Weighing Motion System

INSTALLATION AND CONFIGURATION

Gautham D

1 Table of Contents

2 Revision History

Version No	Date	Author	Change Log
1	24/02/2024	Gautham D	

3 Setting Up a UBUNTU Virtual Machine

3.1 VM Update

- sudo apt update
- sudo apt dist-upgrade
- sudo apt autoremove
- sudo apt autoclean

3.2 Software Installation

- sudo apt install npm
- sudo apt install python3-pip
- sudo apt install nginx
- sudo apt install ufw
- sudo apt install git
- sudo apt install mysql-server
- sudo apt install nodejs
  - if the old version is installed do the following
    - sudo npm cache clean -f
    - sudo npm install -g n
    - sudo n stable
  - node –version (Should be - 18.04)
- sudo apt install mosquitto
- sudo apt-get install python3-mysqldb libmysqlclient-dev python3-dev
- sudo pip3 install django (Version- 4.2)
- sudo pip3 install djangorestframework
- sudo pip3 install django-cors-headers
- sudo pip3 install xmltodict
- sudo pip3 install dict2xml
- sudo pip3 install gunicorn

3.3 Configure MySQL

- sudo mysql
  - ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'password';
  - exit
- sudo mysql_secure_installation (Password: 'M3r1tT#ch@123')
- mysql -u root -p
  - ALTER USER 'root'@'localhost' IDENTIFIED WITH auth_socket;
  - exit
- sudo mysql
  - create database weighing;
  - CREATE USER 'merit'@'localhost' IDENTIFIED BY 'M3r1tT#ch';
  - GRANT ALL PRIVILEGES ON weighing.* TO 'merit'@'localhost' WITH GRANT OPTION;
  - FLUSH PRIVILEGES;
  - exit
- sudo systemctl restart mysql.service
- sudo systemctl status mysql.service

3.4 Clone Software and Link to Database

- git clone <Merit-Cloud-Software GitHub repository link>
- cd Merit-Cloud-Software
  - python3 manage.py makemigrations
  - python3 manage.py migrate
  - python3 manage.py createsuperuser
    - username: Merit
    - password: M3rit@1234

3.5 Configure and Enable Ngnix

- cd
- sudo mkdir /var/www/Merit/
- sudo cp -r Merit-Cloud-Software/* /var/www/Merit/
- sudo nano /etc/systemd/system/gunicorn.socket
  - [Unit]
  - Description=gunicorn socket
  - [Socket]
  - ListenStream=/run/gunicorn.sock
  - [Install]
  - WantedBy=sockets.target
- Check gunicorn location using “which gunicorn” <GUNICORN LOCATION>
- sudo nano /etc/systemd/system/gunicorn.service
  - [Unit]
  - Description=gunicorn daemon
  - Requires=gunicorn.socket
  - After=network.target
  - [Service]
  - User=www-data
  - Group=www-data
  - WorkingDirectory=/var/www/Merit
  - ExecStart=<GUNICORN LOCATION>\
    - --access-logfile - \

        - --timeout 300 \
        - --workers 3 \
        - --bind unix:/run/gunicorn.sock \
        - merit_cloud.wsgi:application

    - [Install]
    - WantedBy=multi-user.target
- sudo nano /etc/nginx/sites-available/merit.conf
    - server {
        - listen 443;
        - server_name merit merit.com;
        - location = /favicon.ico { access_log off; log_not_found off; }
        - location /static/ {
            - root /var/www/Merit/frontend/build;
        - }
        - location / {
            - include proxy_params;
            - proxy_pass http://unix:/run/gunicorn.sock;
        - }
    - }
- sudo systemctl daemon-reload
- sudo systemctl start gunicorn.socket
- sudo systemctl enable gunicorn.socket
- sudo rm /etc/nginx/sites-enabled/default
- sudo ln -s /etc/nginx/sites-available/merit.conf /etc/nginx/sites-enabled/
- sudo nginx -t
- sudo systemctl restart nginx
- sudo systemctl restart gunicorn.service

3.6 Configure Mosquitto

- sudo nano /etc/mosquitto/mosquitto.conf
    - pid_file /var/run/mosquitto.pid
    - persistence true
    - persistence_location /var/lib/mosquitto/
    - log_dest file /var/log/mosquitto/mosquitto.log
    - include_dir /etc/mosquitto/conf.d
    - allow_anonymous true
    - listener 1883
    - protocol mqtt
    - listener 80
    - protocol websockets
- sudo systemctl restart mosquitto.service
- sudo systemctl restart nginx.service gunicorn.service gunicorn.socket

3.7 (Optional) Enable Firewall

- sudo su
- ufw enable
- ufw allow 'Nginx Full'
- ufw status
- exit

4 Admin Controls

- Add a new user for weighment.
- Add a new weighbridge station.

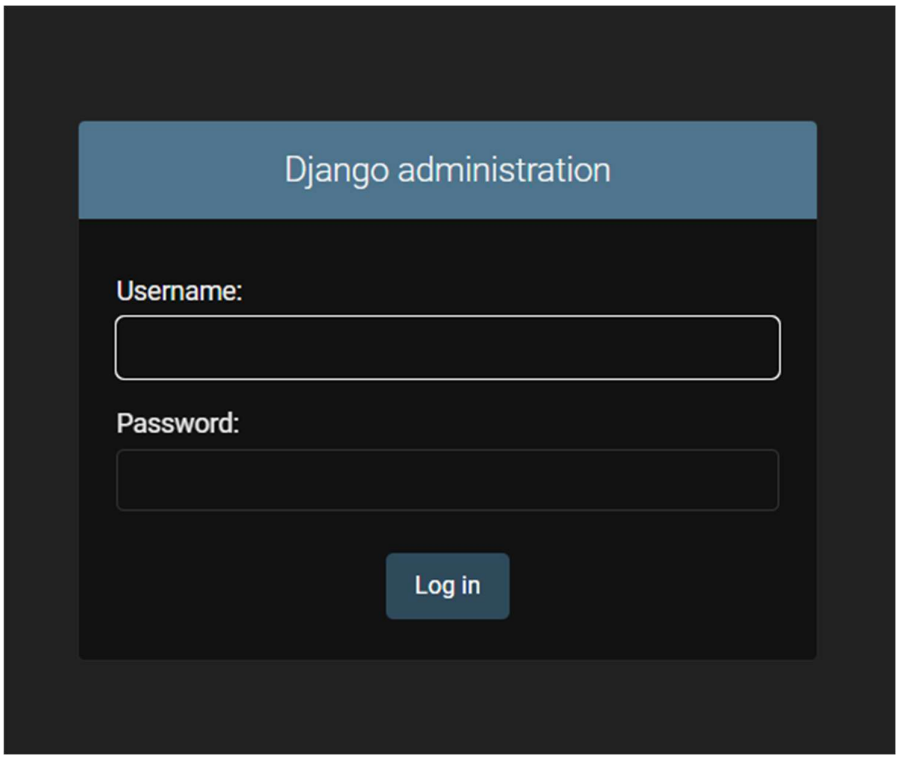
5 Admin Guides

Admin users will be created when setting up the virtual machine.

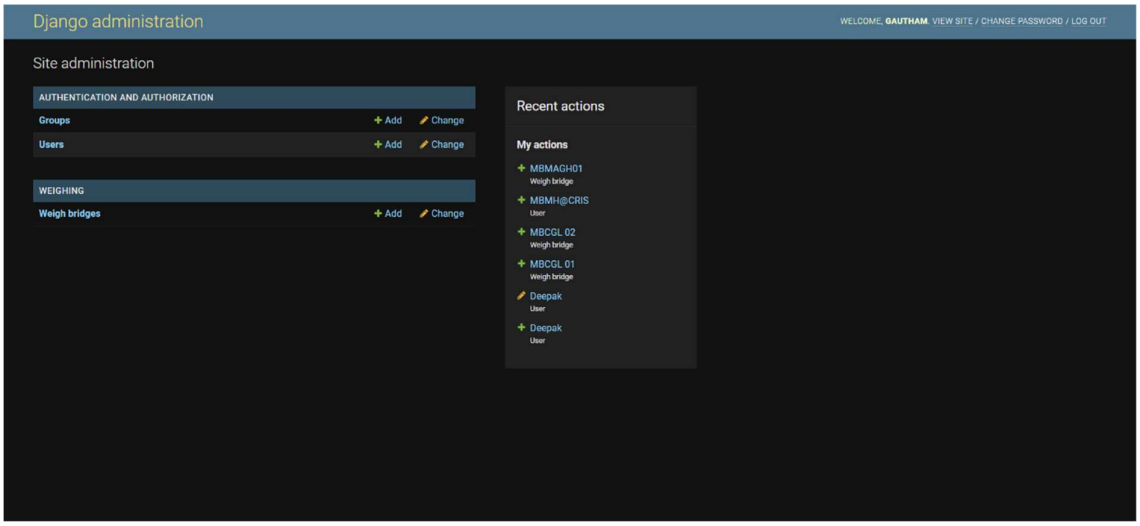
5.1 Guide for adding a new user

5.1.1 Step 1: Login

- Admin page can be accessed by http://<IP Address>:<Port No>/admin
    - Example http://192.168.1.200:443/admin

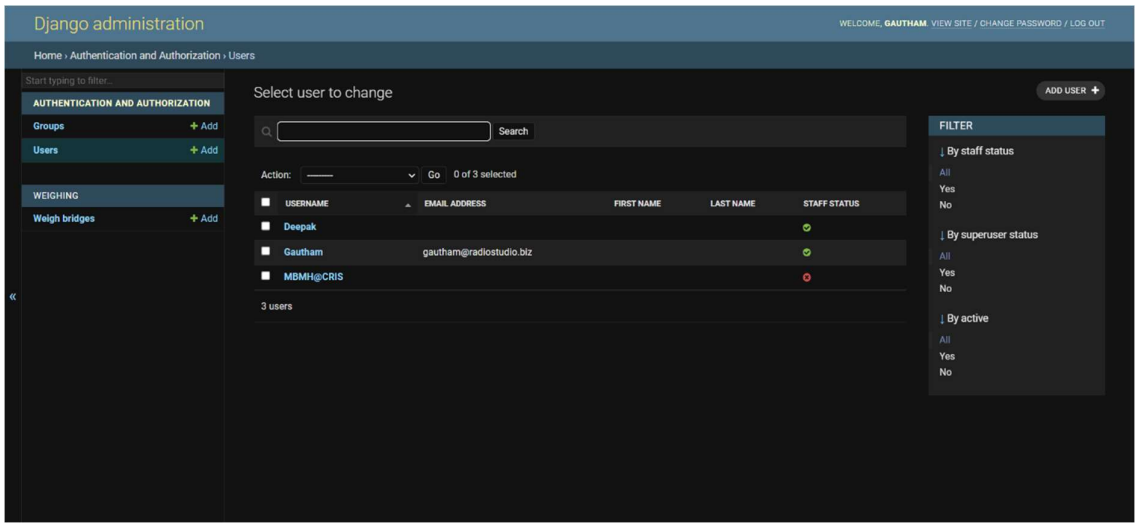


- Login using the admin credentials. When successful, the page redirects to the admin home as shown below

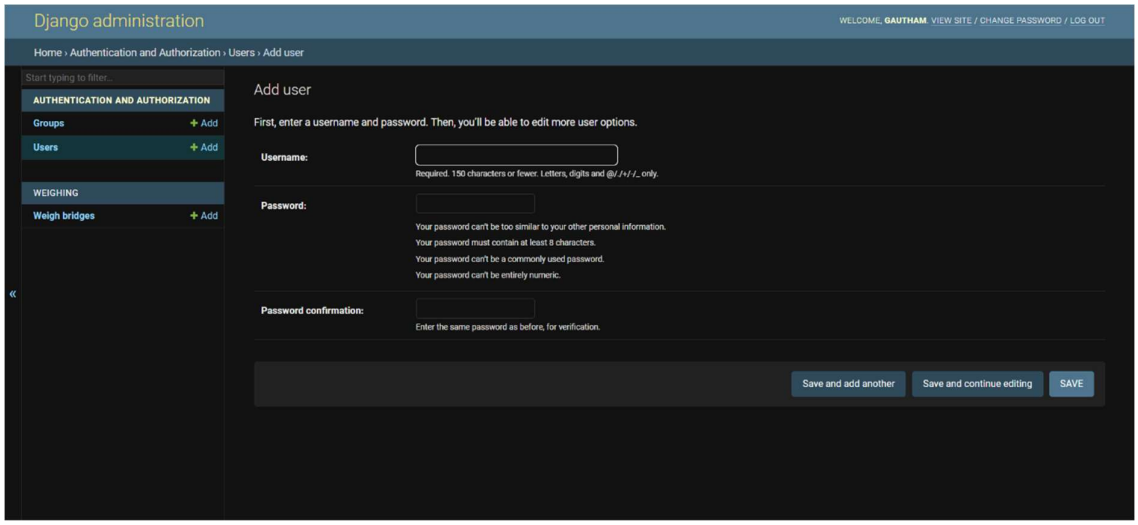


5.1.2 Step 2: Adding New User

- Under the Authentication and Authorization menu click on the Users sub-menu, the page redirects to the Users page, and the list of available users is shown below



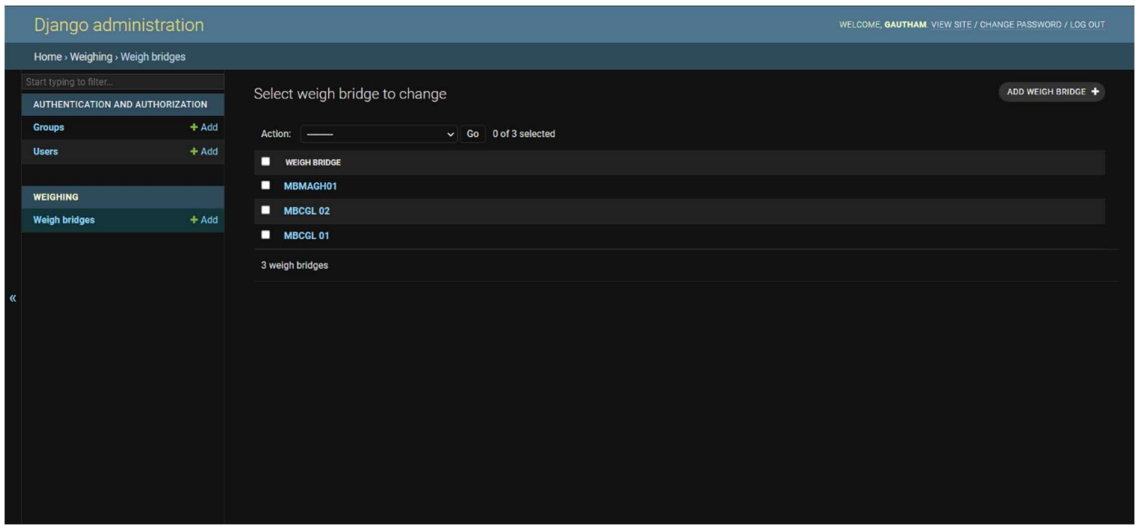
- Click on the username you want to edit or for adding a new user click on the ADD USER button located on the Top-Right of the page and it moves to the next page as shown below



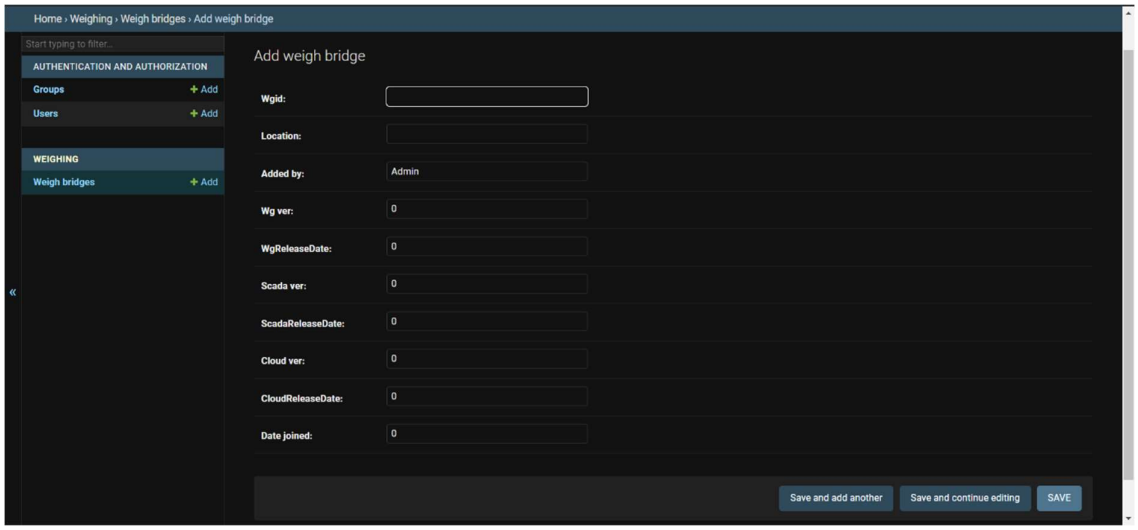
- Add the username and password and click save.

5.1.3 Step 3: Adding New WeighBridge

- Under the Weighing menu click on the Weigh Bridges sub-menu, the page redirects to the Weigh Bridges page, and the list of available WeighBridgeIDs is shown below



- Click on the ADD WEIGH BRIDGE button and the add weigh bridge page will be shown below



- Fill the wgid and location fields alone and click save. The remaining fields will be automatically updated when the Track Logic Controller scripts start in the weighbridge station.
    - Example
        - Wgid: MBMAGH01
        - Location: MAGH

6 References