noarch 19/22  
Verifying : perl-Math-Complex-1.59-477.amzn2023.0.7.noarch 20/22  
Verifying : perl-Sys-Hostname-1.23-477.amzn2023.0.7.x86_64 21/22  
Verifying : perl-base-2.27-477.amzn2023.0.7.noarch 22/22  
Installed:  
mariadb-connector-c-3.3.10-1.amzn2023.0.1.x86_64 mariadb-connector-c-config-3.3.10-1.amzn2023.0.1.noarch mariadb105-3:10.5.29-1.amzn2023.0.1.x86_64  
mariadb105-backup-3:10.5.29-1.amzn2023.0.1.x86_64 mariadb105-common-3:10.5.29-1.amzn2023.0.1.x86_64 mariadb105-cracklib-password-check-3:10.5.29-1.amzn2023.0.1.x86_64  
mariadb105-errmsg-3:10.5.29-1.amzn2023.0.1.x86_64 mariadb105-gssapi-server-3:10.5.29-1.amzn2023.0.1.x86_64 mariadb105-server-3:10.5.29-1.amzn2023.0.1.x86_64  
mariadb105-server-utils-3:10.5.29-1.amzn2023.0.1.x86_64 mysql-1.0.4-2.amzn2023.0.3.noarch perl-B-1.80-477.amzn2023.0.7.x86_64  
perl-DBD-MariaDB-1.22-1.amzn2023.0.4.x86_64 perl-DBI-1.643-7.amzn2023.0.3.x86_64 perl-Data-Dumper-2.174-460.amzn2023.0.2.x86_64  
perl-File-Copy-2.34-477.amzn2023.0.7.noarch perl-FileHandle-2.03-477.amzn2023.0.7.noarch perl-Math-BigInt-1:1.9998.39-2.amzn2023.0.2.noarch  
perl-Math-BigRat-0.2624-500.amzn2023.0.2.noarch perl-Math-Complex-1.59-477.amzn2023.0.7.noarch perl-Sys-Hostname-1.23-477.amzn2023.0.7.x86_64  
perl-base-2.27-477.amzn2023.0.7.noarch  
Complete!  
[ec2-user@ip-172-31-64-21 ~]$ sudo systemctl start mariadb  
[ec2-user@ip-172-31-64-21 ~]$ sudo systemctl enable mariadb  
Created symlink /etc/systemd/system/mysql.service - /usr/lib/systemd/system/mariadb.service.  
Created symlink /etc/systemd/system/mysqld.service - /usr/lib/systemd/system/mariadb.service.  
Created symlink /etc/systemd/system/multi-user.target.wants/mariadb.service - /usr/lib/systemd/system/mariadb.service.  
[ec2-user@ip-172-31-64-21 ~]$ sudo systemctl status mariadb  
● mariadb.service - MariaDB 10.5 database server  
Loaded: loaded (/usr/lib/systemd/system/mariadb.service; enabled; preset: disabled)  
Active: active (running) since Sun 2025-11-30 12:01:41 UTC; 44s ago  
Docs: man:mariadb(8)  
https://mariadb.com/kb/en/library/systemd/  
Main PID: 27524 (mariadb)  
Status: "Taking your SQL requests now..."  
Tasks: 13 (Limit: 1053)  
Memory: 66.5M  
CPU: 509ms  
CGroup: /system.slice/mariadb.service  
└─27524 /usr/libexec/mariadb --basedir=/usr  
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: The second is mysql@localhost, it has no password either, but  
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: you need to be the system "mysql" user to connect.  
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: After connecting you can set the password, if you would need to be  
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: able to connect as any of these users with a password and without sudo  
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: See the MariaDB Knowledgebase at https://mariadb.com/kb  
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: Please report any problems at https://mariadb.org/jira  
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: The latest information about MariaDB is available at https://mariadb.org/.  
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: Consider joining MariaDB's strong and vibrant community:  
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: https://mariadb.org/get-involved/  
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal systemd[1]: Started mariadb.service - MariaDB 10.5 database server.  
[ec2-user@ip-172-31-64-21 ~]$  
Type here to search  
26°C  
ENG 4:02 AM  
IN 11/30/2025
```

Step8 Start and enable ,status of the php -fpm

```
ec2-user@ip-172-31-64-21:~$
Docs: man:mariadb(8)
      https://mariadb.com/kb/en/library/systemd/
Main PID: 27524 (mariadb)
Status: "Taking your SQL requests now..."
Tasks: 13 (limit: 1053)
Memory: 66.5M
CPU: 500ms
CGroup: /system.slice/mariadb.service
        └─27524 /usr/libexec/mariadb --basedir=/usr

Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: The second is mysql@localhost, it has no password either, but
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: you need to be the system 'mysql' user to connect.
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: After connecting you can set the password, if you would need to be
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: able to connect as any of these users with a password and without sudo
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: See the MariaDB Knowledgebase at https://mariadb.com/kb
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: Please report any problems at https://mariadb.org/jira
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: The latest information about MariaDB is available at https://mariadb.org/.
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: Consider joining MariaDB's strong and vibrant community:
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal mariadb-prepare-db-dir[27479]: https://mariadb.org/get-involved/
Nov 30 12:01:41 ip-172-31-64-21.ec2.internal systemd[1]: Started mariadb.service - MariaDB 10.5 database server.

[ec2-user@ip-172-31-64-21 ~]$ sudo yum install php
Last metadata expiration check: 0:05:11 ago on Sun Nov 30 11:57:52 2025.
Dependencies resolved.
=====================================================================================================================================
Package                                     Architecture                               Version                                Repository                               Size
Installing:
php8.4                                     x86_64                                    8.4.14-1.amzn2023.0.1                amazonlinux                              16 k
Installing dependencies:
libsodium                                  x86_64                                    1.0.19-4.amzn2023                    amazonlinux                              176 k
libbrotli                                 x86_64                                    1.1.43-1.amzn2023.0.3                amazonlinux                              183 k
nginx-filesystem                          noarch                                     1:1.28.0-1.amzn2023.0.2              amazonlinux                              9.6 k
php8.4-cli                                x86_64                                    8.4.14-1.amzn2023.0.1                amazonlinux                              3.8 M
php8.4-common                             x86_64                                    8.4.14-1.amzn2023.0.1                amazonlinux                              802 k
php8.4-process                            x86_64                                    8.4.14-1.amzn2023.0.1                amazonlinux                              51 k
php8.4-xml                                 x86_64                                    8.4.14-1.amzn2023.0.1                amazonlinux                              675 k
Installing weak dependencies:
php8.4-fpm                                x86_64                                    8.4.14-1.amzn2023.0.1                amazonlinux                              2.0 M
php8.4-mbstring                           x86_64                                    8.4.14-1.amzn2023.0.1                amazonlinux                              540 k
php8.4-opcache                             x86_64                                    8.4.14-1.amzn2023.0.1                amazonlinux                              499 k
php8.4-pdo                                 x86_64                                    8.4.14-1.amzn2023.0.1                amazonlinux                              99 k
php8.4-sodium                              x86_64                                    8.4.14-1.amzn2023.0.1                amazonlinux                              47 k
Transaction Summary
Install 13 Packages

Total download size: 8.8 M
Installed size: 40 M
Is this ok [y/N]: |
```

Step 9: Go to html folder and edit the files using vim editor-

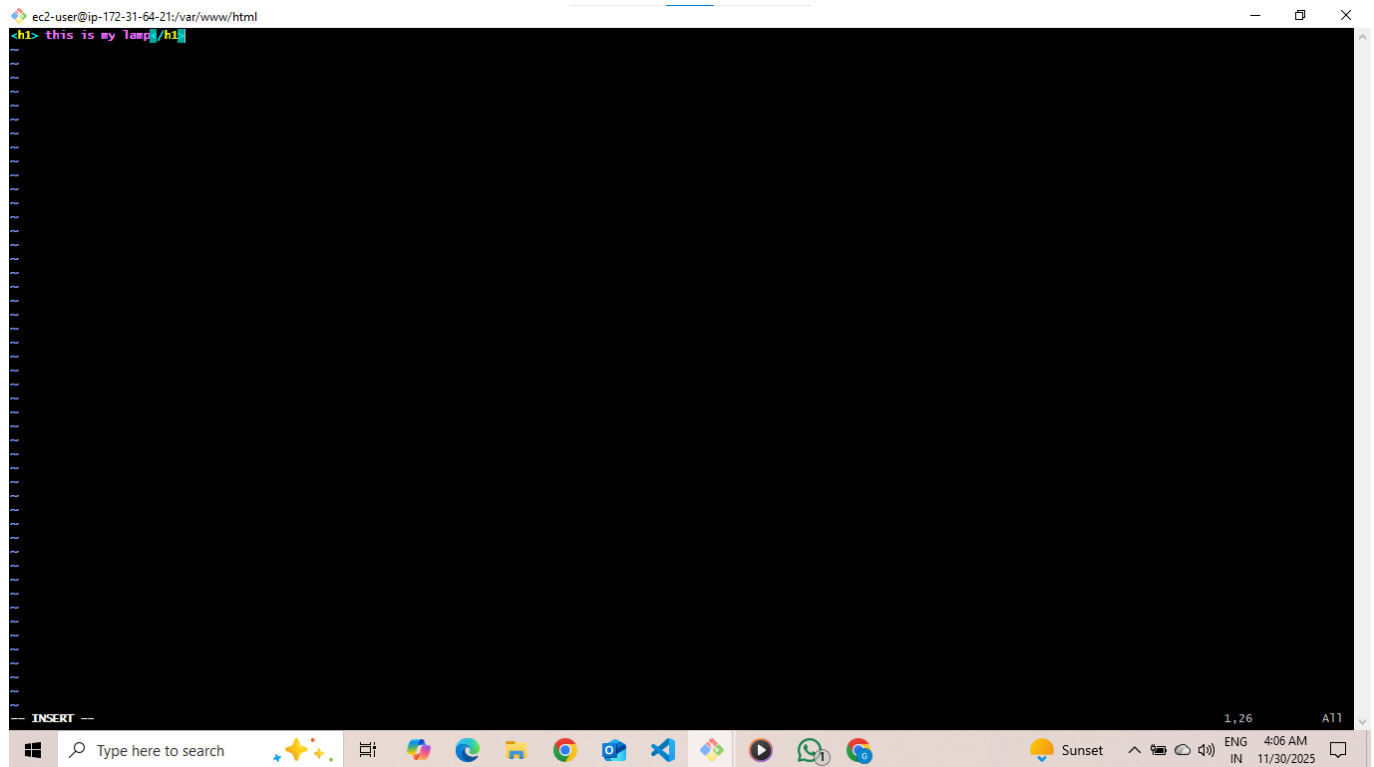
```
ec2-user@ip-172-31-64-21:~$
Verifying : libsodium-1.0.19-4.amzn2023.x86_64 1/13
Verifying : libxml2-2.10.3-1.amzn2023.0.3.x86_64 2/13
Verifying : nginx-filesystem-1:1.28.0-1.amzn2023.0.2.noarch 3/13
Verifying : php8.4-8.4.14-1.amzn2023.0.1.x86_64 4/13
Verifying : php8.4-cli-8.4.14-1.amzn2023.0.1.x86_64 5/13
Verifying : php8.4-common-8.4.14-1.amzn2023.0.1.x86_64 6/13
Verifying : php8.4-fpm-8.4.14-1.amzn2023.0.1.x86_64 7/13
Verifying : php8.4-mbstring-8.4.14-1.amzn2023.0.1.x86_64 8/13
Verifying : php8.4-opcache-8.4.14-1.amzn2023.0.1.x86_64 9/13
Verifying : php8.4-pdo-8.4.14-1.amzn2023.0.1.x86_64 10/13
Verifying : php8.4-process-8.4.14-1.amzn2023.0.1.x86_64 11/13
Verifying : php8.4-sodium-8.4.14-1.amzn2023.0.1.x86_64 12/13
Verifying : php8.4-xml-8.4.14-1.amzn2023.0.1.x86_64 13/13

Installed:
libsodium-1.0.19-4.amzn2023.x86_64      libxml2-2.10.3-1.amzn2023.0.3.x86_64      nginx-filesystem-1:1.28.0-1.amzn2023.0.2.noarch  php8.4-8.4.14-1.amzn2023.0.1.x86_64
php8.4-cli-8.4.14-1.amzn2023.0.1.x86_64  php8.4-common-8.4.14-1.amzn2023.0.1.x86_64  php8.4-fpm-8.4.14-1.amzn2023.0.1.x86_64      php8.4-mbstring-8.4.14-1.amzn2023.0.1.x86_64
php8.4-opcache-8.4.14-1.amzn2023.0.1.x86_64  php8.4-pdo-8.4.14-1.amzn2023.0.1.x86_64      php8.4-process-8.4.14-1.amzn2023.0.1.x86_64  php8.4-sodium-8.4.14-1.amzn2023.0.1.x86_64
php8.4-xml-8.4.14-1.amzn2023.0.1.x86_64

Complete!
[ec2-user@ip-172-31-64-21 ~]$ sudo systemctl start php-fpm
Failed to start php.service: Unit php.service not found.
[ec2-user@ip-172-31-64-21 ~]$ sudo systemctl start php - fpm
Failed to start php.service: Unit php.service not found.
Failed to start -service: Unit -service not found.
Failed to start fpm.service: Unit fpm.service not found.
[ec2-user@ip-172-31-64-21 ~]$ sudo systemctl start php-fpm
[ec2-user@ip-172-31-64-21 ~]$ sudo systemctl enable php-fpm
Created symlink /etc/systemd/system/multi-user.target.wants/php-fpm.service - /usr/lib/systemd/system/php-fpm.service.
[ec2-user@ip-172-31-64-21 ~]$ sudo systemctl status php-fpm
● php-fpm.service - The PHP FastCGI Process Manager
   Loaded: loaded (/usr/lib/systemd/system/php-fpm.service; enabled; preset: disabled)
   Active: active (running) since Sun 2025-11-30 12:04:18 UTC; 41s ago
 Main PID: 28138 (php-fpm)
   Status: "Processes active: 0, idle: 5, Requests: 0, slow: 0, Traffic: 0.00req/sec"
    Tasks: 6 (limit: 1053)
  Memory: 10.8M
     CPU: 52ms
    CGroup: /system.slice/php-fpm.service
            └─28138 "php-fpm: master process (/etc/php-fpm.conf)"
              └─28139 "php-fpm: pool www"
                └─28140 "php-fpm: pool www"
                  └─28141 "php-fpm: pool www"
                    └─28142 "php-fpm: pool www"
                      └─28143 "php-fpm: pool www"

Nov 30 12:04:18 ip-172-31-64-21.ec2.internal systemd[1]: Starting php-fpm.service - The PHP FastCGI Process Manager...
Nov 30 12:04:18 ip-172-31-64-21.ec2.internal systemd[1]: Started php-fpm.service - The PHP FastCGI Process Manager.
[ec2-user@ip-172-31-64-21 ~]$
```

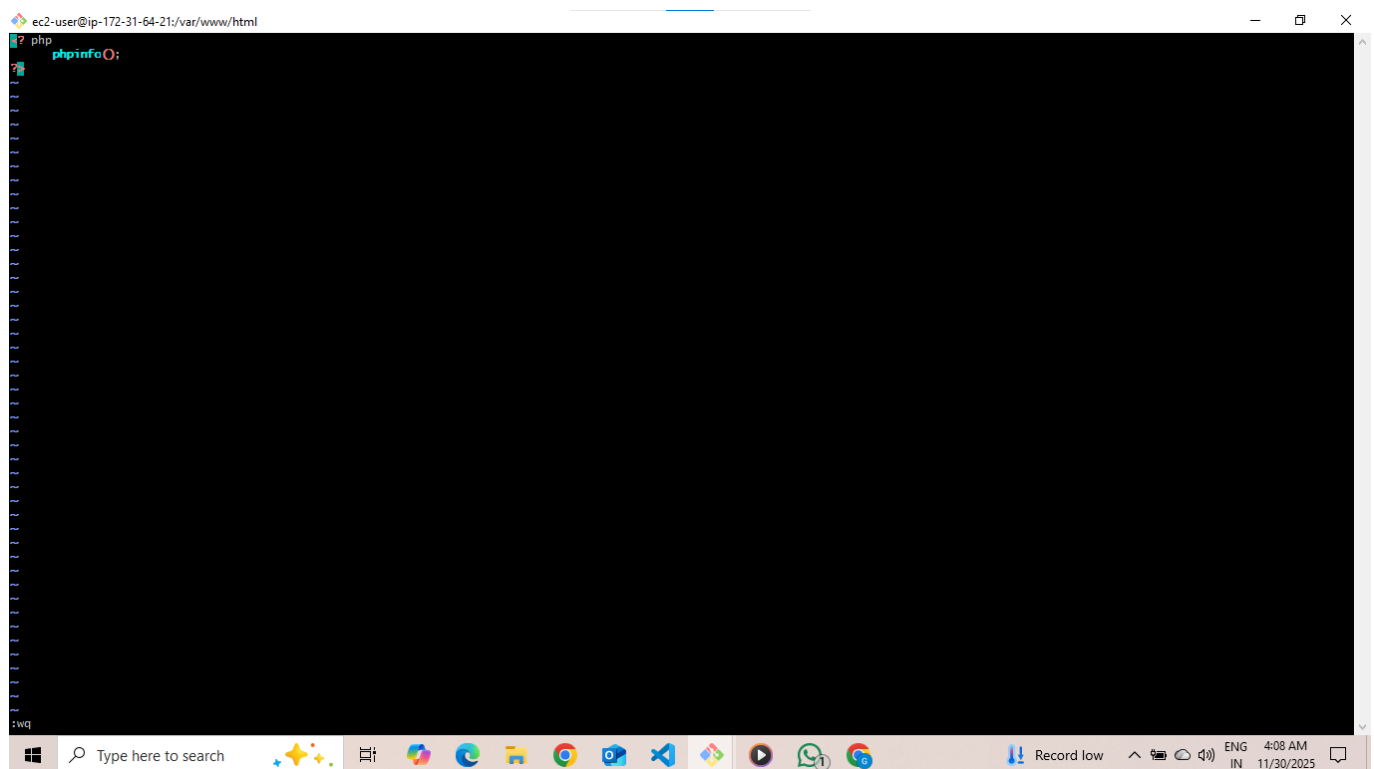
Step10: Write a simple html file.



```
ec2-user@ip-172-31-64-21:/var/www/html
-h1> this is my lamp/h1
```

The screenshot shows a terminal window with a black background. The prompt is `ec2-user@ip-172-31-64-21:/var/www/html`. The command `-h1> this is my lamp/h1` has been entered. The Windows taskbar is visible at the bottom with various application icons and system tray information.

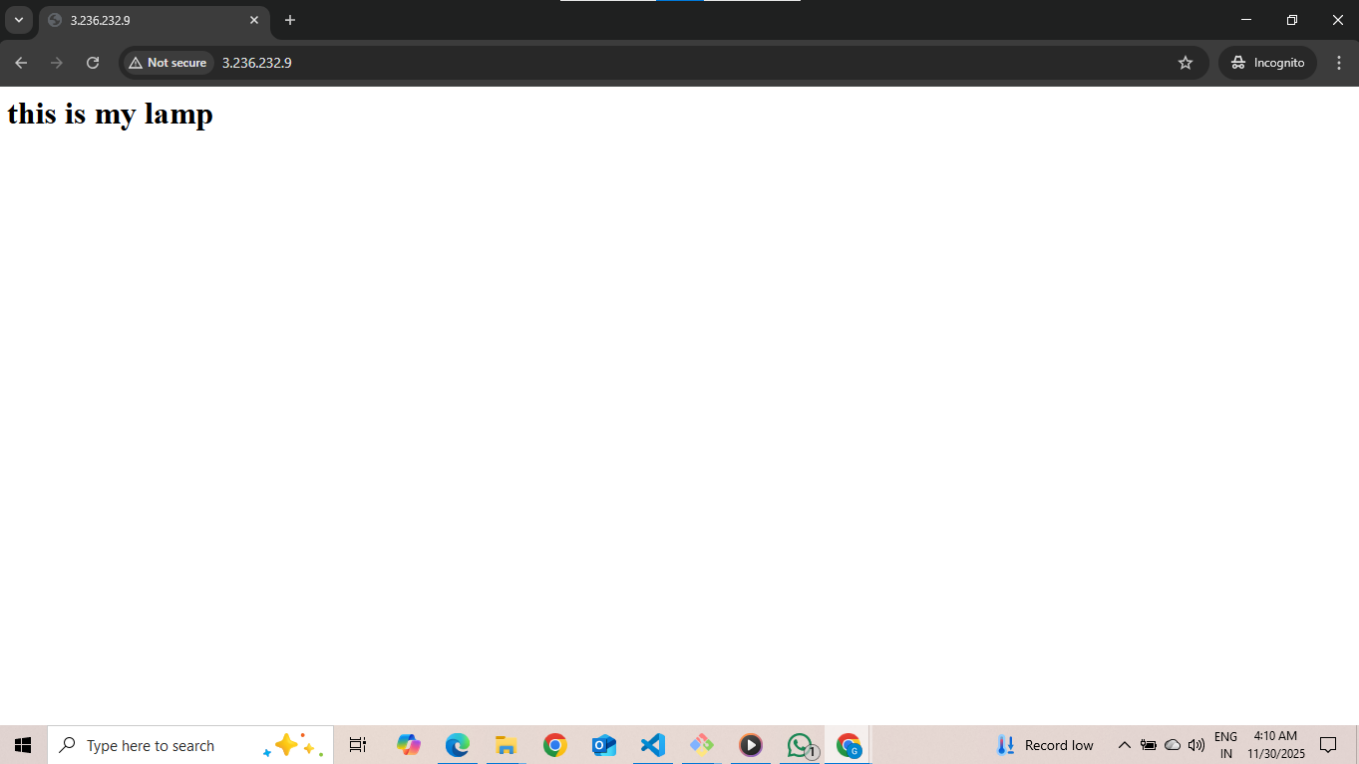
Step11: Create a index.php file



```
ec2-user@ip-172-31-64-21:/var/www/html
? php
phpinfo();
```

The screenshot shows a terminal window with a black background. The prompt is `ec2-user@ip-172-31-64-21:/var/www/html`. The command `? php` has been entered, and the output `phpinfo();` is displayed. The Windows taskbar is visible at the bottom with various application icons and system tray information.

Step12: Write a simple php file



Step13: Test Website copy the public IP address and past.

