NOVUS
We Measure, We Control, We Record

NOVUS Cloud

INSTRUCTION MANUAL V1.0x A

1 NOVUS CLOUD PLATAFORM

NOVUS Cloud is a dedicated solution platform for Internet of Things that extends the data presentation horizons. Applied with **NOVUS** products, this platform can receive data, store, analyse and presents online measurements of temperature, humidity, pressure, geographic location or any other amount of interest. Internet access to the data of physical measurements can bring benefits mainly to the following sectors: industrial, logistics, health, construction, energy, sanitation and agriculture.

A Modbus **FieldLogger** or an **AirGate-3G** connected to any sensor or device that measures physical quantities can send these measurements to the **NOVUS Cloud**. In temperature logging applications, the **TagTemp-NFC** through Android **LogChart-NFC** application is also able to send their records to the platform.

The platform is secure, scalable and offers an environment for rapid application development, even for people with no programming experience.

The cloud applications are fully customizable, and you can create multiple screens with widgets to display data, configure alarms and events for business rules, send notifications by email and configure scripts to process the data.

2 ACCESS TO THE NOVUS CLOUD PLATFORM

You can access the portal through https://iot.novusautomation.com address. To access the account will need to enter access credentials consisting of user name and password provided at the time of application for the account.

If you have trouble accessing or not have an account on the platform, please contact us by sending an email to iot@novusautomation.com.

3 ACCOUNT PROPERTIES

By registering an account at the **NOVUS Cloud** platform, users can access the portal to edit all information relating to it, such as personal or functional information about the equipment and how access the data.

After login with your username and password to access the account properties, it is necessary to display the top application menu and click in **Account**, as shown in **Fig. 01**.

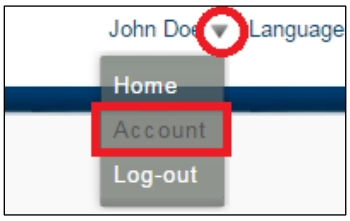

Fig. 01 – Account properties

3.1 USER PROFILE PROPERTIES

The primary user of the application must complete a register of information, where some of these are mandatory or optional, in the User Profile section. As shown in the **Fig. 02**, you can change the full name, time zone, country, city, language and other profile information. After entering the data, you must click on the **UPDATE** button to save the information.

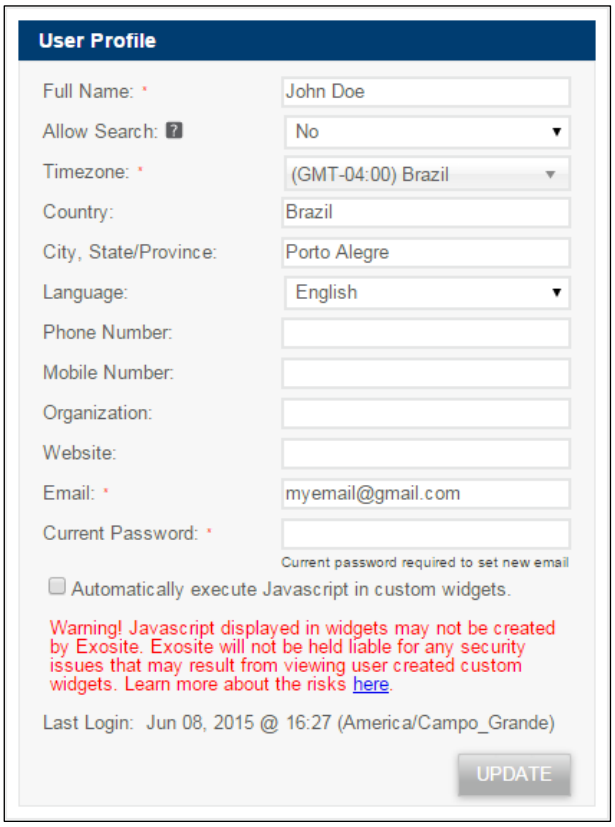

Fig. 02 – User profile

3.2 PASSWORD RECOVERY

If you have forgotten your password, you can recover it through the option "forgot password?" in the website (https://iot.novusautomation.com) or directly using the link https://iot.novusautomation.com/reset. Enter the main email account and click the **SUBMIT** button. You will receive the instructions for password recovery on this email address.

You can add an additional layer of protection in password recovery. In this case, you will must answer correctly the security question at the time of recovery. Access the user profile properties and insert the question and the corresponding answer on Enhanced Security Account, then clicking on **UPDATE**.

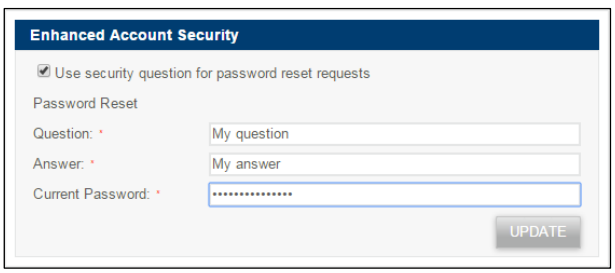

Fig. 03 – Secret question

If you define a security question for password recovery, the link send via email with the instructions for password recovery will direct to the page where you need to answer the secret question, as shown in the **Fig. 04**. After you enter the answer, click on **SUBMIT**.

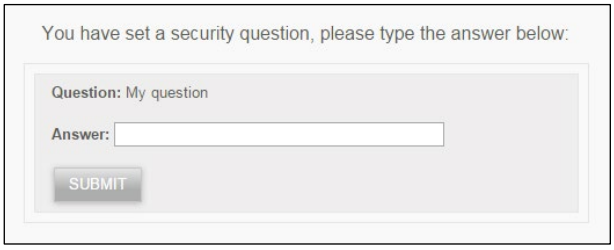

Fig. 04 – Answering the secret question

If the answer entered is correct, the user must enter the new password, confirm it and click on **SUBMIT**.

3.3 RESET PASSWORD

To change the password is necessary to access the Reset Password section, where you must enter the current password and new password. After entering the data, click **UPDATE**.

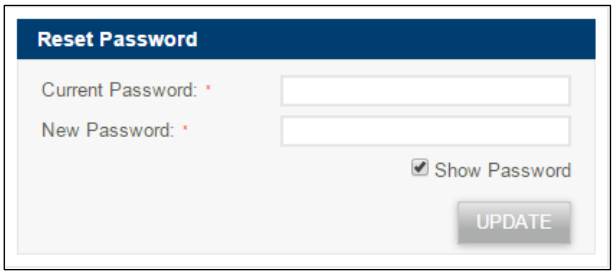

Fig. 05 – Reset password

3.4 CANCEL ACCOUNT

Although you may cancel your account directly on the platform, we do not recommend to be done this way. Contact us by email at iot@novusautomation.com, informing the principal email address to carry out the cancellation.

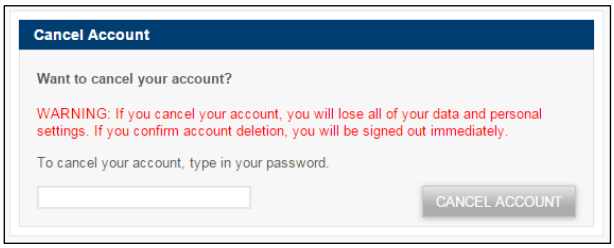

Fig. 06 – Cancel account

4 HOMEPAGE OF THE ACCOUNT

To access the homepage is necessary to access the main menu of the application and click **Home**, highlighted in the **Fig. 07**.

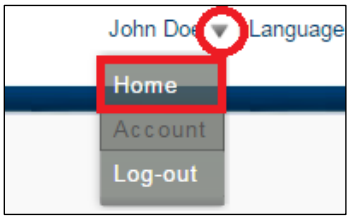

Fig. 07 – Home

On the homepage of your account, you can perform all application settings. The left menu on the homepage shows the items for the setting divided in categories composed of Home, Data, Devices, Dashboards, Admin and Script, as shown in the **Fig. 08**.

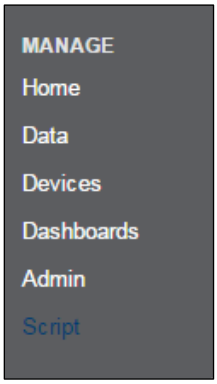

Fig. 08 – Left menu

4.1 HOME

When you entering the application that is the first page displayed. By default, this page has the **NOVUS** logo and some information about documentation, but you can change this page another created within the application.

See more information about how to change this page in the section *ADMIN -> OPENING DASHBOARD.*

4.2 DATA

Below each corresponding equipment will appear all the application data. You can add new data variables by clicking **+ Add Data** in the top right corner of the screen.

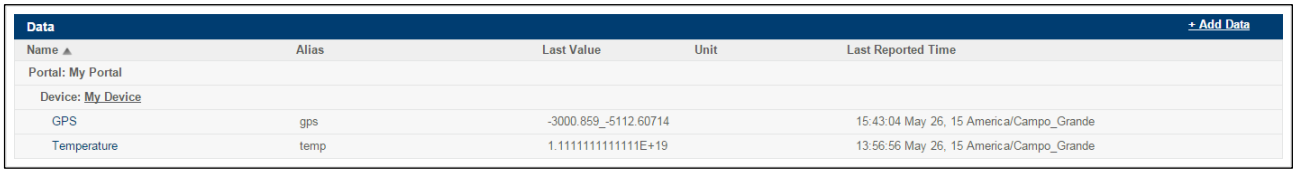

Fig. 09 – Data

In the **Fig. 09**, you can see an example with the device named My Device, their Temperature and GPS data variables and the last values received.

To view the data of the variables on this screen does not need any additional configuration and does not require creating any screen. This is the most primitive way to view the data. By clicking on any variable, you can view their properties.

4.2.1 ADD A DATA VARIABLE

We previously registered all **NOVUS** devices on the platform, so it is not necessary to add variables to receive information from them. However, you can create mathematical variables to store the result of basic operations on the equipment variables, such as addition, subtraction, division, multiplication and modulus.

Click the **Data** item in the left side menu. After loading the new window, click in **+ Add Data** in the top right corner of the screen to start adding a new variable. Check the box **From Existing Data**, select the device and click **CONTINUE**.

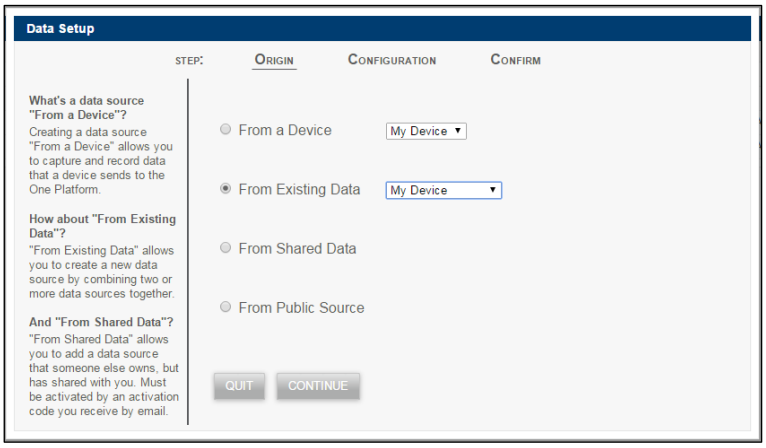

Fig. 10 – Add a data variable

The settings for the new variable are composed of their respective name (Data Source Name); data type (Data Source Format): integer, float or string unit (Unit) and an alias (enter the variable name in this field with no blanks), plus the base variable and their respective calculations.

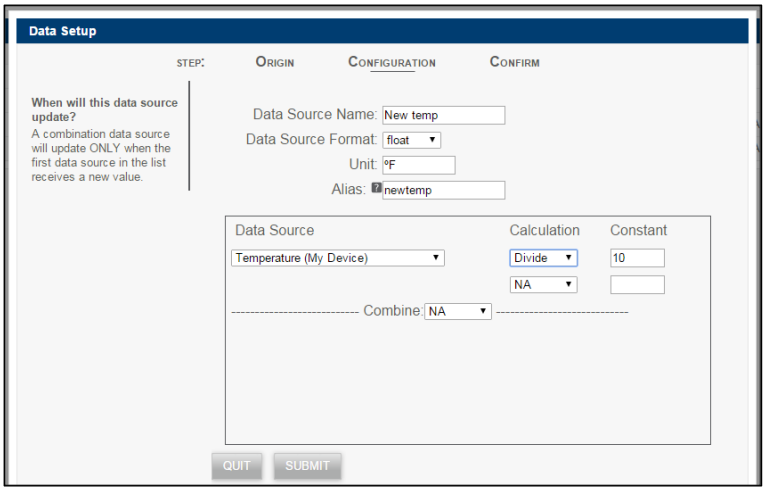

Fig. 11 – New variable

After entering the information, click **SUBMIT**. If the Add Data function was successful, the new variable will appear in the list of equipment variables, as shown in the **Fig. 12**.

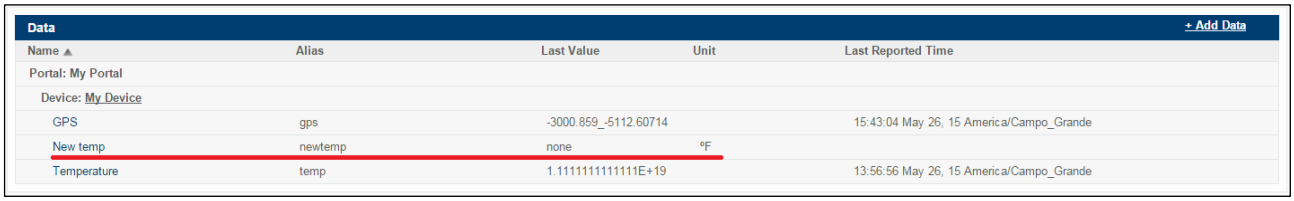

Fig. 12 – List of variables

4.2.2 DATA INFORMATION

Click the **Data** item on the left menu. After loading the new window, click on a variable in the list to access their properties.

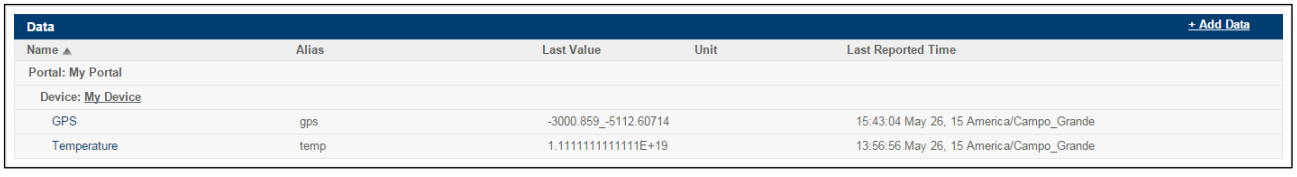

Fig. 13 – Properties

The properties window allows you to modify some parameters and access a graph and a table with the last values received.

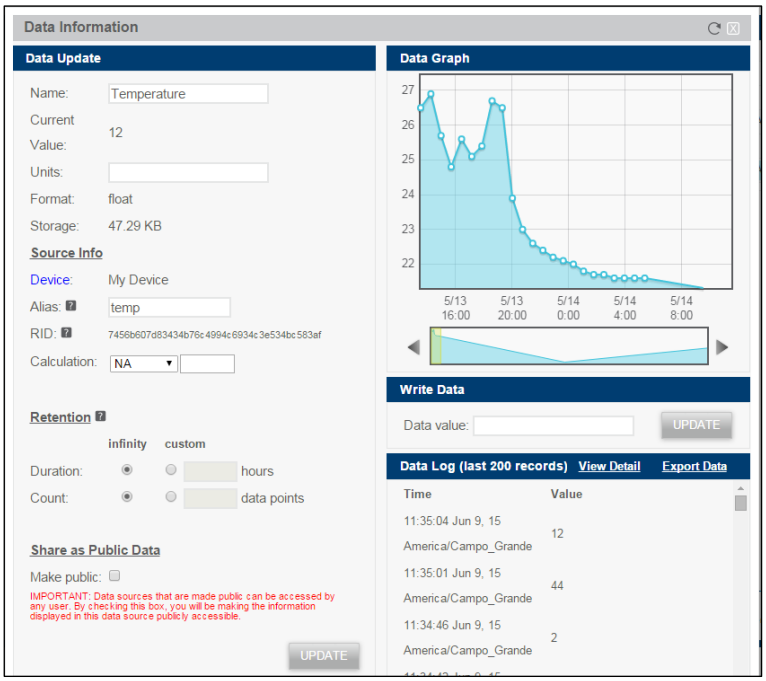

Fig. 14 – Data Information

The user can change the name (Name), unit (Units), add a calculation (Calculation) with the basic math operations and define other settings. To apply the changes you must click **UPDATE**.

⚠	**Do not modify the Alias of the variable; otherwise, it will not receive data from the field device.**

The variable data should be available for a period of two years. If you need to increase this duration, ask for details at iot@novusautomation.com.

4.2.3 WRITE DATA

You can write a value to a variable. To do this, open the properties of the variable in Write Data section, type a value and click **UPDATE**.

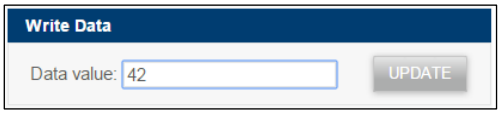

Fig. 15 – Write data

The new value should appear in the data list on the Data Log (last 200 Records) section, as shown in **Fig. 16**.

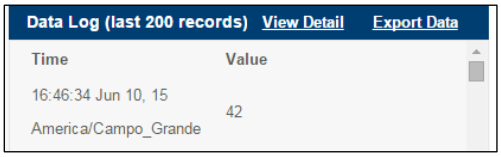

Fig. 16 – Data log section

4.2.4 EXPORTING DATA

You can export all the data for a variable into a CSV file. The export function can be accessed on the property page of the variable in the Data Log (last 200 records) section. Click in **Export Data**.

Fig. 17 – Exporting data

The export tool can export more than one variable at a time, so the user must select the desired variables, the time interval or the amount of the lasts values registered. After parameterization, click on **CONTINUE**.

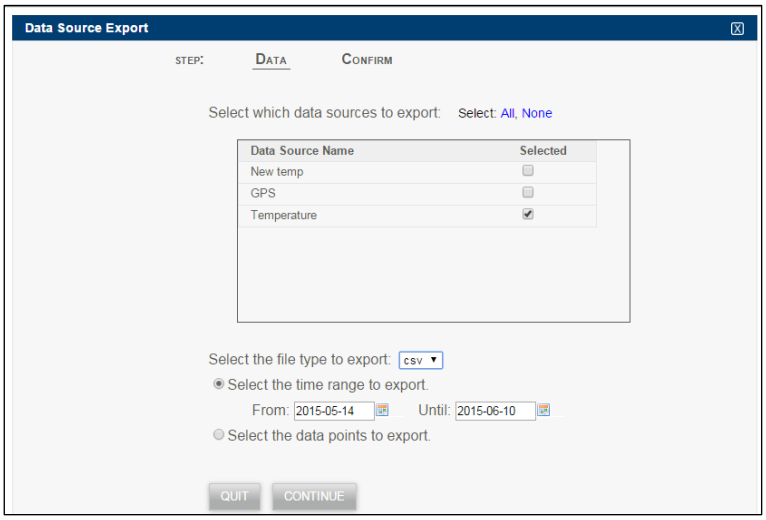

Fig. 18 – Data source export

To download the CSV file with the exported data, click on this link and save the file on a folder of your computer, as shown in the **Fig. 19**.

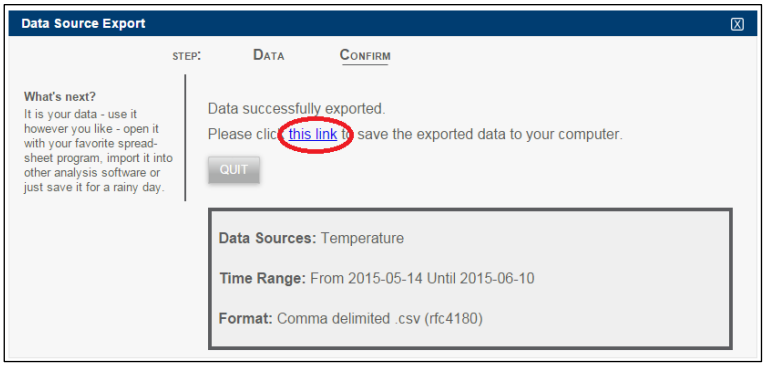

Fig. 19 – Downloading the CSV file

4.2.5 DELETING A VARIABLE

To delete a variable you can access to their properties in the Delete Data Source section, type the word **confirm** and click on **DELETE**.

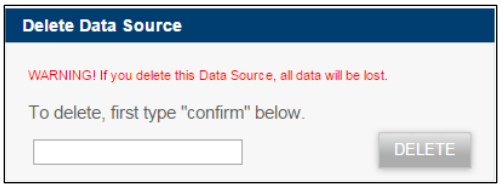

Fig. 20 – Deleting a variable

⚠	**Delete a variable implies losing all data. Export your data before performing this action in case you want to keep them for further analysis.**

4.3 DEVICES

Here you can see all devices for the application. It is possible to add more devices by clicking **+ Add Device** at the top right corner of the window.

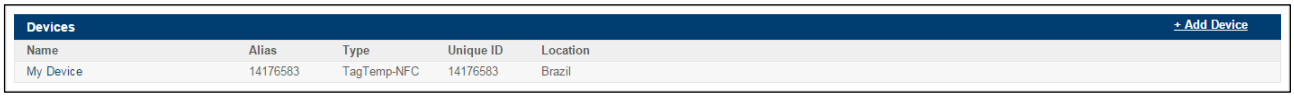

Fig. 21 – Devices

In the **Fig. 21** you can see an example of this screen, where appears a device named as My Device and some respective information.

4.3.1 ADDING A DEVICE

Click on the **Device** item on the left menu. After loading the new window, click in **+ Add Device** at the top right corner of the screen to start adding the new equipment.

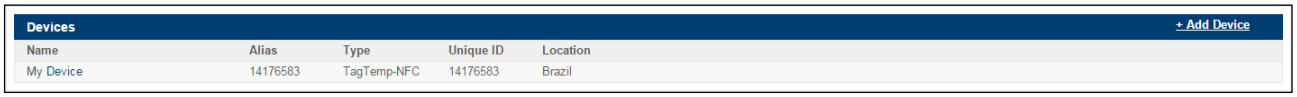

Fig. 22 – Adding a device

The next step is to select the device type and click **CONTINUE**.

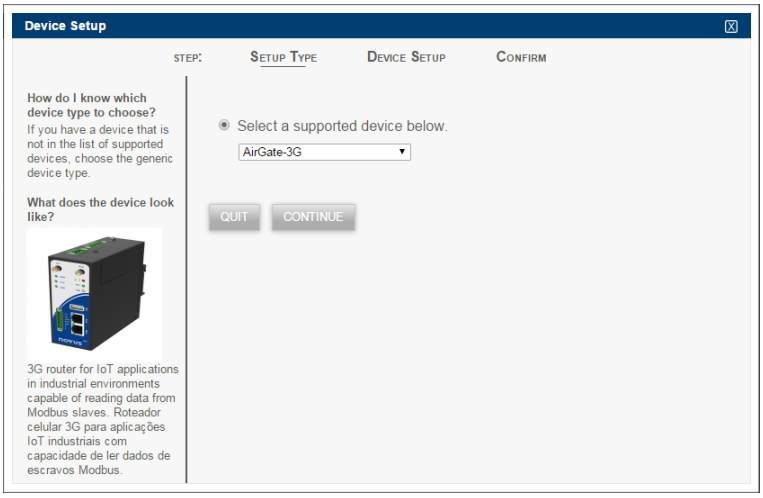

Fig. 23 – Device type

After choosing the equipment, it will be necessary to introduce two mandatory information: serial number and an identifier name. The serial number is numeric and is located on the label on the equipment. After entering the required information, click **CONTINUE**.

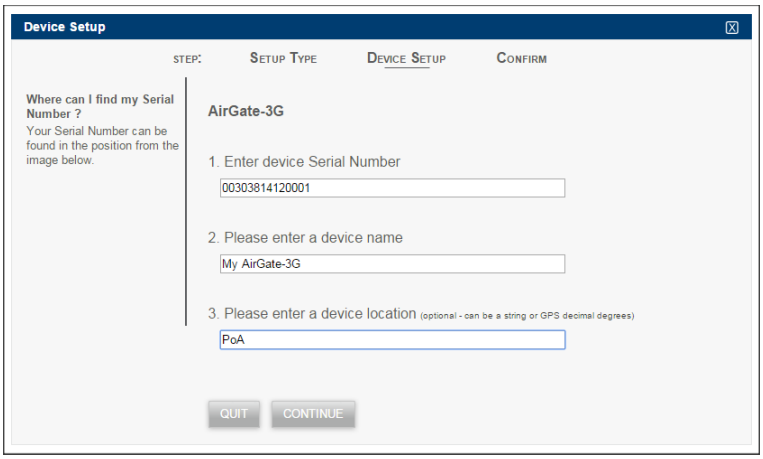

Fig. 24 – Identifying a device

Register the equipment is the first step to make so that it can send data to the cloud. When you enable the service on the device and connect it to the Internet, you will complete the process. Please, follow the instructions in the equipment manual.

After activation, automatically it creates a simple dashboard on the platform to show some parameters for diagnostic purposes. You cannot edit this dashboard.

	**Upon reaching the limit of devices of your account, you will cannot add more devices and the platform will display a warning message. To increase this limit, please, contact us at iot@novusautomation.com.**

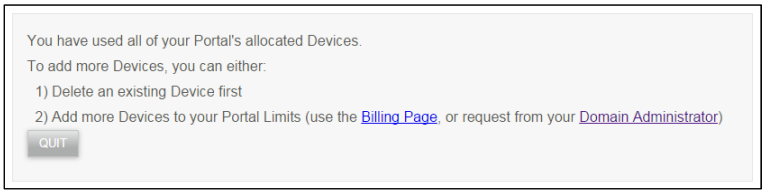

Fig. 25 – Reached the limit of devices

4.3.2 STEPS TO ADD A NEW DEVICE IN NOVUS CLOUD

- Purchase of any **NOVUS** device with **NOVUS Cloud** connection.
- Hire an account on the service **NOVUS Cloud**.

- Configure the device so you can connect to the **NOVUS Cloud** as indicated in the manual.
- Access **NOVUS Cloud** and add the new device as described in this manual.
- Connect the device to the Internet.
- Ready! If everything has gone well, you can see the device status indicated as ACTIVATED on the device properties page.
- You can see the data received by **NOVUS Cloud** accessing the Data item on the menu or in the default Dashboard created automatically, as indicated in this manual.
- The basic application in the cloud is ready!

4.3.3 DEVICE PROPERTIES

Click on the **Device** item on the left menu. After loading the new window, click on a device in the list to access their properties.

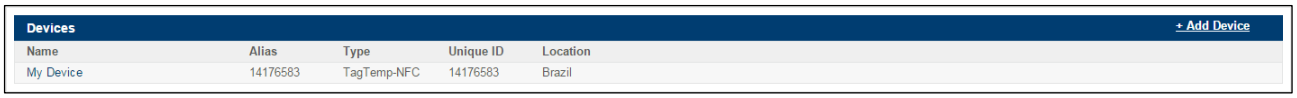

Fig. 26 – Device properties

The Device Information window allows you to modify some parameters and access the list of variables with the last values received.

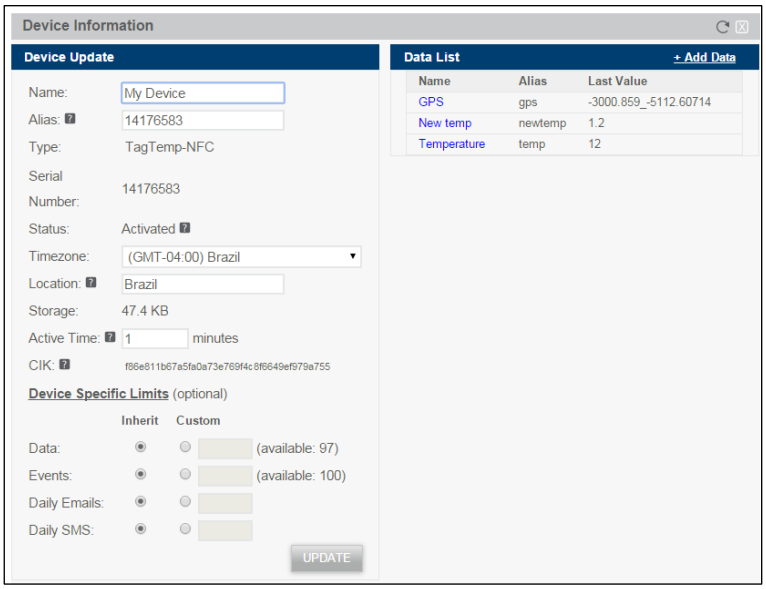

Fig. 27 – Device properties

The user can change the Name, Time zone, Location, Active Time (maximum time to consider the device online) and add new variables. To apply the changes you must click **UPDATE**.

The Status field is important because through it is possible to know if the device is active, inactive or expired, according to the description below:

- **Status Activated:** The device is active to the cloud and enabled for sending data.
- **Status Not-Activated:** Device stated in the cloud, but not activated.
- **Status Expired:** It pass more than 24 hours since the device statement without logging for activation. It will be necessary to re-enable the device to activate it.

4.3.4 DELETING A DEVICE

To delete a device, access to their properties and on the Delete Device section, type the word **confirm** and click **DELETE**.

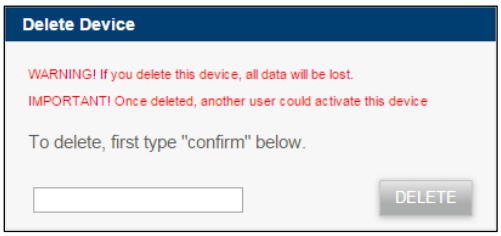

Fig. 28 – Deleting a device

4.3.5 RE-ENABLING A EXPIRED DEVICE

If the device is not ask for activation within 24 hours after its statement on the platform, it will expire. Therefore, it will be necessary to renew its registration in the Re-Enable Device section in the computer properties. Enter the word **confirm** and click **CONTINUE** to renew for more 24 hours.

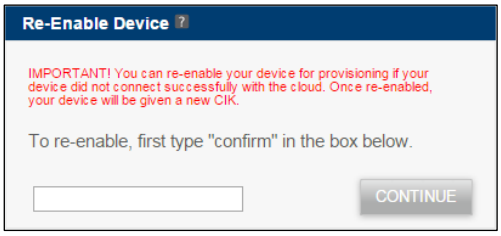

Fig. 29 – Re-enabling a device

4.4 DASHBOARDS

The dashboards are the screens of the application, where you will design all your graphics representations. These work as a container where the user can create widgets, that are objects used to display the variables of the equipment or any other information.

4.4.1 ADD A DASHBOARD

Click the Dashboards item on the left menu. After loading the new screen, click **+ Add Dashboard** on the top right corner of the screen to start adding a new dashboard. Set a name (Dashboard Name), a Description and determine whether the layout will have two (2 columns) or three (3 columns) columns. Then click **SUBMIT**.

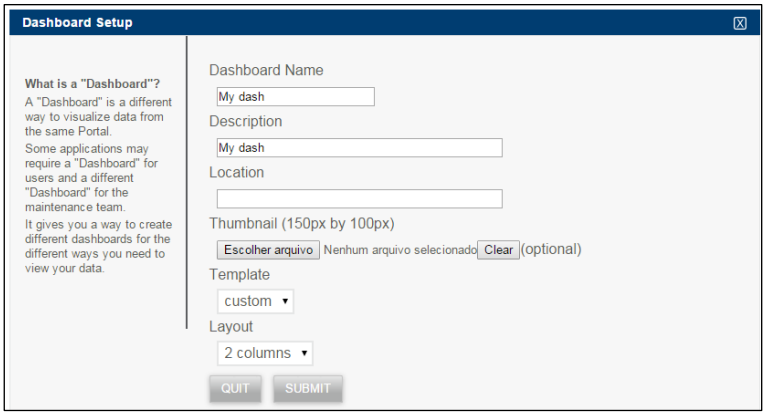

Fig. 30 – Adding a dashboard

The dashboard created will be empty and you need to add widgets to display information. After its creation, click the area indicated on the **Fig. 31** to open the dashboard and start editing.

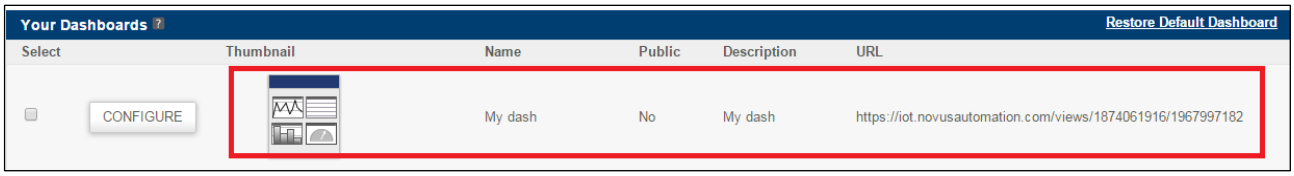

Fig. 31 – Selecting a dashboard

Although it seems natural when click on the **CONFIGURE** button, you will be directed to the properties of the dashboard, determined at the time of its creation.

⚠	**Upon reaching the limit of dashboards of your account, you will cannot add more dashboards. To increase this limit, please, contact us at iot@novusautomation.com.**

4.4.2 DASHBOARD PROPERTIES

Click the **Dashboards** item on the left menu. After loading the new window, click one of the dashboards of the list to access their properties.

Fig. 32 – Dashboards list

The properties window allows you to modify the following parameters:

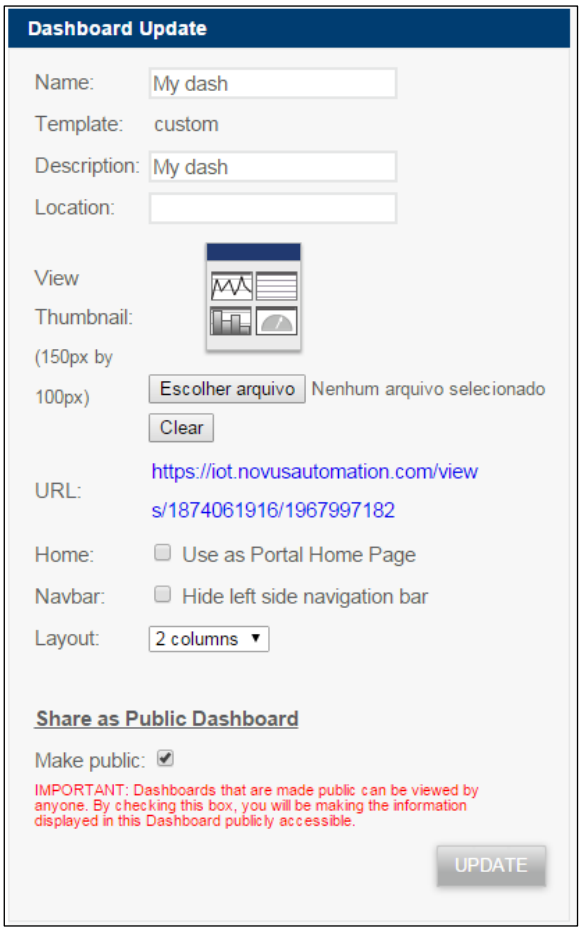

Fig. 33 – Editable parameters

- **Name**;
- **Description**;
- **Location**;
- **Use o Portal Home Page:** Makes this dashboard as your default homepage;
- **Hide left side navigation bar:** Hides the left side menu and the **ADD WIDGET** and **CONFIGURE** buttons;
- **Layout:** Option to select arrangement in two or three columns;
- **Make public**: The dashboard becomes publicly accessible through the Internet. The access link is the URL field, as shown in the **Fig. 34**.

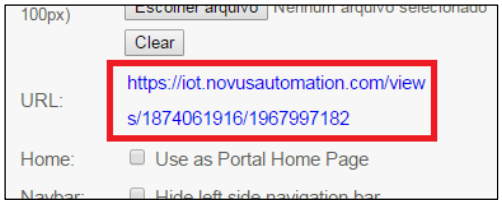

Fig. 34 – Dashboad link

To apply the changes you must click **UPDATE**.

4.4.3 ADD A PRIVATE VIEWER USER

You can invite one or more users as private viewers of a dashboard. After adding the user in the Admin session, in the Private Viewer Access section on the properties of a dashboard, select it and click **ADD USER**.

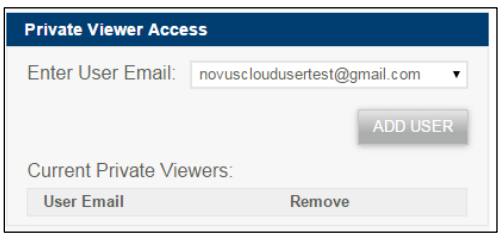

Fig. 35 – Adding a private viewer user

4.4.4 ADD WIDGETS TO A DASHBOARD

Widgets are objects used to display information to the user. This information may include variables of a device, images, maps, animated components, interactive components, among others. The platform has a set of standard widgets that require no programming, so you need just configuring it. There is also the possibility to create custom widgets, where the user can use multiple templates of widgets or write their own using javascript.

Click the **Dashboards** item on the left menu. After loading the new screen, click the **ADD WIDGET** button to start adding widgets. The next step is to select the type (Widget Type) and define a title. Then you must click on **CONTINUE**.

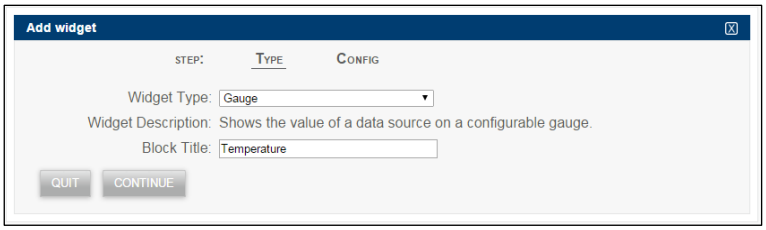

Fig. 36 – Adding a widget

In the above example, it was selected widget called Gauge. The next step is to configure the widget to display information.

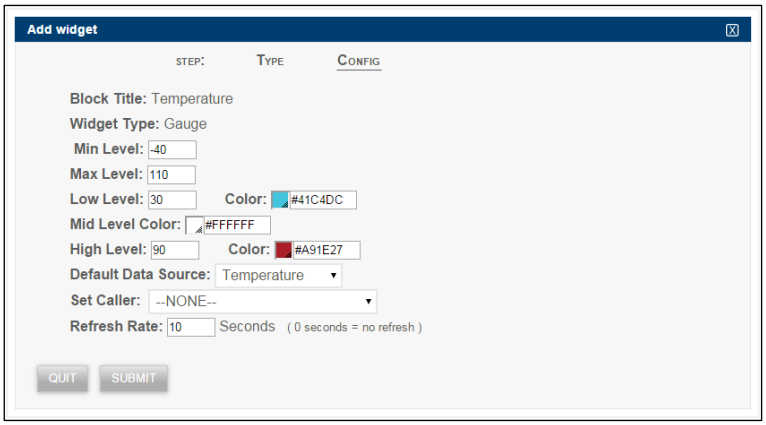

Fig. 37 – Creating a widget

In the specific case of this widget, you can configure the following parameters:

- **Min Level:** Minimum limit of the object;
- **Max Level:** Maximum limit of the object;
- **Low Level:** Lower level of the object;
- **High Level:** Higher level of the object;
- **Default Data Source:** Variable of a device whose value will be displayed;
- **Set Caller:** Advanced parameter. Some widgets can call other (have the function of caller), while others may be called (for this, you must set parameter set caller). The purpose is the exchange of messages between widgets.
- **Refresh Rate:** Individual refresh rate of the object, in seconds. This is not the data transfer rate from the device!

After configure the widget, it will appear as follows on the dashboard:

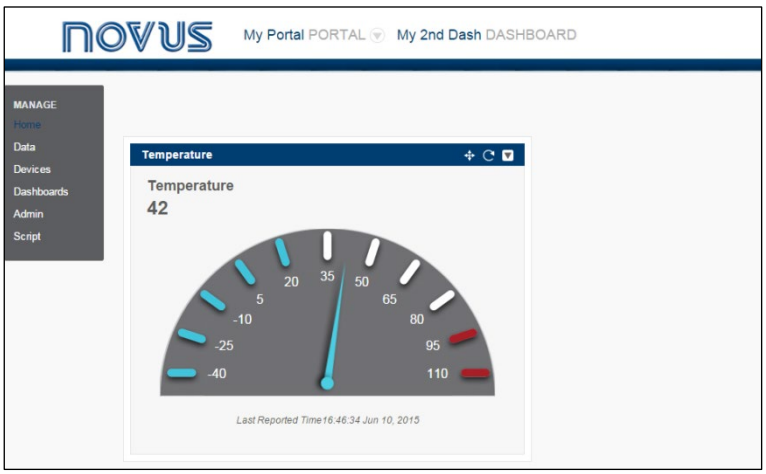

Fig. 38 – Widget

In the top bar of the widgets are three buttons with specific functions:

 You can use this button to move the widget in the dashboard, repositioning it in relation to other widgets.

 You can use this button to force the update of values in the widget.

 You can use this button to view the properties of the widget or to delete it.

Example of a dashboard with two widgets:

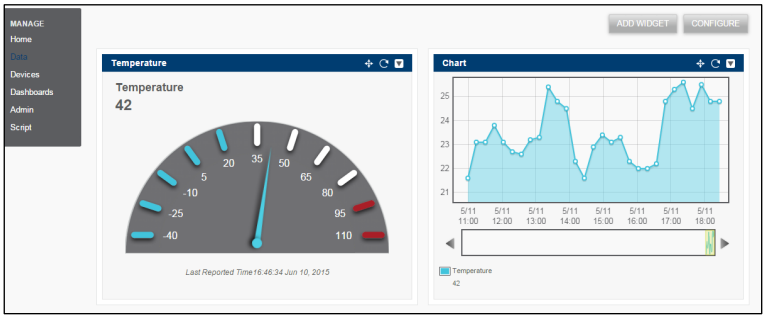

Fig. 39 – Example of a dashboard with widgets

You can found more information about widgets on this link.

4.4.5 DELETING A DASHBOARD

To delete a dashboard, you must access to their properties and in the Delete Dashboard section, type the word **confirm** and click **DELETE**.

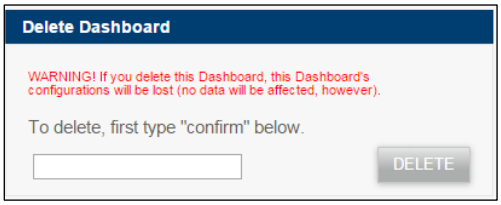

Fig. 40 – Deleting a dashboard

4.5 ADMIN

Some portal information, the user inclusion and the summary use of contracted resources are available in this section.

4.5.1 RENAMING THE PORTAL

To rename the portal, click the **Admin** item on the left menu and in Portal Information section edit the field Portal Name and click **UPDATE**.

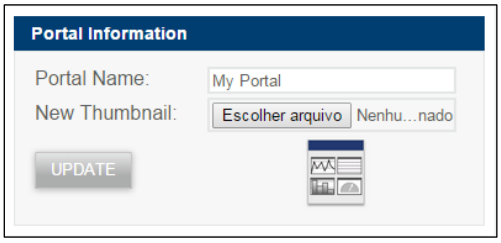

Fig. 41 – Renaming the portal

4.5.2 START DASHBOARD

Define this dahsboard as the homepage when logging into the account. To change this, click the **Admin** item in the left menu, and then in the Set Portal Home Page section, select the desired dashboard and click **SUBMIT**.

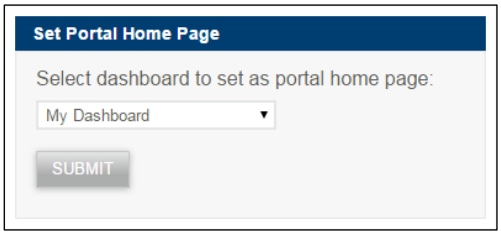

Fig. 42 – Dashboard home page

4.5.3 NEW USERS

To add new users, click the **Admin** item on the left menu and in the Portal Roles section insert the user name and select the role for that user on the platform.

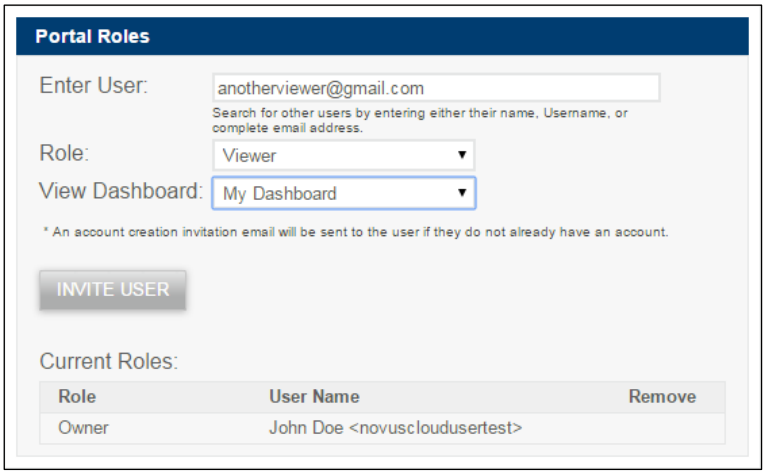

Fig. 43 – Adding new users

There are two types of users available: Manager and Viewer. A Manager can edit all the properties of the application, while the Viewer can only access the permitted dashboards. There is an additional type, called Contact, which you cannot use.

Click the button **INVITE USER** to send an invitation to a new user. The guest user will receive an email with the information of its account activation. This invitation is valid for seven days. After this period, you will need to contact iot@novusautomation.com informing the email address of the user to renew the invite.

4.5.4 PORTAL RESOURCE SUMMARY

When signing up a plane, there is a set of features associated with it. To view the summary, click on the **Admin** item on the left menu and then in the Portal Resource Summary section, to view the summary of use of the resources.

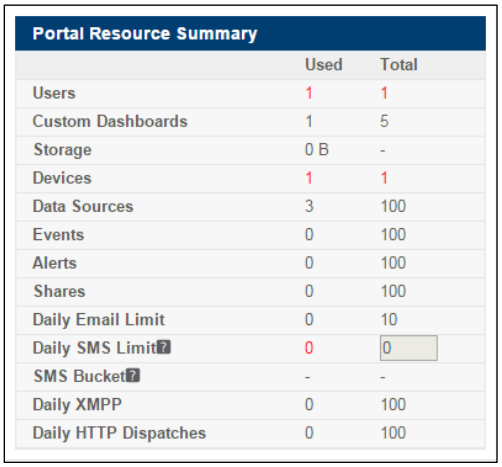

Fig. 44 – Portal resource summary

The resources shown in red colour have reached their limit. If you need more features, please contact us at iot@novusautomation.com.

4.6 SCRIPT

The platform allows advanced programming language with Lua. The scripts run directly on the server, so do not depend on access to the site for execution. You can use the scripts to, for example:

- Perform advanced data analysis using mathematical functions and multiple platforms;
- Adjust and interpret the data;
- Convert the data to other formats;
- Send emails, update http pages, publish on twitter;
- Send data to other systems.

4.6.1 ADDING A SCRIPT

To add a script, click the **Script** item in the left menu and after load the new screen, click **+ Add Script** on the top right corner of the screen to start adding a new script.

A script can have the scope of the platform or device. In the following example, the Reference Device is My Device and the sample script (template) performs the dispatch of emails.

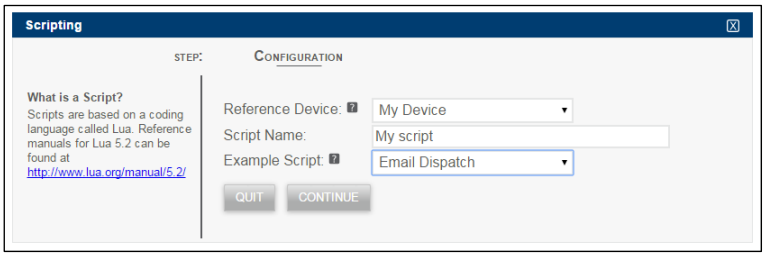

Fig. 45 – Adding a script

The script editor allows debugging on the same programming environment, so that if there are any errors, the editor will display a message and the status will indicate the problem. The **Fig. 46** shows an example of screen:

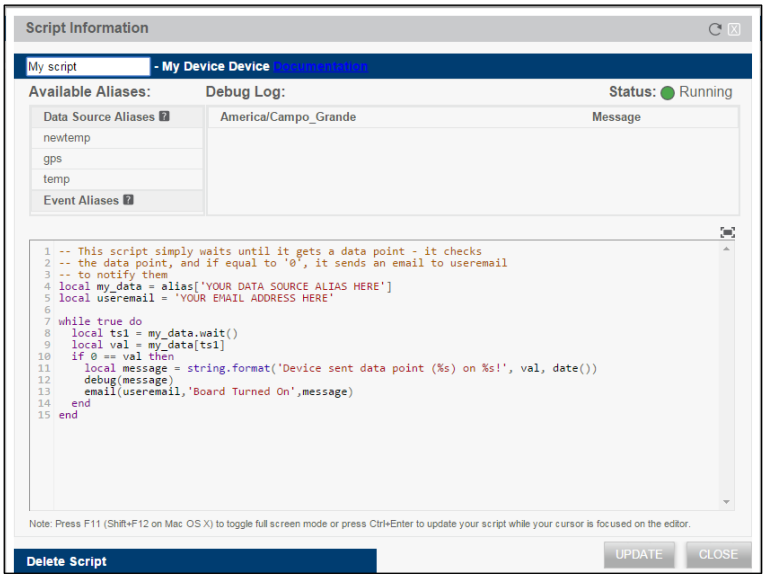

Fig. 46 – Editing a script

Because the scope is for the device My Device, you can use just their own variables in the Available Aliases section.

After editing the script and confirm that they will run smoothly, click **UPDATE**.

⚠	**You can use one free script for each device. If you need to use more scripts, you need to buy more contacting us at iot@novusautomation.com.**

See additional documentation on programming scripts on the platform here.

4.6.2 SCRIPT PROPERTIES

To edit a script, click the Script item on the left menu and select a script to access its properties. The properties screen allows you to change all the parameters previously set. After you finish editing, click on the **UPDATE** button.

4.6.3 DELETING A SCRIPT

To delete a script, access their properties and in the Delete Script section, type the word confirm and click **DELETE**.

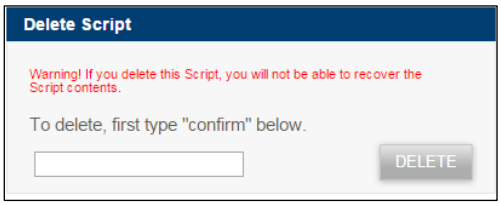

Fig. 47 – Deleting a script

4.6.4 SUPPORTED DEVICES

The **NOVUS Cloud** platform supports the next **NOVUS** devices and their variations:

- FieldLogger;
- AirGate-3G;
- AirGate-3G with GPS;
- TagTemp-NFC;
- TagTemp-NFC with digital input.