

# Web Server Lab Setup

- **Table of content**
  - Apache
  - php
  - MySql
  - phpMyAdmin
- **LAMP Architecture**
  - L – Linux
  - A – Apache
  - M – MySql
  - P – PHP

## ✓ Install Apache

- `sudo apt install apache2 -y`

```
kiran@kiran:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  dbconfig-common icc-profiles-free javascript-common libaio1t64 libcgi-fast-perl libcgi-pm-perl libevent-core-2.1-7t64
  libevent-pthreads-2.1-7t64 libfcgi-bin libfcgi-perl libfcgi0t64 libhtml-template-perl libjs-bootstrap5 libjs-codemirror
  libjs-jquery libjs-jquery-metadata libjs-jquery-mousewheel libjs-jquery-tablesorter libjs-jquery-timepicker libjs-jquery-ui
  libjs-popper.js libjs-sizzle libjs-sphinxdoc libjs-underscore libmccrypt4 libmecab2 libprotobuf-lite32t64 libzip4t64
  mecab-ipadic mecab-ipadic-utf8 mecab-utils node-jquery
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64
0 upgraded, 8 newly installed, 0 to remove and 56 not upgraded.
Need to get 1,902 kB of archives.
After this operation, 7,451 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 libapr1t64 amd64 1.7.2-3.1ubuntu0.1 [108 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1t64 amd64 1.6.3-1.1ubuntu7 [91.9 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.3-1.1ubuntu7 [11.2 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-ldap amd64 1.6.3-1.1ubuntu7 [9,116 B]
Get:5 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-bin amd64 2.4.58-1ubuntu8.8 [1,331 kB]
```

- `sudo systemctl start apache2`
- `sudo systemctl enable apache2`
- `systemctl status apache2`

```
kiran@kiran:~$ sudo systemctl start apache2
kiran@kiran:~$ sudo systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable apache2
kiran@kiran:~$ systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
   Active: active (running) since Sun 2026-01-18 10:02:17 UTC; 2min 15s ago
     Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 12756 (apache2)
    Tasks: 6 (limit: 13060)
   Memory: 10.6M (peak: 10.8M)
      CPU: 138ms
```

## ✓ Install php

➤ `sudo apt install php -y`

```
kiran@kiran:~$ sudo apt install php
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  dbconfig-common icc-profiles-free javascript-common libaio1t64 libcgi-fast-perl libcgi-pm-perl libevent-core-2.1-7t64
  libevent-pthreads-2.1-7t64 libfcgi-bin libfcgi-perl libfcgi0t64 libhtml-template-perl libjs-bootstrap5 libjs-codemirror
  libjs-jquery libjs-jquery-metadata libjs-jquery-mousewheel libjs-jquery-tablesorter libjs-jquery-timepicker libjs-jquery-ui
  libjs-popper.js libjs-sizzle libjs-sphinxdoc libjs-underscore libmcrypt4 libmecab2 libprotobuf-lite32t64 libzip4t64
  mecab-ipadic mecab-ipadic-utf8 mecab-utils node-jquery
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  libapache2-mod-php8.3 php-common php8.3 php8.3-cli php8.3-common php8.3-opcache php8.3-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libapache2-mod-php8.3 php php-common php8.3 php8.3-cli php8.3-common php8.3-opcache php8.3-readline
0 upgraded, 8 newly installed, 0 to remove and 56 not upgraded.
Need to get 18.0 kB/4,918 kB of archives.
After this operation, 22.4 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu noble/main amd64 php-common all 2:93ubuntu2 [13.9 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu noble/main amd64 php all 2:8.3+93ubuntu2 [4,076 B]
Fetched 18.0 kB in 3s (5,851 B/s)
Selecting previously unselected package php-common.
(Reading database ... 159260 files and directories currently installed.)
```

## ✓ Install MySQL Server

➤ `sudo apt install mysql-server -y`

```
kiran@kiran:~$ sudo apt install mysql-server -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  dbconfig-common icc-profiles-free javascript-common libjs-bootstrap5 libjs-codemirror libjs-jquery libjs-jquery-metadata
  libjs-jquery-mousewheel libjs-jquery-tablesorter libjs-jquery-timepicker libjs-jquery-ui libjs-popper.js libjs-sizzle
  libjs-sphinxdoc libjs-underscore libmcrypt4 libzip4t64 node-jquery
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-server-8.0 mysql-server-core-8.0
Suggested packages:
  mailx tinycs
The following NEW packages will be installed:
  mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-server mysql-server-8.0 mysql-server-core-8.0
0 upgraded, 6 newly installed, 0 to remove and 56 not upgraded.
Need to get 21.7 MB of archives.
After this operation, 185 MB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu noble/main amd64 mysql-common all 5.8+1.1.0build1 [6,746 B]
Get:2 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 mysql-client-core-8.0 amd64 8.0.44-0ubuntu0.24.04.2 [2,740 kB]
```

➤ `sudo systemctl start mysql`  
➤ `sudo systemctl enable mysql`  
➤ `sudo systemctl status mysql`

```
kiran@kiran:~$ sudo systemctl start mysql
kiran@kiran:~$ sudo systemctl enable mysql
Synchronizing state of mysql.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable mysql
kiran@kiran:~$ sudo systemctl status mysql
● mysql.service - MySQL Community Server
   Loaded: loaded (/usr/lib/systemd/system/mysql.service; enabled; preset: enabled)
   Active: active (running) since Sun 2026-01-18 10:13:52 UTC; 11min ago
     Main PID: 13953 (mysqld)
    Status: "Server is operational"
       Tasks: 38 (limit: 13060)
      Memory: 374.0M (peak: 377.9M)
         CPU: 19.252s
```



## ✓ To create a user for mysql service

- `mysql -uroot`
- `CREATE USER 'root'@'%' IDENTIFIED BY 'kiran@kk';`
- `GRANT ALL PRIVILEGES ON *.* TO 'root'@'%;`
- `FLUSH PRIVILEGES;`

```
root@ubuntu:~# mysql -uroot
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.44-0ubuntu0.24.04.2 (Ubuntu)

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owners.

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

mysql> CREATE USER 'root'@'%' IDENTIFIED BY 'kiran@kk';
Query OK, 0 rows affected (0.07 sec)

mysql> GRANT ALL PRIVILEGES ON *.* TO 'root'@'%;
Query OK, 0 rows affected (0.02 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.02 sec)

mysql> exit
Bye
root@ubuntu:~#
```

## ✓ Install phpMyAdmin

- `sudo apt install phpmyadmin`

```
kiran@kiran:~$ sudo apt install phpmyadmin
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  dbconfig-mysql php-bz2 php-composer-ca-bundle php-curl php-fig-http-message-util php-gd php-getallheaders
  php-google-recaptcha php-mariadb-mysql-kbs php-mbstring php-mcrypt php-mysql php-nikic-fast-route
  php-phpmyadmin-motranslator php-phpmyadmin-shapefile php-phpmyadmin-sql-parser php-psr-cache php-psr-container
  php-psr-http-factory php-psr-http-message php-psr-log php-slim-psr7 php-symfony-cache php-symfony-cache-contracts
  php-symfony-config php-symfony-dependency-injection php-symfony-deprecation-contracts php-symfony-expression-language
  php-symfony-filesystem php-symfony-polyfill-php80 php-symfony-service-contracts php-symfony-var-exporter php-tcpdf php-twig
  php-twig-i18n-extension php-webmozart-assert php-xml php-zip php8.3-bz2 php8.3-curl php8.3-gd php8.3-mbstring php8.3-mcrypt
  php8.3-mysql php8.3-xml php8.3-zip
Suggested packages:
  php-apcu php-dbase php-imagick php-twig-doc php-recode php-gd2 php-pragmarx-google2fa-qrcode php-bacon-qr-code
  php-code-lts-u2f-php-server
The following NEW packages will be installed:
  dbconfig-mysql php-bz2 php-composer-ca-bundle php-curl php-fig-http-message-util php-gd php-getallheaders
  php-google-recaptcha php-mariadb-mysql-kbs php-mbstring php-mcrypt php-mysql php-nikic-fast-route
  php-phpmyadmin-motranslator php-phpmyadmin-shapefile php-phpmyadmin-sql-parser php-psr-cache php-psr-container
  php-psr-http-factory php-psr-http-message php-psr-log php-slim-psr7 php-symfony-cache php-symfony-cache-contracts
  php-symfony-config php-symfony-dependency-injection php-symfony-deprecation-contracts php-symfony-expression-language
  php-symfony-filesystem php-symfony-polyfill-php80 php-symfony-service-contracts php-symfony-var-exporter php-tcpdf php-twig
  php-twig-i18n-extension php-webmozart-assert php-xml php-zip php8.3-bz2 php8.3-curl php8.3-gd php8.3-mbstring php8.3-mcrypt
  php8.3-mysql php8.3-xml php8.3-zip phpmyadmin
```

- `cd /etc/apache2`
- `ls`
- `sudo nano apache2.conf`

- Go to last and add
  - #phpMyAdmin Configuration
  - Include /etc/phpmyadmin/apache2.conf

```
# Include the virtual host configurations:  
IncludeOptional sites-enabled/*.conf  
  
#phpMyAdmin Configuration  
Include /etc/phpmyadmin/apache.conf
```

- service apache2 restart