SENSE | MONITOR | CONTROL

Versatile, Scalable Sensor-to-Cloud Connectivity

USER GUIDE

Portal Web Application (Ver.2.0.0-3.0.7)

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1. About This Guide

This guide explains the usage of IoTPortal Web Application. The screenshots used are for illustration purpose only.

2. Intended Audience

The intended audience will be System Integrators, Technical / Administrative users who will assist in realizing the capabilities, functions, and the full benefits of the product.

3. Document References

Document Name	Document Type	Format
BRTSYS_AN_032_IoTPortal User Guide - Introduction	Application Note/	PDF
BRTSYS_AN_034_IoTPortal User Guide – Android Mobile App	User Guide	



4. Registration

The IoTPortal Web Application is a browser-based GUI application that serves as a one-stop management tool enabling administrators to configure the IoTPortal Server Software such as to manage dashboards, Gateways, Events, Notification and Subscriptions. Open any supported web browser (*Chrome / Mozilla Firefox*) and enter the URL, for example - https://www.iotportal.com.

4.1 IoTPortal Account Sign Up

1. Log in to the IoTPortal website – www.iotportal.com. Click **[Sign Up]** in the bottom of the page.

Configure Sensor to cloud Connectivity Montron g solution to meet your Solution to meet your Solution to meet your Solution g system free from the issues faced by wireless networks apt for applications such as urban farming, industrial monitoring and data centres etc. Solution gatewaye. Configure Sensors and Actuators. Configure Alerts and Events to receive Email/SMS/Push Notifications. Setup your organisation for better user authorization.	Sign In Enail / Mobile Number Lease enter your enail/mobile number Password Messe enter your password Com Forget password? LOCIN Dy logging into an account, you are agreeing with or farms of Seviles and Privacy Delicy and yous contine that you are above 13 years of age.
About Terms of Service Privacy Policy © 2024 BRT Systems Pte Ltd. All Rights Reserved.	
 Enter the following information in the respective fiele First Name Last Name Email Address Mobile Number Password / Confirm Password Go through the Terms of Service & Privacy Policlicking on the respective links; accept it by t the checkbox. Click [SIGN UP].	elds - Sign Up First Name Enter First Name Last Name Enter Last Name Enter Password Enter Password Enter Password Confirm Password

By creating an account, you are agreeing with our <u>Terms of Service</u> and <u>Privacy Policy</u> and you confirm that you are above 13 years of age.

SIGN UP



3. Enter the Verification Code sent to the registered email address and click [VERIFY].



4. Upon successful verification, click [LOGIN].

0	4
Verified Successfully	
Your account has been verified successfully. Login to continue	
LOGIN	1



4.2 Sign In

1. Enter the Email Id/Mobile Number & Password.



2. Click **[LOGIN].** Upon successfully logging in, Web Management Console user interface is displayed with an empty Dashboard.



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4.3 Forgot Password

1. Click Forgot Password link.

Sign In	1
Email / Mobile Number	
Please enter your email/mobile number	
Password	
Please enter your password	0
Forgot password?	
LOGIN	

2. Enter the registered *Email Address* & click [RESET PASSWORD].



3. Enter the *Verification Code* (sent to your registered email); *New Password* and *Confirm Password*. Click **[Submit]**.

Forgot Password 3
A Verification code has been sent to your email address in order to reset the password.
Verification Code
379181
New Password
Confirm Password
SUBMIT
Didn't get code? Resend code



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<u>NOTE:</u>

"Attempt limit exceeded, please try after some time" – message is displayed if the user enters an invalid verification code more than 5 times. Please try again after 30 minutes.





6. Menu Overview

The IoTPortal Web Management Console main menu is displayed on the left and can be extended by clicking on it to display the sub menus. The following table provides an overview of Menu/Submenu and its functions.

Menu	Submenu	Functionality			
Dashboards	-	→ The dashboard function allows users to create dashboards for data visualization in real time. Users can create dashboards and add attributes for Gateways, Sensors (Temperature, Humidity, Ambient Light etc.), Actuators and Other Chart (Count of Events, Count of Email, SMS, Notification).			
Gateways	All Gateways	→ View /Add/Edit/Delete/Search all Gateway Information			
	Gateway Groups	ightarrow View/Add/Edit/Delete/Search Gateway Groups			
	Standalone Gateways	ightarrow View/Add/Edit/Delete/Search Standalone Gateways			
Events	-	\rightarrow View/Add/Edit/Delete/Search Events			
Organisation*		\rightarrow View/Edit/Delete organisation			
Settings		ightarrow Manage API Access Keys			
About	-	→ To view information pertaining to WMC version / Terms of Services / Privacy Statement / License			

Table 1 – IoTPortal Web Application Menu

* This menu will be displayed only after adding an organisation.

Each menu/submenu/function will be discussed in detail in the following sections.

7. Gateway Management

7.1 Register / Add Gateway

Registration is the process by which a gateway makes its presence known to the IoTPortal service without which it is incapable of providing service. Registration is completed when the user adds a gateway to his account. Gateway registration is a 2-step process that requires user and gateway to be involved.

For the first step, the user, must add a gateway to his or her account. This step legitimizes the gateway's existence to the IoTPortal and enables the portal to accept communications from the gateway. In the absence of this step, the IoTPortal does not accept connection and registration requests from the gateway. The second step involves the gateway self-registering with the IoT Portal which occurs during <u>on-boarding</u> to the local network. The second step fails if the first step is not successfully completed.

James Adar

To register / add gateway,

- 1. Click Gateways from the menu. For first time users, there will not be any connected Gateways displayed. Click [+Add Gateway].
- 2. Enter the UUID, Serial Number (Product Key), MAC Address (ETH ID). The Gateway details can be found on the label on the back of the device. Enter the Gateway Name; Click [SAVE].
- The newly added gateway is displayed 3. as part of the table.





<u>NOTE:</u> At any point of time, if any error message is encountered, try adding the gateway again.

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7.2 On-board Gateway

On-boarding is the process by which a gateway connects to the local network, and it is performed independently of the IoTPortal Cloud. Upon adding the gateway, user has to on-board the device before using it. The gateway that needs to be on-boarded is indicated with the Status – "*Not On-boarded"* (*RED Colour*).

All Gateways			+ Add Gateway	Search for	
Gateway Name 💲	UUID ©	Last Active 0	Group 🗘	Action	
Gateway 1	LG01020105272100017	Not On-boarded			

To on-board gateway using Ethernet,

- 1. Connect to an Ethernet Network. Connection verification will be in progress.
- 2. Upon successfully establishing connection, the gateway is on-boarded successfully and gateway status changes to online.

Upon connecting to a Wi-Fi or Ethernet Network, the gateway is on-boarded successfully and the Last Active status changes to online (indicated with a GREEN colour).

All Gateways			+ Add Gateway	h for.,	
Gateway Name 👙	UUID \$	Last Active 👙	Group 0	Action	
Gateway 1	LG01020105272100017	• Online			



<u>NOTE:</u> The Web Management Console only supports "onboarding via ethernet" feature. Alternatively, users can onboard via Wi-Fi or Ethernet by using the IoTPortal Mobile App.

7.3 View Gateway Details

To view details of the gateway,

1. Click on the **Gateway name** or >.

All Gateways					1
			+ Add Gateway		
Gateway Name 💲	UUID ¢	Last Active 💲	Group 0	Action	
Gateway 1	LG01020105272100017	• Online		Ū	5

2. The gateway details (*Status; UUID; Firmware Version; Serial Number*) are displayed.





- h. Click [Manage Storage] function link to view / manage the storage space.
- i. Click [Firmware Update] function link to update the firmware version for the selected gateway.
- j. Click [Gateway Descriptor] function link to view the gateway descriptors.
- k. Click [Delete] to delete/un-register gateway device.

7.3.1 Edit Gateway Name

To edit gateway,

1. Click [Edit].

Gateway Name		
Gateway 1	🧷 Edit	1

2. Edit the *Gateway Name* as required and click **[Update]**. An appropriate message indicating the update is displayed.

Gateway Name		
Gateway 01	Update	2

7.3.2 Gateway Scan

The Gateway Scan has two options, namely – 1. Scan with Power Cycle and 2. Scan without Power Cycle.

1. Click [Scan] to start the Gateway Scan.



A scan request may cause events to be falsely triggered. This message may be ignored if you have already disabled all events on this gateway. Click **[SCAN]**.



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Scan with Power Cycle: Selecting this checkbox will restart and discover all the connected devices on all the 3 ports.

F

<u>NOTE:</u> The Scan with power cycle option, if triggered, will affect all the connected actuators and restart the actuators.



<u>Scan without Power Cycle:</u> De-selecting this checkbox will just discover all the connected devices on all the 3 ports.

A gateway scan can be initiated by a user (via the mobile app or the Web Client). The IoTPortal shall not initiate a gateway can unless the user requests it. LDSU scan results are reported to the IoTPortal and may contain information about newly discovered LDSUs or LDSUs that are no longer accessible (offline devices).

<u>NOTE:</u> The scan must be performed sequentially, meaning, scan and wait for LDSBus 1 Scan to complete, verify whether the devices are online/offline, and then perform LDSBus 2 Scan and LDSBus 3 Scan.

7.3.3 Manage LDSBus Ports

The gateway has 3 LDSBus ports. Each LDSBus port can connect to multiple LDSUs (up to 80 LDSUs) via LDSBus Quad-T Junctions.

Gateway 2					Scan 🕑 Restart	🖻 Delete
Gateway Name Gateway 2	Status Edit • Online C	UUID LG01020105272100017	Firmware Version V 1.4.31	Serial Number 482C034C	UART	
LDSBus 1 Off C		LDSBus 2 Off C		LDSBus 3 On C		
Sensors and Actuators reported from connected L	DSUs	Sensors and Actuators reported from connected Lt				
0 Sensors > 0		0 Sensors > 0			2 Actuators	
Q Scan 🗇 Delete	Power On	Q Scan 🗇 Delete	Power On	Q Scan 🔯 Delete		Power Off

For Illustration purposes, the procedure for managing the LDSBus 3 is explained here. The same procedure can be used for managing LDSBus 1 and LDSBus 2.

The LDSBus port has the following features – Scan, Delete and Port Power Control.





The system will turn on the LDSBus port power and discover the connected LDSUs; list the number of **LDSUs** connected to LDSBus Port 3 and categorize the associated sensor and actuators to the LDSUs.

2. Click **[Delete]** to remove all the connected LDSUs from the port. Download the LDSU data before performing a delete operation.

LDSBus 3 On C			
4 LDSUs			
Sensors and Actuators report	ed from conne	ected LDSUs	
3 Sensors		2 Actuators	
Q Scan 🗇 De	elete 2		Power Off

3. Click **[Power Off]** to control the port power (Power Off / Power ON). A confirmation message will be displayed. Click **[YES]** to continue or **[NO]** to discard this operation.



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¹ Long Distance Sensor Units (LDSUs) can be LDSBus Sensors / Adapters (for example – 4in1 Sensor, pH Sensor Adapter, CO2 Sensor, EC Sensor Adapter etc.) and LDSBus Controllers (Relay Controller, IR Blaster, IO Controller, etc.)



7.3.3.1 LDSU List and Categories

To access LDSU List and Categories interface,

1. Click on a specific LDSBus Management Widget, for example LDSBus 3.



2. The LDSU List interface displays the number of *Sensors* and *Actuators* reported under the detected LDSUs in the corresponding tabs.

LDSBus Gateway	3 3 / LDS Bus 3				Q Scan	Delete
[LDSUs 4	Sensors 3	Actuators 2			
	+ Add Prefix/Suffix to Name			3	Search]
	LDSU Name 🗘	UUID 🌣 Status 🗘	Reporting Rate 🗘	Termination Statu	is 🌣 Action	
	pH Sensor	LS04010104212100036 🔍 Reachab	le 5 sec(s)	OFF		
	Thermocouple Sensor	LS03010103152100001 • Reachab	le 5 sec(s)	OFF		
	Relay Controller	LC01110101042200090 • Reachab	le 5 sec(s)	OFF		
	pH Sensor	LS01010124262100031 • Reachab	le 5 sec(s)	OFF		

3. The table provides the *LDSU Name, UUID, Status (reachable / not reachable), Reporting Rate* and *Termination Status.* Users may search for a specific LDSU using the **Search** field.

7.3.3.1.1 Change Report Rate

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The sensor report rate is also known as the data reporting rate or sampling rate, refers to the frequency at which a sensor collects and reports data.

To change report rate -

1. Select a LDSU device (by clicking on the checkbox) and click ***. From the resulting menu, click [Change Report Rate].

LDSBus 3 Gateway / LDS Bus 3	78		ĺ	Q Scan	団 Delete
LDSUs	Sensors 3	Actuators 2			
💼 + Add Prefix/Suffix to Na	me				
LDSU Name 🗅	J Download Data tus 0	Reporting Rate 💲	Termination Statu	s 🗘 Action	
pH Sensor	LS04010104212100036 • Reacha	ble 5 sec(s)	OFF		
Thermocouple Sens	or LS03010103152100001 🔍 Reacha	ble 5 sec(s)	OFF		
Relay Controller	LC01110101042200090 Reacha	ble 5 sec(s)	OFF		
pH Sensor	LS01010124262100031 • Reacha	ble 5 sec(s)	OFF		

2. Modify the *report rate* and click **[UPDATE]**.

Change Report Rate	×
Report Rate	
15	sec(s)
Minimum - 5 seconds, Maximum - 1800 seconds (30 minu 5 seconds.	tes) and value should be multiple of
1 LDSU(s) selected	2 UPDATE

3. A confirmation message is displayed. Click **[YES]** to proceed with the changes.



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7.3.3.1.2 LDSU Details

To access LDSU details,

1. Click on the LDSU Name or >.

LDSBus 3 Gateway / LDS Bus 3	a.		l	Q Scan	⑰ Delete
LDSUs	Sensors 3	Actuators 2			
+ Add Prefix/Suffix to Name					
LDSU Name 🔅	UUID 🗘 Status 🗘	Reporting Rate 0	Termination Status	C Action	
pH Sensor	LS04010104212100036 🔍 Reacha	ble 5 sec(s)	OFF		
Thermocouple Sensor	LS03010103152100001 • Reacha	ble 5 sec(s)	OFF		
Relay Controller	LC01110101042200090 🔹 Reacha	ble 5 sec(s)	OFF		
pH Sensor	LS01010124262100031 • Reacha	ble 5 sec(s)	OFF	Ū	1

2. The LDSU details interface displays the LDSU Name and other attributes (UUID, Serial Number etc.).

pH Sensor Gateway / All LDSUs / LDSU		2a Q Identify Device 🗇 Delete 2e
LDSU Name pH Sensor		2b Edit
UUID Serial Number Product Name		Sensor Report Rate 5 2C sec(s) Edit Minimum - 5 seconds, Maximum - 1800 seconds (30 minutes) and value should be multiple of 5 seconds
Manufacturing Date 20 Product Version LDSU DID	26/08/2021 1.0 31	Download LDSU data
Termination Status		Download all data Pick date range
		± Download Data 2d

- a. Click [Identify Device] to identify the LDSU that is connected to the LDSBus Port.
- b. Click [Edit] to edit the LDSU Name. Upon editing (if any), click [Update] to save the changes.
- c. Click **[Edit]** to edit the *Report Rate*. Upon editing (if any), click **[Update]** to save the changes.
- d. Click **[Download Data]** to download LDSU data (*all data* or *based on specific date range*) as required.



e. Click **[Delete]** to delete LDSU device. Upon deleting, ensure that the LDSU is physically removed from the Bus, otherwise it will be reported as newly found LDSU device when the bus port is scanned.

	8		
	1	ι.	
5	100	10	2

<u>NOTE:</u> At any situation Hot plug In/Out is not recommended. In case, if there is a need to add or remove the devices in the network, then shut down the system and do the needful.

7.3.3.1.3 Sensor List

1. To view the list of Sensors, click **[Sensors]** tab. A list of sensors, if any, are displayed as part of the table. The table provides the Sensor *Name*, Sensor *Type*, *Reading*, *Min / Max* values, when the Sensor was *Last Active* and *Alert* (if any). Users may search for a specific Sensor using the **Search** box.

LDSBus 3 Gateway / LDS Bus 3						Q Scan	団 Delete
LDSUs 4	Sensors 3 1	Actuators					
						Search.	
Sensor Name 🗘	Туре 🗘	Reading 0	Min ¢	Max 0	Last Active C	Alert	
рН	pH sensor		7.03	7.14	Today at 04:39 PM 🕐		
Thermocouple	Temperature sensor		21	26	Today at 04:39 PM 🕐		
pH	pH sensor		11.93	14.00	Today at 04:39 PM 🥑		



To configure sensor / alert -

1. Click on the **Sensor** or > to access the configuration interface. For illustration purpose, a pH Sensor is used.

LDSBus 3 Gateway / LDS Bus 3						Q Scan	බ් Delete
LDSUs 4	Sensors 3	Actuators					
Sensor Name 🔹	Туре 🗘	Reading 0	Min ¢	Max 0	Last Active C 🗧	Alert	
₱₩ 1	pH sensor		7.03	7.14	Today at 04:39 PM 🕐		*
Thermocouple	Temperature sensor		21	26	Today at 04:39 PM C		
рН	pH sensor		11.93	14.00	Today at 04:39 PM 😷		



2. The pH Sensor configuration interface is displayed.

pH Gateway / All Sensors / Sensor		
Configuration 2		
Mode Single Threshold Threshold Activate when	Dual Threshold O Greater than	
Activation Alert Options Once	Continuously	
Message Message on activation Sensor alert activated		Message on deactivation
Sensor alert activated message		Sensor deactivation alert message
Send Alert		~
Send Email		
Send SMS		
Send Notification		
SAVE		

- 3. Configure the sensor as per the steps given below
 - a. There are two types of *mode*, namely *Single Threshold* or *Dual Threshold*.

<u>Single Threshold</u>: A single threshold is used when an action should be triggered if the current pH value is greater than or lesser than the specified threshold value.

<u>Dual Threshold:</u> A dual threshold is used when an action should be triggered if the current pH value is within specified threshold range or out of specified threshold range.

Select the *Mode*. If the selected *Mode* is "*Single Threshold*", then fill in the following fields – *Threshold* and *Activate when*.

	Mode Single Threshold	3a Dual Threshold
	Threshold	5.4
	Activate when	Greater than
(Or)		
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If the selected *Mode* is "*Dual Threshold*", then fill in the following fields – *Minimum Limit, Maximum Limit* and *Activate when (Within range or Out of range)*.

Mode		Mode	
Single Threshold	Dual Threshold	Single Threshold	 Dual Threshold
Minimum Limit	10	a Sinimum Limit	10
Maximum Limit	12	aximum Limit	12
Activate when	Within range	Activate when	Out of range

b. An *activation alert* refers to a notification that is triggered to indicate the user defined alert. There are two types of Activation Alert options, namely *Once* or *Continuously*.

Once: If this option is selected, when activated, the activation alert is sent only once

 $\underline{Continuously:}$ If this option is selected, when activated, the activation alert is sent continuously until deactivated.

Select the *Activation Alert* option. If the selected *Mode* is "*Continuously*", then fill in the following fields – *Send Activation Alert Every X Second(s)*.

Activation Alert Options		3b	ion Alert Options		
Once	Continuously	Send	Activation Alert Every	30	Second(s)

c. Click on the *Message on activation* and *Message on deactivation* checkbox and enter an appropriate message *header* and a *message*.

Message	
Message on activation	Message on deactivation
pH value alert ON	pH value alert OFF
The pH value is greater than 5.4	pH value is less than or equal to 5.4

d. Select one or more Send Alert mode(s) – Email, SMS, Push Notification. These modes are enabled only upon selecting either Message on activation or Message on deactivation or both. Upon selecting the appropriate mode(s), fill in the respective fields. For example, if the selected mode is "Send Notification" then click [Add+] and select the "Push Notification Recipients".

Send Alert
Send Email
Email Recipients
Add +
3d
Send SMS
SMS Recipients
Add +
Added members with registered mobile number will receive SMS
Send Notification
Push Notification Recipients
Add +



e. Upon providing all the configuration details, click [SAVE].

Configuration		
Single Threshold	Dual Threshold	
Threshold		
Theaten	5.4	
Activate when	Greater than	
Activation Alert Options		
Once	Continuously	
Message		-
Message on activation		Message on deactivation
pH value alert ON		pH value alert OFF
The pH value is greather than 5.4		pH value is less than or equal to 5.4
Send Alert		
Send Email		
Send SMS		
Send Notification		
Push Notification Recipients		
Add +		
James Adam 🗙		
toportalusr1@gmail.com		
SAVE 3e		

f. A confirmation window to enable or disable the alert is displayed. Click **[ENABLE]** to enable alert or **[NOT NOW]** to discard the operation.





g. Once the alert is enabled, an appropriate message indicating the same is displayed. The **Alert** toggle button in the Sensor list table is enabled.

LDSBus 3 Gateway / LDS Bus 3						Q Scan	圊 De	elete
LDSUs 4	Sensors 3	Actuators						
Sensor Name 0	Туре 🗧	Reading ©	Min 0	Max ¢	Last Active 🕑 💠	Alert		
pH	pH sensor		7.03	7.14	Today at 06:49 PM C			
Thermocouple	Temperature sensor			26	Today at 06:49 PM 😷			
рН	pH sensor		11.93	14.00	Today at 06:49 PM C		3g	



Т4.00 рт Міл 11.93 рн М.	ax 14.00 pH	C Today at 04:36 PM	
Sensor Name			
pH		Edit	
Туре		pH sensor	
LDSU Name		pH Sensor	
LDSU ID		LS01010124262100031	
LDSU Bus Port		3	
Gateway Name		Gateway 2	
Sensor Association Sensor Type	Temperature	-	
Value	Associate a sensor () Fixed		
Fixed value	5	*0	
		SAVE	
Download sensor data			
Download all data			
Pick date range			
	1/ Download Date		

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Edit Sensor Name

1. To edit sensor name, click **[Edit]** and modify the sensor name as required. The sensor information (like Type, LDSU Name etc.) cannot be edited.

Sensor Name	
pH	Edit 1
Туре	
LDSU Name	
LDSU ID	
LDSU Bus Port	
Gateway Name	Gateway 2

2. Upon editing the sensor name, click **[SAVE]**. An appropriate message indicating the change is displayed.

Sensor Name		
pH Sensor @ Fish Farm	Save	2

3. The updated sensor name is displayed as part of the sensor list table and dashboard chart (if available).

Sensors 😦	Actuators 2					
					Y Filter 🗸 Search.	
Туре о	Reading 😂		Min / Max Last 24 hrs :	Last Active 😋 😄	Alert	
Temperature sensor		3	23 / 25 °C	Today at 02:52 PM 🕐		
pH sensor			14.00 / 14.00 pH	Today at 02:52 PM 🕐		
	Sensors Type : Type : Temperature sensor pH sensor	Sensors 2 Actuators 2 Type : Reading : Temperature sensor 23 °C pH sensor 14.00 pH	Sensors Actuators 2 Type : Reading : Temperature sensor 23 °C 3 pH sensor 14.00 pH	Sensors Actuators 2 Type : Reading : Min / Max Last 2d fml : Temperature sensor 23 °C 3 23 / 25 °C ; PH sensor 14.00 pH 14.00 pH ; ;	Sendors Actuators 2 Type : Reading : Min / Max Last 2d frm : Last Active () : Temperature sensor 23 °C 3 23 / 25 °C Today at 02.32 PM () PH sensor 14.00 pH Today at 02.32 PM () C C	Sendors Actuators 2 V Filter ∨ Search. Type : Reading : Min / Max Last 24 hrs c Last Active @ : Alert Temperature sensor 23 °C 3 23 / 25 °C Today at 02:52 PM @



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Sensor Association



NOTE: This function can be used only for EC, Salinity, and pH sensors

1. Associate a sensor - This option is used to associate additional parameter (like temperature) for compensation to improve sensor data accuracy. For example, in order to associate temperature with pH sensor,

Select the **Sensor Type –** Temperature; Select **Value** - Associate a sensor.

Sensor Association	-	
Sensor Type	Temperature Temperature	1
Value	Associate a sensor	Fixed
Associate a sensor SELECT A SENSOR 2		
		SAVE

2. Click [SELECT A SENSOR] and choose a sensor from a list of available temperature sensor. Click [DONE].

Selec	t Sensor	\$	×
Sea	arch		
•	Thermocouple Gateway 2 - LDS BUS 3 LDSU UUID: LS030101021S2100001 Temperature sensor		
		2 DONE	

3. Click [SAVE] to save the associated sensor information. An appropriate message indicating the sensor association is displayed.

	Sensor Association	Sensor Association					
	Sensor Type	Temperature					
	Value	Associate a sensor Fixed					
	Associate a sensor						
	Thermocouple Gebevary 2 - 125 SUS 2 LOSU UNIX: LSS321010315210001 Temperature Sensor		×				
	Associate another sensor's value from the CHANCE SENSOR	e same Gateway					
4 \u03c8		3	SAVE				
(or)							
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Associate sensor with Fixed value – This option is used when a temperature sensor is not available. For example, in order to associate a fixed temperature value with pH sensor,

Select the **Sensor Type –** Temperature; Select **Value –** Fixed;

Sensor Association		
Sensor Type	Temperature	
Value	Associate a sensor Fixed 	
Fixed value	25	۰c
		SAVE

Enter a **Fixed value**; Click **[SAVE]**. An appropriate message indicating the sensor association is successful will be displayed.

Download Sensor Data

This function allows users to download sensor data to perform any further research / analysis using third party tools and for archiving purpose. To download sensor data,

1. Select data to include – *Download all data* or *Pick date range*. Upon providing the required input, click **[Download Data]**.

Download sensor data	
💿 Download all data	
Pick date range	
L Download Data	1

2. A confirmation message will be displayed. Click [OK].



3. Upon confirmation, an email will be sent to the user's registered email address with <u>instructions</u> on how to download the sensor data.

	IoTPortal - Your data to download is ready linker x
•	support@brtsys.com to me ▼ IoTPortal (்)
	Dear Adam James,
	You recently requested to 21 Us 2024 (UTC)) a copy of your IoTPortal data. Your data to download is now ready. Please click on the link below to download your data.
	This link will expire on 28 May 2024 (UTC).
	The password of your archive is
	Thank you!

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Instructions on how to download the sensor data

- Click [Download Data].
- The data is downloaded to your local folder (for example Downloads)
- Extract the zip file and its content by providing the password sent to your registered email address.
- Open the spreadsheet file that contains the downloaded sensor data.

	AutoSave 💽 O		? • €				LG	0102010	5272100017_I	.SO101	01242621	00031_0_ph ~
F	ile Home	e Insert	Pag	e Layout	Formula	5 Data	Reviev	v Vi	iew Aut	omate	e He	lp
٢	<u>~ X </u>	Aptos Narr	ow	~ 11 ~ A	A =		87~	ab,	General	~	🔛 Con	ditional Format
Pi	aste	P T I	i litti	1	Δ=				\$ ~ %	,	Forr	nat as Table ~
	* ダ	DIG	· • [Ш	· ·	<u> </u>				€00 .000 .00 →0		Cell	Styles ~
CI	ipboard 🗔		Font		15	Aligni	nent	_{لا} ا	Number	I2		Styles
A		: ×	~	<i>f</i> ∗ Time	estamp							
	٨	P	C	D II	-	E	G	U U	- U - 7i			v
1	Timestamn	Data	C.	D.	. L	4.5	J	11		-	4	IX.
2	1710749652	10.428										
3	1710749657	10.451										
4	1710749662	10.475										
5	1710749667	10.498	_				_					
6	1710749672	10.522		amnle	Senso	nr Data						
7	1710749677	10.545		ampic	Jense	n Butu						
8	1710749682	10.592										
9	1710749687	10.616										
10	1710749692	10.639										
11	1710749697	10.663										
	3 10	LG01020	10527210	0017_LS010	101242	÷						8.4



7.3.3.1.6 Actuators List

1. To view the list of Actuators, click [Actuators] tab.

LDSUs 4	Sensors 3	Actuators 2		
				Search
Actuator Name © Type ©	Control C Mode C	Status 🕐 🛛 🗘	Last Activated 0	Action
Relay - Channel 1 Relay switch	Manual Pulse	Low today at 11:02 AM C		Activate Desctivate Abort >
Relay - Channel 2 Relay switch	Manual Level	Low today at 11:02 AM C	2	Activate Desctivate >

2. The table provides the Actuator *Name, Actuator Type, Control, Mode, Actuator Status,* when the Actuator was *Last Active* and *Actions (Activate / Deactivate)* that can be performed on the actuator. Users may search for a specific Actuator using the **Search** box.

7.3.3.1.7 Configure Actuator / Alert

For illustration purposes, Relay - Channel 1 is used.

1. Click on **Actuator Name** or > to access the Relay- Channel 1 configuration interface.

Actuator Name © Type ©	Control 0	Mode 0	Status 🕐 🗘	Last Activated 0	Action
Relay - Channel 1 Relay switch	Manual	Pulse 1	Low today at 11:02 AM C		Activate Deactivate Abort
Relay - Channel 2 Relay switch	Manual	Level	Low today at 11:02 AM C		Activate Deactivate >

2. The Relay – Channel 1 Actuator detail interface is displayed.

Relay - Channel 1 Gateway / All Actuators / Actuator			
Configuration		Activate Deactivat	Abort
Control		Status	● Low Today at 11:06 AM C
Mode Level Pulse		Actuator Name Relay - Channel 1	Edit
Polarity		Туре	
•		LDSU Name	
High	Low	LDSU Bus Port	
SAVE		Gateway Name	Gateway 2



- 3. Configure the actuator parameters as per the steps given below.
 - a. There are two types of **Control**, namely *Manual, Auto*. Select the *Control* as required.



Manual: This mode allows user to activate and deactivate relay channels manually.

<u>Auto:</u> This mode operates autonomously, with the system managing the activation and deactivation of the relay channel automatically. In this mode, predefined events or conditions determine when the relay channel is activated or deactivated. These events could include specific times of the day, environmental triggers, or inputs from other systems. The system executes these actions based on programmed instructions without requiring manual intervention, enabling automated operation, and reducing the need for constant oversight.

b. There are two types of mode, namely *Level* Mode, *Pulse* Mode. Select the *Mode* as required.



Level: In Level mode, the functionality operates similarly to a standard switch mode commonly found in various electronic devices. Once a channel is activated, meaning the relay is turned on, it remains in that state until the user manually intervenes to deactivate it. This mode provides a straightforward and intuitive way of controlling the relay, offering stability and consistency in maintaining the relay's state until a deliberate action is taken by the user to change it.

<u>*Pulse*</u>: In pulse mode, the functionality mirrors that of automatic doors.

Upon activation, the channel remains active for a predefined period, denoted as T1. During this time, the relay maintains its active state, allowing the load to be powered or controlled as required. This duration typically corresponds to the time required to perform a specific task or operation associated with the load. Following the completion of the T1 period, the channel automatically deactivates. The duration of this inactive period is denoted as T2 and is adjustable based on the application requirements.

c. Select the *Polarity* – *Positive* or *Negative*.



NOTE: Polarity feature is available for both Level mode and Pulse mode.

The LDSBus 2CH relay utilizes Single Pole Double Throw (SPDT) relay type, offering two distinct ways of load connection. Load connection can be achieved by connecting the load to Normally Open (NO) or Normally Closed (NC) terminals. To accommodate these connection options, the controller features two configurations: High and Low.



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<u>High:</u> In the default High configuration, the relay operates with the channel contact closed between the Common (COM) and Normally Open (NO) terminals for activation. Upon deactivation, the channel contact switches to close between the Common (COM) and Normally Closed (NC) terminals.

Low: In the Low configuration, the relay operates in the opposite manner compared to the High configuration. Upon activation, the channel contact closes between the Common (COM) and Normally Closed (NC) terminals. Then, upon deactivation, the channel contact switches to close between the Common (COM) and Normally Open (NO) terminals.

These two configurations provide flexibility in adapting the relay to different load connection requirements, ensuring compatibility with a wide range of applications and allowing users to select the configuration that best suits their specific needs.

d. If the selected mode is *Pulse* mode, then fill in the Pulse Phase in the *T1*, *T2* fields.





T1 and T2 indicate the first and second phase of the pulse, respectively. Input the duration of T1 and T2. Ensure that T1 and T2 duration are greater than 0 seconds and (T1 + T2) duration does not exceed 1 hour.

e. If the selected mode is *Pulse* mode, then select one of the *Deactivate Option* from the drop down list box.



<u>NOTE:</u> Deactivation mode feature is only available for Pulse mode.

The following three distinct options are available for deactivation mode.



Immediate: With this option, the channel instantly returns to its deactivated state without any delay.

<u>Immediate after T1:</u> With this option, the channel returns to deactivated state after completing the T1 cycle.

<u>Immediate after T2:</u> With this option, the channel returns to deactivate state after completing the T1 and T2 cycle.

f. Upon providing all the configuration details, click **[SAVE]**.





g. An appropriate message indicating that the configuration details are saved is displayed. The actuators list table updated accordingly.

Actuator Name © Type ©	Control 0	Mode 🗘	Status 🕐 🗘	Last Activated	Action
Relay - Channel 1 Relay switch	Manual	Pulse	Low today at 11:09 AM C	3g	Activate Deactivate Abort >
Relay - Channel 2 Relay switch	Manual	Level	Low today at 11:09 AM C		Activate Deactivate >

Edit Actuator Name

To edit actuator name, click **[Edit]** and modify the actuator name as required. The actuator information (like Type, LDSU Name etc.) cannot be edited.

Actuator Name	
Relay - Channel 1	Edit
Туре	Relay switch
LDSU Name	LDSBus 2CH Relay
LDSU ID	
LDSU Bus Port	
Gateway Name	Gateway 01

Upon editing the actuator name, click **[SAVE]**. An appropriate message indicating the change is displayed.

Actuator Name	
Relay - Channel 1 @ Fish Farm	Save

The updated actuator name is displayed as part of the actuator list table and dashboard chart (if available).

Actuator Name © Type ©	Control 0	Mode 💲	Status 🕐 🗘	Last Activated 0	Action
Relay - Channel 1 @ Fish Farm	Manual	Pulse	Low today at 11:11 AM C		Activate Deactivate Abort >
Relay - Channel 2 Relay switch	Manual	Level	Low today at 11:11 AM C		Activate Deactivate >

Relay Switch					
Mode: Pu					
0 23/0	5/2024 14:25				
0.8					
0.6					
0.4					
0.2					

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Click [Activate] to trigger the actuator into active state. The status is updated to "High".

	Activate Deactivate Abort La	st activated today at 11:16 AM		
	Status	• High Today at 11:16 AM 🥐		
	Actuator Name Relay - Channel 1 @ Fish Farm	Edit		
	Туре	Relay switch		
	LDSU Name	LDSBus 2CH Relay		
	LDSU ID	LC01110101042200090		
	LDSU Bus Port	3		
	Gateway Name	Gateway 2		
Actuator Name © Type © Control © Mode	≎ Status C ≎	Last Activated 🗘	Action	
Relay - Channel 1 @ Fish Farm Relay switch Manual Pulse	High today at 11:18 AM C	Today at 11:18 AM	Activate Deactivate Abort	•
Relay - Channel 2 Relay switch Manual Level	Low today at 11:18 AM C		Activate	

Click [Deactivate] to trigger the actuator into inactive state; The status is updated to "Low".

Click **[Abort]** to cancel the current operation and return the actuator into inactive state immediately. The status is updated to "Low".

		Activate Deactivate A	Last activated today at 11:18 AM		
		Status	Low Today at 11:19 AM C		
		Actuator Name Relay - Channel 1 @ Fish F	Farm Edit		
		Туре	Relay switch		
		LDSU Name	LDSBus 2CH Relay		
		LDSU ID	LC01110101042200090		
		LDSU Bus Port	3		
		Gateway Name	Gateway 2		
Actuator Name © Type © Cor	ntrol 🌣 Mode 🌣	Status 🕐 🗘	Last Activated 🗘	Action	
Relay - Channel 1 @ Fish Farm Relay switch Ma	inual Pulse	Low today at 11:21 AM C	Today at 11:18 AM	Activate Deactivate Abort	>
Relay - Channel 2 Relay switch Ma	inual Level	Low today at 11:21 AM C	•	Activate Deactivate	>
N	OTE: The Abor	rt feature is only	available for Pulse mo	de.	
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Override Actuator

When actuator is in "Auto" mode, the Activate and Deactivate functions are disabled and the override function is displayed. Click **[Override]** to exit the "Auto" mode. Only those actuators that are linked to this event are disabled.

LDSBus 3 Gateway / LDS Bus 3				Q Scan
LDSUs 4	Sensors 3	Actuators 2		
Actuator Name © Type ©	Control Control	Status 🕐 🔅	Last Activated 🗘	Action
Relay - Channel 1 @ Fish Farm Relay switch	Manual Pulse	Low today at 11:25 AM C	Today at 11:18 AM	Activate Deactivate Abort >
Relay - Channel 2 Relay switch	Auto Level	Low today at 11:25 AM C		Override Activate Deactivate >

7.3.4 Configure UART

BRTSys

The UART connection is a RS232 serial cable connection between the gateway and user PC. This connection is known as Machine To Machine (M2M) connection. It enables the user to download system level diagnostic messages about the gateway. These messages can be useful for further troubleshooting in case of issues.

By default, the UART of the gateway is enabled with the default communication parameters. Using the Web Management Console or Mobile app, users can modify the communication parameters, if necessary. Ensure the token balance is sufficient to perform this operation.

1. Click [UART].

Gateway 01					Q Scan		面 Delete
Gateway Name		Status	UUID	Firmware Version	Serial Number		
Gateway 01	Edit					UART	1

2. The UART configuration interface is displayed.

RT teway / UART	
Configuration	Reset to default Reset all fields to default values
Baud Rate	
115200	
Parity	
None	
Flow Control	
None	
Stop Bits	
Data Bits	
8	
Default Message	
Send Alert	
Send Email	
Send SMS	
Send Notification	
SAVE	

Baud Rate - Refers to the communications speed measured in "bits transferred per second." Select the Baud Rate from the drop down control.

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Parity - Parity is used for error-checking. Parity can be either Even, Odd, or None.

For example, for Even parity, if the data is 10010010, the serial port sets the parity bit as 1 to keep the number of logic-high bits Even. For Odd parity, the parity bit is 0 so that the number of logic-high bits is Odd. Select the Parity from the drop down control.

Flow Control - Flow control used to manage the rate of data transmission between sender and receiver to prevent a fast sender from overwhelming a slow receiver.

Stop Bits - Stop bits are used to signal the end of a communication packet. Stop bits can be either 1 or 2 bits.

Data Bits - Data bits are a measurement of the actual data bits transferred within a word. Data Bits can be either 7 or 8 bits.

Send Alert – Refers to the notification mechanism (*Email, SMS, Push Notification*).

Select one or more **Send Alert** mode(s) – *Email, SMS, Push Notification.*

Click **[RESET]** to reset all fields to default values or configure the parameters manually and click **[SAVE]** to save the changes. An appropriate message indicating that the UART properties are set is displayed.

7.3.5 Hierarchy Chart

The **Hierarchy Chart** depicts the visual representation of the relationship between Gateway and its LDSBus devices.

To view the Hierarchy Chart, click [Hierarchy Chart].



Click on each "node" to expand on the sub-groups.

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7.3.6 Gateway Location

BRTSys

This function is used to view/update the selected Gateway Location.

To access the Gateway Location –

1. Click [Gateway Location].



2. The current location of the gateway is displayed.



3. Long tap on the marker **v** to change the gateway location to the new coordinates. A confirmation window will be displayed. Upon changing the gateway location (if any), click **[SAVE]** to save the changes.



7.3.7 Manage Storage

In every subscription, owners receive 5GB of storage data for all their gateways. 5GB of data can buffer reports from 4,750 sensors reporting one report per minute for 365 days. Charges for data offload requests are applied after the data download is complete. The request is not charged if the download is not successful.

There is a storage system for all sensor data. Sensor data is no longer stored when storage is full. Upon exceeding the user-preset storage threshold, the user will receive a first notification. In this notification (email or push notification), the user or owner is notified of the following:

- The sensor storage capacity has exceeded the user-set usage threshold (%)
- Sensor storage will cease when capacity reaches 100%
- Delete or offload sensor data

When storage reaches 100%, a second notification is sent. Upon reaching 100%, sensor data storage is stopped.

Email notifications will be sent to verified email addresses, and push notifications will be sent to verified mobile numbers. The default notification method shall be email if both are verified.

Ensure the token balance is sufficient to perform this operation.

To view / manage storage,

1. Click [Manage Storage].

Hierarchy Chart	© Gateway Location	Manage Storage	Ci Firmware Update	Gateway Descriptor
	Storage	1	Download Gateway data	
2	Grosor cache auspe by No Gatemage Aldr Mill, (0.11%) 5.07 Mill (0.1%) 5.07 Mill (0.1%)		Download all data Mick date range	
Free sensor cache at 43 88 89 90 90 90 90 90 90 90 90 90 90 90 90 90	rege capacity: no ca roz 7/0; moro cache usage by this Gatevray moro cache usage by all other Gatevray(t) es armoro cache storage capacity 10: Clear Data		± Download Data	

- 2. The information related to *Used Storage* (storage used by the current gateway and other gateways) and *Free Storage* are displayed.
- 3. Click **[Clear Data]** to clear all the data related to the selected gateway. A confirmation message is displayed. Click **[YES]** to clear the data or **[NO]** to discard the operation.
- 4. To download gateway data, select a time zone (applicable only for Pick data range option); Select data to include Download all data or Pick date range. Upon providing the required input, click [Download Data]. A confirmation message is displayed. Click [OK]. Upon confirmation, an email will be sent to the user's registered email address with <u>instructions</u> on how to download the gateway data.



7.3.8 Firmware Update

This function is used to update gateway firmware. To update firmware,

1. Click [Firmware Update].

मुंबर Hierarchy Chart	© Gateway Location	Ranage Storage	Firmware Update	1 Gateway Descripto
[2 Current Version V 1.4.31		V 1.4.25 Log	2 ×
	Last Update Details Version V 1.4.31	Last Update Date Last 1 12/07/2024 Succe	Uhat's New: - New driver for 4 - LDSBus port fau - Gateway and LD cycle. - Actuator configu	channel Solid State Relay. It indications. SBus port scan with and without power uration v2.0 for Relays.
	Available Updates	Le	What's Improved: -LDSU ID 126 is o What's Fixed: - Fixed an OTA rea - IoTPortal version arm More	considered to be in valid range. covery bug. n 2.0.0 onwards.
	• va.o	Le	am More	

- 2. Currently installed firmware version details and a list of available versions if any are displayed. Click **[Learn More]** to view the *version log*.
- 3. Select the required version and click **[UPDATE]**. A confirmation will be displayed. Click **[UPDATE]** to proceed. A request for firmware update will be submitted.
- 4. Upon updating the firmware, the last updated status is updated from "*In-progress"* to "*Success"*. Firmware is updated if the gateway is online. If the gateway is offline, the firmware update will start later.

Last Update Details			
Version	Last Update Date	4	Last Update Status
V 1.4.25	07/08/2024		In-progress
Last Update Details			
Version	Last Update Date	4	Last Update Status
V 1.4.25	07/08/2024		Success

7.3.9 Gateway Descriptor

BRTSys

Upon successfully connecting to the IoTPortal, the gateway registers its Gateway Object Descriptor. To view the gateway descriptors -

1. Click [Gateway Descriptor]. The Gateway Descriptors are displayed.

문 Hierarchy Cha	art	© Gateway Location M	lanage Storage	Firmware Update	G	iateway Descriptor
	UUD		Number of LDS Ports			1
	Serial Number		Configuration Storage			
	Ethernet MAC Address		Maximum LDSUs per Gate	way		
	1 WiFi MAC Address		Machine to Machine Confi	g		
	Model Number		GPS Location			
	Product Version		Auto-Scan			
	Firmware Version		Sensor Cache Status			
	Sensor Cache Storage	Size 64				

7.4 Manage Gateway Group

Gateways can be organized into groups to facilitate gateway administration. For example, firmware updates can be applied to all gateways in the group.

7.4.1 Create New Gateway Group

To create new gateway group -

1. Click Gateways > Gateway Groups from the menu.



2. For first time users, there will not be any Gateway Groups displayed. Click [+New Group].



3. Enter a *Group Name;* Select the *member gateways* of this Gateway Group by clicking **[Select Gateways]**; Click **[DONE]**.

Group Name		
Gateway Group 1	Select Gateway 3	
Select Gateways	Standalone Cateway 01 UND Lisofteentoszziteeon?	
	No gateways selected.	
CANCEL SAVE	1	



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4. The selected gateway(s) are displayed. Click [SAVE].

Group Name	
Gateway Group 1	
Gateway Gloup 1	
Select Gateways	
Select Gateways Select Gateways Gateway 01	Search
Select Gateways Select Gateways Gateway 01	Search
Select Gateways Select Gateways Gateway 01	Search

5. New Gateway Group is created successfully.

loT Po	rtal 💼 🛛 James Adam Your Personal Account 💠		Success ×
للله Dashboards	Gateway Groups	5 + New Group	Device group added successfully.
Gateways	Group Name 🗘	Members û	Action
Events	Gateway Group 1	1	
ැබු Settings			
© About			



7.4.2 Edit Gateway Group Name

To edit gateway group name,

1. Click Gateway Group Name or >.

Gateway Groups	+ New Group Search for	
Group Name 🗘	Members 🗘	Action
Gateway Group 1	1	b >

2. The Gateway Group Name and the Group Members are displayed. Click [Edit].

Gateway Group 1 Gateway Groups / Group Details			🗇 Delete
Group Name Gateway Group 1			Edit
Group Members Firmware Update (0)		+ Add Gate	way to Group Search.
Gateway Name	UUID	Last Active	Action
Gateway 01	LG01020105272100017	Online	Transfer Remove >

3. Edit the *Gateway Group Name* as required and click **[Update]**. An appropriate message indicating the update is displayed.





7.4.3 Firmware Update for Gateway Group Member

To perform firmware update for gateway group member -

1. Select one or more gateways from the Group Member table by selecting the **checkbox**. Alternately, to select all the group members, select the checkbox on the table header.

Gateway Group 1 Gateway Groups / Group Details			1 D	elete
Group Name Gateway Group 1			Edit	
Group Members Firmware Update (1)		+ Add Gat	eway to Group	
Gateway Name	UUID	Last Active	Action	
Gateway 01	LG01020105272100017	Online	Transfer	
1				

2. Click [Firmware Update].

3. Select the required version; Click **[Learn More]** to view the *version log.* Click **[UPDATE]**. A confirmation window will be displayed. Click **[UPDATE]** to proceed. A request for firmware update will be submitted.

Select Update	×
Available Updates	
🔍 V 1.4.24	Learn More 3
V 1.4.23	Learn More
V 1.4.22	Learn More
V 1.4.21	Learn More
V1420	Learn More
	UPDATE 3

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7.4.4 Transfer Gateway from one group to another group

This function allows users to transfer gateway from one group to another. To transfer gateway -

1. Click **[Transfer]** against the Gateway to be transferred. A confirmation window will be displayed. Click **[Yes]** to proceed. A request for transfer will be submitted.

Gateway Group Gateway Groups /	1 Group Details			册 Delete
Group Name Gateway Grou	p1			Edit
Group Members	(0)		+ Add Gateway to Grou	P Search
Gatewa	ay Name	UUID	Last Active	Action
Gatewa	ay 01	LG01020105272100017	• Offline from today 01:43 PM	Transfer Remove >

2. Select the destination group. Click **[DONE]**. Upon successful transfer an appropriate message indicating the same is displayed.

Select Gateway Group	×
Search	
Gateway Group 2 0 members	
	2 DONE



7.4.5 Remove Gateway from Gateway Group

This function allows users to remove member gateway from gateway group. To remove gateway from gateway group –

1. Click **[Remove]** against the Gateway to be removed.

Gateway Group 1 Gateway Groups / Group Details			🖶 Delete
Group Name			
Gateway Group 1			Edit
Group Members			
Firmware Update (0)		+ Add Gateway to Gro	Search
Gateway Name	UUID	Last Active	Action
Gateway 01	LG01020105272100017	Offline from today 01:43 PM	Transfer Remove 1 >

2. A confirmation window will be displayed. Click **[REMOVE]** to proceed. Upon successful removal, an appropriate message indicating the same is displayed.



Upon successful removal, the gateway will become a standalone / single gateway.



7.4.6 Remove Gateway Group

To remove gateway group -

1. From the Gateway Groups interface, click \blacksquare .

IoT Po	rtal 💼 James Adam Org1 💠		<u>\$</u> 2
لی Dashboards	Gateway Groups	+ New Grou	Search for
Gateways	Group Name 💲	Members 🗘	Action
Events	Gateway Group 1	1	± >
AAA Organisation			1
Ø About			

2. A confirmation message is displayed. Click **[DELETE]** to proceed with the deletion.

Gateway Groups		Search for.
Group Name 🗘	Confirmation Are you sure you want to delete Gateway Group 1?	Action
Gateway Group 1	CANCEL DELETE 2	tin 🖞 🔸

3. Upon successful deletion of gateway group, the gateway will become standalone.

Standalone Gateways		+ Add Gateway		
Gateway Name 😋	UUID ¢	Last Active 🗘	Action	
Gateway 2	LG01020105272100017	Online		



7.5 Standalone Gateway

To access Standalone Gateway interface -

1. Click **Gateways > Standalone Gateways** from the menu.



2. A list of Standalone Gateways (if any) is displayed.

Standalone Gateways		3 + Add Gateway	Search for
Gateway Name 🔅	UUID 0	Last Active	Action
Gateway_1	LG01020105272100017	• Online	
			3 4

- 3. Perform the following functions as required -
 - Add Gateway
 - Remove Gateway
- 4. To access the Gateway details, click on the Gateway or >. Refer to <u>View Gateway Details</u> for more information.



7.6 Delete Gateway

To delete gateway -

1. Click 🗖.

All Gateways		1	+ Add Gateway	Search for	
Gateway Name 🗘	UUID : 0	Last Active 🗘	Group ¢	Action	
Gateway_1	LG01020105272100017	• Online			
				1	

2. A confirmation window will be displayed. Click **[DELETE]** to proceed.

All Gateways					
	_		+ Add Gateway		
Gateway Name	UUID			Action	
Gateway 3	PH80	Confirmation Are you sure you want to delete Gateway 3? This cannot be undone.	ay Group 1		
Gateway 2	PH80		ay Group 2		
Gateway 1	PH80		lone		



NOTE: Once a gateway is deleted, it can be re-onboarded only after 2 hours.



8. Subscription Management

A subscription is tied to a user account and not to a gateway. Currently users can subscribe on a *Monthly* basis. Subscriptions may come with prevailing discounts regardless of the type. *For example*, 0% for monthly.

The subscription plan is created at the time of subscription, sign-up and payments are collected monthly. For example, if a subscription is initiated on July 4th, a monthly deduction will occur every 4th of the month thereafter. Depending on the active discount rate setting for that plan, the discount may be applied once or multiple times.

Subscriptions can only be signed up through the web client (WMC). Owners of subscription can choose the payment schedule (*Monthly*) during subscription sign up.

Add-ons and Entitlements for Tokens

- Tokens are categorized into 3 types Allocated Tokens, Bonus Tokens and Purchased Tokens. Priority is given to Allocated Tokens (Highest Priority), followed by Bonus Tokens and Purchased Tokens (lowest priority). Consumption order is determined by priority. Each token has the same value.
- Tokens are allocated at the beginning of every monthly billing cycle, and any unused tokens from the previous month are reset to zero.
- Bonus tokens are received through promo codes and have an expiration date. With any addition
 of bonus tokens, the expiration date of the old and new bonus tokens will be adjusted to the
 earlier expiration date.
- Purchased tokens are added to the subscription when the owner or authorized user purchases them. Tokens purchased do not expire and may be accumulated through additional purchases.
- User actions consume tokens within the system. Thus, such actions must be accounted for under each organization and user's account.
- To avoid service disruptions due to the full usage of tokens (zero token balance), the IoTPortal shall keep a tally of tokens. An alert shall be sent to the owner or owner's group when the remaining token balance reaches less than 72 hours of service. Once triggered, this alert will be sent every day until the token balance is restored to more than 72 hours.

	Resource	Tokens Consumed
1	Email	1000 / Email
2	SMS	3000 to 33000*
		Depends on destination and the SMS rate
3	Notification	0 per notification
		(100% discounted)
4	Ingress Report	0 per MiB
		(100% discounted)
5	Egress Commands	0 per MiB
		(100% discounted)
6	Dashboard Data Request	2000 per MiB
7	Data Download Request	1000 per 10MiB
8	Active Event	0 per Event per Day per enable (100% discounted)

Table 2 – Token Conversion Rate



8.1 Subscription Sign Up

The subscription menu is enabled / displayed only for the Owner. To sign up for Subscription -

1. Click [Subscribe Now].



2. Click [Subscribe]. To view the Token conversion rate, click the link.

Subscribe to ge	t the very best	of IoTPortal
Subscription includes:		
Get 3,000,000 Tokens every	month	
 Use Tokens to get dashboar and download data. 	rd data, send alerts (e	mail, notifications, SMS
Token conversion rate		
3,000,000 Tokens every r	nonth • Recurring billi	ng • Cancel anytime
Token Conversion Rate 2		×
Token Conversion Rate 2	Token Consumed	×
Token Conversion Rate 2 Resource Email	Token Consumed	/ Email
Token Conversion Rate 2 Resource Email SMS	Token Consumed 1000 3000 to 33000* *Depends on destination	/ Email / SMS n and the SMS rate.
Token Conversion Rate 2 Resource Email SMS Notification	Token Consumed 1000 3000 to 33000* *Depends on destination +0 0 100% Discount	× / Email / SMS n and the SMS rate. / Notification
Token Conversion Rate 2 Resource Email SMS Notification Ingress Report Ingress Report	Token Consumed 1000 3000 to 33000* *Depends on destination 100% Discount 2000 0 100% Discount	× / Email / SMS n and the SMS rate. / Notification / MiB
Token Conversion Rate 2 Resource Email SMS Notification Ingress Report Egress Commands	Token Consumed 1000 3000 to 33000* *Depends on destination 100% Discount 2000 0 100% Discount 5 0 100% Discount	× / Email / SMS n and the SMS rate. / Notification / MiB / MiB
Token Conversion Rate 2 Resource Email SMS SMS Notification Ingress Report Egress Commands Dashboard Data Request	Token Consumed 1000 3000 to 33000* *Depends on destination +0 100% Discount 2000 100% Discount 5 100% Discount 2000	× / Email / Email / SMS n and the SMS rate. / Notification / MiB / MiB / MiB
Token Conversion Rate 2 Resource Email SMS SMS Notification Ingress Report Egress Commands Dashboard Data Request Data Download Request Data Download Request	Token Consumed 1000 3000 to 33000* *Depends on destination +0 100% Discount 2000 100% Discount 2000 100% Discount 2000 1000	× / Email / Email / SMS n and the SMS rate. / Notification / MiB / MiB / MiB / 10MiB



3. Subscriptions / Billing address interface is displayed.

Enter the following <u>Customer information</u> – *Customer ID* and *PRN* and click to **[VERIFY]** the same.

Checkout Subscriptions / Bil	lling Address					
Custon Enter you	ner ID and PRN ar Customer ID and PRN.			3		
Customer ID	TEST_CUSTOMER_123	PRN TES	T_PRN_123	VERIFY	🥑 Verified	

Upon verifying successfully, enter the following <u>Billing Address information</u> – *First Name, Last Name, Street, Building (optional), Floor, Unit, City, Zip/Postal Code, Country, State/Province* (optional)

Checkout Subscriptions / Billing Address	3	
Customer ID and PRN Enter your Customer ID and PRN.		You are buying
Customer ID TEST_CUSTOMER_123 PRN TEST_PF	NL123 VERIFY Ø Verified	Monthly Charge USD 30.00/mo Billing Startis: 04 Mar 2024 Subscription Period: 04 Mar 2024. 03 Mar 2025 (12 Months)
Billing Address Address is required according to regulatory requirement.		Billing starts from today (04 Mar 2024), and will renew automatically every month. Payments won't be refunded for partial billing periods. Cancel anytime.
James		
Adam		NEXT 4
Street 1 Tai Seng Avenue, Tower A		
Building (Optional) Tai Seng Exchange		
Floor, Unit		
03-01 City		
Singapore		
536464		
Country Singapore		•
State/Province (Optional)		
Central Singapore		×

- 4. Click **[NEXT]**. Upon successfully adding the billing address, an appropriate message indicating the same is displayed.
- 5. Add the Payment Method (Card Number, Expiration Date and CVV number).

Checkout Subscriptions / Billing Address / Checkout			You are buying	
Customer ID and PRN Them are required to complete the transaction. Customer ID: TEST_CUSTOMER_123 PRN: TEST_PRN_123			Monthly Charge Billing Starts: 04 Mar 2024 Subscription Period: 04 Mar 2024 - 03 Mar 2025 (12 Months)	USD 30.00/mo
Billing Address Address to regulatory requirement.			Promocode	
James Adam Singapore, 1 Tai Seng Avenue, Tower A, Tai Seng Exchange, 03-01, Singapo	re, 536464			USD 30.09 - USD 0.00 USD 2.70
Payment Method				
Pay with card		VISA 👥	Total	
Card Number			Jame to the Terms of Bassica	
Etpracenuum (son(m)	5 <u></u>		PAY	
uct Page				5
ment Feedback			Copyright © BRT Sys	tems Pte Lto



6. Select or enter the promo code, if any and click [Apply].



- 7. Go through the *Terms of Service* (by clicking on the link) and accept it by clicking on the check box. Upon adding the required information, click **[PAY]**.
- 8. Once the payment is successful an appropriate message indicating the same is displayed and the subscription details are displayed.

Subscription					
Current Balance		Purchase Additional Tokens		Subscription Information	
Monthly Allocated Tokens 04 Mar 2024 - 03 Apr 2024	3,000,000 /3,000,000	Bundle of 1,000,000 Purchased Tokens No orphy	USD 10.00	FMIX 788/6812/949c-4174-6/d41636/94/7887e7 Customer ID: TKST_CXSTOMER_123	
Bonus Tokens			1,000,000 Tokens	Vour next billing date in 04 Apr 2024 IoTPortal Monthly Subscription - USD 30.00/mo Monthly Plan - Active	
Purchased Tokens No expiry		USD 10.00	9		
Token conversion rate					
Token Spending Detailed Statistics					
Monthly Spending		Overview			Show Overview 2024 -
PS - Construction	0% - 0%				
Erneil 🛢 SMS 🖷 Notification 🔳 Deshboard I	Data 🔳 Data Download	Email SMS ENdification Deshboard Data	Data Download		

9. To purchase additional tokens, enter the required token quantity, click **[BUY]** and **repeat the steps from 6-8**.

BRTSYS_AN_033 IoT Portal User Guide - Portal Web Application Version 2.0 Document Reference No.: BRTSYS_000103 Clearance No.: BRTSYS#083

8.2 Billing History

BRTSys

Token purchases can be viewed in the billing history interface, which shows a history of all transactions. Additionally, invoice receipts can be downloaded through this interface.

To view billing history,

1. Click on the **avatar** icon at the top right corner and selection **Subscription** from the resulting menu.

ΙοΤΡοι	rtal 💼 🛛 James Adam Your Personal A	1 ccount		Current Ba 3,000,0 0	alance: 00 Toke	ns 🖄	8
للس Dashboards	All Gateways				පී	James Adam iotportalusr1@gm	
				+ Add Gateway		Subscription	1
	Gateway Name 🗘	UUID 0	Last Active 🗘	Group 🗘		Account Setting	s
Events	Gateway_1	LG01020105272100017	• Online		8	Logout	

2. Subscription interface is displayed. Click [Manage Subscription].

Subscription		
Current Balance	Purchase Additional Tokens	Subscription Information
3,000,000 Tokens Monthly Allocated Tokens 3,000,000 /3,000,000	Bundle of 1,000,000 Purchased Tokens No expiry USD 10.00	PRN: 788fd812-949c-4174-b6d4-fa5d9d73a7e7 Customer ID: TEST_CUSTOMER_123
04 Mar 2024 - 03 Apr 2024 Bonus Tokens 0 -	Qty (Max 100) 1,000,000 Tokens	Your next billing date is 04 Apr 2024 IoTPortal Monthly Subscription - USD 30.00/mo Monthly Plan - Active
Purchased Tokens 0 No expiry Token conversion rate	USD 10.00 BUY	Manage Subscription 2

3. Manage Subscription interface is displayed. Click Billing History.

Manage Billing History Billing	g Address			
Current Plan Manage your subscription				CANCEL SUBSCRIPT
Monthly Plan - Active IoTPortal Monthly Subscription	Monthly Allocated Tokens 3,000,000	Starts On 04 Mar 2024	Renewal Monthly	P4 US
			Next Billing Date 04 Apr 2024	Monti USI
Add on				
Bundle of 1,000,000 Purchased Tokens Monthly renewing additional tokens, starting from next billing date.			Qty (Max 100) 1 USD 10.00/m	NO BUY ADD O
Payment Information EGB payment method for subscription				EDIT PAYM
Payment method used for current subscription Ending in 1111 Visa				
uct Page				



4. A list of transactions (if any) will be displayed.

Manage Subscription Subscription / Manage Subscription					
Manage	Billing History	Billing Address			
				04/03/2024 - 03/04/2024 Filt	er Search
Receipt Type 😄	Period 0	Transaction ID 👙	Payment Date 🔅	Amount 0	Status 0
Monthly Subscription	04/03/24 - 03/04/24 4	5e1410b2-e546-402b-a454-260fb	04/03/2024		Success R Download

5. Click **[Download]** to download the invoice receipt in pdf format. Please note that the invoice receipt can be downloaded only after the payment *status* shows *success*.

BRT SYSTEMS PTE LTD. 1 Tai Seng Avenue, Tower A, #03-01	Document No.: 983002850 Date of Issue: 04 Mar 2024				
Singapore 536464					
Tet: +65 6547 4827, Fax: +65 6841 6071 Email: sales@brtsys.com		GST Registration	No.: 202220043F		
Bill To:	Account ID: i	otportalusr1@gn	nail.com		
James Adam	Customer ID:	TEST_CUSTOM	ER_123		
1 Tai Seng Avenue, Tower A, 03-01	PRN: 788fd8	12-949c-4174-b6	d4-fa5d9d73a7e7		
Singapore, Central Singapore, Singapore 53	6464 Currency: US	\$D			
DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE		
			101000000000		
Monthly Plan	1	\$30.00 USD	\$30.00 USE		
Monthly Plan (Tokens 3.000,000) Period: D4 Mar 2024 - 03 Apr 2024	1	\$30.00 USD	\$30.00 USE		
Monthly Plan (Tokens 3.000.000) Period: D4 Mar 2024 - 03 Apr 2024	1	\$30.00 USD	\$30.00 USC		
Monthly Plan (Takens 300.000) Period: D4 Mar 2024 - 03 Apr 2024	1	\$30.00 USD Sales:	\$30.00 USD \$30.00 USD		
Monthly Plan Trakens 30.00.000 Period: D4 Mar 2024 - 03 Apr 2024	1	\$30.00 USD Sales: Discount:	\$30.00 USE \$30.00 USE -\$0.00 USE		
Monthly Plan (Tokms 3.000.000) Period: D4 Mar 2024 - 03 Apr 2024	1 Taxe	\$30.00 USD Sales: Discount: s (GST 9.0%):	\$30.00 USE \$30.00 USE -\$0.00 USE \$2.70 USE		
Monthly Plan (Takens 30.00.000) Period: 04 Mar 2024 - 03 Apr 2024	1 Taxe	\$30.00 USD Sales: Discount: s (GST 9.0%): Total:	\$30.00 USE \$30.00 USE -\$0.00 USE \$2.70 USE \$32.70 USE		
Monthly Plan (Takens 300.000) Period: D4 Mar 2024 - 03 Apr 2024 Period: D4 Mar 2024 - 03 Apr 2024	1 Taxe	\$30.00 USD Sales: Discount: s (GST 9.0%): Total: Sales (SGD):	\$30.00 USE \$30.00 USE -\$0.00 USE \$2.70 USE \$32.70 USE \$40.34 SGE		
Monthly Plan (Tokens 30:00:00) Period: 04 Mar 2024 - 03 Apr 2024 For GST reporting purposes only,	1 Taxe	\$30.00 USD Sales: Discount: s (GST 9.0%): Total: Sales (SGD): Discount:	\$30.00 USE \$30.00 USE -\$0.00 USE \$2.70 USE \$32.70 USE \$40.34 SGE -\$0.00 SGE		
Monthly Plan (Tokens 300:000) Period: D4 Mar 2024 - 03 Apr 2024 For GST reporting purposes only,	1 Taxe: Taxe:	\$30.00 USD Sales: Discount: s (GST 9.0%): Total: Discount: s (GST 9.0%):	\$30.00 USE \$30.00 USE \$2.70 USE \$32.70 USE \$40.34 SGE \$40.34 SGE \$3.63 SGE		
Monthly Plan (Trakens 30:00:00) Period: 04 Mar 2024 - 03 Apr 2024 For GST reporting purposes only, SGD Exchange Rate: 1 SGD = 0.7438 USD	1 Taxe Taxe Taxe	Sales: Discount: s (GST 9.0%): Total: Sales (SGD): Discount: s (GST 9.0%): otal in SGD:	\$30.00 USE \$30.00 USE \$30.00 USE \$2.70 USE \$32.70 USE \$40.34 SGE \$40.34 SGE \$43.97 SGE		
Monthly Plan (Tokans 3.000.000) Period: 04 Mar 2024 - 03 Apr 2024 For GST reporting purposes only, SGD Exchange Rate: 1 SGD = 0.7438 USD	1 Taxe Taxe Taxe	\$30.00 USD Sales:: Discount: s (GST 9.0%): Discount: s (GST 9.0%): Discount: s (GST 9.0%): otal in SGD:	\$30.00 USE \$30.00 USE -\$0.00 USE \$2.70 USE \$32.70 USE \$40.34 SGE \$40.34 SGE \$43.97 SGE \$43.97 SGE		

Sample Receipt / Invoice for Singapore Users

RECEIPT/ INVOICE BRTSys Document No.: 683000001 BRT SYSTEMS PTE LTD. Date of Issue: 27 Feb 2023 1 Tai Seng Avenue, Tower A, #03-01, Singapore 536464 Tel: +65 6547 4927, Fax: +65 6841 6071 Email: sales@brtsys.com GST Registration No.: 202220043R Account ID: email@domain.com Customer ID: SYS-000001 Bill To: Your Name Your Address, Town PRN: BRTSYS00001 City, Postcode Currency: USD DESCRIPTION OTY UNIT PRICE TOTAL PRICE Monthly Plan 1 \$50.00 USD \$50.00 USD (Yokena (000000) Periud: 27 Feb 2023 - 26 Mar 2023 Add-On Bundle of 1,000,000 Purchased Tokens \$10.00 USD \$10.00 USD 1 Sales: \$60.00 USD Discount: -\$0.00 USD Total: \$60.00 USD ure is required. Please request if a tax invoice is needed © BRT Systems Pts Ltd. www.brtsys.com

Sample Receipt / Invoice for Non- Singapore Users



8.2.1 Buy Add-On tokens

To buy add-on tokens,

1. In the Manage Subscription interface, under Add-on section, click [BUY ADD-ON].

Manage	Billing History Bi	illing Address		
		0		
it Plan e your subscription	C	Confirm		CANCEL SUBSCRIPTION
y Plan - Active rtal Monthly Subscription	Your added payment meth every month together with	od will charge additional USD 10. I your monthly subscription charg	00 Renewal C. Monthly	Per Mor USD 30.
	The new billing will start account will be credited a tokens together with you billing date on	t on the next billing date and your additional 1 x 1,000,000 purchase ar subscription plan from the nex awards until you cancel.	d Next Billing D t 04 Apr 2024	ate Monthly To 4 USD 30.1
	Do you v	want to continue?		
	NO	YES 2		
		YES 2		1

- 2. A confirmation message will be displayed. Go through the message and click **[YES]** to proceed.
- 3. Upon successful purchase, the details are displayed as part of the current plan.

Current Plan Manage your subscription			CANCE	L SUBSCRIPTION
Monthly Plan - Active IoTPortal Monthly Subscription	Monthly Allocated Tokens 3,000,000	Started On 04 Mar 2024	Renewal Monthly	Per Month USD 30.00
Add-on - Active Bundle of 1,000,000 Purchased Tokens Remove Add-on	Monthly Purchased Tokens 1 x 1,000,000	Starts On 04 Apr 2024	Reneiwal Monthly	Per Month USD 10.00
			Next Billing Date 04 Apr 2024	Monthly Total USD 40.00



8.2.2 Remove Add-On tokens

To remove add-on tokens,

1. Click Remove Add-On.

Current Plan Manage your subscription			CANCE	L SUBSCRIPTION
Monthly Plan - Active IoTPortal Monthly Subscription	Monthly Allocated Tokens 3,000,000	Started On 04 Mar 2024	Renewal Monthly	Per Month USD 30.00
Add-on - Active Bundle of 1,000,000 Purchased Tokens Remove Add-on	Monthly Purchased Tokens 1 x 1,000,000	Starts On 04 Apr 2024	Renewal Monthly	Per Month USD 10.00
			Next Billing Date 04 Apr 2024	Monthly Total USD 40.00

2. A confirmation message will be displayed. Go through the message and click **[CANCEL ADD-ON]** to proceed.



3. The Add-on tokens are removed successfully.

Current Plan Manage your subscription			CA	NCEL SUBSCRIPTION
Monthly Plan - Active IoTPortal Monthly Subscription	Monthly Allocated Tokens 3,000,000	Started On 04 Mar 2024	Renewal Monthly	Per Month USD 30.00
			Next Billing Date 04 Apr 2024	Monthly Total USD 30.00
Add-on 3				
Bundle of 1,000,000 Purchased Tokens Monthly renewing additional tokens. starting from next billing date.		Qty (Max 100) 1	USD 10.00/mo	BUY ADD-ON



8.3 Updating Billing Address

To update billing address,

1. From the Manage Subscription interface, click **Billing Address**.

Manage	Billing History	Billing Address	1			
urrent Plan Image your subscription						CANCEL SUBSCRIPTION
anthly Plan - Active TPortal Monthly Subscription			Monthly Allocated Tokens 3,000,000	Starts On 04 Mar 2024	Renewal Monthly	Per Mar USD 30.
					Next Billing Date 04 Apr 2024	Monthly To USD 30.
ld-on						
Bundle of 1,000,000 Purchased Tokens Monthly renewing additional tokens, starting fro					Qty (Maix 100) 1 US	5D 10.00/mo BUY ADD-ON
yment Information It payment method for subscription						EDIT PAYMENT
avment method used for current subscript	ion					

2. Billing Address interface is displayed. Update the billing address (as required) and click **[UPDATE]** to save the changes (if any).

Manage Subscription Subscription / Manage Subscription	
Manage Billing History	
Billing Address Address is required according to regulatory requirement.	
First Name	
James	
Last Name	
Adam	
Street	
1 Tei Bong Avenue, Tower A	
Building (Optional)	
Tal Seng Exchange	
Floor, Unit	
03-01	
City	
Singapore	
Zip/Postal Code	
536464	
Country	
State/Province (Optional)	
Central Singapore	



8.3.1 Edit Payment Information

To edit payment information,

1. In the Manage Subscription interface, under Payment Information section, click [EDIT PAYMENT].

Current Plan Manage your subscription			CA	NCEL SUBSCRIPTION
Monthly Plan - Active IoTPortal Monthly Subscription	Monthly Allocated Tokens 3,000,000	Started On 04 Mar 2024	Renewal Monthly	Per Month USD 30.00
			Next Billing Date 04 Apr 2024	Monthly Total USD 30.00
Add-on				
Bundle of 1,000,000 Purchased Tokens Monthly renewing additional tokens, starting from next billing date.		Qty (Max 100) 1	USD 10.00/mo	BUY ADD-ON
Payment Information Edit payment method for subscription				EDIT PAYMENT
Payment method used for current subscription				
Ending in 1111 Visa				

2. Edit the payment information as required and click **[UPDATE]** to save the changes, if any.

	VISA 🥌
CVV (3 digits)	
•••	
	CVV (3 digits)



8.4 Cancel Subscription

To cancel subscription-

1. From the Manage Subscription interface, click [CANCEL SUBSCRIPTION].

and the second					
Manage	Billing History	Billing Address			
urrent Plan anage your subscription				1	CANCEL SUBSCRIPTION
onthly Plan - Active TPortal Monthly Subscription		Monthly Allocated Tokens 3,000,000	Starts On 04 Mar 2024	Renewal Monthly	Per Mo USD 30

2. A confirmation message is displayed. Click **[YES]** to cancel the subscription or **[NO]** to cancel the subscription cancellation operation.



8.5 Re-Subscription

To re-subscribe-

1. From the Subscription interface, click **Manage Subscription**.



2. From the Subscription > Manage Subscription interface, click [SUBSCRIBE].

	Current Plan Manage your subscription				SUBSCRIBE
	Monthly Plan - Canceled IoTPortal Monthly Subscription	Monthly Allocated Tokens 3,000,000	Started On 04 Mar 2024	Ends on 03 Apr 2024	Per Month USD 30.00
9.	Event Manage	ement			

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An event is a set of triggers evaluated against a set of conditions that cause an action or sequence of actions to happen. There are 5 types of events. The following table provides the list of events and action triggered.

	Event Type	Action Triggered
1	Sensor based events	The trigger signal is generated by one or more sensors
2	Time based events	The trigger signal is generated by a clock
3	Duration based events	The trigger signal is generated by a timer
4	Attribute based events	The trigger signal is generated by an attribute of an object that is not a sensor (for example, an attribute of a gateway)
5	Complex events	Combination of one or more above triggers

Table 3 – Event Types

In every event, conditions are evaluated, and when the conditions are met, an action or sequence of actions is taken. Alerts and actuation sequences may be included in such actions. A triggered event cannot be re-armed until all its action components have been completed.

The events are created by the event owner, or any member of the organization authorised to perform the action, such as CREATE, READ, UPDATE and DELETE (CRUD). Events are given a name, and a log of event activations is kept and counts towards storage. Events can be enabled or disabled. The default state is disabled. A disabled (disarmed) event ignores its trigger signals and does not evaluate its conditions.



9.1 Create Event

To create a new event-

1. Click **Events** from the menu. If no events are available, then the interface will be empty. Else, a list of events is displayed.

IoT Pc	ortal 🌐	Adam James Your Personal Account	t 🗢					Current Balance: 2,997,000 Tokens	Ø	8
្ន៍ណ៍ Dashboards	Event M	lanagement								
Gateways		All Events 🕕		Event Variables						
Events	1					2	+ New Event			Search
ැබු Settings	Event N	lame 🗘		Event Conditions 0	Event Act	ions 0		Status Action		
© About					No Events to display.					

- 2. Click [+ New Event].
- 3. Enter a name for the Event. For example, *Event_Fish_Farm_pH_High*. Click **[CREATE]**.



9.1.1 Add Condition(s) / Action(s)

9.1.1.1 When

4. Add conditions to trigger an event by clicking [+ADD CONDITION];

Event_Fish_Farm_pH_H Events / Event Details	ligh					🗇 Delete
Enable this event	0	Event Name	Event_Fish_Farm_pH_Hi	gh		P Edit
	Wh	en		>	Do	
,	Add conditions to + ADD CO	trigger this eve NDITION	ent.		Add the actions this event will run.	

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- 5. Select the condition, for example, *Recurrence*;
 - Add Condition
 ×

 Image: Condition
 ×
 </t
- Configure the condition details as required and click [ADD]. For illustration purpose, "Recurrence Type – Daily" is explained here. The below picture shows a recurrence condition that repeats "Daily" "Every Day" "at" "12:00 PM" and "End by 24/08/2024".

Recurrence Events / Event Details					
Repeat	Weekly	Monthly	Yearly		
Repeat Every 1 Minimum 1 day an					Day(s)
Time Schedule At 12:00 PM					() Add
12:00 PM					
Range of Recur	24/05/2024				
End	No end date	End by		ö	
CANCEL ADD	6				



9.1.1.2 Do

Now, add the actions the event will run when the conditions are met, by clicking [+ADD ACTION]. For illustration purpose, "Action – Trigger Recurrence Type – Daily" is explained here



8. Select the action to be taken from the Add Action window. For illustration purpose, "Add Action – Trigger Actuator" is explained here.

Add Ac	tion	×
0	Send SMS Send SMS to one or more phone numbers	2
0	Send Email Send entail to one or more email addresses	>
0	Send Notification Send notification to one or more users	\$
6	Trigger Actuator Add an action to trigger Actuator	12
0	Add Delay Add a delay before an action gets triggered	*
	Modify Event Variable Modify the value of Event variable	>

9. Select Actuator and click [DONE].





<u>NOTE:</u> If the actuator is in "Manual" mode, it will not be enabled to select actuator. In order to use the actuator in an event, it should be "Auto" mode.

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10. The Actuator details (like Actuator Name, Mode etc.) are displayed. Select the appropriate **Action –** Activate or Deactivate. Click **[ADD]**.

Trigger Actuator Events / Event Details / Action
Actuator
Relay - Channel 1 @ Fish Farm Relay Switch Mode: Pulse Control: Auto
Action
Activate Deactivate CANCEL ADD 10

11. Upon successfully adding the action, an appropriate message indicating the same is displayed. The event details are displayed. The below picture shows an event with a recurrence condition (left side) that repeats "Daily" "Every Day" "at" "12:00 PM" and "End by 24/08/2024". Upon triggering this event, the Actuator Relay – Channel 1 @ Fish Farm will be activated.

Event_Fish_Farm_pH_High Events / Event Details						🗂 Delete
Enable this event	0	Event Name	Event_Fish_Farm_pH_High			C Edit
					11	
	W	nen		>	Do	
C Daily Recurrence At 12:00 PM	AND				Actuator Relay - Channel 1 @ Fish Farm Relay Switch Mode: Pulse Control: Auto Action: Activate	
	OR +					

		BRTSYS_AN_(033 IoT Portal User Gu	ide - Portal Web Applicati
BRTSys	б р	ocument Reference I	No.: BRTSYS_000103	Version Clearance No.: BRTSYS#0
2. Enable or Dis	able event using	the 💽 toggle	button ² . By default	, the events are disable
Event_Fish_Farm_pH_ Events / Event Details	High			🝵 Delete
Enable this event	Event Name	Event_Fish_Farm_pH_High		🥖 Edit
	When	>		Do
C Daily Recurrence At 12:00 PM			C Actuator Relay - Channel 1 @ Fish Farm Relay Switch	
	AND +		Mode: Pulse Control: Auto Action: Activate	
	OR			·
	•			
	Event Status	Toggle	Button State	
	Enabled			

13. Upon creating the Event Conditions and Actions, the list of events is updated.

Disabled

Event Management				
All Events 1	Event Variables 0			
		l l	+ New Event Search for	Search
Event Name 🗘	Event Conditions 🗘	Event Actions 🗠 🗘	Status 😂 Acti	on
Event_Fish_Farm_pH_High	Single Condition		•	
Show 10 - entries				Previous 👔 Next

² A toggle button refers to a control used for switching (or toggling) between two or more states or options.



9.1.2 Change the order of the Condition(s) / Action(s)

To change the order of condition(s) / action(s) -

Click on the "=" icon to change the order of the condition / action by moving up or down.

Event_Fish_Farm_pH_High Events / Event Details					Delete
Enable this event	Event Name	Event_Fish_Farm_pH_High			se Edit
	When		>	Do	
Daily Recurrence At 12:00 PM	AND +	/ ×		Actuator Relay - Channel 1 @ Fish Farm Relay Switch Mode: Fulse Control: Auto Action: Activate	/ ×
	OR +				

9.1.3 Edit Condition(s)

1. Click Edit 🖍	icon.			
Event_Fish_Farm_pH_High Events / Event Details	21 1			🛅 Delete
Enable this event	C Event Name	Event_Fish_Farm_pH_High		🧷 Edit
	When	?	Do	
Daily Recurrence At 12:00 PM	AND +		Actuator Relay-Channel 1 @ Fish Farm Relay Switch Mode: Pulse Control: Auto Action: Activate	0 × =
	OR			
	+			

To edit condition(s)

BRTSys



2. Modify the condition as required. Click **[UPDATE]** to save the changes, if any.

Daily					
- Juliy	Weekly	Monthly	Yearly		
Repeat Every					
					Day(s)
Time Schedule					
At					
				0	Add
12:00 AM 🗙					
Range of Recu	rrence				
Start		-			
End	No end date	End by			

9.1.4 Edit Action(s)

To edit action(s) -

1. Click Edit 🖍 icon.

Event_Fish_Farm_pH_High Events / Event Details						📋 Delete
Enable this event	0	Event Name	Event_Fish_Farm_pH_High			/ Edit
	Wh	en		>	Do	
C Daily Recurrence At 12:00 PM	AND +				Control: Autor Relay-Channel 1 @ Fish Farm Relay Switch Mode: Pulse Control: Auto Action: Activate	/* 1
	OR +					



2. Modify the actions as required. Click **[UPDATE]** to save the changes, if any.

Trigger Actuator Events / Event Details / Ac	ion'
Actuator	
Relay - Channel 1 Relay Switch Mode: Pulse Control: Auto	@ Fish Farm
Action	
 Activate 	Deactivate
CANCEL	2

Note that only the "Action" can be edited. To edit actuator details, the existing action must be deleted and a new action must be added, since the edit action feature does not allow for editing actuator details.

9.1.5 Delete Condition(s) / Action(s)

To delete condition(s) / action(s) -

1. Click **Delete** X icon.

Event_Fish_Farm_pH_High Events / Event Details						Delete
Enable this event		Event Name	Event_Fish_Farm_pH_High			
	When		1	>	Do	
Oally Recurrence At 12:00 PM	AND +		/ ×		C Actuator Relay - Channel 1 @ Fish Farm Relay Switch Mode: Pulse Control: Auto Action: Activate	0 <mark>×</mark> =
	OR +				-	

2. A confirmation window is displayed. Click [DELETE] to remove the condition/action.



Product Page Document Feedback


Event 1- Fish Farm pH justHigh Events / Event Details	4		面 Delete
Enable this event	Event Name	Event 1- Fish Farm pH justHigh	🖉 Edit



ม์มี Dashboards	Events		+ New Event		Search
Gateways	Event Name 🗘	Event Conditions 0	Event Actions 🗘	Status	
Events	Event 1- Fish Farm pH justHigh	Single Condition	(L)	•	
AAA Organisation		Showir	ng 1 to 1 of 1 entries		ious 🚺 Next
© About					

2. Click [Delete].

Event 1- Fish Farm pH justHigh Events / Event Details			2	🖞 Delete
Enable this event	Event Name	Event 1- Fish Farm pH justHigh		/ Edit

3. A confirmation message is displayed. Click [DELETE] to proceed with deletion.



10. Dashboard Management

The dashboard function allows users to create dashboards for data visualization in real time. Users can create dashboards and charts to display gateway attributes, sensor data, actuator data, event usages, etc.

10.1 Create Dashboard

To create a dashboard -

BRTSys

1. Click **Dashboards** from the menu. If no dashboards are available, then the interface will be empty.





10.2 Dashboard Charts – Gateway/Sensor/Actuator/Others

This section describes how to add/edit/delete different charts (*Gateway, Sensor, Actuator and Others*).

10.2.1 Add Gateway Chart

To add gateway chart,

BRTSys

1. Choose the **Dashboard** (from the drop-down control) for which the gateway chart is to be added. There must be at least one available dashboard for adding gateway charts.

loT Por	tal 💼 James Adam Your Personal Account	Current Balance: 2,998,000 Tokens	<u>ک</u> گ	2
Dashboards	Dashboard 1 V Add Chart ••• All Gateways	Sensors Actuate		
Gateways	+ New Dashboard Search for.,			
Events	Dashboard 1 1			
ැලි Settings	Dashboard 2 No Charts added a new chart to your dash			
© About	Add Chart 2			

- 2. Click [Add Chart].
- 3. The Create charts interface is displayed. Select **Gateways** from Charts for drop-down control. Click **[Select Gateways]**.

		_
CANCEL		
	CANCEL CREATE	CANCEL CREATE



5. Update the chart attributes (Chart Name / Chart for / Chart Type), as required. Click [CREATE].

Create charts				
Charts for				
Gateways				~
Gateway charts				
Select Gateways				
Gateway	Chart Name	Chart for	Chart Type	
Cataway 1	Gateway_1 - Storage	Storage Usage	Donut Chart	~
Galeway_1	Gateway_1 - Status	Online/Offline Status	Donut Chart	
	C	CANCEL CREATE 5		

6. Upon successfully creating the chart, an appropriate message indicating the same is displayed; The newly created gateway chart(s) are displayed.

Dashboard 1 🐱 🛛 Add Chart 🛛 🚥		All Gateways	Sensors	Actuators	Others
Gateway_1 - Status Daline/Offline Status Offline - 23.98 Hours Offline - 0.08%	: 1 Day + 5	Gateway_1 - Stor Storage usage Free sensor cache sto 5.00 Git	rage cap 8 (99.99%)	Sensor cache usage 411.74 KiB (0.01%) Senso 0 B (by this Ga or cache usa 0%)



2. The Edit Dashboard Chart interface is displayed. The *Chart Name* and *Chart Type* can be edited. Click **[SAVE]** to save the changes made, if any.

Edit Dashboard Chart		
Chart Name		Gateway_1 - Status
Gateway		
Chart for		Online/Offline Status
Chart Type		Donut Chart 🗸
	CANCEL SAVE 2	



2. A confirmation window is displayed. Click **[DELETE]** to delete the chart or **[CANCEL]** to discard the delete operation.

Dashboard 1 \vee 🛛 Add Chart						
Gateway_1 - Status Online/Offline Status Offline - 23.97 Hours Offline - 0.03 Hours Offline - 0.13	Confirm Do you really want to This cannot CANCEL 2 Online - 99.87%	Delete delete this be undone. DELETE Fre	e chart? e sensor cache stor 5.00 Gi	age capa B (92,99%)	Sensor cache usage I 428.61 KiB (0.01%) Senso 0 B (0	



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10.2.4 Add Sensor Chart

To add sensor chart,

1. Click [Add Chart].

IoT Po	ortal 🌐	James Your Pers	Adam Ional Account	٥			Current Balance: 2,998,000 Tol	kens (3 2
Dashboards	Dashboa	ard 1 💌	Add Char		All	Gateways	Sensors	Actuators	Others
Gateways									
Events					No Ch	arts adde	d		
ැලි Settings				Add a	new cha	rt to your dasl	nboard.		
© About						dd Chart 1			

2. The Create charts interface is displayed. Select **Sensors** from Charts for drop-down control box.

Cr	ate charts	
	harts for	
	Sensors	
	Gateways	
	Sensors 2	
	Actuators Other chart options	

10.2.4.1 Create standalone charts for selected sensors

1. Select the chart option – Create standalone charts for selected sensors. Selecting this option creates one chart for one sensor parameter.





2. Click [Select Sensors]; From the resulting window, select the sensors and click [ADD].



3. Update the chart attributes (Chart Name / Chart Color, Alert line³), as required. Click [CREATE].

Create charts						
Charts for						
Sensors						
Single sensor charts or Multiple Sensor Charts:						
Create standalone charts for selecte sensors	Create standalone charts for selected sensors Create stacked charts for multiple sensors					
Single sensor charts						
Select Sensors						
Sensor Chart Name Type	Gateway	LDSU UUID	Unit	Color	Alert line	
Thermocouple Thermocouple or	ure sens Gateway 01	LS03010103152100001		•		
pH Sensor @ Fish Farm pH Sensor @ F pH sensor	Gateway 01	LS01010124262100031				
		CANCEL CREATE	3			

³ Alert line toggle is used to show the Threshold range on the chart if user enables the Sensor alert. For example, If user sets "activate less than 26.5°C" and enables the sensor alert, then user adds the sensor chart that the Alert line option is enabled, user can see the threshold on the chart.



4. Upon successfully creating the sensor chart, an appropriate message indicating the same is displayed; Click **[OK]**.

Cr	eating Single	Sensor Char	ts						×
	Chart Name	Sensor	Туре	Gateway	LDSU UUID	Unit	Color	Alert line	
	Thermocouple	Thermocouple	Temperature s ensor	Gateway 01	LS0301010315210	0001 °C	-		0
6	pH Sensor @ Fish Farm	pH Sensor @ Fish Farm	pH sensor	Gateway 01	LS01010124262100	0031 pH	-	0	0
				2/2 0	chart(s) are successfi	ully created			

5. The newly created standalone sensor chart for the selected sensors, is displayed.

IoT Po	ortal 💼 🛛 Adam James Your Personal Account		Current Balance: 2,997,000 Tokens 🖄 온
لمن المن المن المن المن المن المن المن ا	Fish Farm Das 👻 🛛 Add Chart 🛛 🚥	All	Gateways Sensors Actuators Others
Sateways	pH Sensor @ Fish Farm Land 3 Minutes - pH sensor Land 3 Minutes - 14.00pH Minutes - 20/05/2024 17:22:05 15.07 14	Thermocouple Image: Constraints Image: Constr	Relay - Channel 1 @ Fis Image: Comparison of the second s
© About	8 6 4.33 T7.18 T7.19 T7.20 T7.21 T7.22 	22.4 22.35 22.3 T7:18 17:19 17:20 17:21 17:22 Thermocouple Refresh Rate: 10 Secs -	0.4 0.2 0 17.18 17.19 17.20 17.21 17.22

10.2.4.2 Create stacked charts for multiple sensors

1. Select the chart option – *Create stacked charts for multiple sensors*. Selecting this option creates one chart for multiple sensor parameters.



2. Click [+ Create Multiple Sensor Chart].

Multiple sensor charts	
In a multiple sensor chart, you can add max 8 sensors (Sensors with same sensor type or two different sensor type. i.e. 2 y-axis can plot with different units)	
+ Create Multiple Sensor Chart	



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3. Enter a **Chart Name**; Select the **sensor type –** *Same type* or *Two different types*.

Sensor Type – Same Type

a. Select sensor type option – Same type.

in e multiple sensor chart, you can add max & sensors (Sensors with same sensor type or two different sensor type. Le. 2 yaxie can plot with different units) Chart Name Multiple sensor chart - Same Type (pH Sensor)	
Chart Name Multiple sensor chart - Same Type (pH Sensor)	
Multiple sensor chart - Same Type (pH Sensor)	
Select sensor type	
Same type Two different types	

b. Select sensor type – *pH sensor* from the drop down list box and click [Select Sensors].

Temperature sensor		`
Temperature sensor pH sensor	3b	

c. From the Select Sensors interface, select *pH sensors* and click **[ADD]**.

Filter By:	All Gateways		٠	pH sensor	0
Select A	All	Search.	i.		
рН					
Gatew	ay 2 - LDS BUS	3			
pH se	nsor	2100030			
pН					
🕝 Gatew	ay 2 - LDS BUS	3	3c		
UUID: nH sei	LS0101012426 nsor	2100031		•	
pH set	1501				



d. Update the chart color attribute, if required. Upon selecting all the chart attributes, click **[Create**].

Sensors			
Single sensor charts or Mu	ultiple Sensor Charts:		
Create stan	dalone charts for selected sensor	s Create stacked charts for multiple sensors	
Multiple sensor charts In a multiple sensor chart, you ca			
Chart Name			
Multiple sensor chart	- Same Type (pH Sensor)		
Select sensor type			
Same type		Two different types	
Select sensor type			
pH sensor			
pH sensor	n this chart		
pH sensor pH sensor sensors o	n this chart		
pH sensor pH sensor sensors o Select Sensors	n this chart		
pH sensor pH sensor sensors o Select Sensors Sensor	n this chart Type	✓ Color	
pH sensor pH sensor sensors o Select Sensors Sensor	n this chart Type	♥ Color	
pH sensor pH sensor sensors o Select Sensors Sensor pH	n this chart Type pH sensor	Color - X	
pH sensor pH sensor sensors o Select Bensors Sensor pH	n this chart Type pH sensor	Color	
pH sensor pH sensor sensors o Select Bensors Sensor pH	n this chart Type pH sensor pH sensor	Color Color	
pH sensor pH sensor sensors o Select Bonsors Sensor pH pH	n this chart Type pH sensor pH sensor	Color Color	

e. An appropriate message indicating that the chart has been successfully created is displayed, Click **[OK]**.

Chart Name	Sensor Type	No. of Sensors	Unit	
Multiple sensor chart	pH sensor	2	pH	

f. The chart is displayed.

Count of Events Count of Events enabled vs triggered	1 1 2074 -	Multiple sensor chart - Same Ty	pe (pH Sensor)	pH and Therm	ocouple Senso	r Chart		
1				25 *6				
0.8				20 °C				
0.6				15 T				
0.4			31	10 °C				
0.2				5 °C				
•				0.4C				
ken Sch Mar Apr May han hat Aug 5	Sep Oct Nov Dec	an an an an an	Defrech Date Altro -				Defresh Date	
	Multiple se pH sensor 15 pH	nsor chart - Same Typ	be (pH Sensor) 🗄 🗄					
	Multiple se pH sensor 15 pH	nsor chart - Same Typ	be (pH Sensor) 🗄 🗄 🗍					
	Multiple se pH sensor 15 pH — 12 pH — .9 pH —	nsor chart - Same Typ	be (pH Sensor) 🗄 🗅 🕼					
	Multiple se pH sensor 15 pH 12 pH 9 pH 6 pH	nsor chart - Same Typ	pe (pH Sensor)					
	Multiple se pH sensor 15 pH 12 pH 9 pH 6 pH 3 pH	nsor chart - Same Typ	e (pH Sensor) : 1					
	<u>Multiple see</u> pH sensor 15 pH — 12 pH 9 pH 6 pH 3 pH 0 pH — 1 0 pH —	nsor chart - Same Typ	10:33 10:24					



Sensor Type – Two different types

a. Select sensor type option – Two different types.

Multiple sensor charts			
In a multiple sensor chart, you can add max 8 sensors (Sensors with same sensor type or two different sensor t			
Chart Name			
Multiple sensor chart - Two different types (pH and Thermocouple)			
Select sensor type			
Same type	Two different types	3a	

b. Select the **sensor type 1** and **sensor type 2** from the drop down list box.

Select sensor type 1		Select sensor type 2	
Temperature sensor		pH sensor	
Temperature sensor sensors on this chart		pH sensor sensors on this chart	
Select Sensors	3b	Select Sensors	

c. Click **[Select Sensors]**. From the resulting window, select the sensors and click **[ADD]**.

Select Sensors		X Select Sensors	×
Filter By: All Gateways	Temperature sense	Filter By: All Galeways	6 pH sensor 9
Select All	Search	PH	6
Gateway 2 - LDS BI UUID: LS03010103 Temperature senso	JS 3 152100001 yr	PH sensor PH Gateway 2 - LDS BUS 3 UUD: LSD 101012428210003	1
/8 Sensor(s) are selected		ADD 1/7 Sensor(s) are selected	ADD

d. Update the chart attribute (*Color*), as required. Upon selecting all the chart attributes, click **[CREATE]**.

Sensors Single sensor charts or Multiple Sensor Charts: Create standalone charts for selected sensors Multiple sensor charts Multiple sensor charts Multiple sensor charts Chart Name Create standalone charts (Sensor specified and Thermocouple) Select sensor type Select senso						
Single sensor charts or Multiple Sensor Charts: Create standalone charts for selected sensors Create standalone charts for selected sensors Create standalone charts for selected sensors Multiple sensor charts Ratingle sensor charts Create standalone charts for selected sensors Select sensor type Select sensor type 1 Temperature sensor charts Select Sensors This chart Select Sensors Create sensor type 2 Fit sensor Fit s						
Create standadone charts for selected sensors Create standadone charts for selected sensors Create standadone charts for selected sensors Chart Name Autiple sensor chart - Two different types (aff and Thermocouple) Select sensor type Select	isor charts or Multiple Sensor Charts:					
A triple sensor chars A triple sensor chars A triple sensor chars A triple sensor chars trye cars dd me 3 sensor (Sensors with same sensor type of twi ddferent sensor type 1 2 sensor type 1 Select sensor type 1 Temperature sensor or sensors on this chart Belect Sensor	Create standalone charts for selected sensors	💿 🦟 Create	e stacked charts for multiple s	ensors		
Is a multiple sensor chart, you can add nue? Sensors (Sensors with scane sensor type of the different sensor type. 1 2 years can plot with different types Select sensor type 1 Select sensor type 1 Temperature sensor Temperature sensors on this chart Delect Sensors	ensor charts					
Lia I venie Multiple sensor chart - Two different types (sif and Thermocouple) Select sensor type Select sensor type Select sensor type 1 Temperature sensor Temperature sensor on this chart Belect Sensor	sensor chart, you can add max 8 sensors (Sensors with same sensor type o					
Select sensor type 1 Select sensor type 1 Temperature sensor or this chart Delect Sensor Select sensor type 1 Select sensor type 2 pH sensor PH sensor Select Sensor Selec	Name	2				
Same type • Two different types Select sensor type 1 Select sensor type 2 Temperature sensor v Temperature sensor sensors on this chart pH sensor sensors on this chart Belect Sensor pH sensor	sensor type	2				
Select sensor type 1 Temperature sensor Temperature sensor sensors on this chart Belect Sensor Select Sensor	Same type		Two different types			
Select sensor type 1 Select sensor type 2 Temperature sensor pH sensor Temperature sensor sensors on this chart pH sensor sensors on this chart Belect Sensor Select Sensor						
Temperature sensor v pH sensor v Temperature sensor sensors on this chart pH sensor sensors on this chart v Select Sensors Select Sensors select Sensors	ct sensor type 1		Select sensor type 2			
Temperature sensor sensors on this chart pH sensor sensors on this chart Belect Sensors Select Sensors	emperature sensor		pH sensor			
Select Sensors Select Sensors	perature sensor sensors on this chart		pH sensor sensors on this	chart		
	elect Sensors		Select Sensors			
Sensor Type Color Sensor Type Color	ensor Type Co	olor	Sensor	Туре	Color	
Thermocouple Temperature sensor 💼 - 🗴 pH pH sensor 💼 - 🗴	ermocouple Temperature sensor	. .	pH	pH sensor	— • •	
+ Create Multiple Sensor Chart	e Multiple Sensor Chart					
24				24		

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10.2.5 Edit / Delete Sensor Chart

The procedure for editing / deleting sensor chart is similar to <u>Edit Gateway Chart</u> / <u>Delete Gateway</u> <u>Chart</u>.



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10.2.6 Add Actuator Chart

To add actuator chart,

1. Click [Add Chart].



2. The Create charts interface is displayed. Select **Actuators** from Charts for drop-down control box and click **[Select Actuators]**.

Cre	eate charts				
	Charts for				
	Actuators			v	
	Gateways Sensors				
	Actuators				
	Other chart options Select Actuators				
		CANCI	EL CREATE		

3. From the resulting window, select the actuator(s) and click [ADD].

Select Actuators	×
Filter By: All Gateways	*
Select All Search	
Relay - Channel 1 Gateway_1 - LDS BUS 3 UUID: LC01110101042200090 Relay switch	
Relay - Channel 2 Gateway_1 - LDS BUS 3 UUID: LC01110101042200090 Relay switch	
2 Actuator(s) are selected	3 ADD



4. Update the chart attributes (Chart Name / Chart Color), as required. Click [CREATE].

Create charts						
Charts for						
Actuators						
Actuator charts						
Select Actuators						
Actuator	Chart Name	Туре	Gateway	LDSU UUID	Color	
Relay - Channel 1	Relay - Channel 1	Relay switch	Gateway_1	LC01110101042200090	•	
Relay - Channel 2	Relay - Channel 2	Relay switch	Gateway_1	LC01110101042200090	-	
				4		

5. Upon successfully creating the actuator chart, an appropriate message indicating the same is displayed; The newly created actuator charts are displayed.

loT Por	tal 💼 James Adam Your Personal Account 💠				Current Balance: 2,998,000 Tokens	1
Cashboards	Dashboard 1 👻 🛛 Add Chart		5		Sensors Actuator	Others
Gateways Gateways Events Settings Settings	Relay - Channel 1 Relay Switch Mode: Level 18:12:45 1 0 0:5/03/202418:12:45 1 0.6 0.7 0.4 0.2 0 1 0.6 0.7 0 1 0.8 0.9 1 0.0 1 0.0 1 0.0 1 0.0 1 0.1 1 0.2 1 1 1 1 1 1 1 1 1 1 1 1 1	C C C C Cast 5 minutes - Cast 6 minutes	Relay - Channel 2 Relay Switch Mode: Level 0 05/03/202418:12:45 1 0 0 0 0 0 0 0 0 0 0 0 0 0	Lad Sminutes - Lad Sminutes - 1810 1811 18-12 Refresh Rate Auto -		

10.2.7 Edit / Delete Actuator Chart

The procedure for editing / deleting actuator chart is similar to <u>Edit Gateway Chart</u> / <u>Delete Gateway</u> <u>Chart</u>.



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10.2.8 Add Other Chart

To add other charts,

1. Click [Add Chart].



2. The Create charts interface is displayed. Select **Other chart options** from Charts for drop-down control and select one or more of the following chart options and click **[CREATE]**.

 \boxdot Count of emails, SMS, and notifications sent \boxdot Count of Events enabled vs triggered

Create charts	
Charts for	
Other chart options	
Gateways Sensors Actuators	
Uther chart options	
Chart Options	Chart Name
Count of emails, SMS, and notifications sent	Count of Email, SMS, Notification
Count of Events enabled vs triggered	Count of Events
	CANCEL CREATE 2

3. Upon successfully creating the other chart options, an appropriate message indicating the same is displayed; The newly created other chart options are displayed.

loT Portal 🌐	James Adam Your Personal Account				Current Balance: 2,998,000 Tol	(ens l	<u>ک</u> لا
Dashboards	board 1 👻 Add Chart 🚥						Others
Gateways Cou	unt of Email, SMS, Notification Int of emails, SMS, and notifications sent	2024 - Count	t of Events of Events enabled				
Events 0.8							
0.0 Settings 0.4							
© About	2 0 Jan Feb Mar Aor May Jun Jul Aug See Oct	0.2 Nov Dec 0	Jan Feb Mar	Apr May	Jun Jul Aua	Sep Oct	Nov Dec
• E	imail SMS Notification	Ever	nts enabled 🛛 🗧	Events triggered			



10.2.9 Edit / Delete Other Charts

The procedure for editing / deleting other chart options is similar to <u>Edit Gateway Chart</u> / <u>Delete</u> <u>Gateway Chart</u>.

10.2.10Dashboard Features





2. Position the cursor on the chart area that needs to be zoomed.



3. The zoomed portion of the chart is displayed.

Temperature s	ensor x pH senso			
— Temper	ature sensor	pH s	ensor	
				15 pH
				12 pH
				9 pH
10 °C				6 pH
		3		
0 °C ∟	16-26-20	16-26-30	16-26-40	0 pH
	10.20.20		10.20.40	



To reset zoom,

1. Click on the Zoom Reset 🚺 icon.





2. The chart will reset to the previous zoom level.



10.2.10.3 Restore

To restore to the default chart size,

1. Click on the Restore \bigcirc icon.

Multiple sensor Temperature sensor	chart x pH sensor	1	ta ta 🖸 🧰 Last 5 Minu	
— Temperature	e sensor 🛛	- pH sensor		
25 °C			15 p	н
20 °C			== 12 p	н
			9 pł	
10 °C			6 pł	
			3 pł	
0 °C	17-22-10	17-22-20	0 pł	
17.44				
	🔶 - pH Sensor @ F	ish Farm Refre	sh Rate: Pa	

2. The chart will be restored to the default chart size.





10.2.10.4 Save as Image

To save the chart as an image,

1. Click on the Save as Image $\boxed{\bigcirc}$ icon. The chart is saved as an image.

Tompo	roturo oo	noor			
— rempe	fature se	- 1501	pn se	211501	
25 °C					^{15 pH}
20 °C					12 pH
					9 pH
					6 рН
0 °C	17.00	47.07	47.00	47.00	0 pH
	17:26	17:27	17:28	17:29	17:50

10.2.10.5 Functions

To access the chart function, click on the ellipsis icon.

Temperature s — Temper ^{25 °C} 20 °C	ensor x pH sensor ature sensorpH s	ens De	lit elete ownload Data
15 ℃ 10 ℃			9 рН 6 рН
5°€ 0°C			0 pH 18:00

10.2.10.5.1 Edit Dashboard Chart

To edit chart,

1. Click on the ellipsis : icon and select **Edit**.





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2. Edit the dashboard chart as required and click [SAVE] to save the changes.

Dashboard Chart				
Chart Name				
Multiple sensor chart				
Select sensor type				
Same type	 Two different types 			
Select sensor type 1	Select sensor type 2			
Temperature sensor	pH sensor			
Temperature sensor sensors on this chart	pH sensor sensors on this cha	art		
Select Sensors	Select Sensors			
	Sensor	Туре	Color	
	pH Sensor @ Fish Farm	pH sensor		
	2			



1. Click on the ellipsis icon and select **Delete**.



2. A confirmation window is displayed. Click [DELETE] to remove the chart.





10.2.10.5.3 Download Chart Data

1. Click on the ellipsis icon and select **Download Data**.

Multiple sense pH sensor	or chart - S	ame Type (j	oH Senso	r) 🕇 🗗 🗭 Edit Delete	0
12 pH				Download	Data 1
9 pH					
6 pH					
3 pH					
0 рН	11:44	11:45	11:46	11:47	11:48
- е - рН - е - рН				Refresh Rate:	

2. To download sensor data, input the Date/Time Range; Select the sensors by clicking on the respective check box or click All to select all the sensors. Note that, Single Sensor chart does not have the sensor selection option. Upon providing the required input, click [Download]. A confirmation message is displayed. Click [OK]. Upon confirmation, an email will be sent to the user's registered email address with instructions on how to download the sensor data.

Download Sensor Data		×
Date/time Range		
From	То	
05/08/2024 11:35 AM	06/08/2024 11:35 AM	
Sensor(s)		All
pH Gateway 2 - LDS BUS 3 UUID: LS04010104212100036 pH sensor		
pH Gateway 2 - LDS BUS 3 UUID: LS01010124262100031 pH sensor		
	2	Download

10.2.10.6 Refresh Rate

Refresh rate refers to the frequency at which dashboard charts should be refreshed.

To set the refresh rate -

1. Click on the Refresh Rate drop down control.



2. From the list box, select the **Refresh Rate frequency** (5 Secs/10 Secs/30 Secs/60 Secs/300 Secs) as required.



Setting the refresh rate to *Pause*, will temporarily stop refreshing the chart; Setting the refresh to *Auto* will auto-refresh every 5 Seconds; To set a *Custom Refresh Rate*, enter the refresh rate (in seconds) in the box and click \checkmark . For example, if 60 Sec is selected, then the dashboard chart will refresh every 60 Seconds.



NOTE: Less tokens are consumed when the refresh rate is longer.



10.2.10.7 Time Interval Filter

This filter allows users to select a specific period or duration of time to analyse data within a dashboard.

To set time interval -

1. Click on the **Time interval** filter.

Dashboard 3 🗸 🛛 Add Chart 🛛 🚥	
Multiple sensor chart Temperature sensor x pH sensor — Temperature sensor pH sensor	ast 5 Minutes -
25 °C	15 pH
20 °C	12 pH
15 ℃	9 pH
	6 pH
5 *C	3 pH
0 °C 10:31 10:32 10:33 10:34 10:35	0 pH
Thermocouple pH Sensor @ Fish Farm Refresh Rat	te: 5 Secs +

2. From the filter, select the **Time interval** (*Last 5 minutes....Last 24 Hrs./Last 7 days...15 days/Last 1 month....Last 1 year/ Custom Range)* required.

Multiple	sensor c	hart		tal	1 C 🖸 1	
					Last 24 Hours -	
— Temp	perature	sensor	pH se	ensor	Last 7 Days	
25 °C					Last 15 Days	
20 °C					Last 1 Month	2
15 °C					Last 3 Months	
10 °C					Last 6 Months	
					Last 9 Months	
5 °C					Last 1 Year	
0 °C	10.00	4	05.00	124	Custom Range	

For example, if 7 days is selected, then the dashboard chart will display the last 7 day's data.



10.2.10.8 Expand Chart Size

To expand chart size,

Point the cursor at the left or right edge of the chart, and it will change to a two-sided arrow. Then click and drag to increase or decrease the chart size.

/ultiple	sensor	chart			0 🙆 1
		k pH sensor			
— Temp	perature	sensor	pH s	ensor	
25 °C	L				 15 pH
20 °C					12 pH
15 °C					9 pH
10 °C					6 pH
5 °C					3 pH
0.40					0 pH

10.2.10.9 Drag / Change Chart Order or Position

To drag or change the chart order or position,

Point the cursor at the top of the chart, and it will change to a quad arrow. Then click and drag to move or reposition the chart.

numple sei	nsor chart				00
- Temperature s	ensor x pH sensor	nH se	nsor	Last	5 Minute
25 °C		prise	11901		15 pH
20 °C					12 pH
15 °C					9 pH
					6 oH
10 °C					
10 °C 5 °C					3 pH



10.3 Edit Dashboard Charts

To edit dashboard charts,

1. Click on the Ellipsis *** button and select Edit Dashboard Charts.

Dashboard 1 👻 🛛 Add Chart		All
	Edit Dashboard Charts 1	
Actuator Chart	Edit Dashboard Details /ay 01 - Storage	
Relay Switch	Delete Dashboard usage	Sensor cache usage by thi
Mode: Level		6.44 MiB (0.13%) Sensor cache
1 12/04/2024 11:42:26		0 B (0%)
1		
0.9		
0.8		
0.7		
0.0	Free sensor cache storage	
0.5 11:38 11:39 11:40	11:41 11:42 4.99 GiB (99.87%)	
Relay - Channel 1 Refres	sh Rate: Auto -	

2. Edit the following as required –

Gateway charts	Chart Name and Chart Type
Single sensor charts	Chart Name and Chart Color
Actuator charts	Chart Name and Chart Color
Other charts	Chart Name

Upon making changes, if any, click **[SAVE]** to update the changes, if any.

✓ Gateway charts 3 Chert(s)								
Chart Name	Gateway		Chart For		Chart Type			
Gateway 01 - Storage	Gateway 01		Storage Usage		Pie Chart		*	
Gateway Chart	Gateway 01		Online/Offline Status		Donut Chart		*	
Gateway Chart	Gateway 01		Storage Usage		Donut Chart		~	
✓ Single sensor charts 1 Charts								
Chart Name Sen	sor Type	Gateway	LDSU UUID	Unit	Color	Alert line		
Sensor Chart pH	pH sensor	Gateway U1	LS01010124262100031	рН +	•			
✓ Actuator charts 1 Chart(s)								
Chart Name	Actuator	Туре	Gateway	LDSU UUID		Color		
Actuator Chart	Relay - Channel 1	Relay switch	Gateway 01	LC011101010	142200090	-		
Other charts 1 Chart(s)								
Chart Name			Chart Type					
Other Chart			Count of Events enabl	ed vs triggered				
			CANCEL SAVE	2				





10.4 Edit Dashboard

To edit dashboard details,

1. Click on the **Ellipsis** •••• button and select **Edit Dashboard Details**.

Dashboard 1 👻 🛛 Add Chart		All Gateways	Sensors	Actuators	Others
Gateway_1 - Status Online/Offline Status Online - 24 Hours Offline - 0 Hours Offline - 0 Hours	Edit Dashboard Charts Edit Dashboard Details Delete Dashboard	Sensor cache usage by th 394.91 KB (0.01%) Sensor ca 0 8 (%) capacity: (99.99%)	is Gateway: he usage by al		

2. Edit the *Dashboard Name* and *Icon Color* as required. Click **[SUBMIT]** to update the changes, if any. The updated dashboard details (if any) are displayed.

IoT Po	rtal 💼 🛛 James Adam Your Personal Account 💠			Current Balance: 2,998,000 Tokens
Dashboards	Dashboard 1 🗸 🛛 Add Chart	Edit Dashboard X	iys	
Gateways	Gateway_1 - Status Online/Offine Status Online - 24 Hours	Dashboard 01	rage	
Events	Offline - 0 Hours	Icon Color	1	
يې Settings ©				
About			D GiB (S	
		SUBMIT 2	J	

10.5 Delete Dashboard

Click on the **Ellipsis** •••• button and select **Delete Dashboard**. The procedure for deleting dashboard is similar to <u>Delete Gateway Chart</u>.



11. Organisation Management

Organisations are collections of user <u>groups</u> assigned with predefined permissions to achieve usage and access policies. The user may create one or more organisations and be invited to join and become a <u>member</u>. A user who creates an organisation becomes its owner. Any user who is invited to join the organisation becomes a member. Owners can create up to 8 organisations. Organisations cannot be created on IoTPortal without a verified email address of the owner.





11.1 Create Organisation

To create organisation -

1. Click the Drop-Down control and [Create New Organisation].



2. Enter the *Organisation Name*. Click **[CREATE]**. Upon successful creation of organisation, an appropriate message indicating the same is displayed.

IoT Po	ortal 🌐	James Adam Your Personal Account	Current Balance: 2,998,000 Tokens	Ô	Do
Dashboards	Create Org	ganisation			
) Gateways	Organisa James	ntion Name Org 1			
Events					
کې Settings	CANCEL	CREATE 2			
© About					

3. The newly created organisation will be added to the list of organisations. Owner may proceed to <u>invite members</u>.





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11.1.1 Members

The number of members in each group may be up to 16. Invitations are used to invite members into organisations. The invited user receives an email or push notification inviting them to download and register for an IoTPortal account and accept or decline the invitation. A member who is not assigned to a group does not inherit any default policies, except policy-leave-organisation.

A group owner or member with a group-manager policy can add, remove, or transfer users into, out of, and between groups. Members are re-invited back to an organisation when they are removed from it. Pending invitation can be cancelled by the owner.

Members who have been moved to a different group or removed from an organisation may have active ongoing sessions in progress at the time of change. As a result, the member's next actions will fail (e.g., invalidate access and refresh tokens). To allow the new group policy and permissions to take effect, the member must log into the IoTPortal again and select the organisation. If a member is removed from the organisation, the organisation will not appear on the list of organisations. Members and owners who have been re-assigned or removed will be notified via email (verified email) or push notification (verified mobile).

11.1.1.1 Invite Members

To invite new members -

1. Select the **organisation** (from the organisation list) under which you wish to invite users.



2. Click [Organisation] from the menu; From the Organisation interface, click [+ INVITE NEW MEMBERS].





3. Enter the *Email address* of the user; To add more users, click **[Add More Emails]** and input the email address.



- 4. Upon providing the email address of the users, click **[INVITE]**. An appropriate message indicating that the invitation has been sent is displayed. An email will be sent to the invited user. The user can join the IoTPortal / organisation using the instruction provided in the email.
- 5. The Members tab displays the list of members (including the owner) who are part of the organisation. The status column shows "Pending" (when an invitation is yet to be accepted) / "Declined" (when an invitation is declined) / "Accepted" (when an invitation is accepted). Once accepted, the status is updated to "Accepted."

IoT Po	rtal 💼 James Org 1 Organisation					ť	<u>گ</u> گ
لللي Dashboards	Organisation					🥒 Edit	🗇 Delete
) Gateways	James Org 1	Owner James Adam	Created On 07/03/2024	Members 2	Groups 1	Roles 1	
Events	5						
	Members 2	Groups 1	Roles				
ගි				+ INVITE NEW 1	MEMBERS		
Settings	Name 🗘	Date 🗘		Status 0		Action	
© About	James Adam	Created on 07/03/2	024	Owner			
	wmciotportal@gmail.com	Invited on 07/03/20	24	Pending			

6. To create or view the user groups, click Groups tab.



11.1.1.2 Cancel Invitation

To cancel user invitation -

1. Select the user.

Organisation								Delete
Ja	imes Adam Organisa	ation 2	Owner James Adam	Created On 30/07/2024	Members 3	Groups 2	Roles 1	
Г	Members 3	Groups 2	Roles					
					+ IN	VITE NEW MEMBERS	Search.	
	Name 0		Date 0		Status 🗘		Action	
	James Adam		Created on 30/07/2024		Owner			
	Bob Robin		Joined on 31/07/2024		Accepted			
	marcel.marc2024@gn	^{nail.com} 1	Invited on 04/08/2024		Pending			

2. Click [CANCEL INVITATION].

Marcel Marc Organisation / Member				
Email Address	Status	Invited On	Invited By	2 CANCEL INVITATION
marcel.marc2024@gmail.com	Invitation Pending	04/08/2024	iotportalusr1@gmail.com	

3. A confirmation message will be displayed. Click **[YES]** to proceed.

IoT Pc	ortal 🏝 💧	James Adam Orga Organisation	in		٨	Do
រវីណ៍ Dashboards	Marcel Ma Organisation			Cancel Invitation?		
Gateways	Email Ad marcel.n	dress harc2024@gmail.com	Status Invitati			
Events						

4. The invitation is successfully cancelled.

Org	anisation						🧷 Edit	団 Delete
	James Adam Organisati	ion 2	Owner James Adam	Created On 30/07/2024	Members 2	Groups 2	Roles 1	
	Members 2	Group	IS 2	Roles				
					+ INVITE NEW	/ MEMBERS		
	Name 0 4		Date 0		Status 0		Action	
	James Adam		Created on 30/07/2	2024	Owner			
	Bob Robin		Joined on 31/07/20	024	Accepted		団	>


11.1.1.3 Remove Member / User from Organisation

To remove member/user from organisation -

1. Select the member you wish to remove and click \blacksquare .

IoT Po	rtal 🌐	James Adam Organ Organisation	\$					ß	3 2
ណ៍រំ Dashboards	Organis	ation						/ Edit	🖶 Delete
Gateways	Ja	nmes Adam Organis	ation 2	Owner James Adam	Created On 30/07/2024	Members 2	Groups 2	Roles 1	
Events	_								
A AAA Organisation		Members 2	Group	2	Roles				
ŵ	册 (1)					+ INVITE NEW	MEMBERS		
Settings		Name 🗘		Date 0		Status 🗘		Action	
© About	10.	James Adam		Created on 30/07/	2024	Owner			
		Bob Robin		Joined on 31/07/2	024	Accepted		₫	
	1								

(Or)

Click on the member / user's name and from the resulting member list interface, click **[REMOVE USER]**.

Bob Robin Organisation / Member							
Name	Email Address	Status	Joined On	Invited On	Invited By	REMOVE	1
Bob Robin	bob.robin2024@gmail.com	Invitation Accepted	05/08/2024	05/08/2024	lotportalusr1@gmail.com	USER	

2. To confirm the deletion, click **[DELETE]**.

Orga	anisation					🖉 Edit	団 Delete
	James Adam Organisation 2	Owner James Adam	Created On 30/07/2024	Members 2	Groups 2	Roles	
	Members 2	Delete N	Member?				
d	· (1)	CANCEL	DELETE 2		EW MEMBERS		
	Name 🗘	Bate y		otatuo			
	James Adam						
	Bob Robin						



3. An appropriate message indicating the successful removal is displayed and the member is removed from the members list.

Members 1	Groups 2	Roles 1	
3		+ INVITE NEW MEMBERS	
Name 🌣	Date 💲	Status 👙	Action
James Adam	Created on 30/07/2024	Owner	

11.1.2 Groups

The owner of an organisation can create up to 16 groups. Groups can be divided into two types:

- Fixed Owner Group (Default Group): This group is pre-created. Only one owner group can exist, and it cannot be deleted, but members can be added and removed except the organisation owner. The members of this fixed group have unrestricted access to the organisation's configuration.
- <u>Regular Group (Custom Group)</u>: The second type of group is a regular group/custom group that can be assigned policies. The policies define a set of privileges for a particular action or set of actions withing the IoTPortal or for access to protected resources. Owners may perform *Create/Read/Update/Delete (CRUD)* operations on their groups. Organisations can have up to 15 regular groups besides the owner group.

Each member is added to a group, and group membership is not exclusive; each member can belong to more than one group.



11.1.2.1 Create Custom Groups

To view or create user groups -

1. Click Groups tab.

IoT Po	rtal 💼 James Org 1 Organisation					<u>ی</u> ک
لللله Dashboards	Organisation				/ Edit	Delete
) Gateways	James Org 1	Owner James Adam	Created On 07/03/2024	Members C	Groups Roles	
Events	_	1				
Organisation	Members 2	Groups 1	Roles	3		
礅				+ NEW GR	OUP Search.	
Settings	Group Name 🗘	Type ≎	Members 0	Roles ¢	Action	
© About	Admin 2					

- 2. A list of *default groups* and its *member's count* (if any) are displayed.
- 3. To create a new user group, click [+ New Group].
- 4. Enter the Group Name; Add Roles to the group and Click [SAVE].





5. An appropriate message indicating the successful creation of group is displayed. The newly added group is displayed as part of the table.





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11.1.2.2 Add Members to Custom Group

To add members to the custom group -

1. Click on the Group Name (for example - Gateway Manager) or >.

Members 2	Groups	2	Roles 1	
		+ NEW (GROUP Search.	
Group Name 💲	Туре 🗘	Members 0	Roles ¢	Action
Admin	Default Group	1	1	
Gateway Manager	Custom Group	0	0	1

2. Click [+Add MEMBERS]. From the resulting window, select *member(s)* and click [ADD].

loT Porta	al 💼 James Org Organisation	1 ᅌ			٨	Q
لللله Dashboards	Gateway Manager Organisation / Group					
Gateways	Group Name					
Events	Gateway Manager				Edit	
Organisation	Members	•	Roles			
දිලි3 Settings			2	ADD MEMBERS		
© About	Name \$		Added to this g	group on 💲		
			No members to display			
		Select Memb	pers	×		
		Search				
		🕑 John Ja	cob			
				2 ADD		
<u>uct Page</u>	lback			Convria	nt © BRT Sve	tems Pt
	·····					



3. The newly added member is displayed as part of the Members table.





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11.1.2.3 Remove Member from Custom Group

To remove member from custom group -

1. Select the member you wish to remove and click \blacksquare .



(Or)

Click on the group name and from the resulting Group interface, click imes.

Gateway Manager Organisation / Group				
Group Name				
Gateway Manager				Edit
-				
Members 1	Roles			
			+ ADD MEMBERS	
Name 🗘		Added to this group on 🗘		
Bob Robin				1 ×

2. To confirm the deletion, click [DELETE].





3. An appropriate message indicating the successful removal is displayed and the member is removed from the group.

Gateway Manager Organisation / Group				
Group Name Gateway Manager				Edit
Members 0	Roles 0			
			+ ADD MEMBERS	
Name ©		Added to this group on $\ \circ$		
	3	No members to display.		

11.1.2.4 Edit Custom Group Name

To edit the custom group name -

1. Click on the custom group from the Groups tab .

Organisa	tion						🖉 Edit	බ Delete
Jan	nes Adam Organisa	ation 2	Owner James Adam	Created On 30/07/2024	Members 2	Groups 2	Roles 1	
	Members 2	Groups	2	Roles 1				
					l	+ NEW GROUP		
	Group Name 🗘	Туре 🗘		Members ٥	Roles		Action	
	Admin							
	Gateway Manager	1 Custom Gr						

2. Click [Edit].

Gateway Manager Organisation / Group		
Group Name		2
Gateway Manager		Ean

3. Modify the Group Name as required and click [Update].

Gateway Manager Organisation / Group		
Group Name		
Gateway Admin	3	Update



4. An appropriate message indicating the successful update of group name is displayed. The updated group name is displayed.

Gateway Admin Organisation / Group					
Group Name Gateway Admin	4			Edit	
Members	2 Groups 2	Roles 1			
			+ NEW GRO	UP Search	
Group Name	е≎ Туре≎	Members \$	Roles 🗘	Action	
Admin					
Gateway Ad	Imin Custom Group		0		



11.1.2.5 Delete Group

Only the custom group can be deleted. To delete group -

1. Select the group you wish to delete by clicking on the check box. Click icon located under the Action column.

Members 2	Groups 3	Roles 3			
			+ New Group		
Group Name	Туре	Members	Roles	Action	
Gateway Manager		0		đ	>
Super Admins			1	1	>
Users		0	1		>

A confirmation window is displayed. Click **[DELETE]** to proceed or **[CANCEL]** to discard the deleted operation.



11.1.3 User Roles

The IoTPortal users can have one or more roles. Roles have associated Access Rights CREATE, READ, UPDATE and DELETE (CRUD) and Resources (device/sensor page, dashboard page etc.). Roles can be defined in number of ways. Roles can be restrictive or loose, generic, or specific. Some examples of roles are *Finance role, Operator role, Customer role, Guest role* etc. Alternatively, it can be generic such as *Full Control, Restrictive, View Only* etc. Owners and members are given permission to perform actions in the system or access resources when they have permissions. Refer to the table given below for the list of Policies and Permissions.

Policies		Permissions	
Gateway Management (All Gateways and Gateway Groups)			
Gateway Settings, Sensors, Actuators etc.	Can Manage	View Only	No Access
Dashboard Management (All Dashboards)			
Dashboards and Charts	Can Manage	View Only	No Access
Organisation Management (Manage Organisations)			
Groups, Roles, and Members	Can Manage	View Only	
Event Management (All events)			
Create, Edit, View and Delete Events	Can Manage	View Only	No Access

Table 4 – Permissions



11.1.3.1 Create Custom Roles

To view or create user roles -

1. Click Roles tab.

ΙοΤΡο	rtal 💼 James Org 1 Organisation 🗘				<u></u>
لللي Dashboards	Organisation				🖉 Edit 🗇 Delete
) Gateways	James Org 1	Owner James Adam	Created On Member 07/03/2024 2	s Groups 2	Roles 1
Events					
	Members 2	Groups 2	Roles 1	1	
ŵ			l	+ NEW ROLE	
Settings	Role Name 💲		Туре 🗘	2	Action
© About	Owner				

- 2. The owner of the organisation has the default role. To create new role, click [+ New Role].
- 3. Enter the *Role Name; Assign Permissions* to the role and Click **[SAVE]**. Refer to Table 4 for the list of Permissions.

IoT Po	rtal 💼 James Org 1 Organisation 🗢			Ô	8
لللَّيْلَ Dashboards	New Role Organisation / New Role				
Gateways	Role Name Super Admin				
Events	Permissions				
Ganisation	Gateway Management All Gateways and Gateway Groups				
ැලි Settings	Gateways settings, Sensors, Actuators, etc.	Can Manage	😑 View Only	No Access	
) About	Dashboard Management All Dashboards				
	Event Management All events				
	Organisation Management Manage organisations				
	Groups, Roles and Members	Can Manage	😑 View Only		
	CANCEL SAVE 3				

Product Page Document Feedback



4. An appropriate message indicating the successful creation of role is displayed. The newly added role is displayed as part of the Roles table.



11.1.3.2 Edit Custom Role

To edit custom role -

1. Click on the custom role from the Roles tab .

Org	anisation					🖉 Edit	団 Delete
	James Adam Organisation 2	Owner James Adam	Created On 30/07/2024	Members 2	Groups 2	Roles 2	
	Members 2 Groups	s 2	Roles 2	_			
					+ NEW ROLE		
	Role Name 🗘		Type 🗘			Action	
	Owner						
	Gateway Manager 1						

2. Click [Edit].

Gateway Manager Organisation / Role	
Role Name Gateway Manager	2 Edit



3. Modify the custom role name as required and click [Update].



4. An appropriate message indicating the successful update of role name is displayed. The updated custom role name is displayed.

Gatewa Organisa	ay Administrator ttion / Role					
Role Ga	Name teway Administrator				Edit	
	Members 2	Groups 2	Roles 2			
				+ NEW ROLE		
	Role Name 💲		Type 🗘		Action	
	Owner					
	Gateway Administrator					



11.1.3.3 Delete Role

Only a custom role can be deleted. To delete a role -

1. Select the role you wish to delete by clicking on the check box. Click icon located under the Action column.

IoT Por	rtal 🌐	James Org 1 Organisation					Ô	Q
اللَّيْنَ Dashboards	Organisati	on					9 Edit 🗍	Delete
🛞 Gateways	Jam	es Org 1	Owner James Adam	Created On 07/03/2024	Members 2	Groups 2	Roles 3	
Events								
AAA Organisation	1	Members 2	Groups 2		Roles 3			
තු					+ NEW R	OLE Searc		
Settings		Role Name 🗘		Туре 🗘			Action	
© About		Dwner						
		Super Admin						
		Admin				1		

A confirmation window is displayed. Click **[DELETE]** to proceed or **[CANCEL]** to discard the deleted operation.

11.2 Edit Organisation Name

To edit organisation name -

1. From the organisation interface, click [Edit].

Orga	nisation						1 🖉 Edit	🗇 Delete
	James Adam Organisa	ation 2	Owner James Adam	Created On 30/07/2024	Members 2	Groups 2	Roles 2	
	Members 2	Groups		Roles 2				
					+ INVIT	E NEW MEMBERS		
	Name 0		Date 0		Status 0		Action	
	James Adam		Created on 30/07/2	024	Owner			
	Bob Robin		Joined on 05/08/20	024	Accepted			



2. Edit the Organisation Name as required and click [UPDATE] to save the changes, if any.

Edit Organisation	
Organisation Name	
James Adam Org 2	
CANCEL UPDATE 2	

3. An appropriate message indicating the successful update will be displayed. The updated organisation name is displayed.

Orga	anisation						🖉 Edit	団 Delete
	James Adam Org 2	3	Owner James Adam	Created On 30/07/2024	Members 2	Groups 2	Roles 2	
	Members 2	Groups		Roles 2				
					+ INVIT	E NEW MEMBERS		
	Name 🗘		Date 🗘		Status 🗘		Action	
	James Adam		Created on 30/07/2	2024	Owner			
	Bob Robin		Joined on 05/08/20	024	Accepted			



11.3 Delete Organisation

To delete organisation -

1. From the organisation interface, click [Delete].

loT Po	rtal 💼 🛛 Jame Organi	es Adam Org 2							<u>ه</u> ک
للُعَانِ Dashboards	Organisation							/ Edit	面 Delete
Gateways	James A	dam Org 2		Owner James Adam	Created On 30/07/2024	Members 2	Groups 2	Roles 2	
Events	Memb	ers 💿	Groups		Roles 2				
Organisation						+ INVITE	NEW MEMBERS		
िंगे Settings	Nan	ne o		Date o		Status :		Action	
@ About	III Jan	nes Adam		Created on 30/07/2	024	Owner			5
	Bob	Robin		Joined on 05/08/20	24	Accepted			>

2. A confirmation message is displayed. Go through the message and click **[DELETE]** to proceed.

	James Adam 07/2024 2
	Delete Organisation?
	Are you sure you want to delete
	James Adam Org 2?
E	By deleting all Groups, Roles and other items related to this organisation will be lost.
	CANCEL DELETE



12. Profile Management

The profile management allows users to manage the personal settings. To view/edit user profile -

1. Click on the **Avatar** icon; Select *View/Edit profile details*. Alternatively, the profile interface can be accessed by clicking [Account Settings > Profile Details].

loT Po	ortal 💼 🛛 James Adam Your Personal Acco	unt 🗘		Current B 2,998,0	alance: 00 Toke	ns 🖄 🛆
لللله Dashboards	All Gateways			1	8	James Adam iotportalusr1@gmail.com
6				+ Add Gateway		Subscription
Gateways	Gateway Name 🗘	UUID 0	Last Active 0	Group 0		Account Settings
Events	Gateway_1	LG01020105272100017	Online			Logout
ලි Settings						
M						
About						

2. The user profile interface is displayed. To modify the user profile, click [Edit].

Profile Account Settings / Profile		2 Z Edit
First Name	Last Name	
James	Adam	
Email		
iotportalusr1@gmail.com		0
Mobile Number		
· +65 8198 9341		Verify

3. Except for Email Address field, all the other fields are editable. Upon editing, click **[SAVE]** to save the changes (if any).

Profile Account Settings / Profile		
	To all Dance	
James	Last Name Adam	
Email		
iotportalusr1@gmail.com		
Mobile Number		
•== • +65 8198 9341		Verify
CANCEL SAVE 3		
rage nt Feedback		Copyright © BRT Syste



13. Invitation from other Organisation

To view the invitations received from other organisations (if any) -

1. Click on the *Invitation* icon.

loT Po	ortal 💼 James Adam Your Personal Account 💠		Current Balance: 2,998,000 Tokens
الدان Dashboards	Dashboard 2 👻 🛛 Add Chart	All Gateways	Sensors Actuato 1 Others
A			
Gateways			
Events			
		No Charts added	
ැබු Settings		Add a new chart to your dashboa	
0		Add Chart	
About			

2. Invitation(s) from other organisation(s) if any is displayed. Click **[ACCEPT]** to join the organization or **[DECLINE]** to discard the invitation.

IoT Po	rtal 🌐	James Adam Your Personal Account	>			Current Balance: 2,998,000 Tokens	٢	<u>6</u>
Dashboards	Invitation	S						
) Gateways	J	John Org 1 Invited On: 08/03/2024 You are invited to the Orga	nisation John Org 1.			DECLINE	ACCEPT	
Events		Organisation Invited On		John Org 1 08/03/2024	Owner Invited By	wmciotportal		
ැබු Settings								
© About								

3. Upon accepting the invitation, the newly joined organisation is shown as part of the organisation list.

loT Por	tal 🌐	James Adam Your Personal Account		Current Balance: 2,998,000 Tokens	٢	Do
للله Dashboards	Invitations	Your Personal Account	,			
		Organisations	o Invitations			
Gateways		James Org 1 🔶 🖈				
Events		J John Org 1 3				
ŝ		Create New Organisation				
Settings						
© About						
uct Page						
ument Feed	<u>dback</u>			Cop	yright © BR	T Systems P

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14. Account Settings

14.1 Change Password

To change password -

icon; Select Account Settings. 1. Click on the Avatar Ă



2. The Account Settings interface is displayed. Select **Change Password**.

Accoun	t Settings	
Do	Profile Details	
Ð	Change Password 2	

3. Change the password as required and click **[SAVE]** to store the changes.

Current Password	
	٥
New Password	
	ø
Confirm New Password	
	ø
CANCEL SAVE 3	
Page	



15. Manage API Access Keys

The API Access Keys can be used to retrieve and analyse sensor data from gateways, as well as send commands to actuators in application or script. These Access Keys can only be used for personal account. To create Access Keys for your organisations, please switch to an organisation and create Access Keys under that organisation.

15.1 Generate API Access Key

To generate API Access Key -

1. Click Settings from the menu. Click Manage API Access Keys or >.

loT Po	ortal 🌐	James Adam Your Personal Account	\$	Current Balance: 2,998,000 Tokens	٨	Do
للم Dashboards	Settings					
Gateways	Ŷ	Manage API Access Keys Use API access key to retrieve a or script. You can use this Access Keys for create Access Keys under that a	1 and analyze the sensor data of gateways and sen or your personal account only. For your organisat organisation.			
Settings Settings About	1					

2. Manage API Access Keys interface is displayed. Click [Generate API Access Key] to generate a new key.

Manage API Ac Settings / Manage	cess Keys e API Access Keys	Generate API Access Key Search
Name 🗘	API Access Key 🗘	Scope : Created : Expires : Last used Status : Action
	New API Access Key	ey X
	Name for Access Key API Access Key 1	
	Expiration 7-Days	÷
	Select Scopes	ta Send commands to actuators
		3 GENERATE KEY

3. Input the Name for Access Key, Expiration Date; Select Scopes and click [GENERATE KEY].





Δ

15.2 Revoke API Access Key

To revoke API Access Key -

1. Click [Revoke].

Manage API Access Keys Settings / Manage API Access Key	ŝ			Generate API Access Key	Search	
Name ©	API Access Key 🗯	Scope 0	Created 0	Expires 0 Last used 0	Status 0	Action
API Access Key 2	eyJ0eXAlOiJ0b2tibilsImFsZyl6iIJTMjU21 僋	Retrieve sensor data, Send commands to () actuators	03/04/2024	10/04/2024 -	Active	Revoke 1
API Access Key 1	eyJ0eXAiOiJ0b2tibilsImFsZyl6iIJTMjU2I 🕒	Retrieve sensor data, Send commands to ① actuators	12/03/2024	19/03/2024 -	Expired	Remove

2. A confirmation window is displayed. Click **[YES]** to proceed. The status is updated to Revoked.

Manage API Access Keys Settings / Manage API Access Key	8			Generate	API Access Key	Search	
Name 0	API Access Key 🗯	Scope 0	Created 0	Expires 0	Last used 🔅	Status 0	Action
API Access Key 2	eyJ0eXAiOiJ0b2tibilsImFsZyl6IIJTMjU21 🖞	Retrieve sensor data, Send commands to actuators	03/04/2024	10/04/2024	· 2	Revoked	Remove
API Access Key 1	eyJ0eXAi0iJ0b2tibilsImFsZyl6IIJTMjU21 🌔	Retrieve sensor data, Send commands to actuators	12/03/2024	19/03/2024			Remove



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15.3 Remove API Access Key

To remove API Access Key -

1. Click [Remove].

Manage API Access Keys Settings / Manage API Access Key	3			Generate	API Access Key	Search	
Name o	API Access Key 💠	Scope 💲	Created 0	Expires 0	Last used 🔅	Status 0	Action
API Access Key 2	eyJ0eXAiOiJ0b2ttbilsImFsZyl6IIJTMjU2I 🕒	Retrieve sensor data, Send commands to ① actuators	03/04/2024	10/04/2024			Remove
API Access Key 1	eyJ0eXAlOiJ0b2tibilsimFsZyl6ilJTMjU21 🌓	Retrieve sensor data, Send commands to ① actuators	12/03/2024	19/03/2024		Expired 1	Remove

2. A confirmation window is displayed. Click **[YES]** to proceed. The key is removed.

Manage API Access Settings / Manage API A	Keys Iccess Key	5						
					Generate	API Access Key		
Name 0		API Access Key 👙	Scope ©	Created 0	Expires 0	Last used 0	Status 0	Action
API Access Key 2	2	eyJ0eXAiOiJ0b2tibiisimFsZyi6iIJTMjU2I 🕚	Retrieve sensor data, Send commands to actuators	03/04/2024	10/04/2024			Remove



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16. About

The About interface displays information related to IoTPortal Web Management Console's version information.

To view version information -

1. Click **About** from the menu. The About interface is displayed with the version information. Click on *Terms of Service / Privacy Policy / Licenses* links to view the respective details.

loT Po	rtal 🌐	James Adam Org1 Organisation	\$ ٨	2
لللله Dashboards	About			
Gateways	Terms Privac	of Service y Policy 1		
Events	Licens Version: 2	ies 2.0.0_3.0.7		
AAA Organisation				
© About				



17. Contact Information

Refer to https://brtsys.com/contact-us/ for contact information.

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Appendix

Glossary of Terms, Acronyms & Abbreviations

Term or Acronym	Definition or Meaning
CRUD	In computer programming, Create, Read, Update and Delete are the four basic operations of persistent storage.
GUI	A Graphical User Interface is a digital interface in which a user interacts with graphical components such as icons, buttons, and menus.
ΙοΤ	The Internet of Things is a network of interrelated devices that connect and exchange data with other IoT devices and the cloud.
MFA	Multi-factor Authentication is an authentication method that requires the user to provide two or more verification factors to gain access to a resource such as an application, online account, or a VPN.
ОТР	A one-time password is an identity verification tool for authenticating users logging into an account, network, or system.
QR Code	A quick-response code is a type of two-dimensional matrix barcode, invented in 1994, by Japanese company Denso Wave for labelling automobile parts.
UUID	Universal Unique Identifier is a 128-bit value used to uniquely identify an object or entity on the internet.
UART	A Universal Asynchronous Receiver-Transmitter is a peripheral device for asynchronous serial communication in which the data format and transmission speeds are configurable.

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