

SOLICITEL

Backend Installation Guide

Software Engineering 2 Team 5 - 2024

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1. INTRODUCTION

1.1 Purpose

This document provides an installation guide for the Solicitel backend application developed through Django. To provide a comprehensive guide for the deployment in production of this web application.

1.2 Scope

This document provides a step-by-step guide to install and deploy the application. It outlines the necessary libraries and packages, with links to download the required tools. Additionally, supplementary tutorials are included for the installation and configuration of these tools. Throughout the guide, pictures of the expected results, console outputs, and example configuration files are provided to assist users.

2. INSTALLATION MANUAL

2.1 Pre-requisites

To ensure that the development environment is configured correctly, it is essential to follow the steps outlined in this section. The operating systems and software components mentioned have been tested and are compatible with this application.

Compatible operating systems:

- macOS Sonoma or later versions
- Windows 10 or later versions

This guide will be focused on macOS and Windows 11, which will be taken as references for the execution of python commands.

Software Components

- Database service: MySQL 8.0.39

Instructions for macOS and Windows:

1. Visit the official MySQL website and download version 8.0.39 and then follow the installation instructions: <https://dev.mysql.com/doc/refman/8.4/en/installing.html>

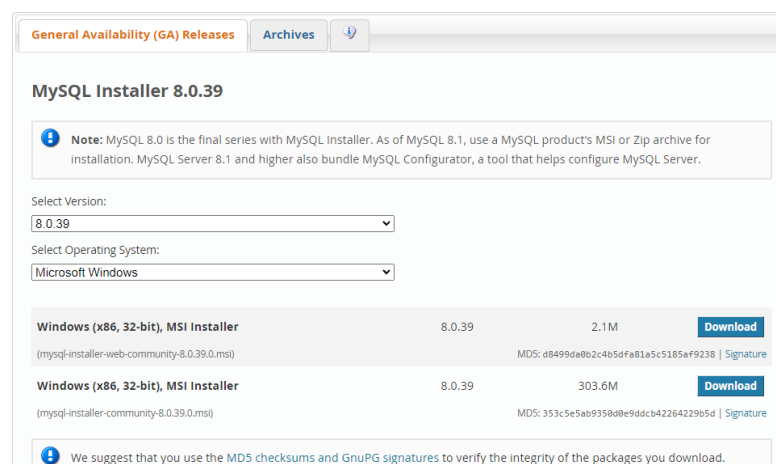


Figure 1 Official MySQL download page showing the selection of version 8.0.39 and operating system.

2. Complete the installation process, which will install MySQL.

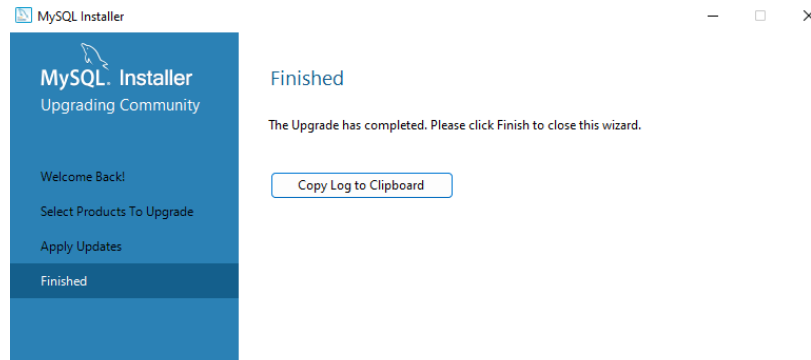


Figure 2 MySQL final installation step.

3. Verify the installation by opening the terminal and running the following commands:

Windows

mysql --version

macOS

brew info mysql

4. If MySQL is not recognized as a command, open a new terminal and check the service again.
5. Follow the steps for root user configuration and set a secure password.

Programming language: Python

Python is a programming language compatible with the most widely used operating systems such as Windows, macOS and GNU Linux based systems.

Instructions for macOS and Windows:

1. Visit the official MySQL website and download version 8.0.39 and then follow the installation instructions: <https://www.python.org/downloads/>



Figure 3 Official MySQL download page showing the selection of version 8.0.39 and operating system.

2. Complete the installation process, which will install MySQL.

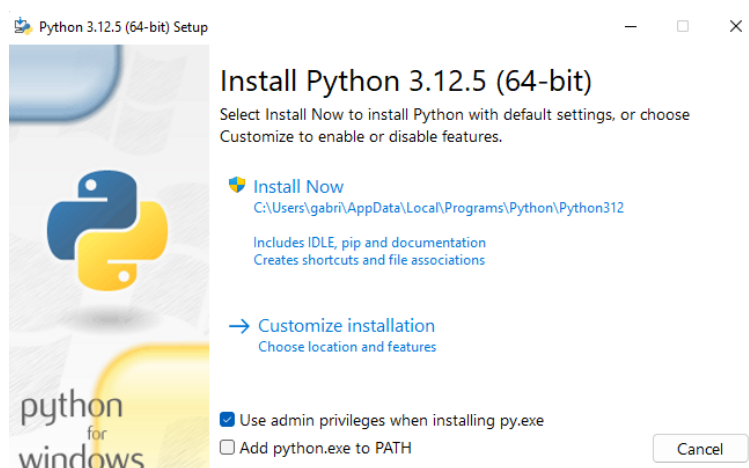


Figure 4 Initial Python installer step.

3. Verify the installation by opening the terminal and running the following commands:

Windows

`python --version`

macOS

`python3 --version`

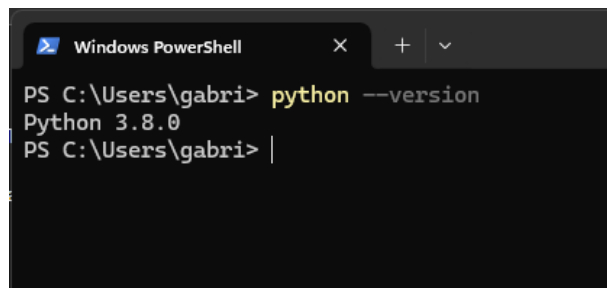
A screenshot of a Windows PowerShell terminal window. The title bar says 'Windows PowerShell'. The prompt is 'PS C:\Users\gabri>'. The user has entered the command 'python --version' in yellow text. The output is 'Python 3.8.0'. The prompt is now 'PS C:\Users\gabri> |'.

Figure 5 Verification of Python installation on Windows

2.2 Pre-Installations Tasks

Before proceeding with the installation, it is essential that you make sure that all tools, applications and frameworks have been downloaded correctly as they may cause compatibility problems, unexpected errors or failures during development. Verify that each version is the correct one for your system. Once confirmed, you can continue with the installation steps.

Source Code

Download the app source code file from the Github Repository:

<https://github.com/itconsultore/espoltel-compras>

To get the source code, follow the steps below:

1. Go to the repository provided in the link above.
2. Click on the green button that says Code.
3. Select the Download ZIP option as indicated in the image below to download the entire contents of the repository as a ZIP file.

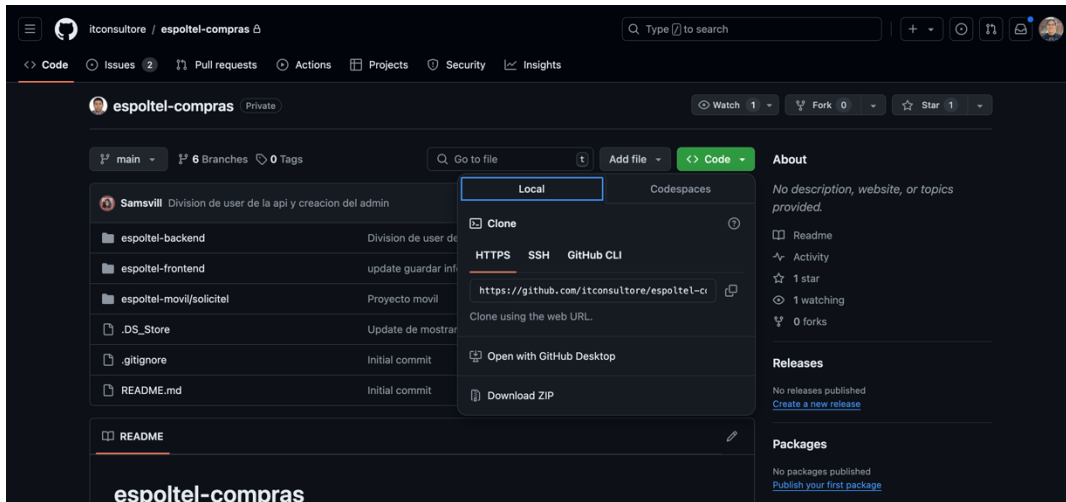


Figure 6 Download the source code in ZIP format from GitHub

Code Editing Tool

For editing the source code of the espotel-compras project, it is recommended to use a modern code editor. Visual Studio Code is the preferred choice for this project due to its robust feature set, including integrated Git, debugging tools, and extensions support.

1. Download Visual Studio Code:

Visit the official [Visual Studio Code download page](#) and select the version appropriate for your operating system. The image below shows the download options available for Windows, macOS, and Linux.



Figure 7 Official Visual Studio Code download page

2. Install Visual Studio Code:

Follow the installation instructions provided on the download page or within the installer. Once installed, open the `espoltel-compras` folder in Visual Studio Code.

2.3 Installation Procedure

1. Open the project:

Begin by opening the folder of the project that you previously downloaded from GitHub using the Visual Studio Code tool. The project structure should be organized as expected, with key files like `settings.py` located in the `espoltel-backend` directory.

2. Create a new virtual environment:

In the visual studio code terminal, navigate to `espoltel-compras/espoltel-backend/` directory and then execute the following commands to create and start a new virtual environment

Windows

```
python -m venv myenv
myenv\Scripts\activate
```

macOS

```
python3 -m venv myenv  
source myenv/bin/activate
```

```
PS C:\Users\gabri\Downloads\espolitel-compras\espolitel-backend> python -m venv myenv  
PS C:\Users\gabri\Downloads\espolitel-compras\espolitel-backend>  
PS C:\Users\gabri\Downloads\espolitel-compras\espolitel-backend> myenv\Scripts\activate  
(myenv) PS C:\Users\gabri\Downloads\espolitel-compras\espolitel-backend> |
```

Figure 8 Creation and initialization of a virtual environment

3. Packages installation

To run the Django project correctly, a series of packages must be installed. Once the virtual environment has been created and started, run the following command:

```
pip install -r requirements.txt
```

```
Downloading https://files.pythonhosted.org/packages/72/21/307200f9301449b293e214ac598e01fadd0970ac003e40f1add0f1d0001  
/MarkupSafe-2.1.5-cp38-cp38-win_amd64.whl  
Collecting colorama; platform_system == "Windows" (from click>=8.1.3->Flask->-r requirements.txt (line 4))  
Downloading https://files.pythonhosted.org/packages/d1/d6/3965ed04c63042e047cb6a3e6ed1a63a35087b6a609aa3a15ed8ac56c221  
/colorama-0.4.6-py2.py3-none-any.whl  
Installing collected packages: backports.zoneinfo, sqlparse, tzdata, typing-extensions, asgiref, django, django-restframe-  
work, django-cors-headers, mysqlclient, zipp, importlib-metadata, itsdangerous, MarkupSafe, Jinja2, blinker, colorama, c  
lick, Werkzeug, Flask, pyjwt, django-restframework-simplejwt, python-dotenv  
Successfully installed Flask-3.0.3 Jinja2-3.1.4 MarkupSafe-2.1.5 Werkzeug-3.0.3 asgiref-3.8.1 backports.zoneinfo-0.2.1 b  
linker-1.8.2 click-8.1.7 colorama-0.4.6 django-4.2.15 django-cors-headers-4.4.0 django-restframework-3.15.2 django-restfra  
mework-simplejwt-5.3.1 importlib-metadata-8.2.0 itsdangerous-2.2.0 mysqlclient-2.2.4 pyjwt-2.9.0 python-dotenv-1.0.1 sql  
parse-0.5.1 typing-extensions-4.12.2 tzdata-2024.1 zipp-3.20.0  
WARNING: You are using pip version 19.2.3, however version 24.2 is available.  
You should consider upgrading via the 'python -m pip install --upgrade pip' command.  
(myenv) PS C:\Users\gabri\Downloads\espolitel-compras\espolitel-backend> |
```

Figure 9 Output after running `pip install -r requirements.txt` for packages installation

4. Database creation

For this guide the database will be created through the console. Open a new terminal and enter the following commands to create the database:

```
mysql -u root -p
CREATE DATABASE espotel;
```

5. .env creation

For a better handling of variables, an .env file should be created in which global variables necessary for the execution of the project are configured. For this you should create a new file called .env in the espotel-backend folder.

```
DJANGO_SECRET_KEY = 'django - insecure - 2- = 7
= fg6&po!0266%95992wgu(ttoraWr9%6 - l_-)jsobju@ro'
MYSQL_PASSWORD = < your root password >
```

6. Database migrations

Migrations are a tool to manage changes in the database structure in a controlled and orderly manner. To create and perform migrations, use the following commands:

Windows

```
python manage.py makemigrations
```

```
python manage.py migrate
```

macOS

```
python3 manage.py makemigrations
```

```
python3 manage.py migrate
```

```

Applying auth.0001_initial... OK
Applying admin.0001_initial... OK
Applying admin.0002_logentry_remove_auto_add... OK
Applying admin.0003_logentry_add_action_flag_choices... OK
Applying contenttypes.0002_remove_content_type_name... OK
Applying auth.0002_alter_permission_name_max_length... OK
Applying auth.0003_alter_user_email_max_length... OK
Applying auth.0004_alter_user_username_opts... OK
Applying auth.0005_alter_user_last_login_null... OK
Applying auth.0006_require_contenttypes_0002... OK
Applying auth.0007_alter_validators_add_error_messages... OK
Applying auth.0008_alter_user_username_max_length... OK
Applying auth.0009_alter_user_last_name_max_length... OK
Applying auth.0010_alter_group_name_max_length... OK
Applying auth.0011_update_proxy_permissions... OK
Applying auth.0012_alter_user_first_name_max_length... OK
Applying authtoken.0001_initial... OK
Applying authtoken.0002_auto_20160226_1747... OK
Applying authtoken.0003_tokenproxy... OK
Applying authtoken.0004_alter_tokenproxy_options... OK
Applying sessions.0001_initial... OK
PS C:\Users\gabriel\Downloads\espoltel-compras\espoltel-backend>

```

Figure 10 Output of `python manage.py migrate` command displaying all migrations applied

7. Super user creation

The super user will be the user with the necessary permissions to enter the django administrator console from which you can create, edit and delete data from the database. Execute the following command and follow the instructions in console for the creation of this user:

`python3 manage.py createsuperuser`

8. Run the application:

Finally, to start the application, run the following command:

`python3 manage.py runserver`

In case one of the packages has not been installed correctly, you will have to install it manually with the command:

`pip install <package name>`

When the project is fully executed, you will be able to enter the link indicated in the console and use the different paths of the project.

```
○ (venv) hubilogist@Hubilogists-MacBook-Air backend % python3 manage.py runserver
Watching for file changes with StatReloader
Performing system checks...

System check identified no issues (0 silenced).
June 30, 2024 - 07:24:19
Django version 5.0.6, using settings 'espoltel_backend.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CONTROL-C.
```

Figure 11 Console with the project in execution on localhost:8000