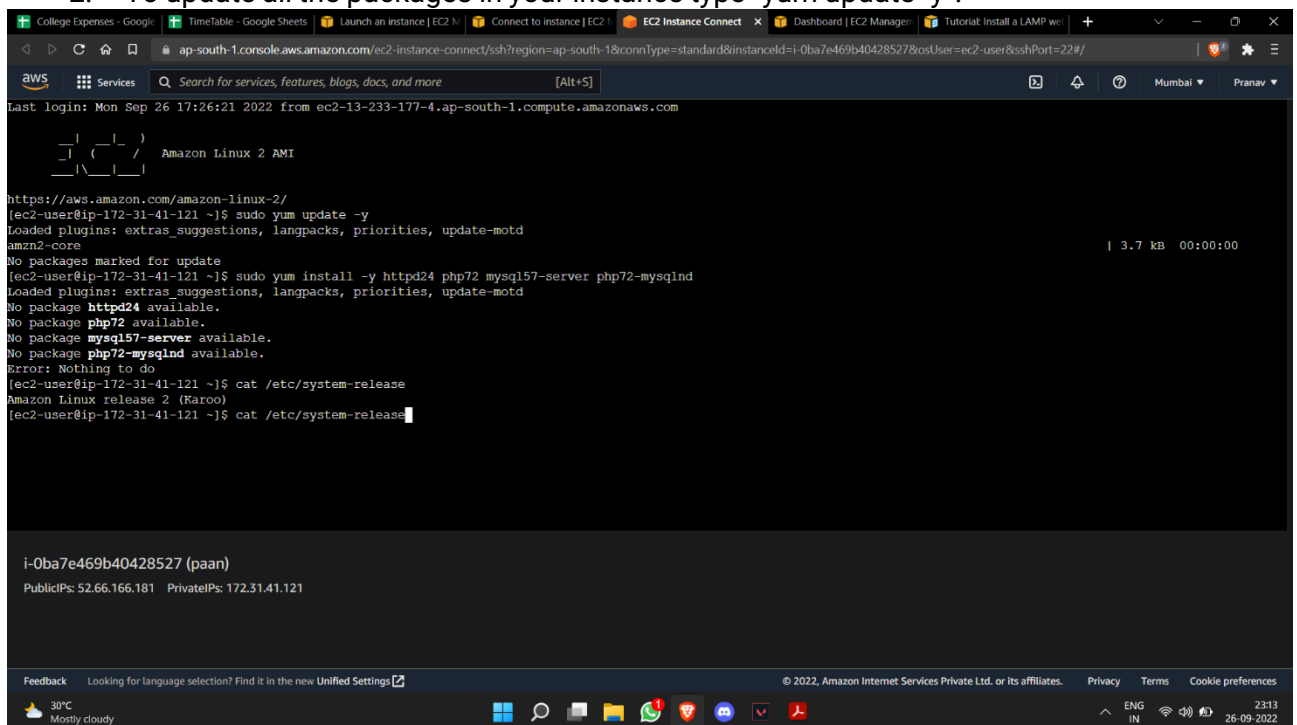


## Experiment 2 - Creating Amazon EC2 Instances - Creating a LAMP Instance in the AWS CLI

**AIM:** To create a LAMP instance in the AWS CLI.

### **PROCEDURE:**

1. Firstly, type `sudo su` to become the root user.
2. To update all the packages in your instance type “`yum update -y`”.



The screenshot shows a terminal window within the AWS Management Console, connected to an Amazon EC2 instance. The terminal displays the following commands and output:

```

Last login: Mon Sep 26 17:26:21 2022 from ec2-13-233-177-4.ap-south-1.compute.amazonaws.com

 _ _  ( _ _ )
 _ _  ( _ _ ) Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-41-121 ~]$ sudo yum update -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                               | 3.7 kB  00:00:00
No packages marked for update
[ec2-user@ip-172-31-41-121 ~]$ sudo yum install -y httpd24 php72 mysql57-server php72-mysqld
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
No package httpd24 available.
No package php72 available.
No package mysql57-server available.
No package php72-mysqld available.
Error: Nothing to do
[ec2-user@ip-172-31-41-121 ~]$ cat /etc/system-release
Amazon Linux release 2 (Karoo)
[ec2-user@ip-172-31-41-121 ~]$ cat /etc/system-release
```

Below the terminal output, the instance details are visible:

```

i-0ba7e469b40428527 (paan)
PublicIPs: 52.66.166.181 PrivateIPs: 172.31.41.121
```

The bottom of the screenshot shows the AWS console footer with a feedback link, copyright notice (© 2022 Amazon Internet Services Private Ltd. or its affiliates), and links for Privacy, Terms, and Cookie preferences. The system status bar at the very bottom indicates a temperature of 30°C, mostly cloudy weather, and the time 23:13 on 26-09-2022.

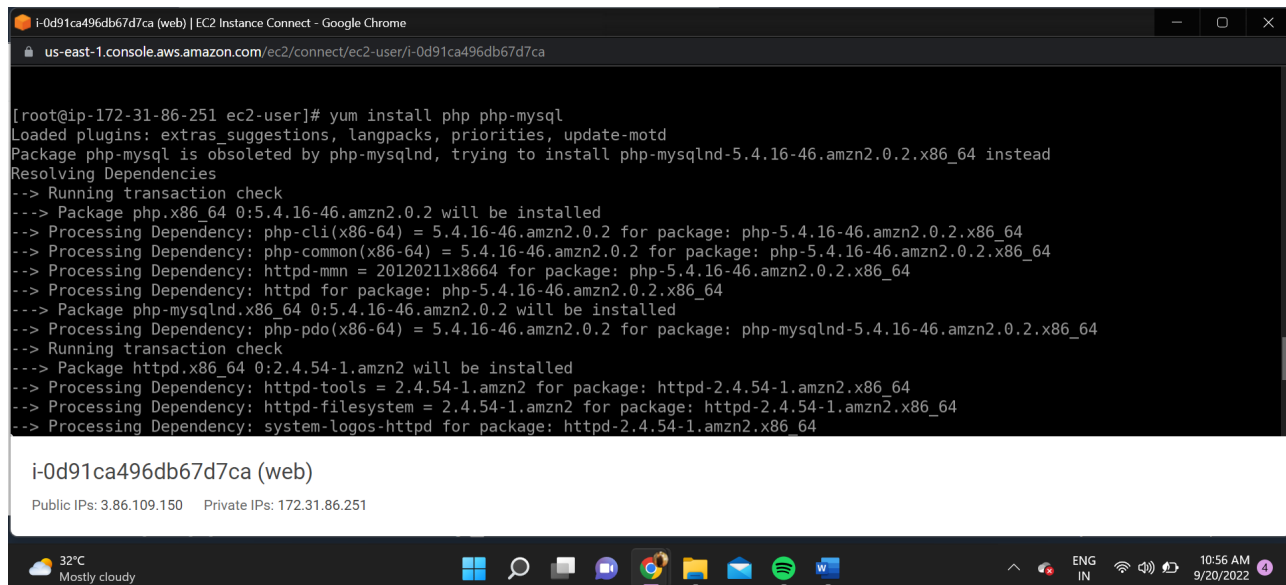
3. To install Apache server in linux, type “`yum install httpd`”.

```
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&connType=standard&instanceId=i-0ba7e469b40428527&osUser=ec2-user&sshPort=22#/  
Installing : libzip010-compat-0.10.1-9.amzn2.0.5.x86_64 10/13  
Installing : php-common-5.4.16-46.amzn2.0.2.x86_64 11/13  
Installing : php-cli-5.4.16-46.amzn2.0.2.x86_64 12/13  
Installing : php-5.4.16-46.amzn2.0.2.x86_64 13/13  
Verifying : apr-util-1.6.1-5.amzn2.0.2.x86_64 1/13  
Verifying : libzip010-compat-0.10.1-9.amzn2.0.5.x86_64 2/13  
Verifying : apr-util-bdb-1.6.1-5.amzn2.0.2.x86_64 3/13  
Verifying : php-cli-5.4.16-46.amzn2.0.2.x86_64 4/13  
Verifying : httpd-tools-2.4.54-1.amzn2.x86_64 5/13  
Verifying : php-5.4.16-46.amzn2.0.2.x86_64 6/13  
Verifying : mod_http2-1.15.19-1.amzn2.0.1.x86_64 7/13  
Verifying : httpd-2.4.54-1.amzn2.x86_64 8/13  
Verifying : mailcap-2.1.41-2.amzn2.noarch 9/13  
Verifying : generic-logos-httpd-18.0.0-4.amzn2.noarch 10/13  
Verifying : httpd filesystem-2.4.54-1.amzn2.noarch 11/13  
Verifying : apr-1.7.0-9.amzn2.x86_64 12/13  
Verifying : php-common-5.4.16-46.amzn2.0.2.x86_64 13/13  
  
Installed:  
httpd.x86_64 0:2.4.54-1.amzn2 php.x86_64 0:5.4.16-46.amzn2.0.2  
  
Dependency Installed:  
apr.x86_64 0:1.7.0-9.amzn2 apr-util.x86_64 0:1.6.1-5.amzn2.0.2 apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2 generic-logos-httpd.noarch 0:18.0.0-4.amzn2  
httpd filesystem.noarch 0:2.4.54-1.amzn2 httpd-tools.x86_64 0:2.4.54-1.amzn2 libzip010-compat.x86_64 0:0.10.1-9.amzn2.0.5 mailcap.noarch 0:2.1.41-2.amzn2  
mod_http2.x86_64 0:1.15.19-1.amzn2.0.1 php-cli.x86_64 0:5.4.16-46.amzn2.0.2 php-common.x86_64 0:5.4.16-46.amzn2.0.2  
  
Complete!  
[ec2-user@ip-172-31-41-121 ~]$  
  
i-0ba7e469b40428527 (paan)  
PublicIPs: 52.66.166.181 PrivateIPs: 172.31.41.121  
  
Feedback Looking for language selection? Find it in the new Unified Settings  
© 2022, Amazon Internet Services Private Ltd. or its affiliates. Privacy Terms Cookie preferences  
30°C Mostly cloudy 23:16 26-09-2022
```

4. To install mysql of mariadb type “yum install mariadb mariadb-server”.

```
i-0d91ca496db67d7ca | EC2 Instance Connect - Google Chrome  
us-east-1.console.aws.amazon.com/ec2/connect/ec2-user/i-0d91ca496db67d7ca  
Resolving Dependencies  
--> Running transaction check  
--> Package mariadb.x86_64 1:5.5.68-1.amzn2 will be installed  
--> Package mariadb-server.x86_64 1:5.5.68-1.amzn2 will be installed  
--> Processing Dependency: perl-DBI for package: 1:mariadb-server-5.5.68-1.amzn2.x86_64  
--> Processing Dependency: perl-DBD-MySQL for package: 1:mariadb-server-5.5.68-1.amzn2.x86_64  
--> Processing Dependency: perl(Data:Dumper) for package: 1:mariadb-server-5.5.68-1.amzn2.x86_64  
--> Processing Dependency: perl(DBI) for package: 1:mariadb-server-5.5.68-1.amzn2.x86_64  
--> Running transaction check  
--> Package perl-DBD-MySQL.x86_64 0:4.023-6.amzn2 will be installed  
--> Package perl-DBI.x86_64 0:1.627-4.amzn2.0.2 will be installed  
--> Processing Dependency: perl(RPC:PLServer) >= 0.2001 for package: perl-DBI-1.627-4.amzn2.0.2.x86_64  
--> Processing Dependency: perl(RPC:PLClient) >= 0.2000 for package: perl-DBI-1.627-4.amzn2.0.2.x86_64  
--> Package perl-Data-Dumper.x86_64 0:2.145-3.amzn2.0.2 will be installed  
--> Running transaction check  
--> Package perl-PlRPC.noarch 0:0.2020-14.amzn2 will be installed  
--> Processing Dependency: perl(Net::Daemon) >= 0.13 for package: perl-PlRPC-0.2020-14.amzn2.noarch  
--> Processing Dependency: perl(Net::Daemon::Test) for package: perl-PlRPC-0.2020-14.amzn2.noarch  
--> Processing Dependency: perl(Net::Daemon::Log) for package: perl-PlRPC-0.2020-14.amzn2.noarch  
  
i-0d91ca496db67d7ca (web)  
Public IPs: 3.86.109.150 Private IPs: 172.31.86.251  
  
32°C Mostly cloudy 10:54 AM 9/20/2022
```

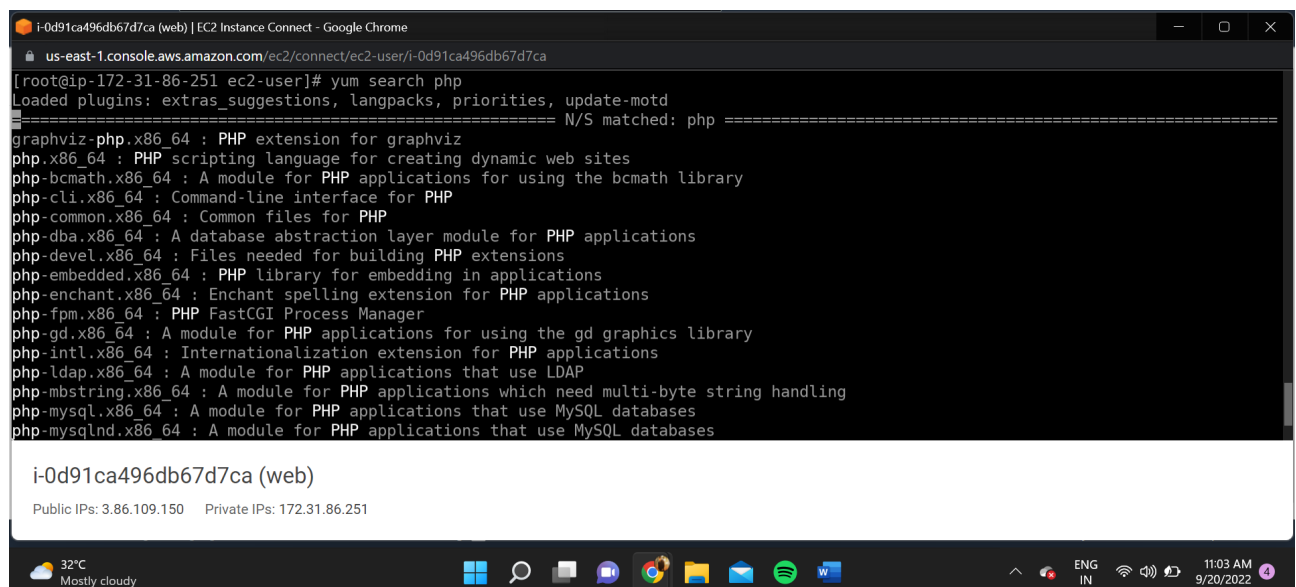
5. To install php, type “yum install php php-mysql”.



The screenshot shows a terminal window titled "i-0d91ca496db67d7ca (web) | EC2 Instance Connect - Google Chrome". The terminal output shows the command `yum install php php-mysql` being executed. The output indicates that the package `php-mysql` is obsolete and `php-mysqld` will be installed instead. The terminal shows the resolution of dependencies, including `php-cli`, `php-common`, `httpd-mmn`, `httpd`, `php-mysqld`, `php-pdo`, `httpd-tools`, `httpd-filesystem`, and `system-logos-httpd`. The terminal also shows the public and private IP addresses of the instance: `Public IPs: 3.86.109.150` and `Private IPs: 172.31.86.251`. The bottom of the window shows a taskbar with various application icons and system status information, including the temperature (32°C) and the time (10:56 AM 9/20/2022).

```
[root@ip-172-31-86-251 ec2-user]# yum install php php-mysql
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Package php-mysql is obsoleted by php-mysqld, trying to install php-mysqld-5.4.16-46.amzn2.0.2.x86_64 instead
Resolving Dependencies
--> Running transaction check
--> Package php.x86_64 0:5.4.16-46.amzn2.0.2 will be installed
--> Processing Dependency: php-cli(x86-64) = 5.4.16-46.amzn2.0.2 for package: php-5.4.16-46.amzn2.0.2.x86_64
--> Processing Dependency: php-common(x86-64) = 5.4.16-46.amzn2.0.2 for package: php-5.4.16-46.amzn2.0.2.x86_64
--> Processing Dependency: httpd-mmn = 20120211x8664 for package: php-5.4.16-46.amzn2.0.2.x86_64
--> Processing Dependency: httpd for package: php-5.4.16-46.amzn2.0.2.x86_64
--> Package php-mysqld.x86_64 0:5.4.16-46.amzn2.0.2 will be installed
--> Processing Dependency: php-pdo(x86-64) = 5.4.16-46.amzn2.0.2 for package: php-mysqld-5.4.16-46.amzn2.0.2.x86_64
--> Running transaction check
--> Package httpd.x86_64 0:2.4.54-1.amzn2 will be installed
--> Processing Dependency: httpd-tools = 2.4.54-1.amzn2 for package: httpd-2.4.54-1.amzn2.x86_64
--> Processing Dependency: httpd-filesystem = 2.4.54-1.amzn2 for package: httpd-2.4.54-1.amzn2.x86_64
--> Processing Dependency: system-logos-httpd for package: httpd-2.4.54-1.amzn2.x86_64
```

6. Type “yum search php” to see all the packages installed in the server.



The screenshot shows a terminal window titled "i-0d91ca496db67d7ca (web) | EC2 Instance Connect - Google Chrome". The terminal output shows the command `yum search php` being executed. The output lists various PHP-related packages and their descriptions, including `graphviz-php`, `php`, `php-bcmath`, `php-cli`, `php-common`, `php-dba`, `php-devel`, `php-embedded`, `php-enchant`, `php-fpm`, `php-gd`, `php-intl`, `php-ldap`, `php-mbstring`, `php-mysql`, and `php-mysqld`. The terminal also shows the public and private IP addresses of the instance: `Public IPs: 3.86.109.150` and `Private IPs: 172.31.86.251`. The bottom of the window shows a taskbar with various application icons and system status information, including the temperature (32°C) and the time (11:03 AM 9/20/2022).

```
[root@ip-172-31-86-251 ec2-user]# yum search php
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
===== N/S matched: php =====
graphviz-php.x86_64 : PHP extension for graphviz
php.x86_64 : PHP scripting language for creating dynamic web sites
php-bcmath.x86_64 : A module for PHP applications for using the bcmath library
php-cli.x86_64 : Command-line interface for PHP
php-common.x86_64 : Common files for PHP
php-dba.x86_64 : A database abstraction layer module for PHP applications
php-devel.x86_64 : Files needed for building PHP extensions
php-embedded.x86_64 : PHP library for embedding in applications
php-enchant.x86_64 : Enchant spelling extension for PHP applications
php-fpm.x86_64 : PHP FastCGI Process Manager
php-gd.x86_64 : A module for PHP applications for using the gd graphics library
php-intl.x86_64 : Internationalization extension for PHP applications
php-ldap.x86_64 : A module for PHP applications that use LDAP
php-mbstring.x86_64 : A module for PHP applications which need multi-byte string handling
php-mysql.x86_64 : A module for PHP applications that use MySQL databases
php-mysqld.x86_64 : A module for PHP applications that use MySQL databases
```

7. Enabling the mariadb server.

The screenshot shows a terminal window titled "i-0d91ca496db67d7ca (web) | EC2 Instance Connect - Google Chrome". The terminal output is as follows:

```
us-east-1.console.aws.amazon.com/ec2/connect/ec2-user/i-0d91ca496db67d7ca
mariadb.x86_64 1:5.5.68-1.amzn2 mariadb-server.x86_64 1:5.5.68-1.amzn2

Dependency Installed:
perl-Compress-Raw-Bzip2.x86_64 0:2.061-3.amzn2.0.2 perl-Compress-Raw-Zlib.x86_64 1:2.061-4.amzn2.0.2
perl-DBD-MySQL.x86_64 0:4.023-6.amzn2 perl-DBI.x86_64 0:1.627-4.amzn2.0.2
perl-Data-Dumper.x86_64 0:2.145-3.amzn2.0.2 perl-IO-Compress.noarch 0:2.061-2.amzn2
perl-Net-Daemon.noarch 0:0.48-5.amzn2 perl-PlRPC.noarch 0:0.2020-14.amzn2

Complete!
[root@ip-172-31-86-251 ec2-user]# systemctl start mariadb
[root@ip-172-31-86-251 ec2-user]# systemctl enable mariadb
bash: systemctl: command not found
[root@ip-172-31-86-251 ec2-user]# systemctl start mariadb
[root@ip-172-31-86-251 ec2-user]# systemctl enable mariadb
Created symlink from /etc/systemd/system/multi-user.target.wants/mariadb.service to /usr/lib/systemd/system/mariadb.service.
[root@ip-172-31-86-251 ec2-user]#
[root@ip-172-31-86-251 ec2-user]#
[root@ip-172-31-86-251 ec2-user]#
[root@ip-172-31-86-251 ec2-user]#
```

Below the terminal window, the instance ID "i-0d91ca496db67d7ca (web)" is displayed, along with "Public IPs: 3.86.109.150" and "Private IPs: 172.31.86.251". At the bottom of the browser window, a taskbar shows the system clock as 11:12 AM on 9/20/2022, with a temperature of 32°C and "Mostly cloudy" weather.

8. After enabling httpd (apache server) , go to the directory where `cd /var/www/html/`

9. Go to vim and type "<?php phpinfo(); ?>".

```
i-0d91ca496db67d7ca (web) | EC2 Instance Connect - Google Chrome
us-east-1.console.aws.amazon.com/ec2/connect/ec2-user/i-0d91ca496db67d7ca
uid:php.x86_64 : PHP support for Universally Unique Identifier library
php-pecl-memcache.x86_64 : Extension to work with the Memcached caching daemon

Name and summary matches only, use "search all" for everything.
[root@ip-172-31-86-251 ec2-user]# systemctl start mariadb
bash: systemctl: command not found
[root@ip-172-31-86-251 ec2-user]# systemctl start mariadb
bash: systemctl: command not found
[root@ip-172-31-86-251 ec2-user]# systemctl start mariadb
Failed to start mariadb.service: Unit not found.
[root@ip-172-31-86-251 ec2-user]# cd /var/www/html/
bash: cd: /var/www/html/: No such file or directory
[root@ip-172-31-86-251 ec2-user]# ls
[root@ip-172-31-86-251 ec2-user]# pwd
/home/ec2-user
[root@ip-172-31-86-251 ec2-user]#
[root@ip-172-31-86-251 ec2-user]#
[root@ip-172-31-86-251 ec2-user]#
[root@ip-172-31-86-251 ec2-user]# vim index.php
```

i-0d91ca496db67d7ca (web)

Public IPs: 3.86.109.150   Private IPs: 172.31.86.251

Copy the public ip address or public domain name from the console and paste in the web browser.

**OUTPUT :**

[illegible]

**RESULT:**

LAMP instance was successfully created and executed in AWS CLI.