

Install the database server

Install MySQL

Install the MySQL database through the CentOS package manager (yum) by running the following commands at a command prompt:

```
sudo yum install mysql-server
sudo /sbin/service mysqld start
```

Run the following command:

```
sudo /usr/bin/mysql_secure_installation
```

Press **Enter** to give no password for root when prompted for it.

Allow remote access

If you need to open a port, add the following rules in iptables to open port 3306:

```
iptables -I INPUT -p tcp --dport 3306 -m state --state NEW,ESTABLISHED -j ACCEPT
```

```
iptables -I OUTPUT -p tcp --sport 3306 -m state --state ESTABLISHED -j ACCEPT
```

Start and stop the database service

```
sudo /sbin/service mysqld start
```

```
sudo /sbin/service mysqld stop
```

Start the mysql shell

```
/usr/bin/mysql -u root -p
```

The following `mysql` shell prompt should appear:

```
mysql>
```

Set the root password

```
/usr/bin/mysqladmin -u root password 'new-password'
```

View users

```
SELECT User, Host, Password FROM mysql.user;
```

You now have the platform to create the database for PLP. Following are the steps to initialize the database.

Create a database

```
CREATE DATABASE plp_database;
```

```
SHOW DATABASES;
```

Manage users and privileges

Add users and privileges

```
CREATE USER 'plp_admin'@'localhost' IDENTIFIED BY 'plp_admin';
```

```
SELECT User, Host, Password FROM mysql.user;
```

Grant database user privileges

```
GRANT ALL PRIVILEGES ON plp_database.* to plp_admin@localhost;
```

```
FLUSH PRIVILEGES;
```

This command grants access to the database when your web application is on the same server as the database(localhost).

When your web application is developed on multiple machines (case of developers) we need to use '%' access which is a wild card that allows any ip address if they have username and password.

When you deploy the database on a server, we use ip address of that server to grant access instead of localhost. All other % accesses should be revoked then.

Revoke privileges

```
REVOKE ALL ON *.* FROM plp_admin@localhost;
```

Create Tables

Create user_information table

```
CREATE TABLE `plp_database`.`user_information` (  
  `id` BIGINT(20) NOT NULL,  
  `name` VARCHAR(255) NULL,  
  `email_id` VARCHAR(100) NULL,  
  `org_school` VARCHAR(100) NULL,  
  `gender` INT NULL,  
  `dateofbirth` DATETIME NULL,  
  `contact_no` VARCHAR(100) NULL,  
  `alt_no` VARCHAR(100) NULL,  
  `profile_photo` VARCHAR(255) NULL,  
  PRIMARY KEY (`id`),  
  UNIQUE INDEX `id_UNIQUE` (`id` ASC),  
  UNIQUE INDEX `email_id_UNIQUE` (`email_id` ASC));
```

Create user_credentials table:

```
CREATE TABLE `plp_database`.`user_credentials` (  
  `username` VARCHAR(100) NULL,  
  `password_salt` VARCHAR(100) NULL,  
  `password_hash` VARCHAR(100) NULL,  
  `id` BIGINT(20) NOT NULL AUTO INCREMENT,  
  `related_user_id` BIGINT(20) NOT NULL,  
  UNIQUE INDEX `useremail UNIQUE` (`username` ASC),  
  PRIMARY KEY (`id`),  
  UNIQUE INDEX `id_UNIQUE` (`id` ASC),  
  INDEX `related_user_id_idx` (`related_user_id` ASC),  
  CONSTRAINT `related_user_id`
```

```
FOREIGN KEY (`related_user_id`)  
REFERENCES `plp_database`.`user information` (`id`)  
ON DELETE NO ACTION  
ON UPDATE NO ACTION);
```

Create gender table:

```
CREATE TABLE `gender` (  
  `number` int(11) NOT NULL,  
  `name` varchar(45) NOT NULL,  
  UNIQUE KEY `gender number UNIQUE` (`number`),  
  UNIQUE KEY `name_UNIQUE` (`name`)  
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

Insert gender options in gender table:

```
INSERT INTO gender () VALUES(0,'male'),(1,'female');
```

Create logs table:

```
CREATE TABLE logs  
(user_id VARCHAR(100) NOT NULL,  
  dated DATETIME NOT NULL,  
  logger VARCHAR(150) NOT NULL,  
  level VARCHAR(10) NOT NULL,  
  message VARCHAR(1000) NOT NULL  
);
```