Steps to Upgrade MySQL 5.7 to MySQL 8.0

Upgrading from **MySQL 5.7 to 8.0** requires careful planning to avoid compatibility issues and data corruption. Follow these **step-by-step** instructions for a smooth upgrade.

Step 1: Check MySQL 8.0 Compatibility

Before upgrading, ensure your **5.7 database is compatible with 8.0** using:

```
mysqlcheck -u root -p --all-databases --check-upgrade
```

Fix any errors or warnings before proceeding.

Step 2: Backup Your Database (Very Important)

Before upgrading, **take a full backup** of your MySQL 5.7 database.
Use mysqldump:

```
mysqldump -u root -p --all-databases --routines --triggers --single-transaction > mysql_backup.sql
```

* Or use **MySQL Enterprise Backup** for larger databases.

Step 3: Stop MySQL 5.7 Service

```
systemctl stop mysql
```

Step 4: Uninstall MySQL 5.7

Depending on your OS, use:
For Ubuntu/Debian:

```
apt-get remove --purge mysql-server mysql-client mysql-common mysql-server-core-* mysql-client-core-*
```

Then clean

```
apt-get autoremove
apt-get autoclean
```

For RHEL/CentOS:

```
yum remove mysql mysql-server mysql-libs mysql-common
```

Note: Your databases remain in /var/lib/mysql/

Step 5: Install MySQL 8.0

Add MySQL 8.0 Repository and Install:
For Ubuntu/Debian:

```
wget https://dev.mysql.com/get/mysql-apt-config_0.8.17-1_all.deb
dpkg -i mysql-apt-config_0.8.17-1_all.deb
apt update
apt install mysql-server
```

For RHEL/CentOS:

```
rpm -Uvh https://dev.mysql.com/get/mysql80-community-release-el7-3.noarch.rpm
yum install mysql-server
```

Step 6: Start MySQL 8.0 and Upgrade Database

Start the MySQL service:

```
systemctl start mysql
```

Then, run the MySQL upgrade process:

```
mysql_upgrade -u root -p
```

Step 7: Verify the Upgrade

Check Your Mysql Version :

```
mysql -V
```

Or log in and run:

```
Select version();
```

Test your databases:

```
mysqlcheck -u root -p --all-databases
```

Step 8: Update MySQL Configuration (my.cnf)

Modify `my.cnf` to optimize settings for MySQL 8.0.
For example, check for deprecated variables like `sql_mode`, `default_authentication_plugin`, and adjust them accordingly.

Restart MySQL:

```
systemctl restart mysql
```

Step 9: Test Applications & Fix Issues

- Verify that your **applications** work correctly.
- Check **error logs**:

```
cat /var/log/mysql/error.log
```

Fix any compatibility issues.