

## TASK 3- DEPLOY A LAMP STACK USING EC2 INSTANCE

LAMP

L-LINUX OPERATING SYSTEM

A-APACHE 2 WHICH IS OPEN-SOURCE WEB SERVER

M-MYSQL (DATABASE)

P- PHP PHP - PHP as a server-side programming language

STEP 1- CREATE A UBUNTU INSTANCE

[Type here]

D

Name

BIKI INSTANCE

Add additional tags

▼ Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

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▼ Summary

Number of instances

Info

1

Software Image (AMI)

Canonical, Ubuntu, 22.04 LTS, ...read more

ami-07d9b9ddc6cd8dd30

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Cancel

Launch instance

Review commands

Key pair name - required

LAMP KEY

Create new key pair

▼ Network settings Info

VPC - required Info

vpc-04643f4dea97e29fa

172.31.0.0/16

(default)

Subnet Info

subnet-02c5d405a7b08401b

VPC: vpc-04643f4dea97e29fa Owner: 905418179079 Availability Zone: us-east-1f

IP addresses available: 4091 CIDR: 172.31.64.0/20

Create new subnet

Auto-assign public IP Info

Enable

Firewall (security groups) Info

New security group

▼ Summary

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Cancel

Launch instance

Services

Q Search

[Alt+S]

EC2

VPC

S3

AWS Auto Scaling

Simple Queue Service

Simple Notification Service

Key Management Service

CloudTrail

Amazon EventBridge

Type Info

ssh

Source type Info

Anywhere

Protocol Info

TCP

Port range Info

22

Description - optional Info

e.g. SSH for admin desktop

Security group rule 2 (TCP, 80, 0.0.0.0/0)

Remove

Type Info

HTTP

Source type Info

Anywhere

Protocol Info

TCP

Port range Info

80

Description - optional Info

e.g. SSH for admin desktop

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

▼ Summary

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Virtual server type (instance type)

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Firewall (security group)

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Cancel

Launch instance

## STEP-2

## CONNECT TO UBUNTU INSTANCE NOW

[Type here]

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```
aws
Services
Search [Alt+S]
N. Virginia Vicky Omprakash Sharma
EC2 VPC S3 AWS Auto Scaling Simple Queue Service Simple Notification Service Key Management Service CloudTrail Amazon EventBridge
Swap usage: 0%
Expanded Security Maintenance for Applications is not enabled.
Updates can be applied immediately.
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
The list of available updates is more than a week old.
To check for new updates run: sudo apt update
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ubuntu@ip-172-31-71-160:~$
```

Step 3- install apache2 now but before these run

Sudo apt update

Sudo apt upgrade

```
ubuntu@ip-172-31-71-160:~$ sudo apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1462 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [285 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [1559 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [259 kB]
```

Cmd 2 –sudo apt install apache2

[Type here]

D

```

ubuntu@ip-172-31-71-160:~$ sudo apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1462 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [285 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [1559 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [259 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1056 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [238 kB]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [22.1 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [42.1 kB]
ubuntu@ip-172-31-71-160:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils bzip2 libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser bzip2-doc
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils bzip2 libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
0 upgraded, 13 newly installed, 0 to remove and 39 not upgraded.
Need to get 2138 kB of archives.
After this operation, 8521 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libapr1 amd64 1.7.0-8ubuntu0.22.04.1
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1 amd64 1.6.1-5ubuntu4.22.

```

## step – 4

Let's allow Apache through the firewall using the following command

`sudo ufw allow in "Apache Full"`

```

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-44-185:~$ sudo ufw allow in "Apache Full"
Skipping adding existing rule
Skipping adding existing rule (v6)
ubuntu@ip-172-31-44-185:~$

```

## STEP 5- INSTALL MYSQL NOW

[Type here]

D

## CMD - sudo apt install mysql-server

```
ubuntu@ip-172-31-71-160:~$ sudo apt install mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libcgi-fast-perl libcgi-pm-perl libclone-perl libencode-locale-perl libevent-pthreads-2.1-7 libfcgi-bin libfcgi-perl libfcgi0ldbl 1:
  libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl liblwp-mediatypes-perl libmecab2 1:
  libtimedate-perl liburi-perl mecab-ipadic mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-s
mysql-server-core-8.0
Suggested packages:
  libdata-dump-perl libipc-sharedcache-perl libbusiness-isbn-perl libwww-perl mailx tinyc
The following NEW packages will be installed:
  libcgi-fast-perl libcgi-pm-perl libclone-perl libencode-locale-perl libevent-pthreads-2.1-7 libfcgi-bin libfcgi-perl libfcgi0ldbl 1:
  libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl liblwp-mediatypes-perl libmecab2 1:
  libtimedate-perl liburi-perl mecab-ipadic mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-s
mysql-server-core-8.0
0 upgraded, 28 newly installed, 0 to remove and 39 not upgraded.
Need to get 29.5 MB of archives.
After this operation, 243 MB of additional disk space will be used.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-71-160:~$ sudo mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.36-0ubuntu0.22.04.1 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> |
```

## NOW INSTALL LAST COMPONENT

### PHD

#### STEP 6-

- BEFORE INSTALL PHP UNDERSTAND THESE COMMAND
- 
- `sudo apt install php libapache2-mod-php php-mysql`
- 

php - installs PHP

- libapache2-mod-php - Used by apache to handle PHP files
- php-mysql - PHP module that allows PHP to connect to MySQL

[Type here]

D

```
mysql> EXIT
Bye
ubuntu@ip-172-31-44-185:~$ sudo apt install php libapache2-mod-php php-mysql
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libapache2-mod-php8.1 php-common php8.1 php8.1-cli php8.1-common php8.1-mysql php8.1-opcache php8.1-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libapache2-mod-php libapache2-mod-php8.1 php php-common php-mysql php8.1 php8.1-cli php8.1-common php8.1-mysql php8.1-opcache php8.1-readline
0 upgraded, 11 newly installed, 0 to remove and 2 not upgraded.
Need to get 5265 kB of archives.
After this operation, 21.8 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Selecting previously unselected package php.
Preparing to unpack .../08-php_2%3a8.1+92ubuntu1_all.deb ...
Unpacking php (2:8.1+92ubuntu1) ...
Selecting previously unselected package php8.1-mysql.
Preparing to unpack .../09-php8.1-mysql_8.1.2-1ubuntu2.14_amd64.deb ...
Unpacking php8.1-mysql (8.1.2-1ubuntu2.14) ...
Selecting previously unselected package php-mysql.
Preparing to unpack .../10-php-mysql_2%3a8.1+92ubuntu1_all.deb ...
Unpacking php-mysql (2:8.1+92ubuntu1) ...
Setting up php-common (2:92ubuntu1) ...
Created symlink /etc/systemd/system/timers.target.wants/phpsessionclean.timer → /lib/systemd/systemd-timers.target.wants/phpsessionclean.timer.
Setting up php8.1-common (8.1.2-1ubuntu2.14) ...

Creating config file /etc/php/8.1/mods-available/calendar.ini with new version

Creating config file /etc/php/8.1/mods-available/ctype.ini with new version

Progress: [ 56%] [#####.....]
```

NOW CONFIRM THE INSTALLATION OF PHP BY USING THESE COMMAND

CMD- `php -v`

```
ubuntu@ip-172-31-44-185:~$ php -v
PHP 8.1.2-1ubuntu2.14 (cli) (built: Aug 18 2023 11:41:11) (NTS)
Copyright (c) The PHP Group
Zend Engine v4.1.2, Copyright (c) Zend Technologies
    with Zend OPcache v8.1.2-1ubuntu2.14, Copyright (c), by Zend Technologies
ubuntu@ip-172-31-44-185:~$
```

FINALLY WE DEPLOY LAMP STACK ON EC2 INSTANCE

[Type here]

D