



# **Paasmer Edge User Guide**

**version 2.2**

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# **PAASMER**

## **PAASMER IoT**

PAASMER is an IoT Platform As A Service that offers all the pieces of the puzzle to build an IoT solution for all businesses ranging from small to big.

## **PAASMER Edge Software**

PAASMER Edge Software is an IoT edge solution that allows developers to connect IoT devices to the PAASMER cloud platform for data visualization and IoT management. This allows for a quick start approach to IoT development. It offers value-added features like Edge Analytics and Machine Learning at Edge.

## **PAASMER Appliances**

PAASMER appliance is an IoT hardware product with pre-installed paasmer edge software with value-added features.

# **PAASMER Value-added Features**

## **1.PAASMER Edge Analytics**

PAASMER Edge Analytics is a feature in Paasmer Edge which provides you to do analytics on the sensor data. Presently we are providing Filter, Aggregate, Average and Feed monitoring algorithms, where you can analyze your sensor data based on your Analytics condition.

## 2. PAASMER Machine Learning

PAASMER Machine Learning is a feature in Paasmer which provides the users with a generic Machine Learning framework that allows performing Machine Learning with their own dataset and TRAIN & TEST the Machine Learning module using few sets of commonly used Machine Learning Algorithms.

## 3. PAASMER Rules Engine

PAASMER Rules Engine is a cloud feature which enables the users to perform automation and get notifications based on a set of rules created by the user on their own conditions for their business requirements.

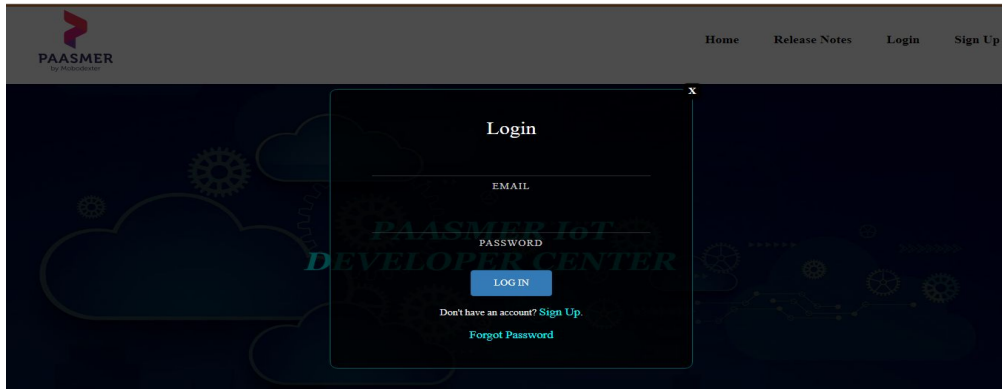
## 4. PAASMER Data Visualization

PAASMER Data Visualization is a data visualization service provided by Paasmer to add a customized visualization block, with a various number of choices to show the feed data as per the business requirements.

# Getting Started with Paasmer Edge Appliance

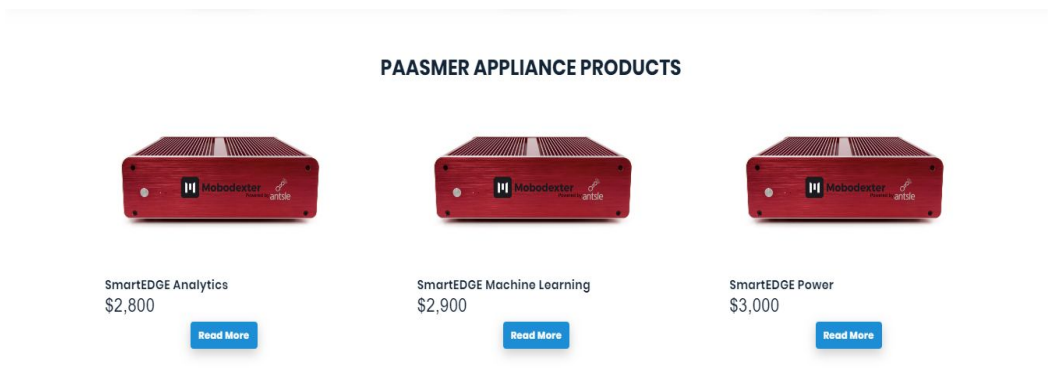
### Step 1: Sign in

Open the [paasmer platform](#) and choose Sign Up and create a new paasmer account. Part of the sign-up procedure involves receiving an email verification token. Enter the token in email verification page. Log in to Paasmer Platform.



## Step 2: Buy Paasmer Edge Appliance from Mobodexter Shop

Go to mobodexter [shop](#) and explore and purchase Paasmer Appliances and their subscription based on your business requirements. Once the order is placed, you will get a confirmation email to your registered Email Id with product details. watch here [how to shop](#)



## Step 3: Connect PAASMER Appliance

Log in to [paasmer platform](#). Go to the purchased device in docker device tab(you can find the device name in the Email sent to you.). The purchased device is inbuilt with a license which can be used for a maximum of 2000 devices

Connect the Appliance hardware to the internet using a LAN cable. After setting up and booting the system, Command line interface will appear on the screen. Get the IP address of

the Appliance using command **ifconfig** for connecting sensor node. To ensure your device is connected with PAASMER platform you can see the device status Online in the web application. Watch here [how to connect](#) paasmer appliance.

## Getting Started with Paasmer Edge Software Products

### Step 1: Buy Paasmer Edge Software product from Mobodexter Shop

Go to mobodexter [shop](#) and explore and purchase Paasmer edge software product and their subscription based on your business requirements. Once the order is placed, you will get a confirmation email to your registered Email Id with product details. watch here [how to shop](#).



### Step 2: Create a device shadow

Log in to [paasmer platform](#) . Go to the purchased license in licenses tab(you can find the license Id in the Email sent to you). The purchased license can be used for a maximum of 2000 devices

Go to Docker Devices and click on Docker-device to add a new Device shadow. Enter a device name and select the paid license shown in the dropdown list to create a device shadow and follow the device setup step to configure the Hardware.

### Step 3: Download and set up the Paasmer Edge on Hardware

Choose your hardware to install the Paasmer Edge software, refer [Hardware Support Matrix](#) to select the suitable hardware.

Download the paasmer edge software [here](#) . Before getting started, go through the Readme file and check if the prerequisites are satisfied. Follow the instructions to connect the IoT device with Paasmer and activate the license. It will establish the connection between the device shadow created in the Paasmer platform and the hardware.

## PAASMER Edge Free Trial

PAASMER allows customers to use the PAASMER Edge solution and PAASMER Cloud services for free with a 15 days free Trial license, that can be availed to evaluate the PAASMER Edge features including Edge Analytics and Machine learning features and PAASMER cloud features including Machine Learning, device/feed management, and configurable data visualization.

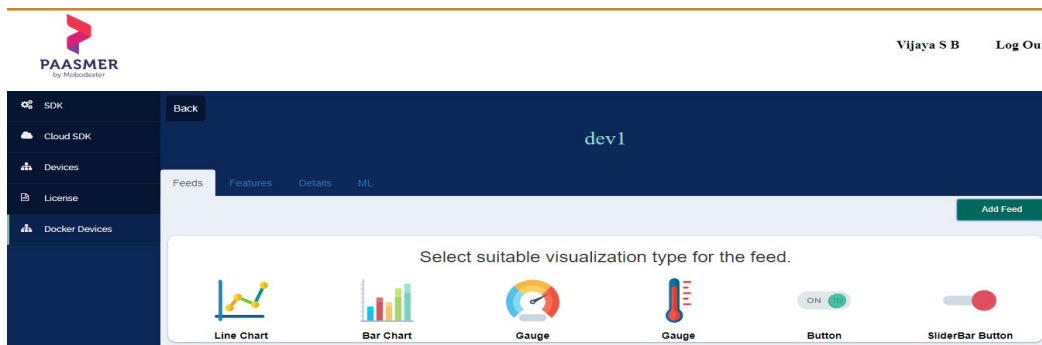
How to avail a free trial,

1. Register at [paasmer platform](#)
2. Add a Docker Device shadow with Free License in PAASMER platform web application
3. Choose your hardware, refer [Hardware Support Matrix](#) to select the suitable hardware.
4. Download PAASMER Edge and Install it on your hardware
5. Your hardware is ready with PAASMER Edge for your Trial now



## Getting Started with Data Visualization

Click on **Add Feed**, select any desired visualization for the feed from the list, fill the feed details and Submit. Watch here [how to use](#) data visualization.



## Getting Started with sensor node to PAASMER Appliance

Log in to [paasmer platform](#) Click on docker devices and select the device. Create the required feeds and its type of visualization. Choose a device for sensor node, refer [Hardware Support Matrix](#) to select suitable device. Download the [PaasmerLibrary](#) on sensornode and refer the sample code example.py in the [PaasmerLibrary](#) directory and modify as per requirement to publish and subscribe to the feeds. Setup sensors, actuators and execute the script. Now the connection will be established between the Sensor node and the Paasmer Edge device. You can use the Paasmer Platform to control the actuator and read the sensor values. Paasmer Edge Analytics and Paasmer Machine Learning can be easily performed from the sensor node using simple functions.

Follow [Readme](#) to build your sensor node script. [watch here](#) how to do it.

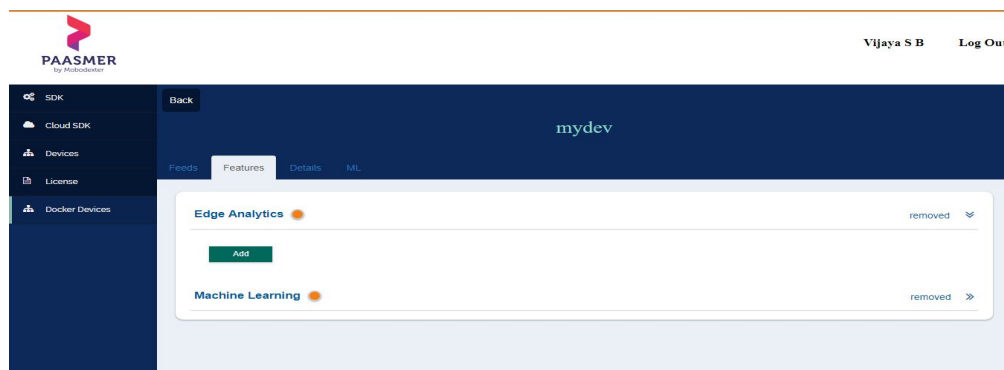
## Getting Started with Feature Management

Go to [Paasmer Platform](#) and choose a docker device. Device status Online shows that the device is connected to PAASMER successfully. Click on the Features tab, to see the current

status of features in the paasmer Edge. Click on button under Edge Analytics or Machine learning to ADD, START, STOP and REMOVE the features in the Edge device. [Watch here](#)

**Expected status :**

- **Running** : Feature is running
- **Exited** : Feature not running/stopped
- **Processing** : Feature installation is in progress
- **Removed** : Feature is removed or not available on the device.



## Getting Started with Edge Analytics

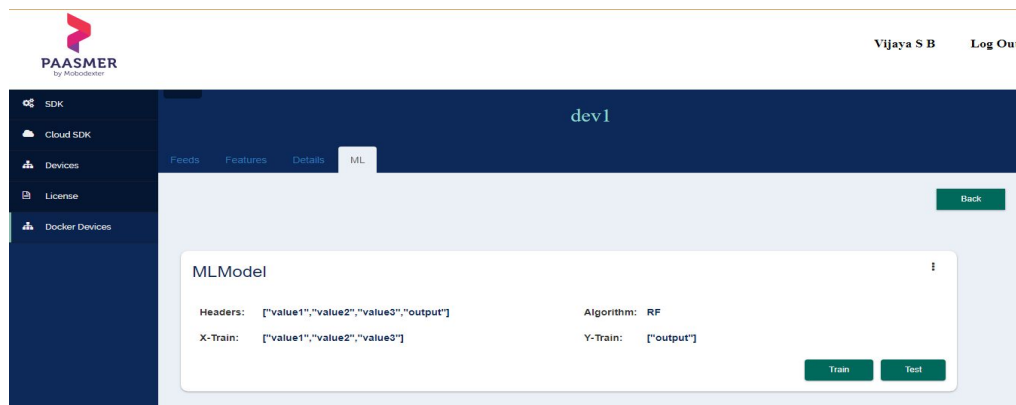
Log in to [Paasmer Platform](#) and select a device in docker device tab. Click on features tab and check status of Edge analytics and make sure it is running. Add Feeds and go to the sensor node e.g. "Raspberry Pi" and refer [readme](#) on how to use the Analytics features to edit sample code example.py script as per your requirement and execute the script. [Watch here](#) for more details.

## Getting Started with Machine Learning

Log in to [Paasmer platform](#) and select a device in the docker devices tab. Click on **ML** tab and select create, enter the required model name and upload sample dataset CSV file. Following this, select the required **Algorithm**, **X and Y train** fields and click on **create**. Once ML module is created train it by clicking **the Train** button. After training successfully

test the model click on **Test** button, enter the sample testing value and submit. This will show you the predicted Output for the entered values. You can also edit the module with a different dataset and try with different Algorithms, X and Y trains to find an efficient Algorithm for your ML requirements.

Click on features tab and make sure Machine Learning is running. go to the sensor node and refer [readme](#) to edit sample code example.py script as per your requirement and execute the script. [Watch here](#) for more details.

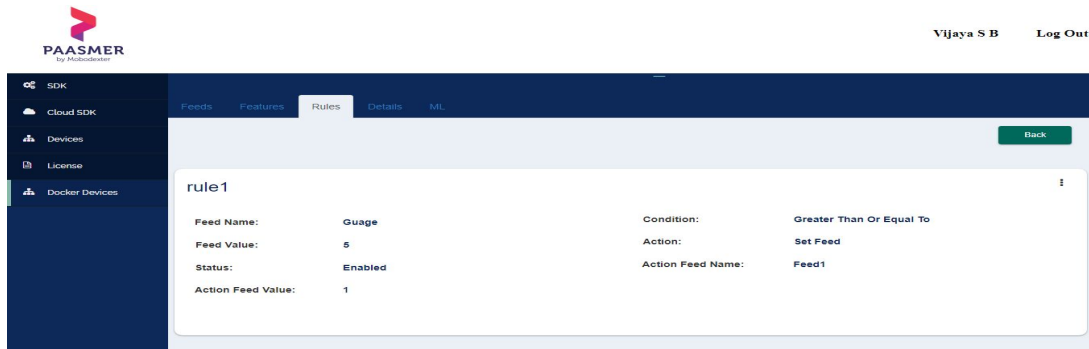


## Getting Started with Rules Engine

Click on **Rules** tab, click **Create rule** button to create a rule, enter the Rule name, select feed for which the rule is to be created, select a condition and its corresponding value, select action to be performed as per your requirement and click on **Create**. Multiple actions can be performed:

- Notification - To receive mail alerts if the feed value meets the condition.
- Set Feed - To control any actuator feed based on condition.

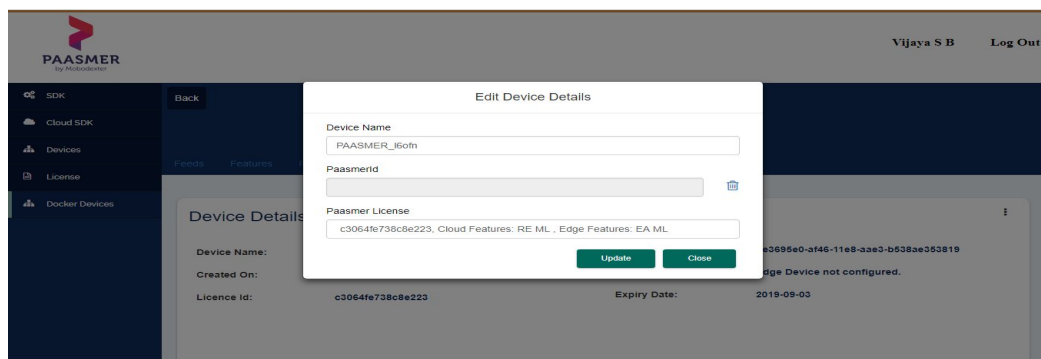
[Watch here](#) for more details.



## Use Cases

### Update the license of the device

Select a device in docker devices, Click on details and click edit in more options and update your license by selecting license in the drop down and click update. When the Paasmer Edge turns online the license will be updated on it. [Watch here](#) for more details.



### Change the physical details of device shadow

In case of change of hardware for the same Paasmer Device and license, Select a device in docker devices, Click on details and click edit in more options and delete existing paasmer Id and click update.

After updating, go to new hardware, [download](#) the Paasmer Edge Software and execute the downloaded run file. it will ask to create a new device, enter 'No' and provide the device name for which you are changing hardware. After successful execution, the new hardware will be registered under Paasmer device.

## **Hardware support matrix**

### **Paasmer Edge IoT Device**

Paasmer Edge Software supports ARM and X86 architecture hardware devices if docker can be installed. Under ARM architecture, it supports Raspberry Pi and it's family of hardware devices with debian, fedora and centos based OS. Under X86 architectures, it supports debian, fedora and centos based OS.

### **Paasmer Sensor Node**

Paasmer Sensor Node can be any hardware device with any OS with pre-installed python and paho-mqtt.