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**MyEMS**

**MyEMS Team**

**May 22, 2022**



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## **INTRODUCTION**

MyEMS is an industry leading open source Energy Management System that is built on cloud computing, IOT, Big Data and AI technologies. MyEMS can be used for a standard and powerful integrated energy management service platform. MyEMS is being developed and maintained by an experienced development team, and the system's source code is published under MIT license.

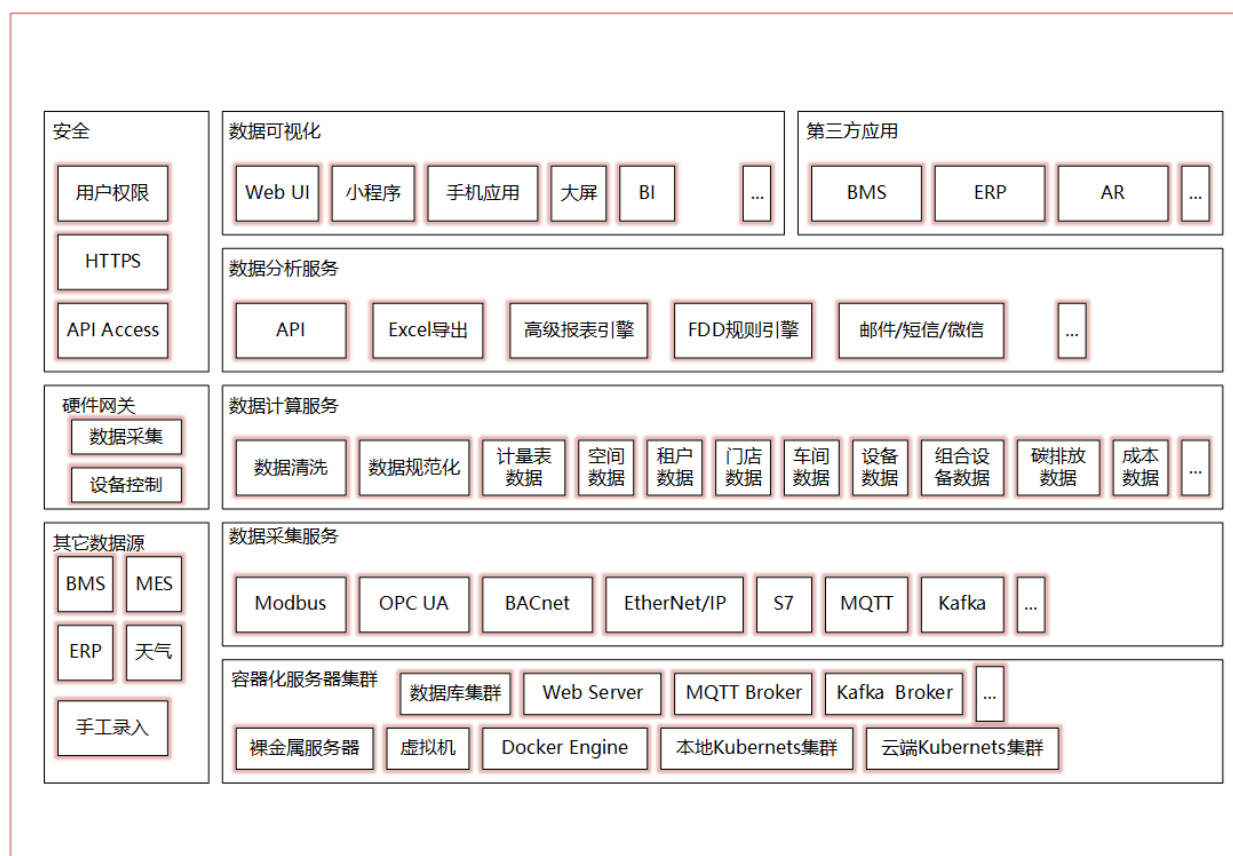
### **1.1 Target audience**

### **1.2 Reasons to use MyEMS**



## ARCHITECTURE

images/architecture-site-view.png



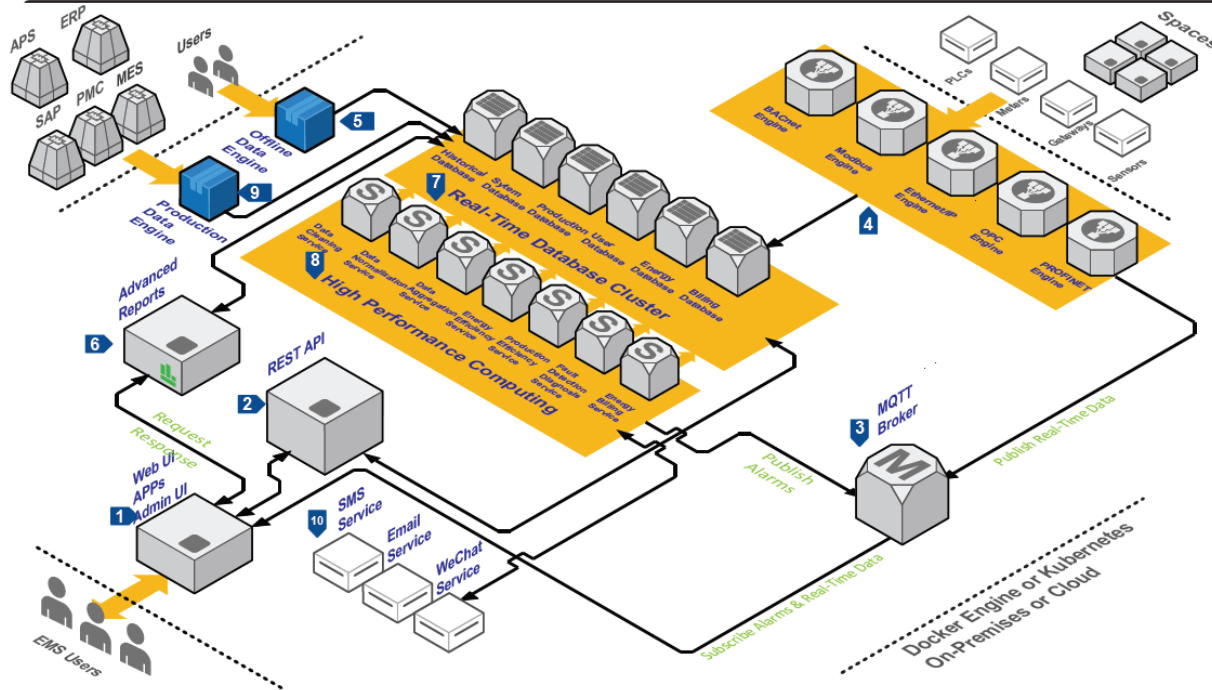




COMPONENTS

MyEMS Software Architecture

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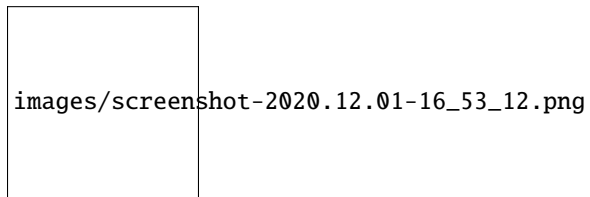
Components  
Overview

- |  |   |  |  |
|--|---|--|--|
| <p>1 Responsive Web UI, Admin UI, iOS APP, Android APP, Mini Programs</p> <p>2 Providing RESTful API to Web UI or Mobile APPs</p> <p>3 Using Broker to implement the MQTT protocol for distributing real-time messages</p> | <p>4 Acquisition of energy data from PLCs, Meters and Sensors</p> <p>5 Import offline energy or production data from Excel</p> <p>6 Reporting server to provide reporting and analytics that can be embedded into the web application</p> | <p>7 Persistent storage for historical data, system, production, users, energy consumption and energy billing</p> <p>8 Data analysis services based on high performance computing platform</p> <p>9 Acquisition of production data</p> | <p>10 Sending energy efficiency alarms by Email, SMS or WeChat</p> |
|--|---|--|--|

Guangyu Zhang  
01/14/2022



**SCREEN SHOTS**





**COMPARE EDITIONS**



**DOWNLOAD**





## INSTALLATION

### 7.1 MyEMS API Service

#### 7.1.1 Introduction

Providing REST API service for MyEMS Web APP, Android APP and iOS APP and/or third parties

#### 7.1.2 Prerequisites

anytree  
simplejson  
mysql.connector  
falcon  
falcon\_cors  
gunicorn  
openpyxl

#### 7.1.3 Installation

- Install anytree:

```
$ cd ~/tools
$ git clone https://github.com/c0fec0de/anytree.git
$ cd anytree
$ sudo python3 setup.py install
```

- Install simplejson:

```
$ cd ~/tools
$ git clone https://github.com/simplejson/simplejson.git
$ cd simplejson
$ sudo python3 setup.py install
```

- Install MySQL Connector:

```
$ cd ~/tools
$ wget https://cdn.mysql.com//Downloads/Connector-Python/mysql-connector-
python-8.0.28.tar.gz
```

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```
$ tar xzf mysql-connector-python-8.0.28.tar.gz
$ cd ~/tools/mysql-connector-python-8.0.28
$ sudo python3 setup.py install
```

- Install Falcon

if you are behind proxy, use `--proxy` parameter

Refer to

<https://falconframework.org/>

<https://github.com/lwcolton/falcon-cors>

<https://github.com/yohanboniface/falcon-multipart>

```
$ mkdir ~/tools/falcon && cd ~/tools/falcon
$ pip3 download cython falcon falcon-cors falcon-multipart
$ export LC_ALL="en_US.UTF-8"
$ export LC_CTYPE="en_US.UTF-8"
$ sudo dpkg-reconfigure locales
$ sudo pip3 install --upgrade --no-index --find-links ~/tools/falcon cython falcon-
→falcon-cors falcon-multipart
```

- Install gunicorn, refer to <http://gunicorn.org>:

```
$ mkdir ~/tools/gunicorn && cd ~/tools/gunicorn
$ pip3 download gunicorn
$ sudo pip3 install --no-index --find-links ~/tools/gunicorn gunicorn
```

- Install openpyxl, refer to <https://foss.heptapod.net/openpyxl/openpyxl>

Get the latest version of `et_xmlfile` from [https://foss.heptapod.net/openpyxl/et\\_xmlfile/](https://foss.heptapod.net/openpyxl/et_xmlfile/)

Get the latest version of `jdcal` from <https://github.com/phn/jdcal>

Get the latest version of `openpyxl` from <https://foss.heptapod.net/openpyxl/openpyxl>

```
$ cd ~/tools
$ wget https://foss.heptapod.net/openpyxl/et_xmlfile/-/archive/1.1/et_xmlfile-1.1.
→tar.gz
$ tar xzf et_xmlfile-1.1.tar.gz
$ cd ~/tools/et_xmlfile-1.1
$ sudo python3 setup.py install
$ cd ~/tools
$ git clone https://github.com/phn/jdcal.git
$ cd ~/tools/jdcal
$ sudo python3 setup.py install
$ mkdir ~/tools/pillow && cd ~/tools/pillow
$ pip3 download Pillow
$ sudo pip3 install --no-index --find-links ~/tools/pillow Pillow
$ cd ~/tools
$ wget https://foss.heptapod.net/openpyxl/openpyxl/-/archive/3.0.7/openpyxl-3.0.7.
→tar.gz
```

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```
$ tar xzf openpyxl-3.0.7.tar.gz
$ cd openpyxl-3.0.7
$ sudo python3 setup.py install
```

- Install gunicorn service for myems-api:

```
$ cd ~/myems-api
$ sudo cp -R ~/myems-api /myems-api
```

Check and change the config file if necessary:

```
$ sudo nano /myems-api/config.py
```

Change the listening port (8000 as an example) in gunicorn.socket:

```
$ sudo nano /myems-api/gunicorn.socket
ListenStream=0.0.0.0:8000
$ sudo ufw allow 8000
```

Setup systemd configure files:

```
$ sudo cp /myems-api/gunicorn.service /lib/systemd/system/
$ sudo cp /myems-api/gunicorn.socket /lib/systemd/system/
$ sudo cp /myems-api/gunicorn.conf /usr/lib/tmpfiles.d/
```

Next enable the services so they autostart at boot:

```
$ sudo systemctl enable gunicorn.socket
$ sudo systemctl enable gunicorn.service
```

Start the services:

```
$ sudo systemctl start gunicorn.socket
$ sudo systemctl start gunicorn.service
```

**Run for debugging and testing:**

```
$ cd myems-api
$ sudo gunicorn -b 127.0.0.1:8000 app:api
```



**ADMINISTRATOR GUIDE**



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CHAPTER

**NINE**

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**USER GUIDE**





**DEVELOPER GUIDE**