Module 7: Database Management

7.1 Introduction to Databases: Understanding MySQL/MariaDB

MySQL and **MariaDB** are popular relational database management systems (RDBMS) used in web hosting to store and retrieve data efficiently. Both are used for storing various types of data, such as website content, user information, and settings.

7.1.1 What is MySQL/MariaDB?

- **MySQL**: A widely-used open-source relational database that uses Structured Query Language (SQL) for database management. It's known for reliability, scalability, and speed.
- **MariaDB**: A fork of MySQL, MariaDB offers more features, better performance in some cases, and greater community-driven support. It's compatible with MySQL, making migration between the two seamless.
- **Why Databases Matter**: Databases store dynamic content for websites (e.g., user accounts, eCommerce

product listings, blog posts), enabling real-time updates, interaction, and functionality.

7.1.2 MySQL/MariaDB in CyberPanel

CyberPanel provides an easy-to-use interface for managing MySQL/MariaDB databases. You can perform essential database tasks like creation, deletion, user management, and backup directly from the control panel.

7.2 Creating and Managing Databases: Using the Database Manager

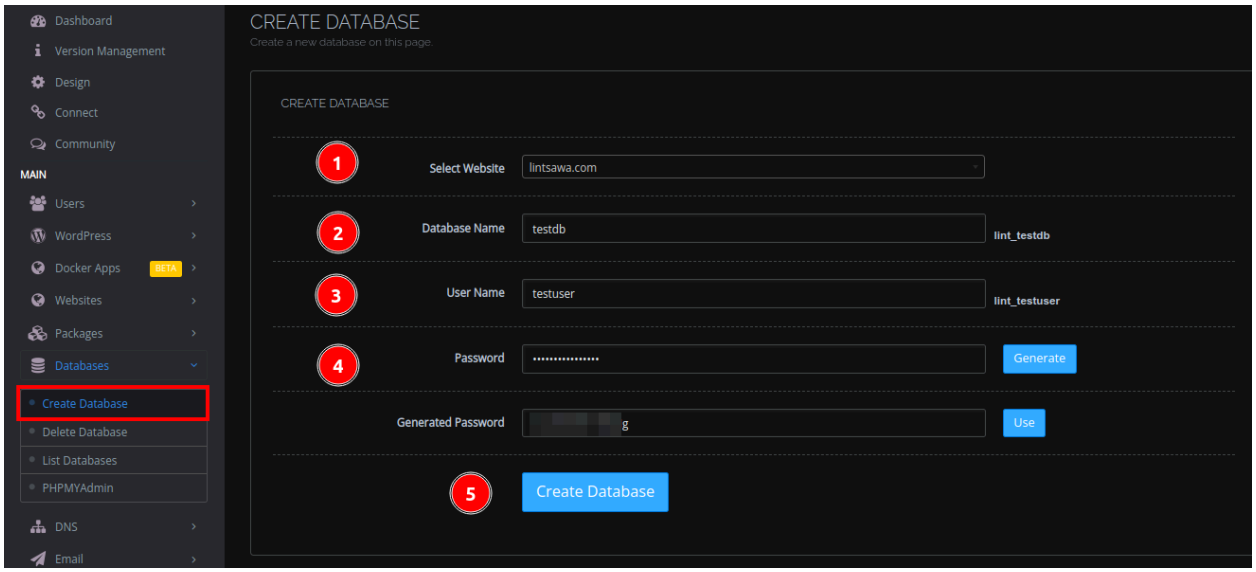
CyberPanel makes database management simple with its built-in **Database Manager**, enabling you to create, modify, and delete databases easily.

7.2.1 Creating a New Database

1. **Navigate to the Database Manager**: In CyberPanel, locate the **"Databases"** section on the left-hand menu.
2. **Click "Create Database"**:
    - **Select Website**: Choose the domain or website the database will be linked to.
    - **Database Name**: Provide a name for your new database.

- **Database Username**: Assign a username for the database.
- **Password**: Set a strong password for the database user.

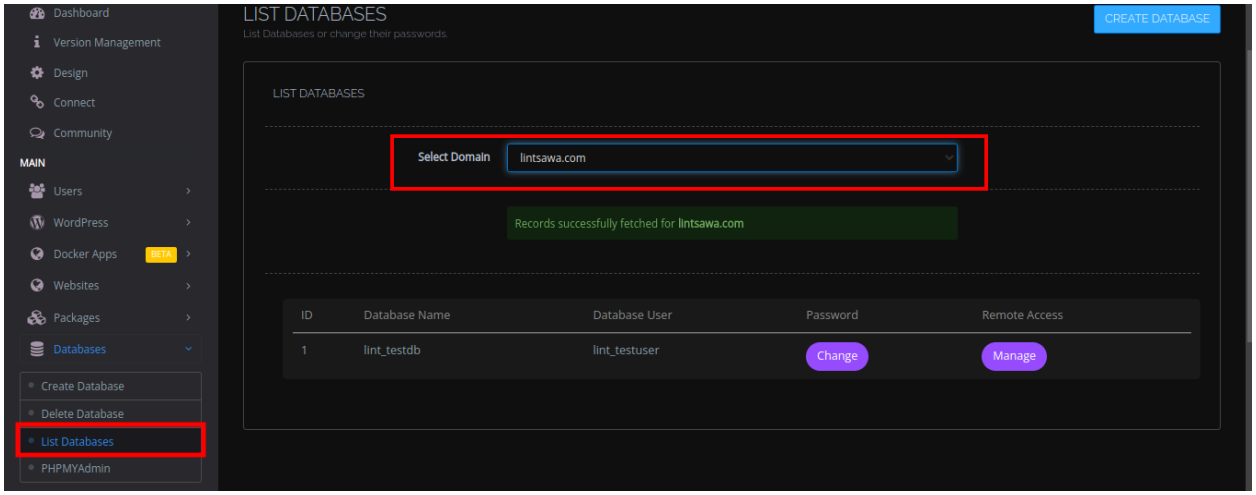
3. **Create the Database**: Click **"Create"** to finalize the process.
4. **Viewing Databases**: You can view and manage all existing databases from the **"List Databases"** section.



7.2.2 Managing Databases

1. **Modify Databases**: From the **"List Databases"** section, you can edit database names, user permissions, or passwords.
2. **Delete Databases**:
   - Select the database you want to delete.

- Click **"Delete"** to permanently remove the database.



7.2.3 Adding and Managing Database Users

1. **Managing Users**: CyberPanel allows you to view, modify, or delete database users.

7.3 Accessing Databases with phpMyAdmin

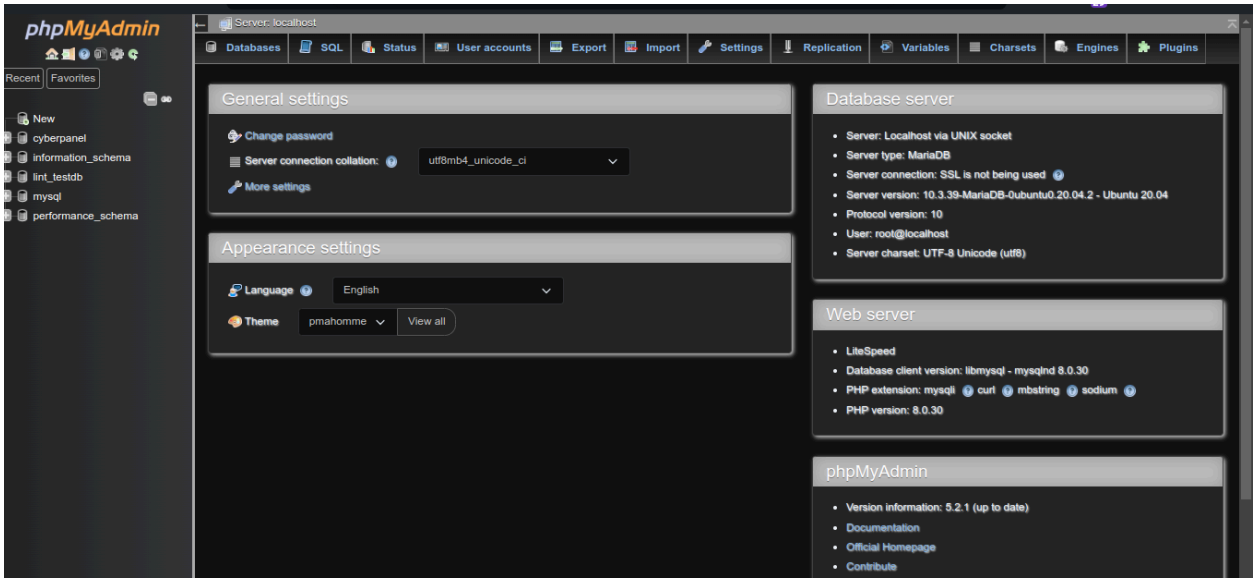
phpMyAdmin is a web-based tool integrated with CyberPanel that allows users to manage MySQL/MariaDB databases. It offers an easy-to-use interface for performing database operations like creating tables, running SQL queries, and importing/exporting data.

7.3.1 Accessing phpMyAdmin

1. **Navigate to phpMyAdmin**: In CyberPanel, go to the **"Databases"** section and click on **"phpMyAdmin"**.
2. **Login to phpMyAdmin**:
    - Use the **database username** and **password** to log in.
    - Alternatively, log in with the **root** MySQL user credentials for full database access.
    - For Cyberpanel , it allows Auto Login to the PHPMyadmin Web Interface.
3. **phpMyAdmin Interface**:
    - From here, you can view all the databases associated with your account.
    - Use phpMyAdmin to execute SQL queries, manage database tables, or inspect the structure and relationships of your data.

7.3.2 Common Tasks in phpMyAdmin

- **Creating Tables**: You can create new tables for storing data in your database by specifying table structure, data types, and indexes.
- **Running Queries**: Use the **"SQL"** tab to execute custom queries for retrieving or updating data.
- **Managing Data**: Insert, update, delete, or search records in the database tables directly from the phpMyAdmin interface.
- **Import/Export Databases** : You can easily import or export your databases for seamless migrations.



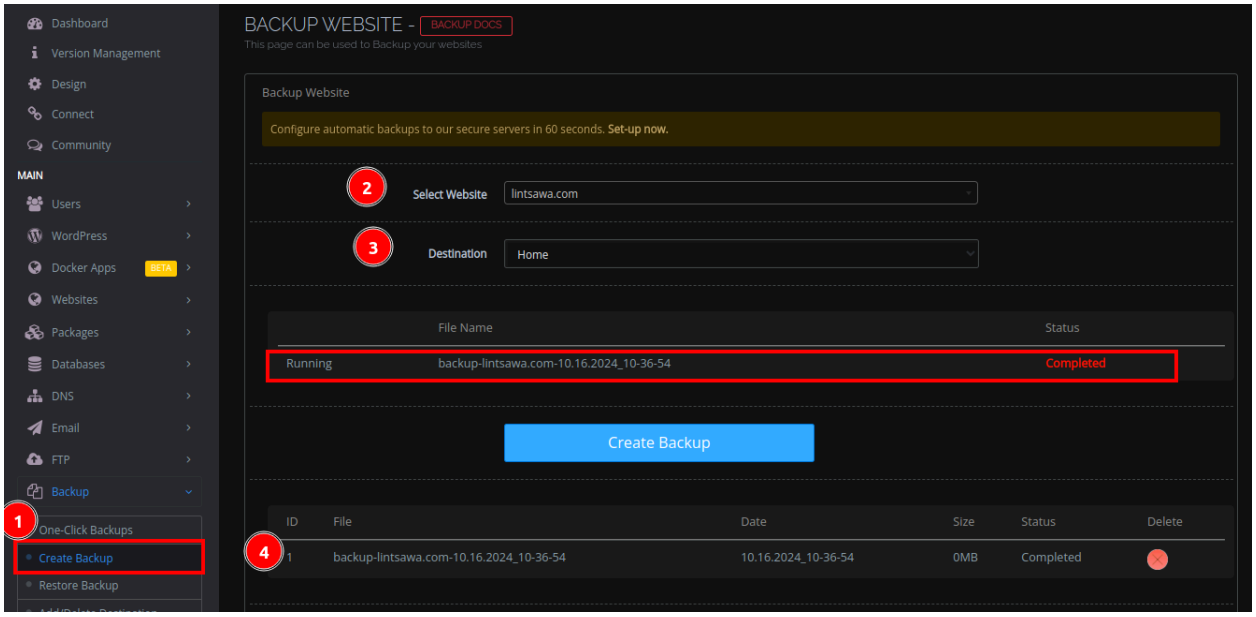
7.4 Backing up and Restoring Databases

One of the critical tasks for database administrators is ensuring data safety through regular backups. CyberPanel allows you to back up and restore databases efficiently.

7.4.1 Backing up Databases

1. **Navigate to the Backup Section**: In CyberPanel, go to the **"Backup"** section under **"**

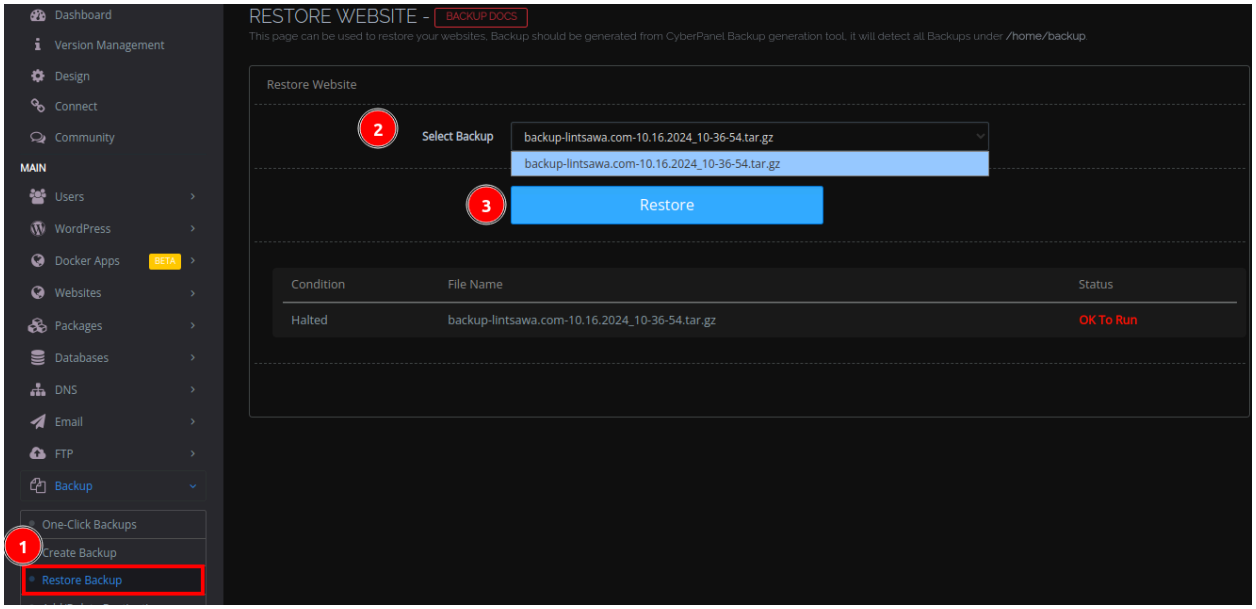
   Perform a full backup of your website.



7.4.2 Restoring Databases

1. **Navigate to Restore Section**: In the **"Backup"** area, select the **"Restore"** option.

   This will restore your whole website content , databases included.



NOTE: For cyberpanel to restore the backup, the backup must be in the location /home/backup/backupfile.tar.gz

If you can’t see the option to select backup, login to your server via SSH and move the generated backup from /home/yourdomain.com/backup/backupfile.tar.gz to /home/backup/backupfile.tar.gz

7.4.3 Using phpMyAdmin for Backup/Restore

You can also use **phpMyAdmin** to back up and restore databases:

1. **Exporting Database**:
    - In phpMyAdmin, select the database you want to back up.
    - Click **"Export"** and choose the export format (usually `.sql` or `.zip`).
2. **Importing Database**:
    - To restore a database, go to the **"Import"** tab in phpMyAdmin.
    - Upload the `.sql` file and click **"Go"** to restore the database.