Installation Guide DogWalker_API

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Table of contents

1 Introduction

1.1 Purpose

This document is provided an installation guide for the DogWalker_API restful api develop with the Express JS framework. To provide a comprehensive guide for the testing and deployment in production of this API.

The guide is mean to users with basic understanding of node.js cross-platform JavaScript runtime environment , server deployment, basic use of relational databases and de SQL computer language.

1.2 Scope

The document will provide and step by step guide to install , test and deploy the DogWalker_API restful api. It will run down the user to the necessary libraries , packages , application, and tools require for the API.

Links will be provided with the sites to download the require tools and additional tutorials will be supplemented for the installation and configuration of this tools. For the rest of the guide pictures of the expected result, console outputs and example configuration files will be provided.

2 Installation Manual

2.1 Pre-requisites

2.1.1 Compatible operating system:

- Windows 11
- Ubuntu 22.4

Any operating system compatible with node.js should been able to run the API. But not all tools might be supported by this Operating System (OS). The complete list of compatible OS for node.js and installation guides are provided here:

https://nodejs.org/en/download/package-manager

The guide will cover the two main ones: Windows 11 and Ubuntu 22.1

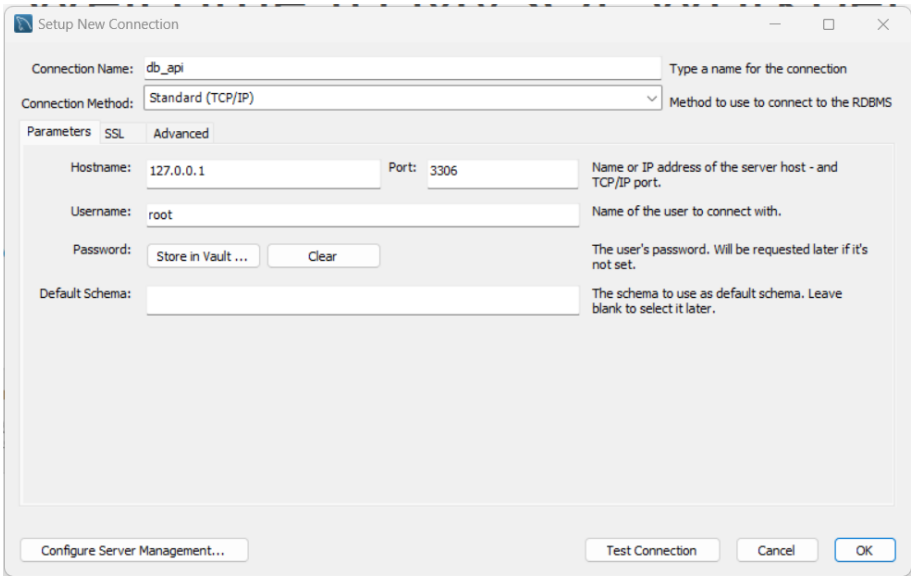
2.1.2 Software components:

Database: MySQL 8.0

- Windows: Download and install MySQL server following the installer: https://dev.mysql.com/downloads/installer/
- Ubuntu: Use the Linux shell install MySQL server using this tutorial: https://www.digitalocean.com/community/tutorials/how-to-install-mysql-on-ubuntu-20-04

MySQL Workbench is also require running SQL scripts and ease of the manager of the data base. For booth OS, the app can be download at https://dev.mysql.com/downloads/workbench/.

Ones the installation proses is competed , a new MySQL connection must be created via the Workbench with the password , user , hostname,and port of your preference. In case that your MySQL database is deploy elsewhere , it is still required to have a local database to test the API



Picture 1 Set up connection window example

Run time environment: Node.js 18.16.1

- Windows: Download node.js throw https://nodejs.org/en/download and complete the installation procedure. The result should install node.js and npm. Check the installation proses running in the Windows console:

  npm -v

  node -v

- Ubuntu: Run in Linux shell to instal node.js and npm :

  sudo apt install nodejs 18.16.1

  sudo apt install npm 9.7.1

  Check the installation proses running in the Windows console:

  node -v

  npm -v

Daemon Process Manager: PM2 9.7.1

To download PM2 Node.js and npm must be installed in the computer. For booth OS consoles run:

npm install npm 2 9.7.1

And check the version with:

npm -v

2.1.3 Frameworks:

All the require frameworks can be installed using npm in the command console regardless of OS:

ORM Model: Sequilize 6.31.1

npm install -g sequelize-cli 6.31.1

npm install -g sequeliz 6.31.1

Testing Framework: Jest 29.5.0

npm install -g jest 29.5.0

2.2 Pre-installation Tasks

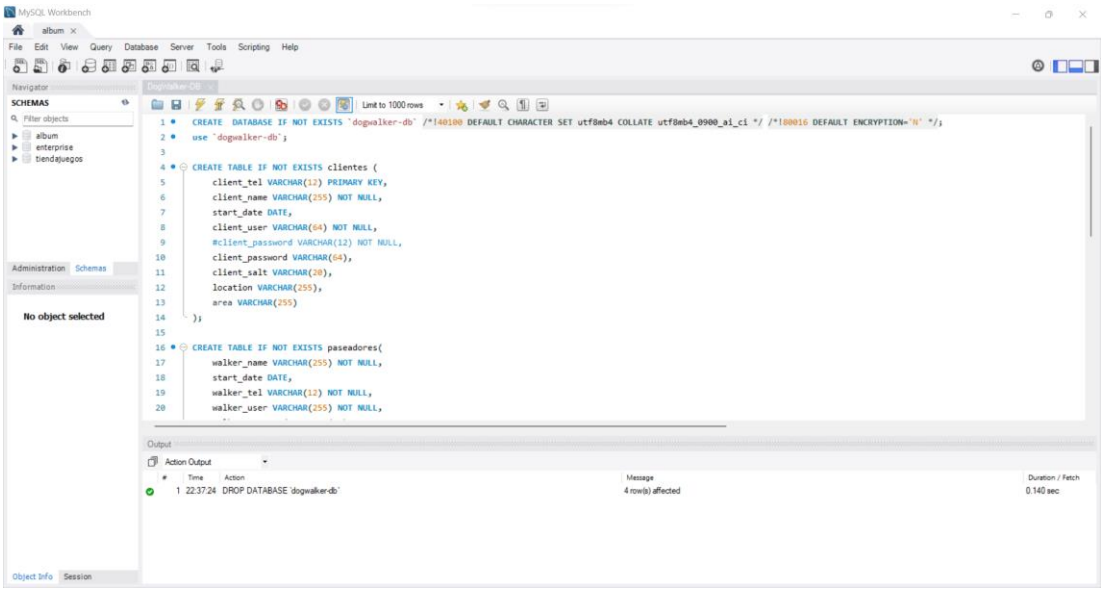
Check all the versions of the previously downloaded apps , tools, and frameworks. The wrong version can cause unexpected unacceptability issues between the api and the computer.

Download the API source code files from : https://github.com/glorona/PuppersApp
Use a code Editing tool of your choice to open the PuppersApp folder and in the computer console open de route for the DogWalker_API folder. For this program the recommended Editing tool is Visual Studio Code:
https://code.visualstudio.com/download

2.3 Installation Procedure

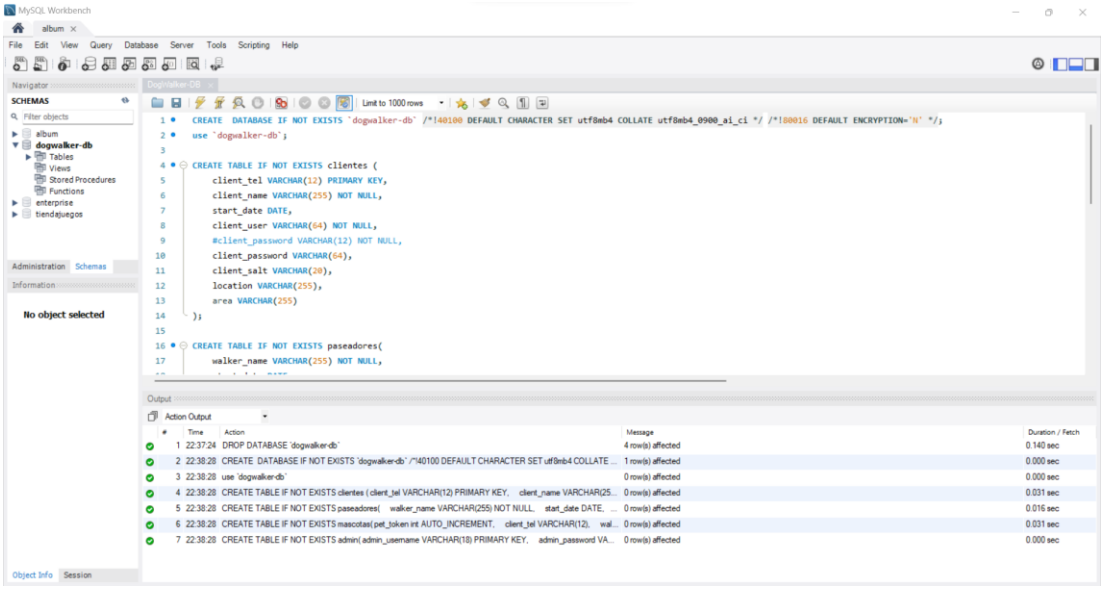
2.3.1 Database

1. In the local database open MySQL Workbench. In the previously created connection open the SQL script ../PuppersApp/sql files/DogWalker-DB.sql



Picture 2 DogWalker-DB.sql examples

2. Run the script. The result should be a new data base call dogwalker-db



Picture 3 DogWalker-DB.sql execution

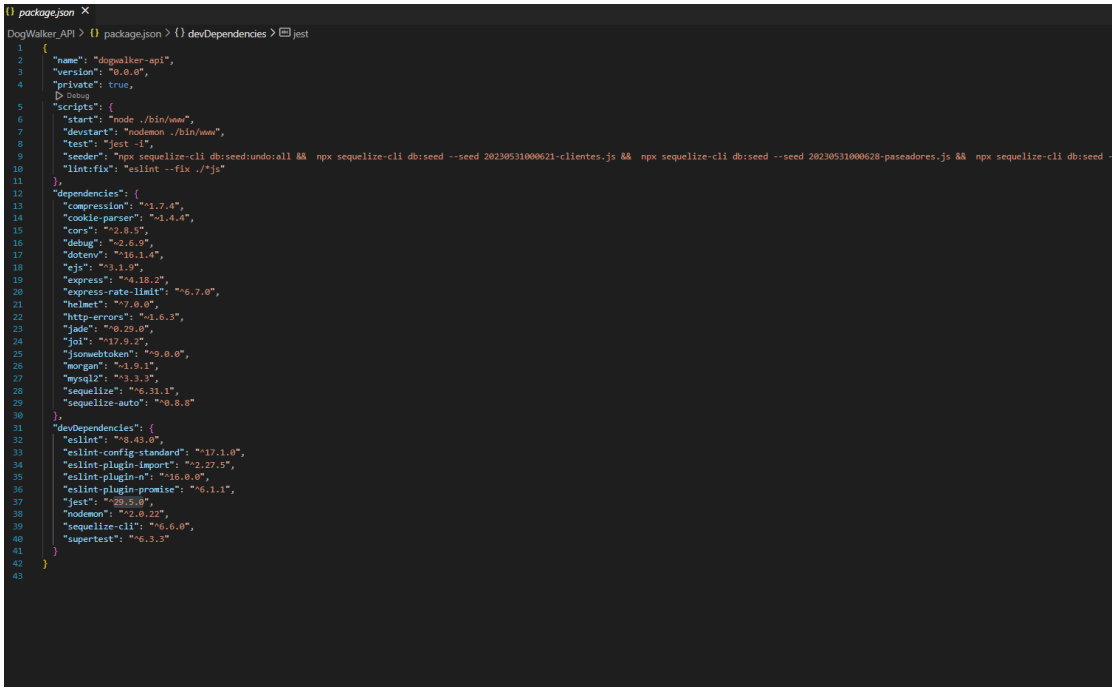
This database is only for testing purposes. The one for deployment must be created with the same script in another connection or if possible in a separate server. The provided script must be used to create the database structure. Changes in names will cause error for the API.

For the deployment database, it is necessary that the database must be populated with data. An SQL script is provided at ../PuppersApp/sql files/DogWalker-Script.sql.

2.3.2 Configuration

Package installation:

A series of libraries must be installed to run the API. These libraries are register in the ../PuppersApp/DogWalker_API/package.json which is supposed to content the next:



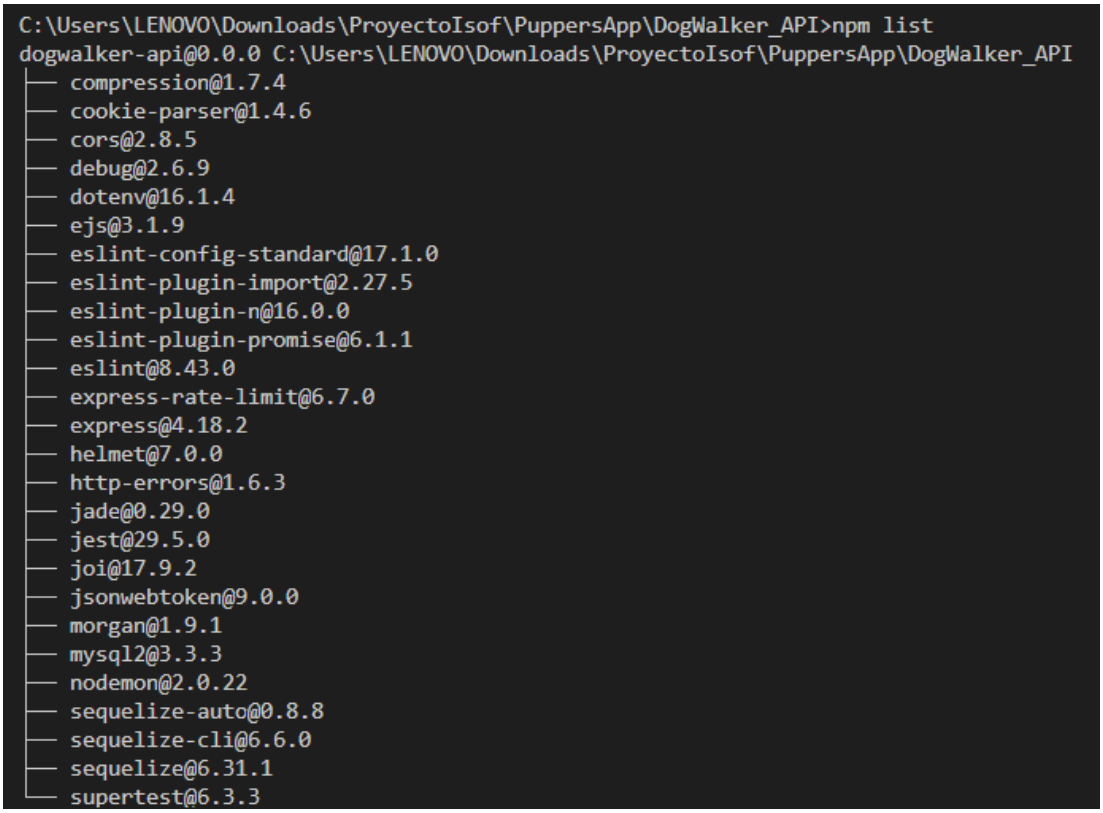
Picture 4 package.json expected contend

In case some package is absent in yout version of package.json, correct the mistake by adding it. The proceed to install alll packages:

1. Run the installation command in the console at ../PuppersApp/DogWalker_API

   npm install.

2. Check that all packages have been install using npm list. The expected output should be:



Picture 5 list of install packages for DogWalker_API

3. In case one of the packages has not been installed run:

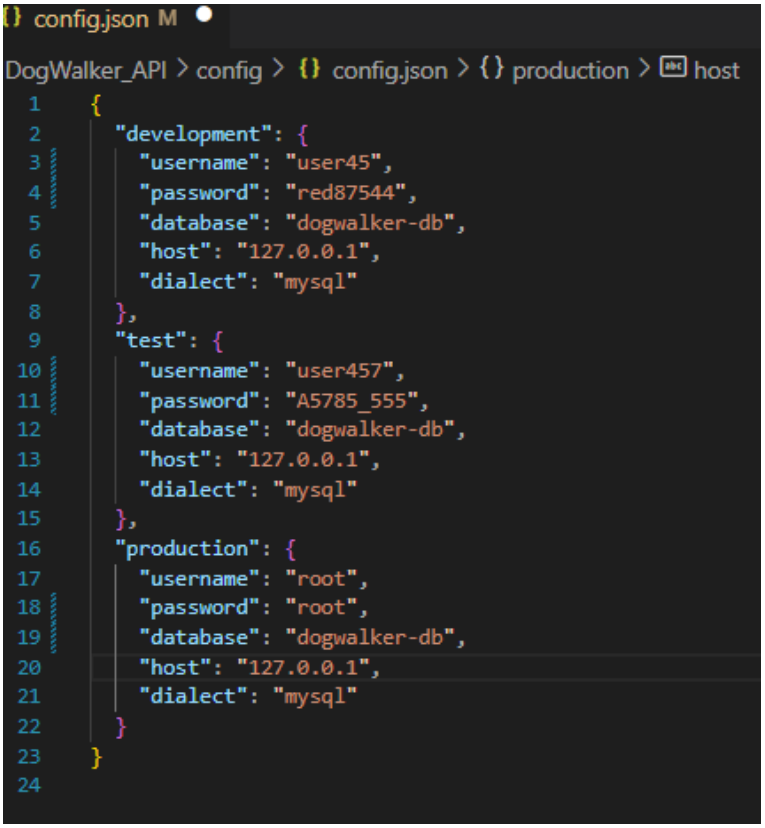
npm install <package name> <package version>

4. In case that a vulnerability is found during any of the installation proses run:

npm audit fix

Database backend connection:

Sequelise uses the ../PuppersApp/DogWalker_API/config/config.json to configure te connection between the database and the framework. An example of this file is:



Picture 6 config.json example

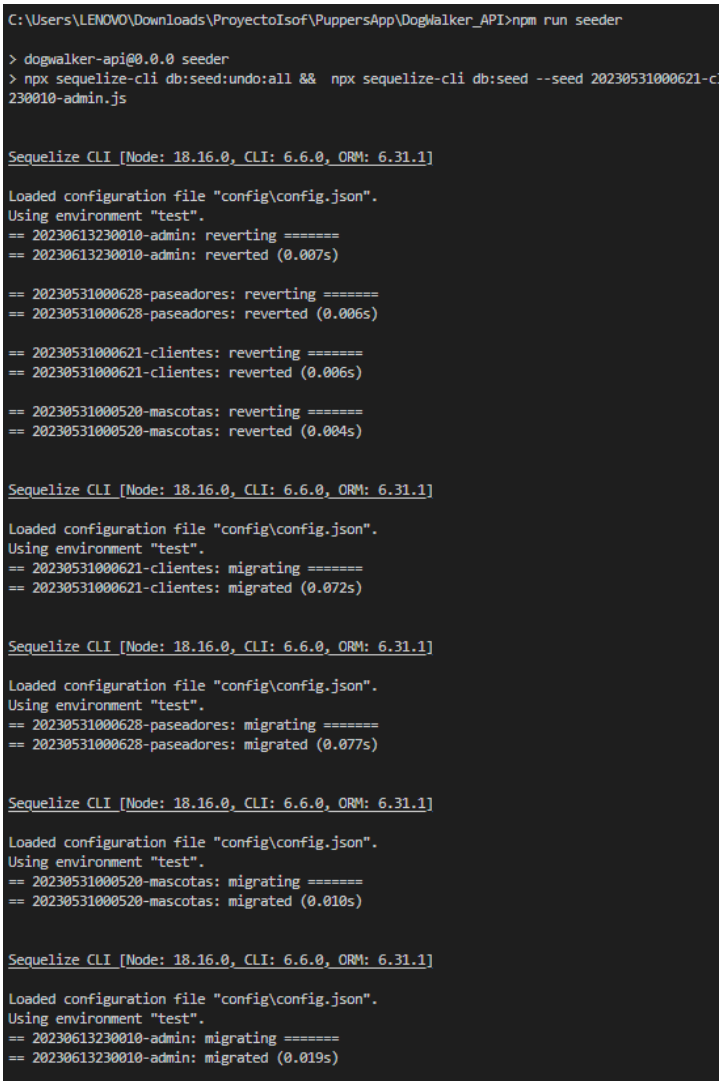
Fild up the coreponding username, password , database and host in the config.json acordin to test database created during the databse intalation and the coresponding data for the production database connection.

2.4 Tests

To secure that the installation process is correct and the connections between database base and API are complete. Tres sets of tests must be run:

1. Change the application to test mode with the console at ../PuppersApp/DogWalker_API using :
    a. Windows: *set NODE_ENV=test*
    b. Linux: *export NODE_ENV=test*
2. Run the seeder script to populate the test database with test data:

npm run seeder



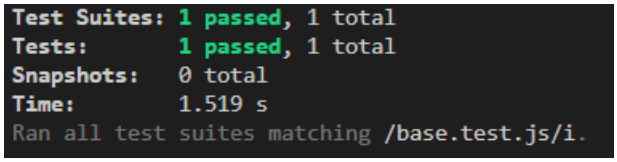
Picture 7 Expected execution of seeder

In case of a failure, the provided test database credentials could be wrong or the database not existed. This seeder must be run before every test to ensure consistency of the database for each test.

3. Run the base.test.js to test the server connection:

npm test base.test.js

The expected result should be Picture 8. Other wise the server is not working, and test cannot be continued.

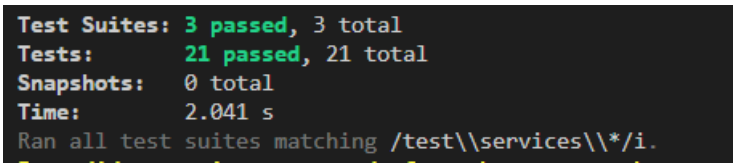


Picture 8 base.test.js successful test

4. Run the test in the ../test/services folder to check se app services/functions:

   *npm test test/services/**

   The expected result should be Picture 9. Otherwise, the services are not working and the api endpoint cannot be tested.

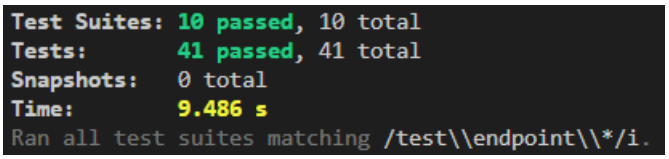


Picture 9 services successful test

5. Run the test in the ../test/endpoints folder to check se API endpoint / routes:

   *npm test test/endpoint/**

   The expected result should be Picture 10. Other wise the data present in the database is not the test data or not all the endpoints are operating.



Picture 10 endpoint successful test

In case more tests need to be executed just for safety. It is necessary to rerun the seeder at step 2 because the test at step 5 update and delete part of the data present in the database. If all the test has been past, the API can be deployed.

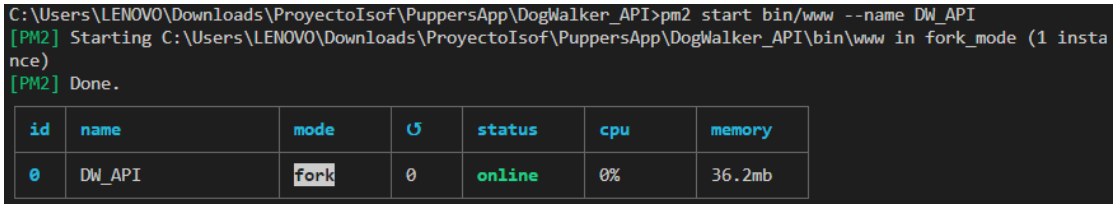
2.5 Application Server:

PM2 9.7.1 will take care of running the server in the background of the computer. For more information about this tool direct to https://pm2.keymetrics.io/docs/usage/quick-start/

1. Change the application to production mode with the console at ../PuppersApp/DogWalker_API using:
    a. Windows: *set NODE_ENV=production*
    b. Linux: *export NODE_ENV=production*
2. Change the server port to one of your preferences by changing the values of PORT at ../PuppersApp/DogWalker_API/.env . If the port is not available, the server will default to 3000.
3. Change the secret TOKEN_JSTVER at .env to a new token.
4. Star the server using the pm2 command:

    pm2 start bin/www --name <app_name>

    If the server is running successfully the proses will be added to pm2 list of proses with the assign app_name:



Picture 11 pm2 prosses list

3. Check that the server is running using one of the next routes in a web browser. (The port may vary depending on the one chosen by you and the data storage ant the production database):
    - http://localhost:4001/mascotas/all


```
[{"pet_token":1,"client_tel":"0994336000","walker_ID":"0955991906","pet_name":"Leia","service":"5P","renovation_date":"2023-12-31","pet_breed":"Pastor Aleman"},
{"pet_token":2,"client_tel":"0998595854","walker_ID":"0927364109","pet_name":"Emma","service":"3P","renovation_date":"2023-12-31","pet_breed":"Golden Retriever"},
{"pet_token":3,"client_tel":"0998824124","walker_ID":"0927364109","pet_name":"Saki","service":"5P","renovation_date":"2023-12-31","pet_breed":"Chihuahua"},
{"pet_token":4,"client_tel":"0998824124","walker_ID":"0927364109","pet_name":"Tiago","service":"5P","renovation_date":"2023-12-31","pet_breed":"Chihuahua"},
{"pet_token":5,"client_tel":"0998824124","walker_ID":"0927364109","pet_name":"Niko","service":"5P","renovation_date":"2023-12-31","pet_breed":"Chihuahua"},
{"pet_token":6,"client_tel":"0994602847","walker_ID":"0927364109","pet_name":"Lali","service":"3P","renovation_date":"2023-12-31","pet_breed":"Chihuahua"},
{"pet_token":7,"client_tel":"0994602847","walker_ID":"0927364109","pet_name":"Emilia","service":"3P","renovation_date":"2023-12-31","pet_breed":"Chihuahua"},
{"pet_token":8,"client_tel":"0994602847","walker_ID":"0927364109","pet_name":"Tiaga","service":"3P","renovation_date":"2023-12-31","pet_breed":"Chihuahua"},
{"pet_token":9,"client_tel":"0994602847","walker_ID":"0927364109","pet_name":"Dolce","service":"3P","renovation_date":"2023-12-31","pet_breed":"Chihuahua"},
{"pet_token":10,"client_tel":"0994468796","walker_ID":"0927364109","pet_name":"Sabi","service":"3P","renovation_date":"2023-12-31","pet_breed":"Ridgeback rhodesian"},
{"pet_token":11,"client_tel":"0995078954","walker_ID":"0956710487","pet_name":"Oreo","service":"5P","renovation_date":"2023-12-31","pet_breed":"Weimeraner"},
{"pet_token":12,"client_tel":"0999778855","walker_ID":"0955991906","pet_name":"Rocky","service":"5P","renovation_date":"2023-12-31","pet_breed":"Labrador"},
{"pet_token":13,"client_tel":"0994862899","walker_ID":"0956710487","pet_name":"Lanoso","service":"5P","renovation_date":"2023-12-31","pet_breed":"Husky"},
{"pet_token":14,"client_tel":"0997203019","walker_ID":"0944184647","pet_name":"Lulo","service":"5P","renovation_date":"2023-12-31","pet_breed":"Labrador"},
{"pet_token":15,"client_tel":"0991349192","walker_ID":"0944184647","pet_name":"Anzo","service":"5P","renovation_date":"2023-12-31","pet_breed":"Weimeraner"},
{"pet_token":16,"client_tel":"0991349192","walker_ID":"0944184647","pet_name":"Millie","service":"5P","renovation_date":"2023-12-31","pet_breed":"Labrador"},
{"pet_token":17,"client_tel":"0999503107","walker_ID":"0952063576","pet_name":"Figo","service":"5P","renovation_date":"2023-12-31","pet_breed":"Standford Terrier"},
{"pet_token":18,"client_tel":"+13052053870","walker_ID":"0944184647","pet_name":"Ecco","service":"5P","renovation_date":"2023-12-31","pet_breed":"Mixed"},
{"pet_token":19,"client_tel":"0997203018","walker_ID":"0944184647","pet_name":"Harry","service":"5P","renovation_date":"2023-12-31","pet_breed":"Sheltie"},
{"pet_token":20,"client_tel":"0999421190","walker_ID":"0944184647","pet_name":"Coco","service":"3P","renovation_date":"2023-12-31","pet_breed":"Beagle"},
{"pet_token":21,"client_tel":"0999400004","walker_ID":"0952063576","pet_name":"Mali","service":"5P","renovation_date":"2023-12-31","pet_breed":"Pastor Belga"},
{"pet_token":22,"client_tel":"0999400004","walker_ID":"0952063576","pet_name":"Noa","service":"5P","renovation_date":"2023-12-31","pet_breed":"Pastor Belga"},
{"pet_token":23,"client_tel":"0999400004","walker_ID":"0952063576","pet_name":"Yuca","service":"5P","renovation_date":"2023-12-31","pet_breed":"Weimeraner"},
{"pet_token":24,"client_tel":"0999400004","walker_ID":"0952063576","pet_name":"Nala","service":"5P","renovation_date":"2023-12-31","pet_breed":"Weimeraner"},
{"pet_token":25,"client_tel":"0968464426","walker_ID":"0952063576","pet_name":"Nala","service":"3P","renovation_date":"2023-12-31","pet_breed":"Border Collie"}]
```


Picture 12 http://localhost:4001/mascotas/all expected response

- http://localhost:4001/clientes/all

Picture 13 http://localhost:4001/clientes/all expected response

In case of a failure, check that your deployment database is working and review all the steps providing during this guide.

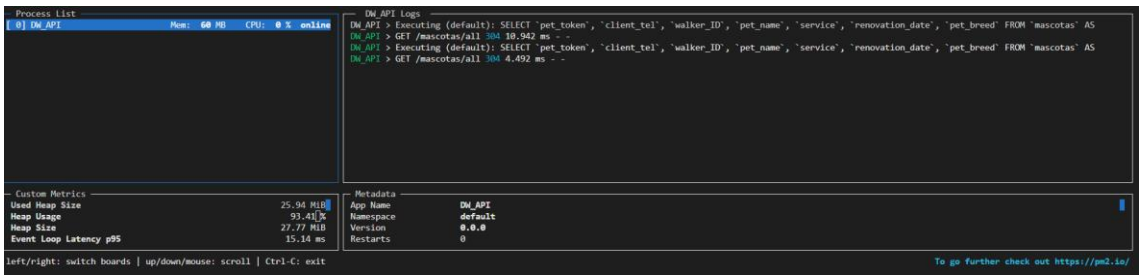
2.6 Post-installation

During execution the server could , in the worst-case scenario, fall. Therefore, pm2 offer some command to control de execution of the server and check its state.

- Restart server: pm2 restart <app_name>
- Reload server: pm2 reload <app_name>
- Stop server: pm2 stop <app_name>
- Delete/shutsown server: delete pm2 delete <app_name>

The current state of the server can be check using:

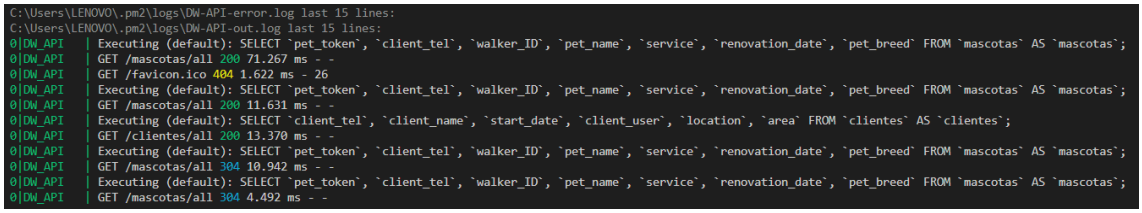
pm2 monit



Picture 14 PM2 Terminal Based Dashboard

And all the logs can be check with:

pm2 logs



Picture 15 PM2 logs example

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