



# **GrowHouse Cloud User Manual - Admin User**

## **GrowHouse NextGen IOT Application**



**Version**

0.11

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Draft

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# CONTENTS

<b>1</b>	<b>DOCUMENT DETAILS.....</b>	<b>8</b>
1.1	Document History .....	8
1.2	Definition, Acronyms and Abbreviations.....	9
1.3	References.....	9
<b>2</b>	<b>INTRODUCTION.....</b>	<b>10</b>
2.1	About GrowHouse System .....	10
2.1.1	Key Features .....	10
2.2	GrowHouse Kit Contents .....	10
<b>3</b>	<b>SYSTEM REQUIREMENTS .....</b>	<b>11</b>
3.1	Typical Setup Requirements.....	11
3.2	Special Configuration and environment.....	11
3.3	Support Documentation list.....	11
<b>4</b>	<b>GETTING STARTED.....</b>	<b>12</b>
4.1	Create Admin Account.....	13
4.2	Logging In .....	15
4.2.1	Forgot Password.....	16
4.2.2	Change Password .....	16
4.3	User Management .....	17
4.3.1	Create User .....	18
4.3.2	Edit User.....	19
4.3.3	Delete User.....	20
4.4	Facility Management.....	22
4.4.1	Create Facility.....	23
4.4.2	Edit Facility .....	25
4.4.3	Delete Facility .....	26
4.5	Container Management .....	27
4.5.1	Create Container .....	28
4.5.2	Edit Container .....	29
4.5.3	Delete Container.....	30
4.6	Grow Area.....	31
4.6.1	Delete Grow Area .....	34
4.6.1.1	Deleting an online Gateway .....	34
4.6.1.2	Deleting an offline Gateway .....	37
4.7	Devices .....	39
4.7.1	View Device .....	40
4.7.1.1	Soil Node .....	40
4.7.1.2	LED Node .....	43
4.7.1.2.1	Create LED Node Profile.....	45
4.7.1.2.2	Set LED Node Profile .....	47
4.7.1.2.3	Delete LED Node Profile .....	49
4.7.2	Delete Device .....	50
4.7.2.1	Deleting an online Device.....	50
4.7.2.2	Deleting an offline Device.....	51
4.8	Groups .....	52
4.8.1	Create Group .....	53
4.8.2	View Group .....	55
4.8.2.1	Group Devices.....	56
4.8.2.2	Group Profiles.....	57
4.8.2.2.1	Create Group Profile .....	58
4.8.2.2.2	Apply Group Profile .....	59
4.8.2.2.3	Schedule Group Profile .....	61
4.8.2.2.4	Edit Group Profile .....	64

4.8.2.2.5	Delete Group Profile.....	65
4.8.2.3	Group Events.....	66
4.8.2.3.1	Delete Group Events.....	67
4.8.3	Edit Group.....	68
4.8.4	Delete Group .....	69
4.9	Grow Sections .....	70
4.9.1	Create Grow Sections .....	71
4.9.2	Attach devices with Grow Sections .....	72
4.9.3	Grow Section Rules.....	74
4.9.3.1	Create Rule .....	74
4.9.3.2	View Rule and its Alerts History .....	77
4.9.3.3	Edit Rule .....	81
4.9.3.4	Delete Rule.....	84
4.10	Alerts.....	87
4.10.1	Alert filtration.....	90
4.11	Step by Step Instructions.....	91
4.12	Instructions/Conventions/Errors .....	91
4.13	Malfunctions.....	91
4.14	Emergencies/Messages .....	91
4.15	Specific Functionality Trouble Shooting .....	91
<b>5</b>	<b>LIMITATIONS AND CONSTRAINTS .....</b>	<b>92</b>
<b>6</b>	<b>WARRANTY AND SUPPORT.....</b>	<b>93</b>
<b>7</b>	<b>UPGRADE AND ADD ON MODULES .....</b>	<b>94</b>
<b>8</b>	<b>TECHNICAL SUPPORT.....</b>	<b>95</b>
<b>9</b>	<b>APPENDIX.....</b>	<b>96</b>
9.1	Hardware Setup.....	96
9.1.1	Soil Node .....	96
9.1.2	LED Node .....	98
9.1.3	IOT Gateway.....	99
9.2	Factory Reset Soil Node.....	100
9.3	Factory Reset LED Node.....	101
9.3.1	Zigbee.....	101
9.3.2	BLE .....	102
9.4	Factory Reset IOT Gateway .....	103

## FIGURES

Figure 1: Top Level GrowHouse System Diagram – Field to GrowHouse Custom App via Arrow Connect.....	10
Figure 2: Field GrowHouse internal design diagram.....	12
Figure 3: Add New Admin User.....	13
Figure 4: Add New Admin User – Admin User details .....	13
Figure 5: Growhouse Web portal Login Page.....	15
Figure 6: Dashboard Page .....	15
Figure 8: Users Page .....	17
Figure 10: Create New User.....	18
Figure 11: Create New User – User’s details .....	18
Figure 12: Edit User .....	19
Figure 13: Edit User – User’s details .....	20
Figure 14: Delete User .....	21
Figure 15: Delete User Confirmation .....	21
Figure 16: Facilities Page.....	22
Figure 17: Facilities List .....	22
Figure 18: Create New Facility .....	23
Figure 19: Create New Facility – Facility’s details .....	24
Figure 20: Edit Facility.....	25
Figure 21: Edit Facility – Facility’s Details .....	25
Figure 22: Delete Facility .....	26
Figure 23: Delete Facility Confirmation .....	26
Figure 24: Containers Page .....	27
Figure 25: Containers List.....	27
Figure 26: Create New Container.....	28
Figure 27: Create New Container – Container’s details.....	28
Figure 28: Edit Container .....	29
Figure 29: Edit Container – Container’s details .....	29
Figure 30: Delete Container .....	30
Figure 31: Delete Container Confirmation .....	30
Figure 32: Out of Network Gateway .....	31
Figure 33: Grow Areas Page.....	31
Figure 34: Grow Areas List.....	32
Figure 35: View Particular Grow Area .....	32
Figure 36: Grow Area's Section Devices Rules .....	33
Figure 37: Grow Areas List.....	34
Figure 38: Devices of Gateway .....	35
Figure 39: Devices List.....	35
Figure 40: Grow Areas List.....	36
Figure 41: Deleting an Online Grow Area.....	36
Figure 42: Delete an Online Grow Area Confirmation.....	37
Figure 43: Delete Grow Area Process.....	37
Figure 44: Deleting an Offline Grow Area.....	38
Figure 45: Delete an Online Grow Area Confirmation.....	38
Figure 46: Devices of Gateway .....	39
Figure 47: Devices List.....	39
Figure 48: View Device .....	40
Figure 49: Soil Node Device.....	40
Figure 50: Soil Node Device Live Chart.....	41
Figure 51: Soil Node Device History.....	41

Figure 52: Soil Node Device History Chart.....	42
Figure 53: LED Node .....	43
Figure 54: Set LED Node Channel Intensity.....	44
Figure 55: Create LED Node Profile.....	45
Figure 56: LED Node Profile – Profile details .....	46
Figure 57: Apply LED Node Profile.....	47
Figure 58: Set LED Node Channel Intensity as per Profile .....	48
Figure 59: Delete LED Node Profile .....	49
Figure 60: Delete LED Node Profile Confirmation. ....	49
Figure 61: Deleting an Online Device.....	50
Figure 62: Deleting an Online Device Confirmation.....	50
Figure 63: Deleting an Offline Device.....	51
Figure 64: Deleting an Offline Device Confirmation.....	51
Figure 65: Groups of Gateway .....	52
Figure 66: Groups List.....	52
Figure 67: Create New Group .....	53
Figure 68: Create New Group - Group's details.....	53
Figure 69: Create New Group - Group's details.....	54
Figure 70: Groups List.....	55
Figure 71: Group Details .....	55
Figure 72: Devices of a Group .....	56
Figure 73: List of the device of a Group .....	56
Figure 74: Profiles of a Group .....	57
Figure 75: List of the Profiles of a Group .....	57
Figure 76: Create New Group Profile .....	58
Figure 77: New Group Profile - Profile's Details .....	58
Figure 78: List of the Profiles of a Group.....	59
Figure 79: Profile Selection .....	59
Figure 80: Apply Selected Profile .....	60
Figure 81: List of the Profiles of a Group.....	61
Figure 82: Profile Selection .....	61
Figure 83: Schedule a Group Profile .....	62
Figure 84: Schedule Group Profile - Schedule Detail .....	62
Figure 85: Edit a Group Profile.....	64
Figure 86: Edit Group Profile - Profile's Details .....	64
Figure 87: Delete a Group Profile.....	65
Figure 88: Delete a Group Profile Confirmation.....	65
Figure 89: Events of a Group .....	66
Figure 90: List of Events .....	66
Figure 91: Delete an Event of a Group.....	67
Figure 92: Delete Event Confirmation .....	67
Figure 93: Edit Group.....	68
Figure 94: Edit Group - Group's Details.....	68
Figure 95: Delete a Group.....	69
Figure 96: Delete Group Confirmation.....	69
Figure 97: Grow Section .....	70
Figure 98: Grow Sections Layout .....	70
Figure 99: Create New Grow Section.....	71
Figure 100: Create New Grow Section – Section details .....	71
Figure 101: Add Devices into Grow Section.....	72
Figure 102: Add Devices into Grow Section – Device details .....	73
Figure 103: View Grow Section.....	74
Figure 104: Create New Rule for a Grow Section.....	74
Figure 105: Create New Rule Field for Grow Section .....	75
Figure 106: List of Rules per Grow Section .....	76

Figure 107: Grow Areas List.....	77
Figure 108: Particular Grow Area Selection .....	77
Figure 109: Rules of Particular Grow Area .....	78
Figure 110: List of Rules per Grow Area .....	78
Figure 111: Particular Rule section .....	79
Figure 112: Rule History .....	80
Figure 113: Rule Alerts History List .....	80
Figure 114: Grow Areas Page.....	81
Figure 115: Grow Area Selection .....	81
Figure 116: Grow Area Section Selection.....	82
Figure 117: Grow Section Rules .....	82
Figure 118: Edit Rules.....	83
Figure 119: Edit Rules - Rule's details .....	83
Figure 120: Grow Areas Page.....	84
Figure 121: Grow Area Selection .....	84
Figure 122: Grow Area Rules.....	85
Figure 123: Delete Rules .....	85
Figure 124: Delete Rules Confirmation .....	86
Figure 125: Alerts Page .....	87
Figure 126: List of Alerts .....	87
Figure 127: Sample Alerts.....	89
Figure 128: Alert Filter based on Message.....	90
Figure 129: Alert Filter based on Date Range .....	90
Figure 130: Soil Node .....	96
Figure 131: Soil Node- Battery Connections .....	96
Figure 132: Soil Node – Sensor Connection .....	97
Figure 133: LED Node .....	98
Figure 134: LED Node – Power, Channels & Antenna Connections.....	98
Figure 135: IOT Gateway .....	99
Figure 136: IOT Gateway – With Enclosure .....	99
Figure 137: IOT Gateway – Ethernet connectivity .....	99
Figure 138: IOT Gateway – Power connection .....	100
Figure 139: Soil Node – SW2 location.....	100
Figure 140: LED Node – SW4 location.....	101
Figure 141: LED Node – SW3 location.....	102
Figure 142: IOT Gateway – SW4 location .....	103

## TABLES

Table 1: Document History.....	9
Table 2: Definition, Acronyms and Abbreviations .....	9
Table 3: Reference .....	9
Table 4: Setup Requirements.....	11
Table 5: Normal and Admin User Access Role.....	17
Table 6: Alerts Description .....	88

# 1 DOCUMENT DETAILS

## 1.1 Document History

Version	Author		Reviewer		Approver	
	Name	Date (DD-MM-YYYY)	Name	Date (DD-MMM-YYYY)	Name	Date (DD-MM-YYYY)
Draft 0.1	Anagha Mhetre	03-March-2019	Sombabu Gunithi, Hasteen Patel	05-March-2019		
Draft 0.2	Anagha Mhetre	11-March-2019	Hasteen Patel	12-March-2019		
Draft 0.3	Anagha Mhetre	13-March-2019	Hasteen Patel			
Draft 0.4	Anagha Mhetre	28-March-2019	Hasteen Patel, David Demona	25-April-2019		
Draft 0.5	Anagha Mhetre	25-April-2019	Sombabu Gunithi, Hasteen Patel	29-April-2019		
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Draft 0.9	Pritesh Shah	25-Oct-2019	Hasteen Patel	25-Oct-2019		
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Draft 0.11	Konexios	22-May-2020	Arrow	29-May-2020		

Version	Description of Change
Draft 0.1	Added description about facility, container, grow area, Grow section, profile. Added limitations and validations.
Draft 0.2	Updated typical setup requirement and Special configuration environment.
Draft 0.3	Added delete Container and delete Device features. Added Abbreviations and Description. Added Reference.
Draft 0.4	Added delete gateway feature. Updated Profile Alerts.
Draft 0.5	Added admin user registration, Updated images LED Node Profile. Addressed Arrow's comments/suggestions.
Draft 0.6	Updated images and description throughout the document based on version 4.0 of Growhouse web portal
Draft 0.7	Updated images and description throughout the document based on version 4.2 of Growhouse web portal.
Draft 0.8	Added LED Grouping, Group Profile, Preset, Group Profile schedule feature. Updated LED Node Profile feature for individual LED Node. Updated images and description throughout the document based on version 4.4 of Growhouse web portal.



Version	Description of Change
Draft 0.9	Updated description for data reporting interval of Soil Node and device status reporting interval.
Draft 0.10	Incorporated review comments from David.
Draft 0.11	Updated to reflect removal of Google login dependency and new authentication.

Table 1: Document History

## 1.2 Definition, Acronyms and Abbreviations

Definition/Acronym/Abbreviation	Description
IOT	Internet Of Things
Arrow Connect	Arrow's IOT platform
Admin user	Account admin
Growhouse Web Portal	Growhouse Cloud

Table 2: Definition, Acronyms and Abbreviations

## 1.3 References

No.	Document	Version	Remarks
1	<i>ei_Growhouse_Mobile_Application_User_Manual.pdf</i>		User Guide of GrowHouse Mobile Application.

Table 3: Reference

## 2 INTRODUCTION

### 2.1 About GrowHouse System

GrowHouse Field to GrowHouse Custom Application via ArrowConnect: Detailed Architecture

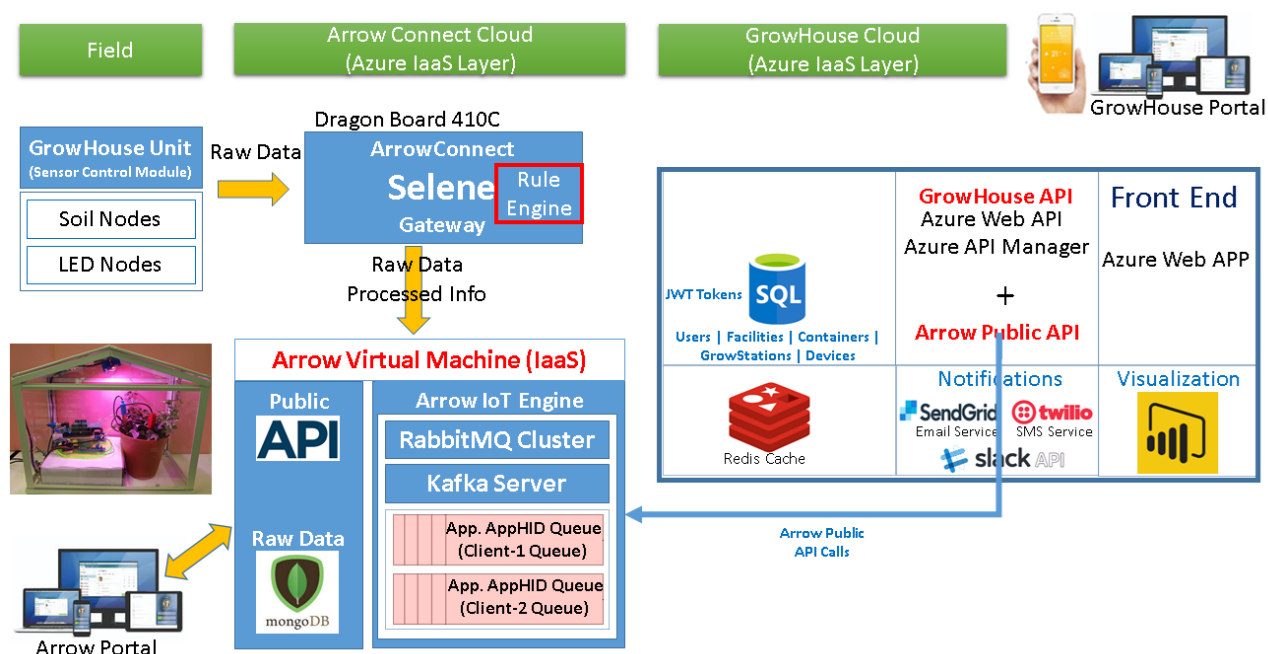


Figure 1: Top Level GrowHouse System Diagram – Field to GrowHouse Custom App via Arrow Connect

#### 2.1.1 Key Features

- User Management
- Facility Management
- Container Management
- Grow Area Management
- Grow Section Management
- Device Management
- LED - Group Management
- Rule Management
- Device Telemetry Live and History Chart

### 2.2 GrowHouse Kit Contents

- Gateway
- LED Node
- Soil Node

### 3 SYSTEM REQUIREMENTS

#### 3.1 Typical Setup Requirements

Tool/Tech Name	Description	Minimum Version
OS	Windows, Ubuntu	Windows 7, Ubuntu 16.04
Browser	Chrome, Firefox	Chrome Version 71.0.3578 Firefox Version 65.0.2
RAM	Minimum 2 GB	

**Table 4: Setup Requirements**

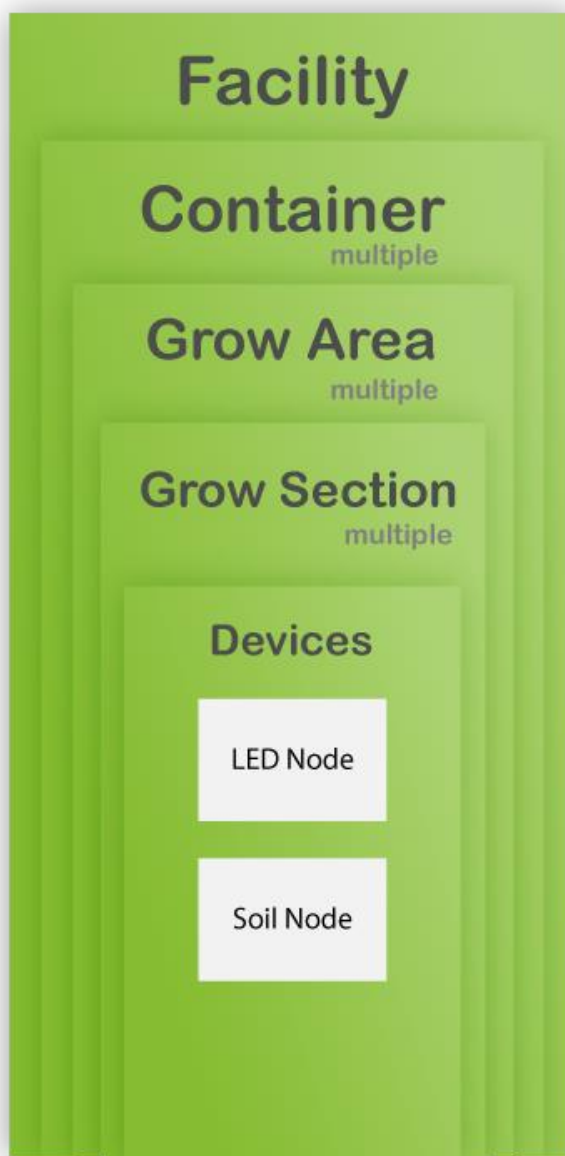
#### 3.2 Special Configuration and environment

- Good internet connectivity

#### 3.3 Support Documentation list

NA

## 4 GETTING STARTED



**Figure 2: Field GrowHouse internal design diagram**

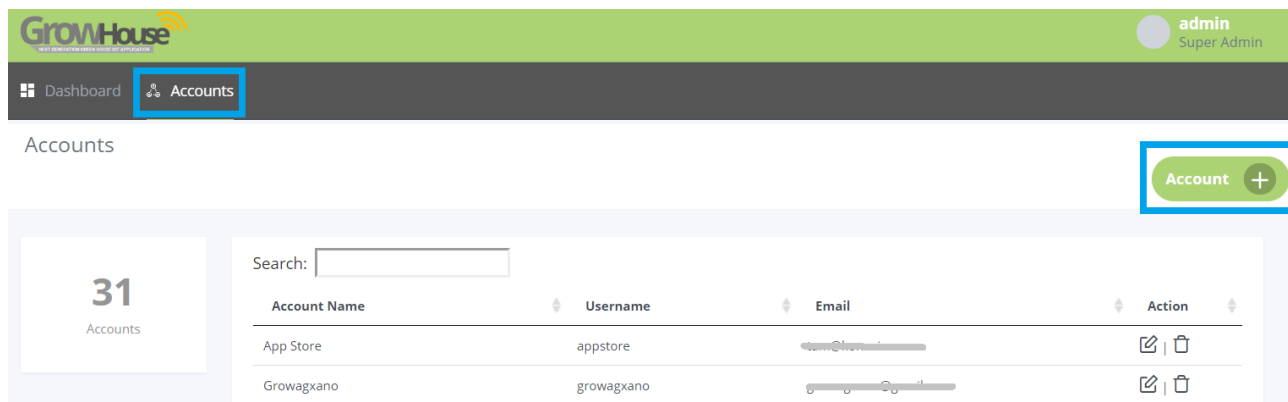
- Actual Grow House may contain multiple Facilities (one to many)
- One Facility may contain multiple Containers (one to many)
- One Container may contain multiple Grow Sections (one to many)
- One Grow Section may contain multiple Devices (one to many)
- One LED Group can contain multiple LED Nodes and group profiles (one to many)
- One Rule can be set over multiple device parameter values (one to many)

## 4.1 Create Admin Account

Admin accounts can only be created by a super user on the Growhouse web portal. A super user needs to create a new account to register an admin user.

Following are the steps to create an Admin account on the Growhouse web portal:

- Open your browser and navigate to **<https://growhouse-arrow.arrowconnect.io>**
- Enter credentials for super user.
- Click on “Sign in” button.



**Figure 3: Add New Admin User**

- The “Dashboard” page will open up.
- Click on Accounts at the top to get to the Accounts page
- Click on “Account +” button
- “Create New Account” page will open up.
- Enter the Account Name, User Name, Email, First Name and Last Name of the admin user.
- Click on “Done” button.
- “Account created successfully” message will be displayed on successful creation of admin account.

×

### Create New Account

Account Name \*

User Name \*

Email \*

First Name \*

Last Name \*

Done ✓

**Figure 4: Add New Admin User – Admin User details**

**Validations:**

- Only letters allowed in account name field
- Only letters allowed in user name field
- Only alphanumerical allowed in email field

**Note:** Super user credentials are not shared to all, it's confined to eInfochips & Arrow USA. Contact Arrow representative and eInfochips <[growhouse@einfochips.com](mailto:growhouse@einfochips.com)> to get your admin user created.

## 4.2 Logging In

- Open your browser and navigate to ***https://growhouse-arrow.arrowconnect.io***
- Enter login credentials which are registered on Growhouse web portal.  
(Section 4.1 describes how to create an Admin user on Growhouse web portal)
- Click on “Sign in” button.

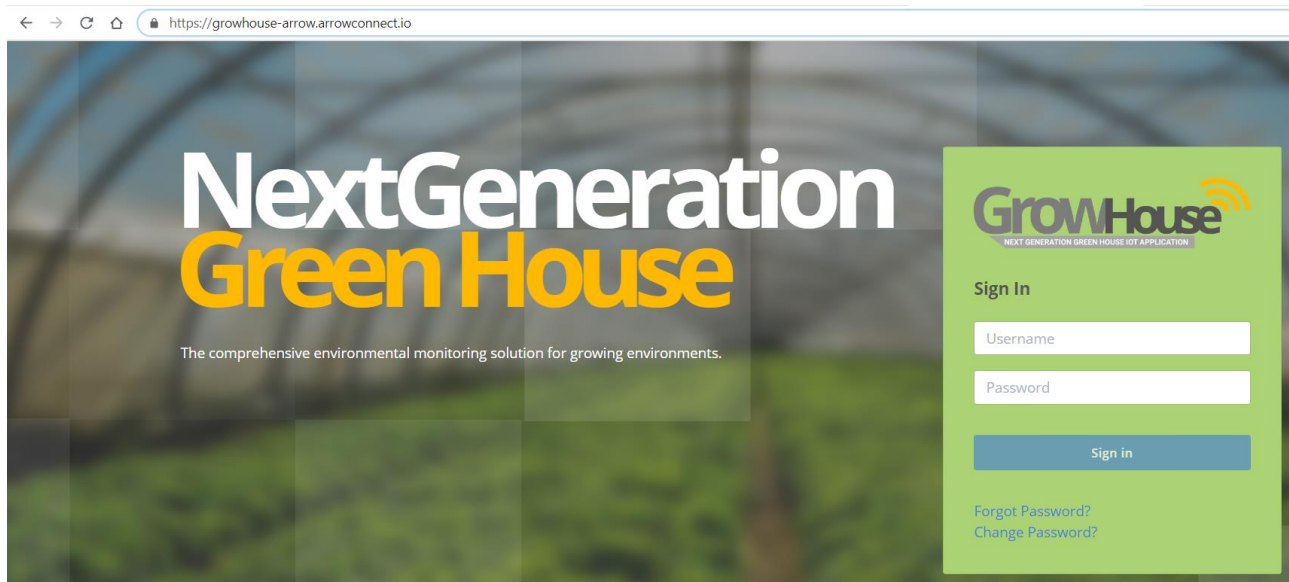


Figure 5: Growhouse Web portal Login Page

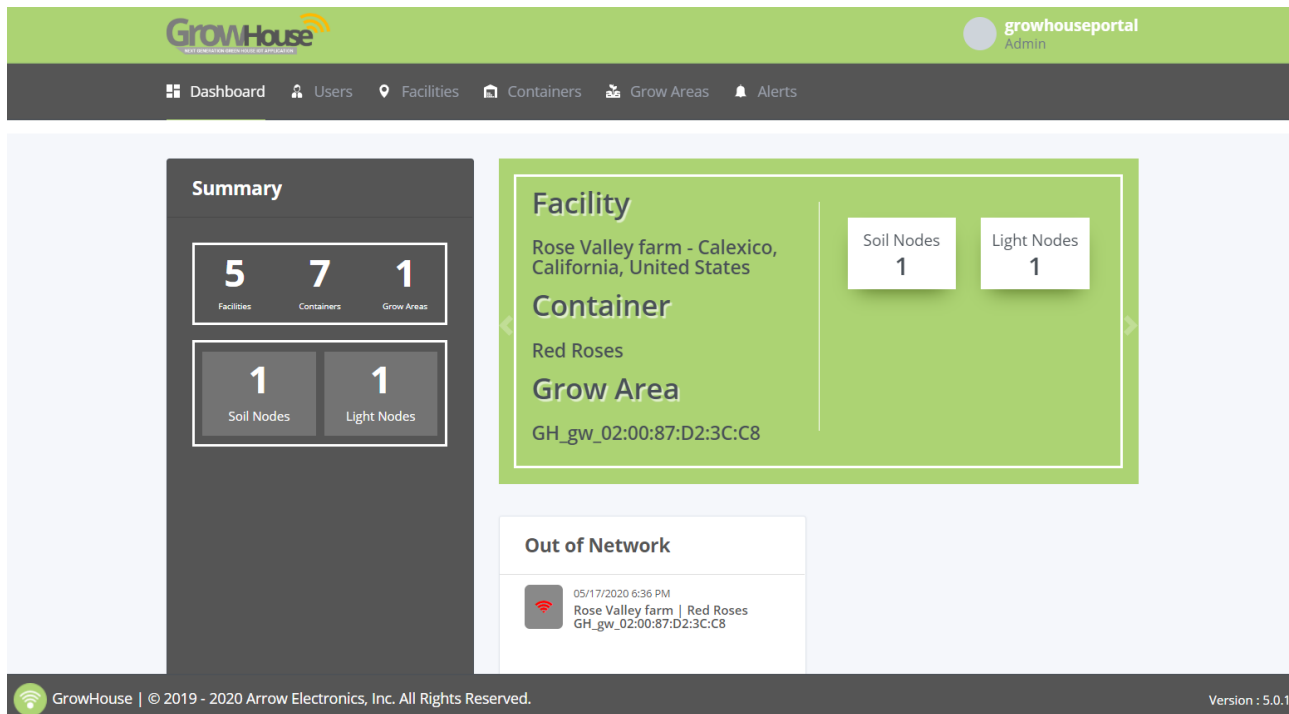
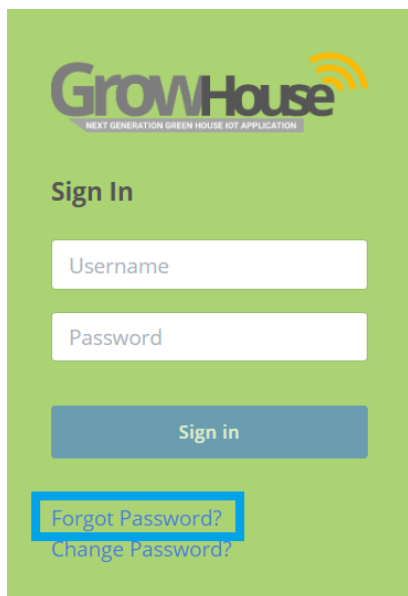


Figure 6: Dashboard Page

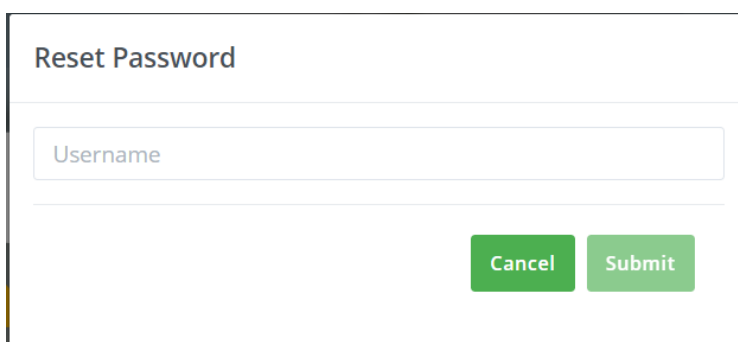
### 4.2.1 Forgot Password

If a user forgets their password, they can reset it from the login screen.

- Click on “Forgot Password?”
- Enter the Username and click on the “Submit” button.
- “Your password has been reset!” will be displayed on successful password reset.
- An email will be sent to the user with their Username and a temporary password.
- Once the user logs in for the first time, they will be required to set a new password.



The image shows the GrowHouse login interface. At the top is the GrowHouse logo with the tagline 'NEXT GENERATION GREEN HOUSE IOT APPLICATION'. Below the logo is the 'Sign In' section with two input fields: 'Username' and 'Password'. A blue 'Sign in' button is positioned below these fields. At the bottom of the sign-in section, there are two links: 'Forgot Password?' and 'Change Password?'. The 'Forgot Password?' link is highlighted with a blue rectangular box.

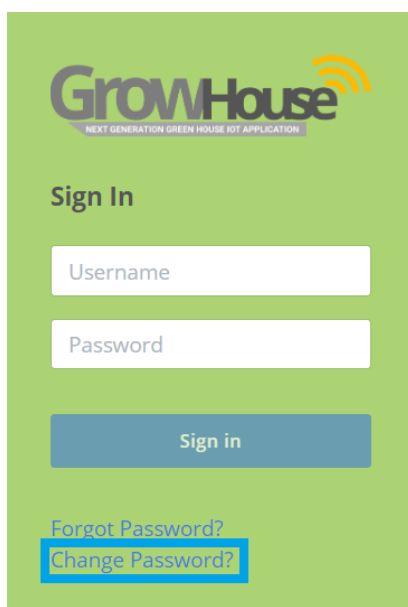


The image shows the 'Reset Password' form. It has a title 'Reset Password' at the top. Below the title is a single input field labeled 'Username'. At the bottom right of the form are two green buttons: 'Cancel' and 'Submit'.

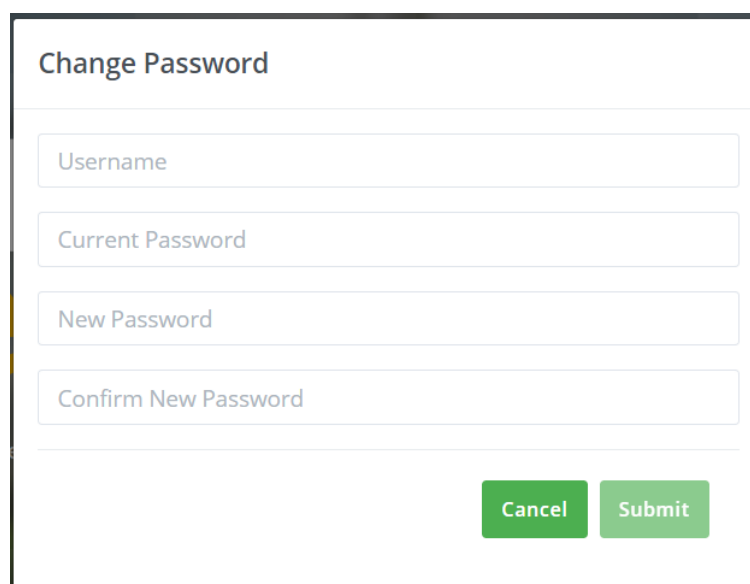
### 4.2.2 Change Password

Users can change their password from the login screen.

- Click on “Change Password?”
- Enter the Username, Current Password, New Password and Confirm New Password.
- Click on the “Submit” button.
- “Your password has been changed successfully!” will be displayed on successful password reset.
- The user can now login with their new password.



The image shows the GrowHouse login interface, identical to the one in the previous section. The 'Forgot Password?' link is highlighted with a blue rectangular box, and the 'Change Password?' link is highlighted with a blue rectangular box.



The image shows the 'Change Password' form. It has a title 'Change Password' at the top. Below the title are four input fields: 'Username', 'Current Password', 'New Password', and 'Confirm New Password'. At the bottom right of the form are two green buttons: 'Cancel' and 'Submit'.



## 4.3 User Management

An Admin User can create Normal Users. User Management contains create user, update user and delete user features.

- Select “Users” tab.
- Users page will open up and a list of existing users added by logged in user will be shown.

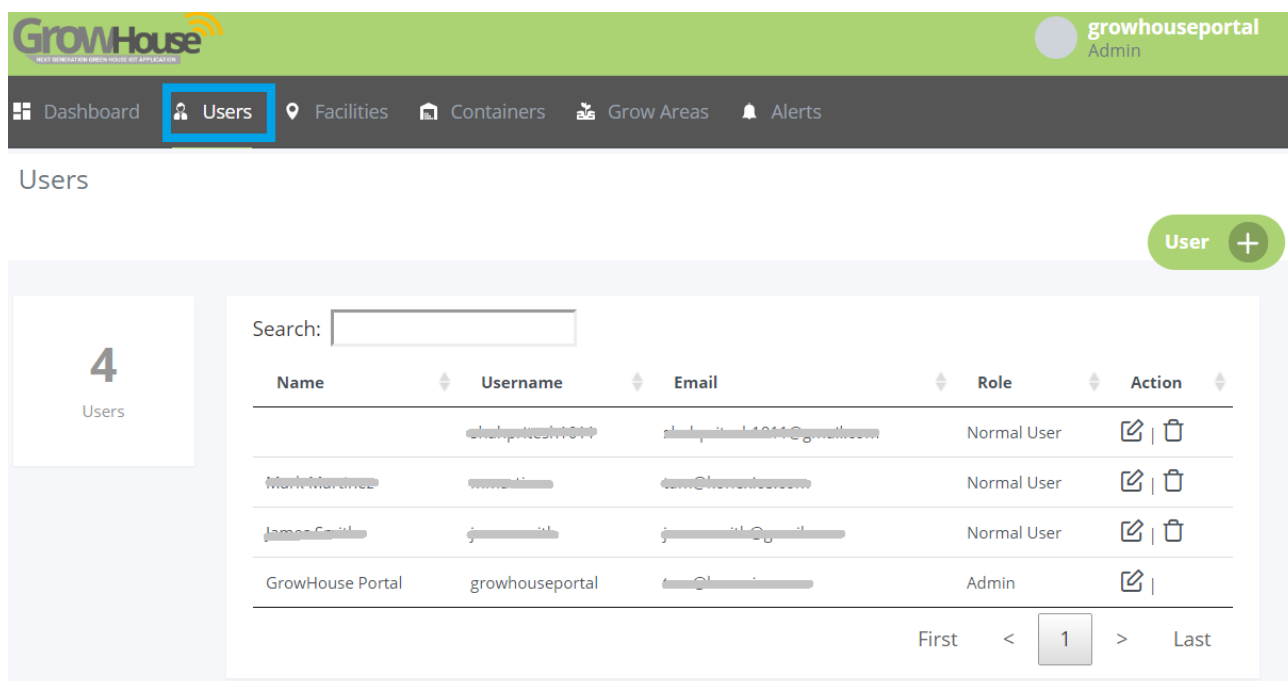


Figure 7: Users Page

- The table below describes the access levels.

Page	Admin User Access	Normal User Access
Dashboard	View	View
Users	View, create, edit and delete	Not Available
Facilities	View, create, edit and delete	Not Available
Containers	View, create, edit and delete	Not Available
Grow Areas	View and delete	View
Devices	View, access, control and delete	View, access and control
Groups	View, create, edit and delete	View, create, edit and delete
Group Profiles	View, create, edit, apply, schedule and delete	View, create, edit, apply, schedule and delete
Group Events	View and delete	View and delete
Grow Sections	View, create, edit and delete	View, create, edit and delete
Rules	View, create, edit and delete	View, create, edit and delete
Alerts	View	View

Table 5: Normal and Admin User Access Role

### 4.3.1 Create User

- Click on “User +” button.

GrowHouse  
NEXT GENERATION GREEN HOUSE SET APPLICATION

growhouseportal  
Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Users

4  
Users

Search:

Name	Username	Email	Role	Action
John Doe	john.doe@samplecompany.com	john.doe@samplecompany.com	Normal User	<a href="#">Edit</a>   <a href="#">Delete</a>
Jane Doe	jane.doe@samplecompany.com	jane.doe@samplecompany.com	Normal User	<a href="#">Edit</a>   <a href="#">Delete</a>
James Smith	james.smith@samplecompany.com	james.smith@samplecompany.com	Normal User	<a href="#">Edit</a>   <a href="#">Delete</a>
GrowHouse Portal	growhouseportal	growhouseportal@samplecompany.com	Admin	<a href="#">Edit</a>   <a href="#">Delete</a>

First < 1 > Last

Figure 8: Create New User

### Create New User

First Name\*

Sally

Last Name\*

Smith

Username \*

sallysmith

Email\*

sallysmith@samplecompany.com

Role\*

Normal User

Submit ☒

Figure 9: Create New User – User’s details


- Enter all the details and click on “Submit” button.
- “User Created Successfully” message will be displayed on successful creation of user.
- An email will be sent to the user with their Username and a temporary password.

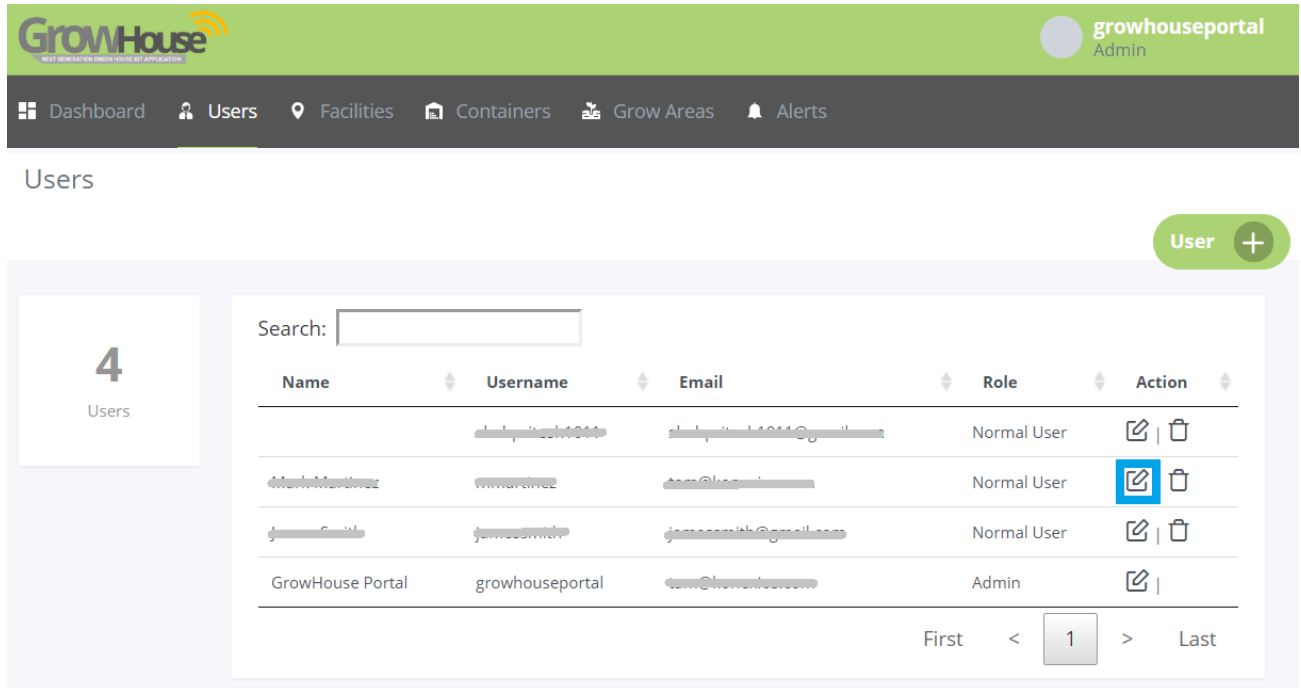
- Once the user logs in for the first time, they will be required to set a new password.

**Validations:**

- Only letters allowed in username field
- Only alphanumerical allowed in email field

### 4.3.2 Edit User

- Click on edit icon  .











growhouseportal Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Users

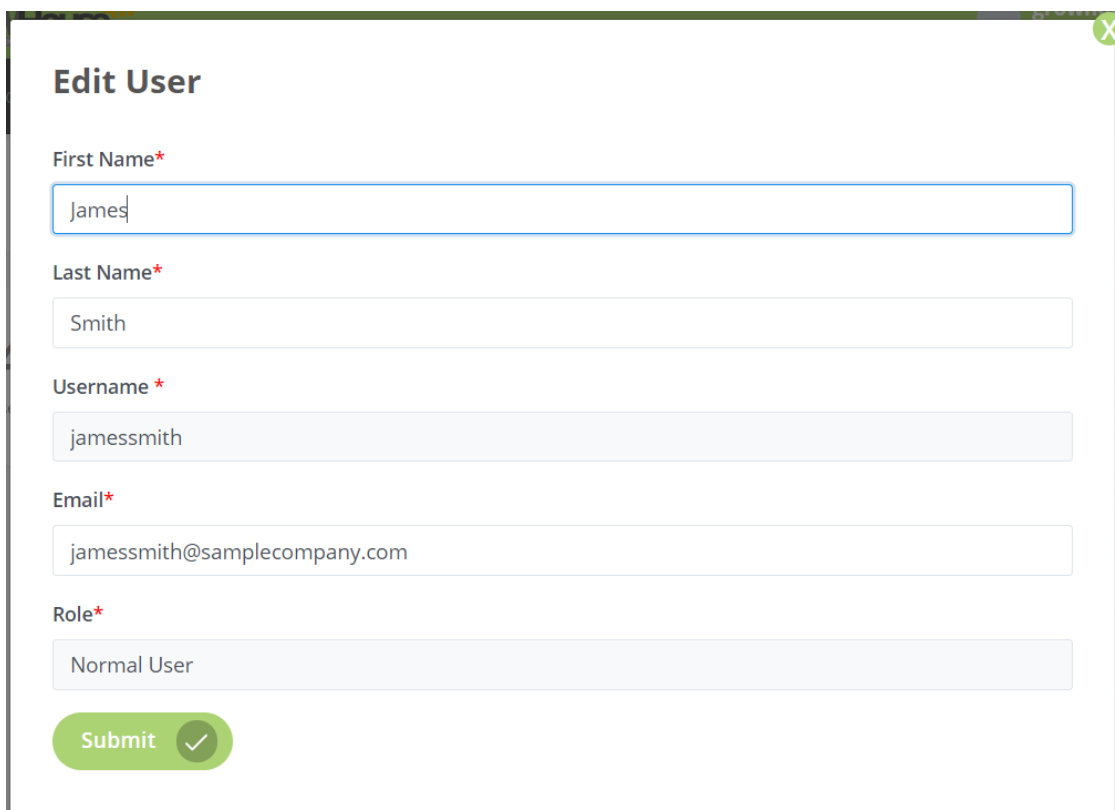
4 Users

Search:

Name	Username	Email	Role	Action
[Redacted]	[Redacted]	[Redacted]	Normal User	 
Mark Martinez	mmartinez	mm@growhouse.com	Normal User	 
James Smith	jamesmith	jamesmith@gmail.com	Normal User	 
GrowHouse Portal	growhouseportal	portal@growhouse.com	Admin	 

First < 1 > Last

**Figure 10: Edit User**



**Edit User**

First Name\*

James

Last Name\*

Smith

Username \*

jamesmith

Email\*

jamesmith@samplecompany.com

Role\*

Normal User

Submit ✓

**Figure 11: Edit User – User’s details**

- Change First Name, Last Name, Username and Email as desired.
- Click on “Submit” button.
- “User edited successfully” message will be displayed on successful update of user information.

**Validations:**

- Only alphanumerical allowed in email field

**Note:**

- Username field cannot be modified
- Role field cannot be modified

### 4.3.3 Delete User

- Click on delete icon  .

GrowHouse  
NEXT GENERATION GREENHOUSE MGT APPLICATION

growhouseportal  
Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Users

User +

4  
Users

Search:

Name	Username	Email	Role	Action
[REDACTED]	[REDACTED]	[REDACTED]	Normal User	[Edit] [Delete]
Mark Martinez	mmartinez	mm@logi...	Normal User	[Edit] [Delete]
[REDACTED]	[REDACTED]	[REDACTED]	Normal User	[Edit] [Delete]
GrowHouse Portal	growhouseportal	[REDACTED]	Admin	[Edit] [Delete]

First < 1 > Last

Figure 12: Delete User

- Click on “Delete” button.

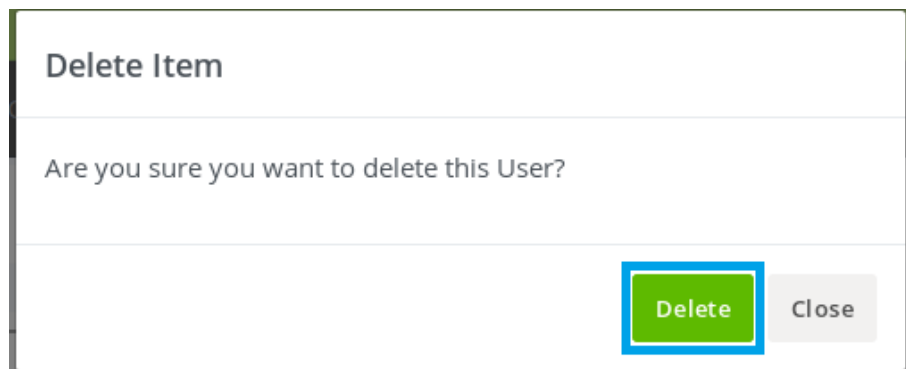


Figure 13: Delete User Confirmation

- “User deleted successfully” message will be displayed on successful deletion of user.

## 4.4 Facility Management

Facilities screen shows the total number of active facilities under the admin account and their details. It also allows user to add, view, edit and delete facilities. One facility can have multiple containers.

- Select “Facilities” tab

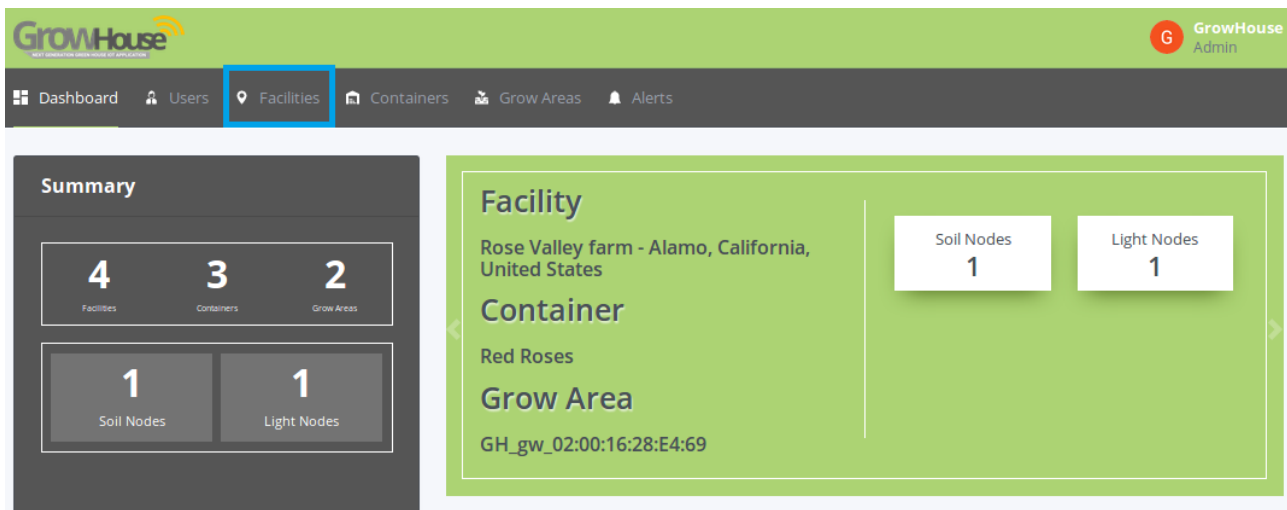


Figure 14: Facilities Page

- Facilities page will open up and a list of existing facilities added by logged in user will be shown.

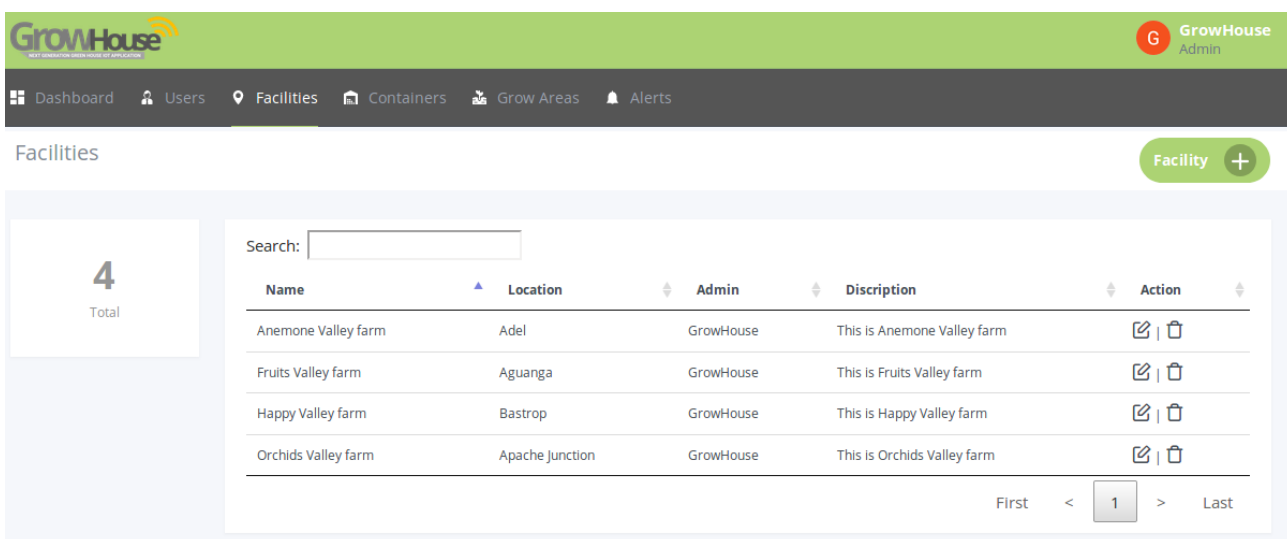
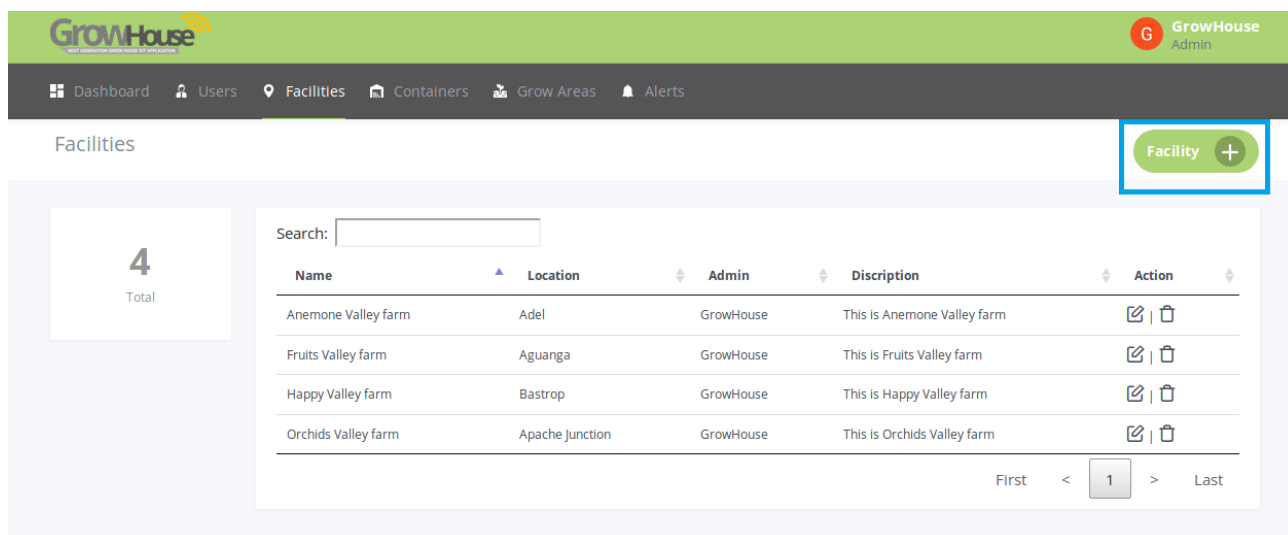


Figure 15: Facilities List

### 4.4.1 Create Facility

When creating a new facility the administrator also has the option of creating a container at the same time.

- Click on the “Facility +” button.




**Figure 16: Create New Facility**

- Enter facility name.
- Select facility admin.
- Select country, state, locality.
- If while creating facility you want to create container then click on “Add respective container now”.
  - Add container name
  - Select container type.
  - Click on “Done” button.
- Else click on “Done” button.
- “Facility created successfully” message will be displayed on successful creation of facility.

**Validations:**

- Only alphanumerical allowed in facility name field.
- Zip field validation depends on selected country.eg USA Zip codes are five digits.



## Create New Facility

Facility Name \*

Rose Valley farm

Facility Admin\*

GrowHouse

Select Country \*      Select State \*      Select Locality \*

United States      California      Alamo

ZIP \*

42020

Description

A facility in California for growing flowers.

☒ Add respective container now

Container Name \*

Red Roses

Container Type\*

Standard



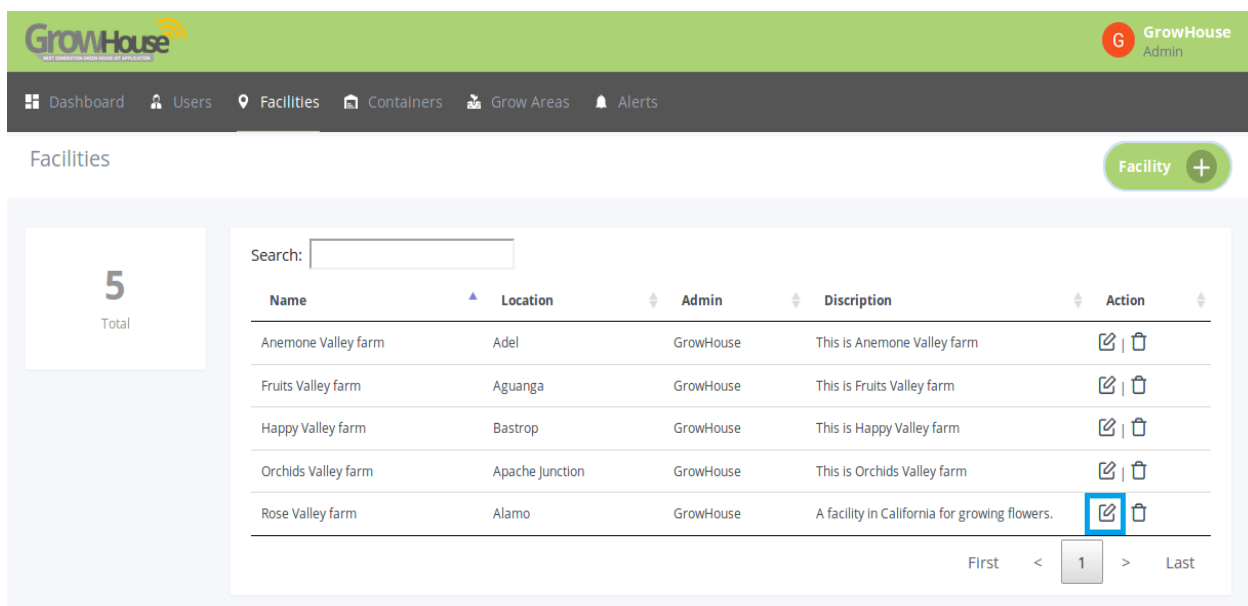
**Done** 

Figure 17: Create New Facility – Facility's details



## 4.4.2 Edit Facility

- Click on edit icon .



The screenshot shows the GrowHouse Admin dashboard. The top navigation bar includes links for Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The 'Facilities' section is active, showing a list of facilities. A sidebar on the left indicates there are 5 total facilities. The main table lists facilities with columns for Name, Location, Admin, Discription, and Action. The 'Rose Valley farm' entry is highlighted, and the edit icon (pencil) in the Action column is circled in blue.











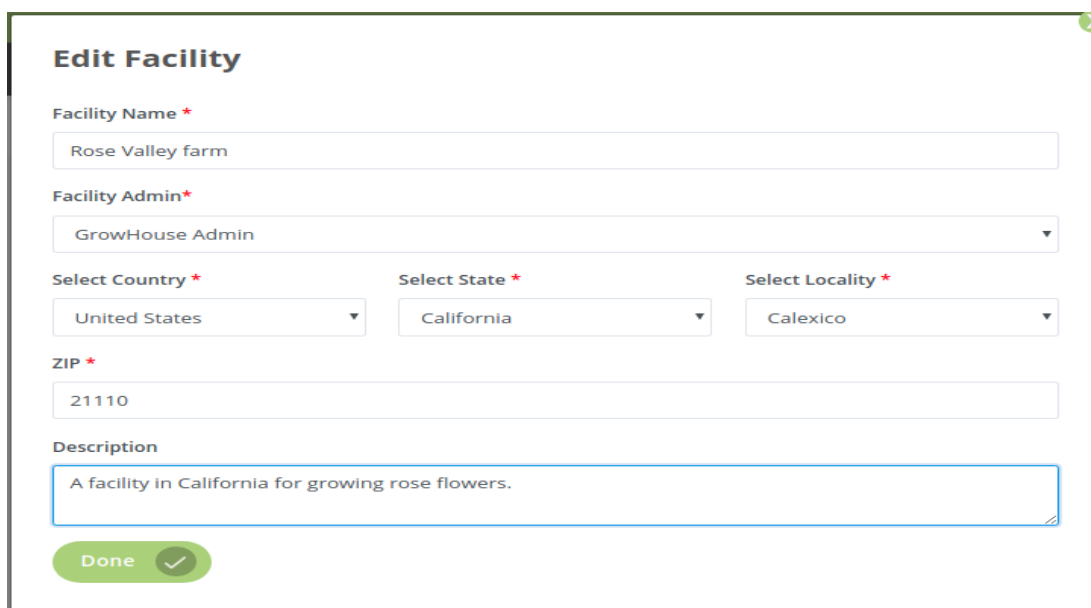
Name	Location	Admin	Discription	Action
Anemone Valley farm	Adel	GrowHouse	This is Anemone Valley farm	 
Fruits Valley farm	Aguanga	GrowHouse	This is Fruits Valley farm	 
Happy Valley farm	Bastrop	GrowHouse	This is Happy Valley farm	 
Orchids Valley farm	Apache Junction	GrowHouse	This is Orchids Valley farm	 
Rose Valley farm	Alamo	GrowHouse	A facility in California for growing flowers.	 

Figure 18: Edit Facility

- Edit required details.
- Click on “Done” button.
- “Facility updated successfully” message will be displayed on successful update of facility.

### Validations:

- Only alphanumeric allowed in facility name field.
- Zip field validation depends on selected country.eg USA Zip codes are five digits.



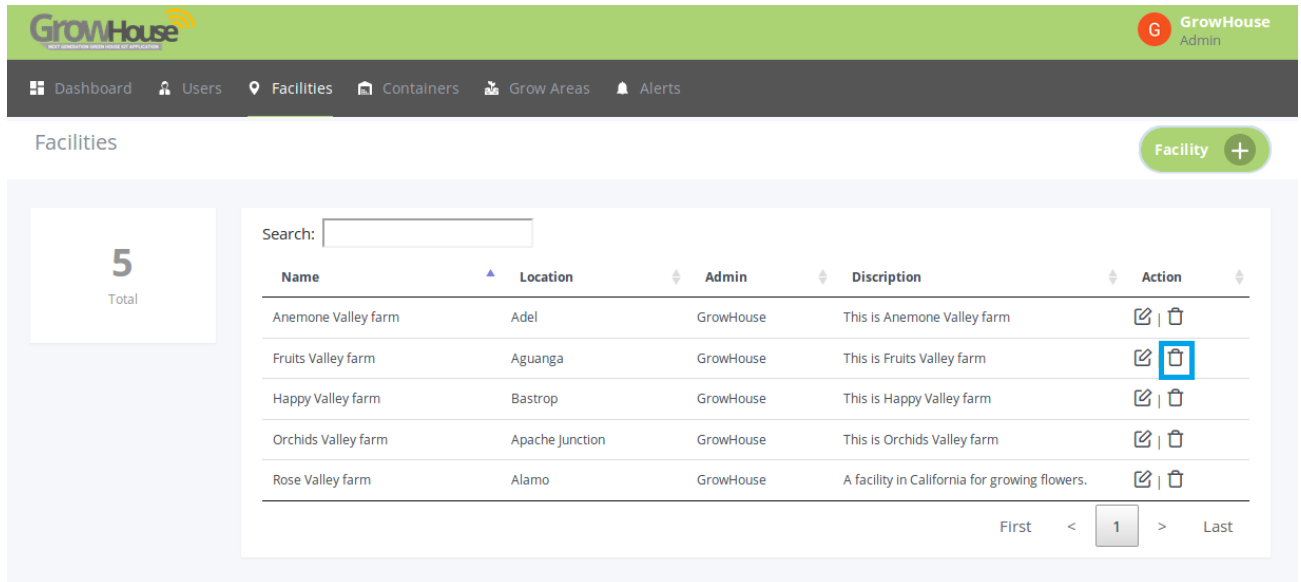
The screenshot shows the 'Edit Facility' form. It includes the following fields and options:

- Facility Name \***: Text input field containing 'Rose Valley farm'.
- Facility Admin \***: Dropdown menu showing 'GrowHouse Admin'.
- Select Country \***: Dropdown menu showing 'United States'.
- Select State \***: Dropdown menu showing 'California'.
- Select Locality \***: Dropdown menu showing 'Callexico'.
- ZIP \***: Text input field containing '21110'.
- Description**: Text area containing 'A facility in California for growing rose flowers.'
- Done**: Green button with a checkmark icon.











Figure 19: Edit Facility – Facility’s Details

### 4.4.3 Delete Facility

- Click on delete icon .

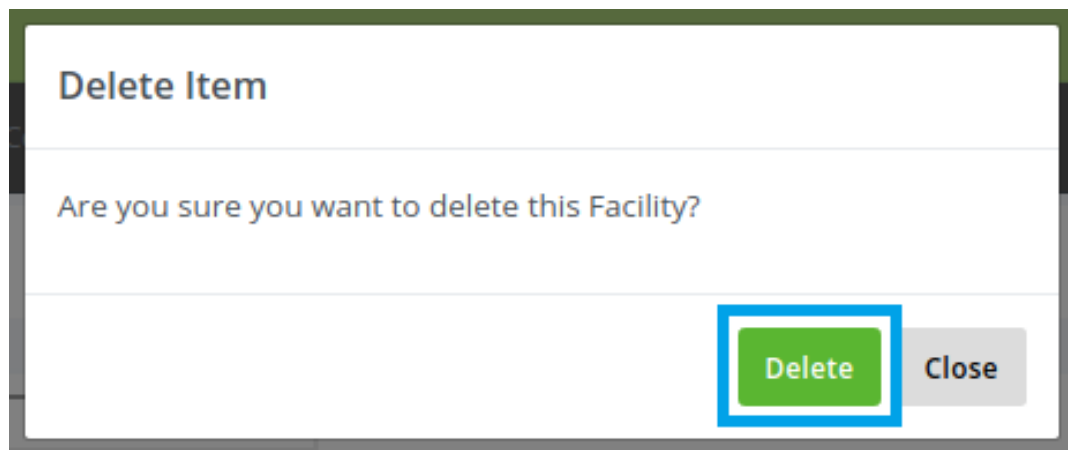


The screenshot shows the GrowHouse Admin interface. The top navigation bar includes links for Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The 'Facilities' section is active, showing a list of facilities. A sidebar on the left indicates a total of 5 facilities. The main table lists facilities with columns for Name, Location, Admin, Discription, and Action. The 'Fruits Valley farm' row is highlighted, and the delete icon (trash) in the Action column is circled in blue.

Name	Location	Admin	Discription	Action
Anemone Valley farm	Adel	GrowHouse	This is Anemone Valley farm	   
Fruits Valley farm	Aguanga	GrowHouse	This is Fruits Valley farm	   
Happy Valley farm	Bastrop	GrowHouse	This is Happy Valley farm	   
Orchids Valley farm	Apache Junction	GrowHouse	This is Orchids Valley farm	   
Rose Valley farm	Alamo	GrowHouse	A facility in California for growing flowers.	   

**Figure 20: Delete Facility**

- Click on “Delete” button.
- “Facility deleted successfully” message will be displayed on successful deletion of facility.



**Figure 21: Delete Facility Confirmation**

## 4.5 Container Management

Container screen shows the total number of active containers under the admin account and their details. It also allows user to add, view, edit and delete the containers.

- Select “Containers” tab.

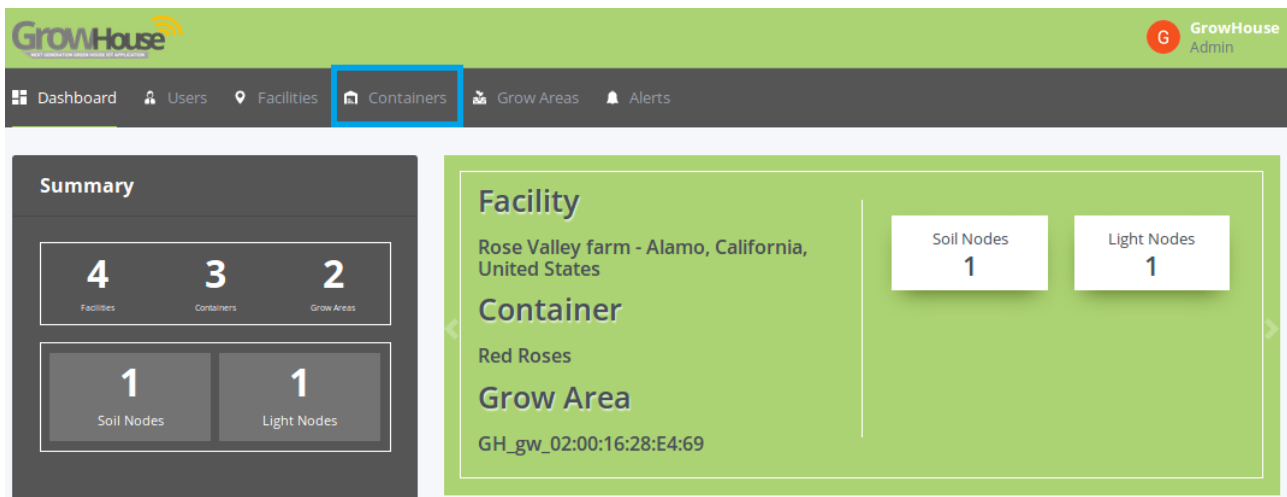


Figure 22: Containers Page

- Containers page will open up and a list of existing containers added by logged in user will be shown.

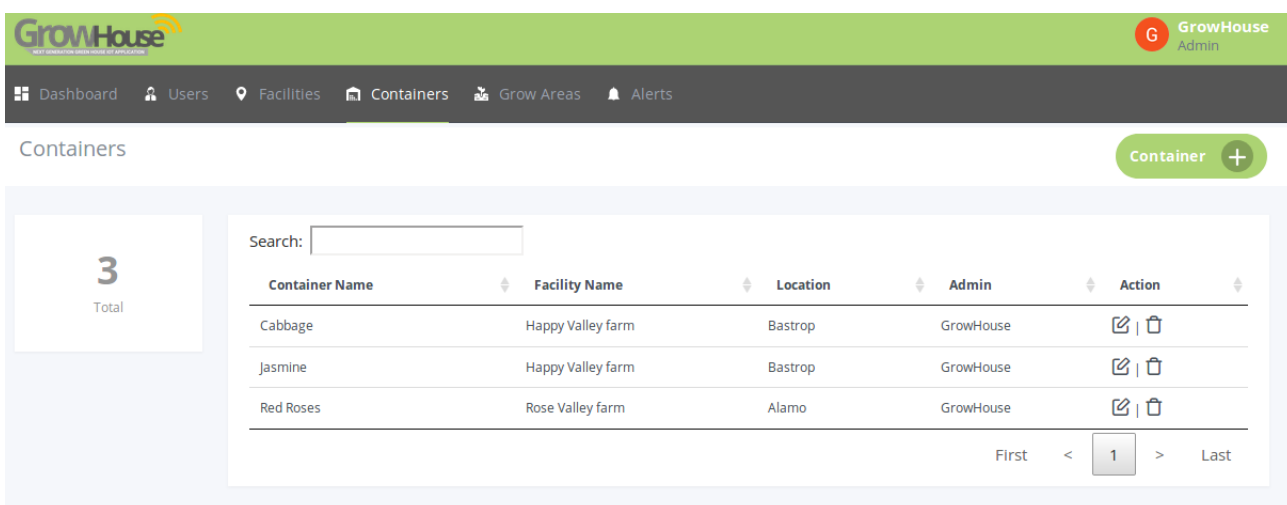


Figure 23: Containers List

## 4.5.1 Create Container

Admin user can create container two different ways. When a facility is created, the user can also choose to create a container at this time. Alternatively, the user can create a new container within an existing facility.

- Click on the “Container +” button.

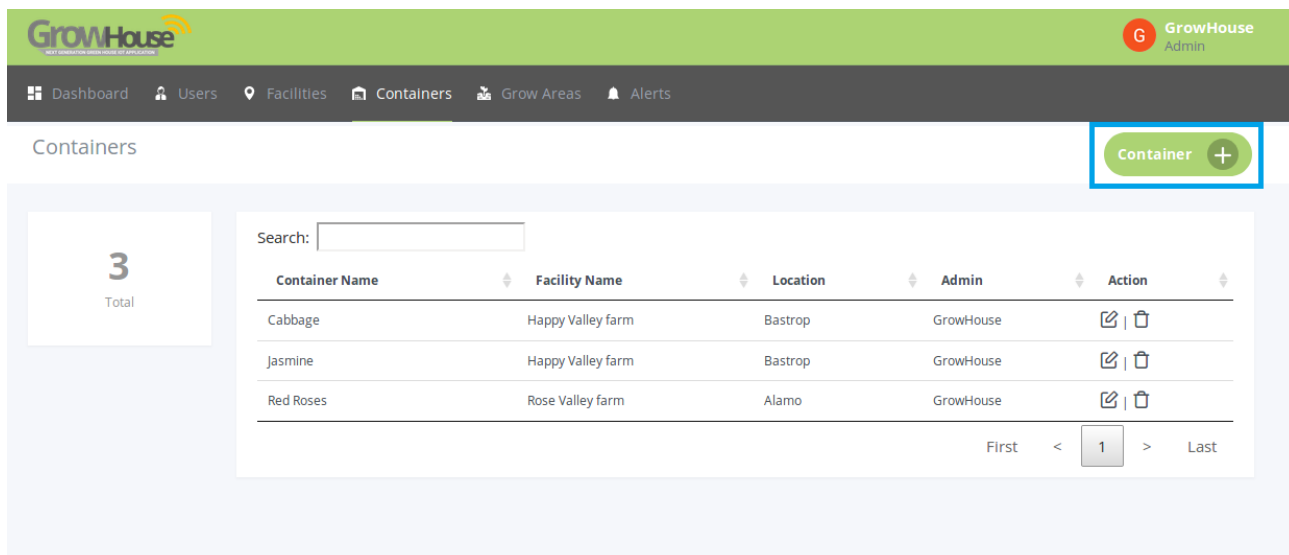


Figure 24: Create New Container

- Enter container name.
- Select facility.
- Enter description.
- Click on “Done” button.
- “Container created successfully” message will be displayed on successful creation of Container.


### Validations:

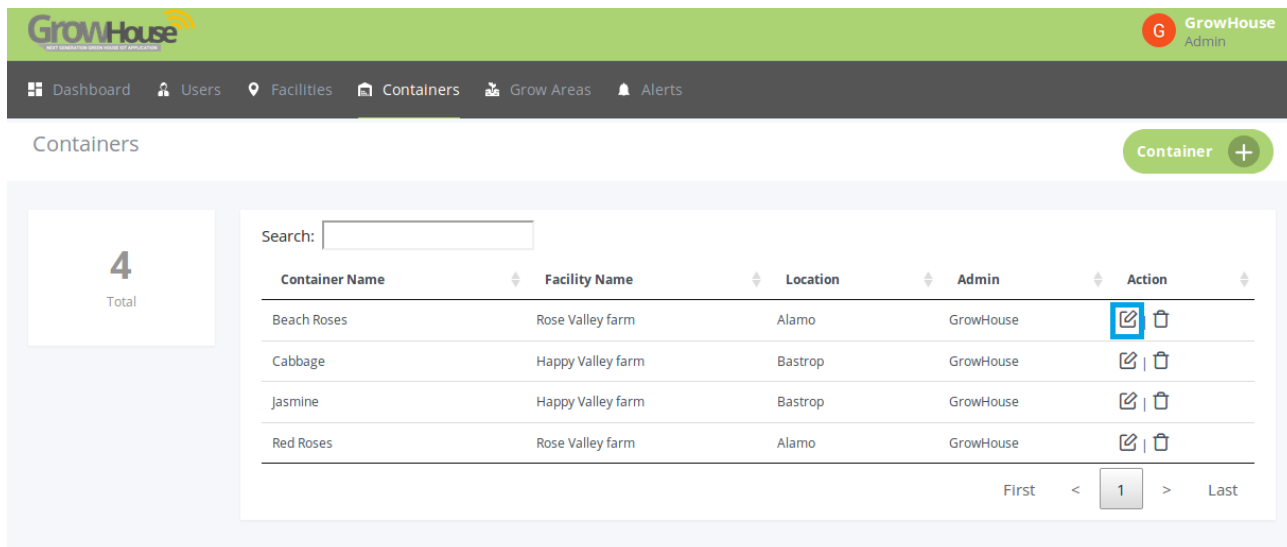
- Only alphanumeric allowed in container name field.

The screenshot shows the 'Create New Container' form. It has a title bar with a close button (X). The form contains several fields: 'Container Name \*' with the value 'Beach Roses', 'Container Type \*' with a dropdown menu showing 'Standard', 'Select Facility \*' with a dropdown menu showing 'Rose Valley farm', 'Select State' with a dropdown menu showing 'California', 'Select Locality' with a dropdown menu showing 'Calexico', and a 'Description' text area with the value 'A container in rose valley farm facility for growing beach roses.' At the bottom, there is a green 'Done' button with a checkmark icon.









Figure 25: Create New Container – Container’s details

## 4.5.2 Edit Container

- Click on edit icon .



The screenshot shows the GrowHouse Admin interface. At the top, there's a green header with the GrowHouse logo and a user profile 'G Admin'. Below the header is a navigation bar with links: Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The main content area is titled 'Containers' and features a green '+ Container' button. On the left, a summary card shows '4 Total'. The main part is a table with columns: Container Name, Facility Name, Location, Admin, and Action. The table lists four containers: Beach Roses, Cabbage, Jasmine, and Red Roses. The 'Action' column for 'Beach Roses' has a blue box around the edit icon (pencil). At the bottom right of the table, there are pagination controls: 'First', '<', '1', '>', and 'Last'.

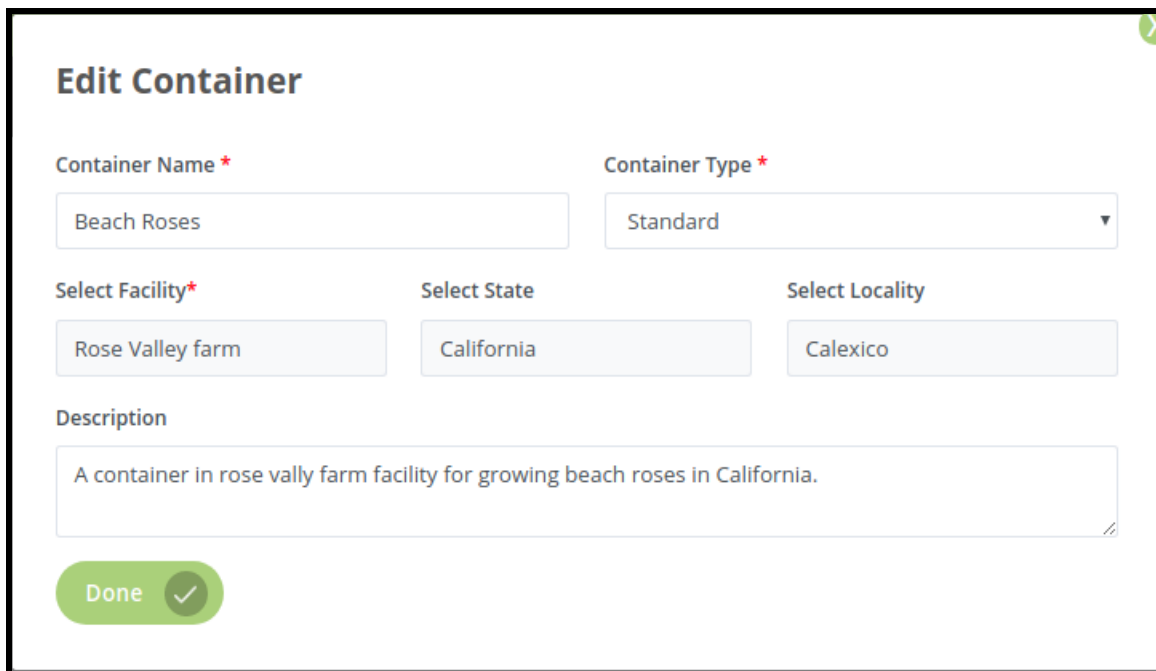
Container Name	Facility Name	Location	Admin	Action
Beach Roses	Rose Valley farm	Alamo	GrowHouse	 
Cabbage	Happy Valley farm	Bastrop	GrowHouse	   
Jasmine	Happy Valley farm	Bastrop	GrowHouse	   
Red Roses	Rose Valley farm	Alamo	GrowHouse	   

**Figure 26: Edit Container**

- Edit required details.
- Click on “Done” button.
- “Container updated successfully” message will be displayed on successful update of Container.

**Note:**

- Facility, State and Locality fields cannot be modified.



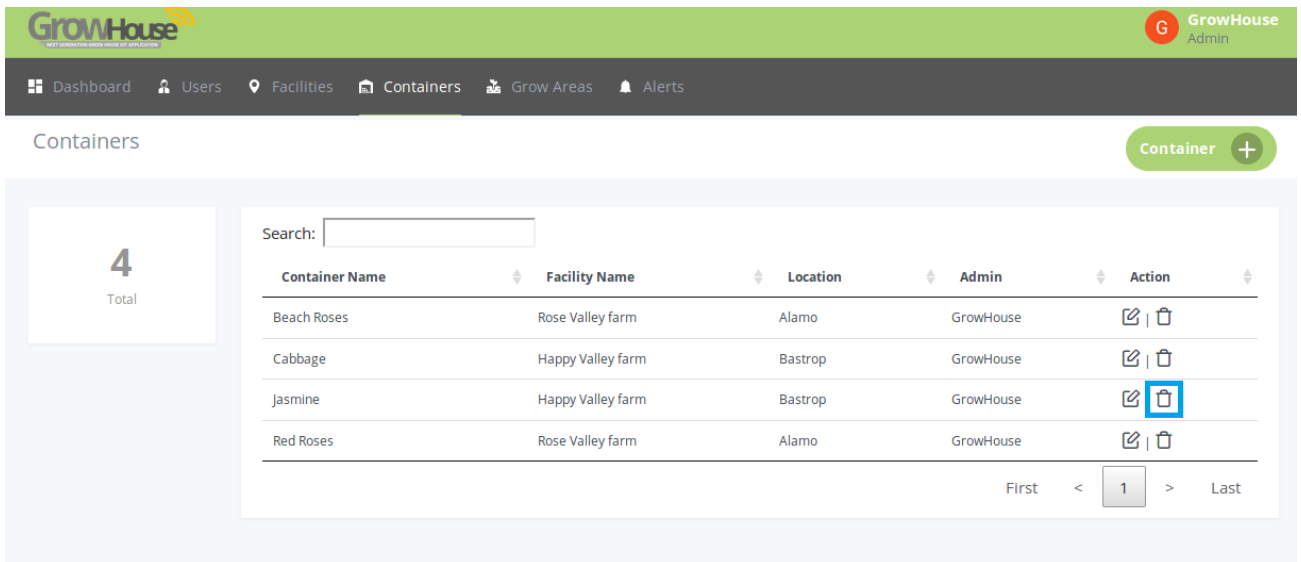
The screenshot shows the 'Edit Container' form. It has a title 'Edit Container' at the top left. Below the title are two rows of fields. The first row has 'Container Name \*' with a text input containing 'Beach Roses' and 'Container Type \*' with a dropdown menu showing 'Standard'. The second row has three select fields: 'Select Facility\*' with 'Rose Valley farm', 'Select State' with 'California', and 'Select Locality' with 'Calexico'. Below these is a 'Description' section with a text area containing 'A container in rose vally farm facility for growing beach roses in California.' At the bottom left is a green 'Done' button with a checkmark icon.

**Figure 27: Edit Container – Container’s details**











### 4.5.3 Delete Container

- Click on delete icon  .

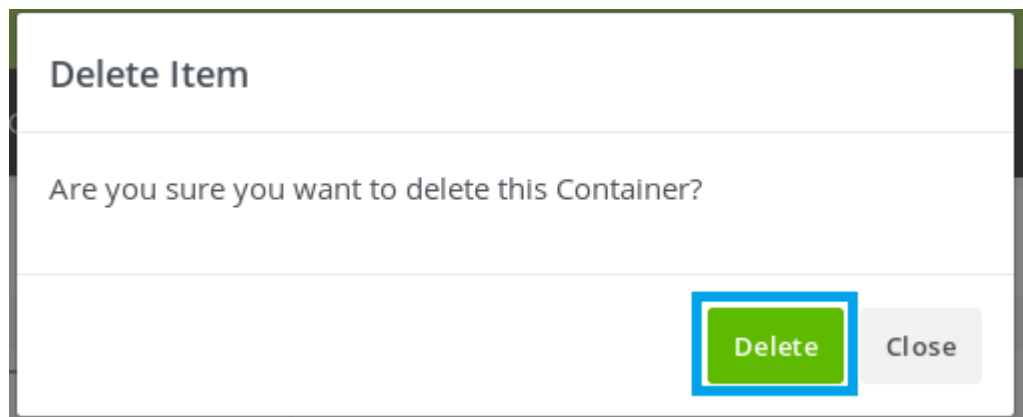


The screenshot shows the GrowHouse Admin interface. The top navigation bar includes links for Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The 'Containers' section is active, showing a list of containers. A sidebar on the left indicates there are 4 total containers. The main table lists containers with columns for Container Name, Facility Name, Location, Admin, and Action. The 'Jasmine' container's delete icon (trash can) is highlighted with a blue box.

Container Name	Facility Name	Location	Admin	Action
Beach Roses	Rose Valley farm	Alamo	GrowHouse	 
Cabbage	Happy Valley farm	Bastrop	GrowHouse	 
Jasmine	Happy Valley farm	Bastrop	GrowHouse	 
Red Roses	Rose Valley farm	Alamo	GrowHouse	 

**Figure 28: Delete Container**

- Click on “Delete” button.
- “Container deleted successfully” message will be displayed after successful deletion of container.



**Figure 29: Delete Container Confirmation**

## 4.6 Grow Area

Grow Area is the actual Gateway which is registered on Growhouse IOT platform. Grow Area and Gateway are referred to interchangeably in this document.

Gateways are added by admin user. This is done using Growhouse Mobile Application and Gateway(s) in the field. Refer *ei\_Growhouse\_Mobile\_Application\_User\_Manual.pdf* on how to add Gateway/Grow Area.

Gateway sends heartbeat to Arrow Connect. If gateway does not send a heartbeat for 15 minutes or more, then that Gateway will be considered as out of network. Growhouse web portal might take up to 15 to 30 minutes to show Gateway device as an out of network. Out of network Grow Area list is shown on Dashboard page as shown in below image and Grow Areas page.

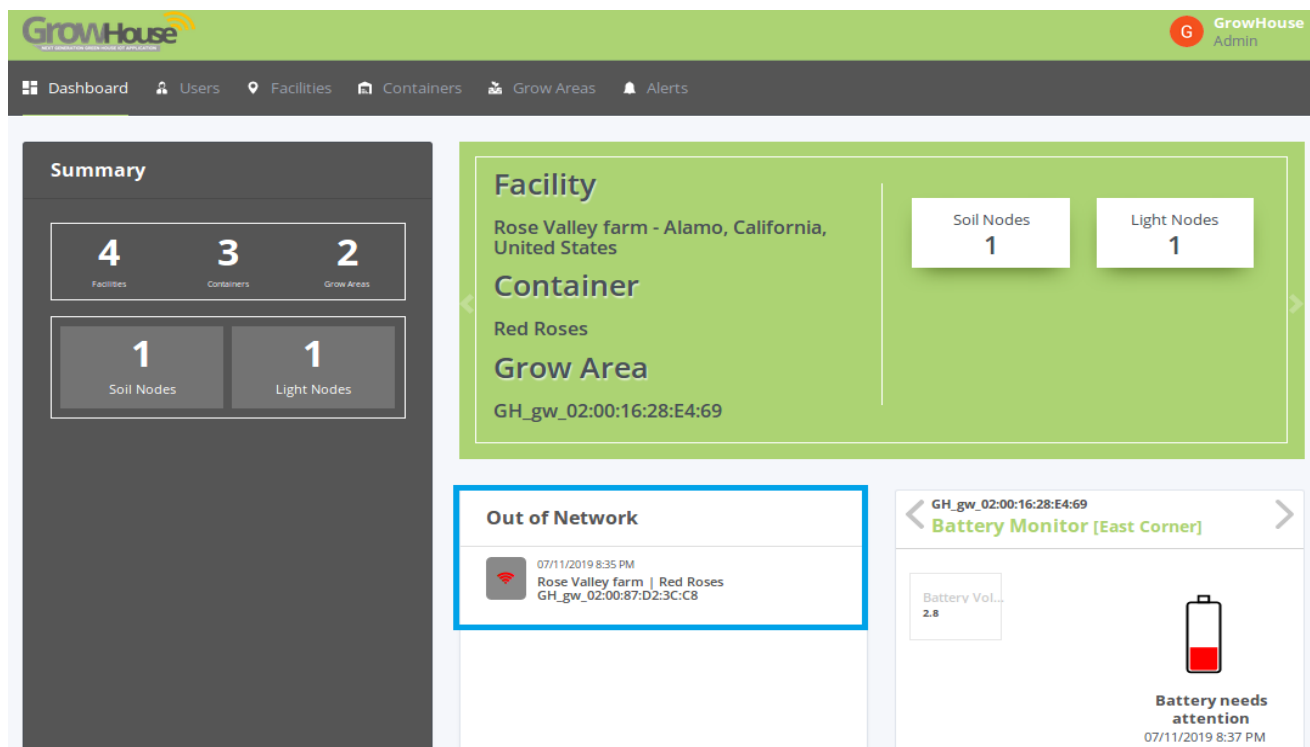


Figure 30: Out of Network Gateway

- Select "Grow Area" tab.

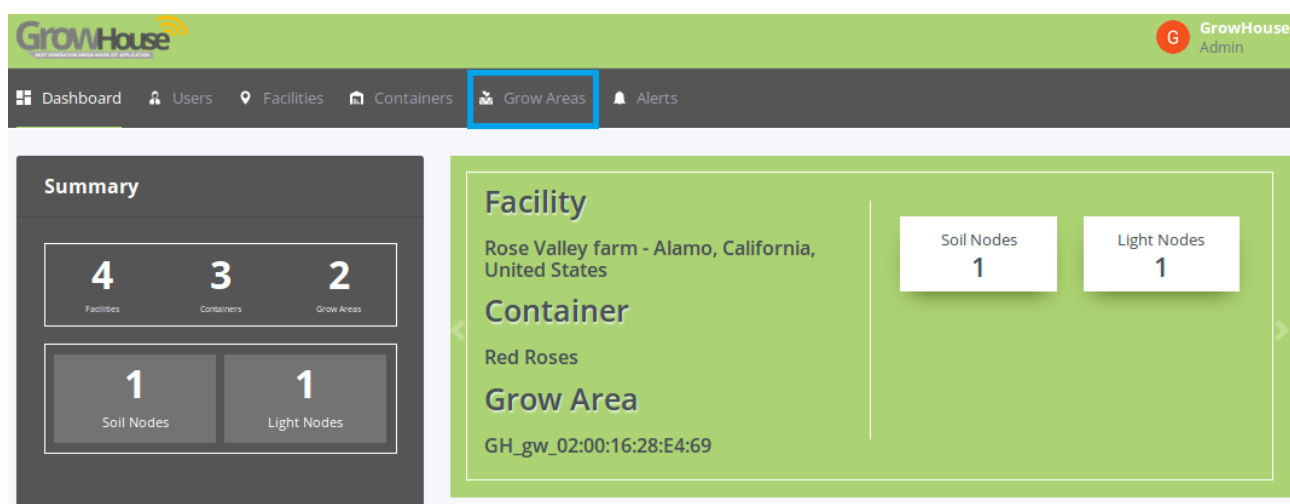


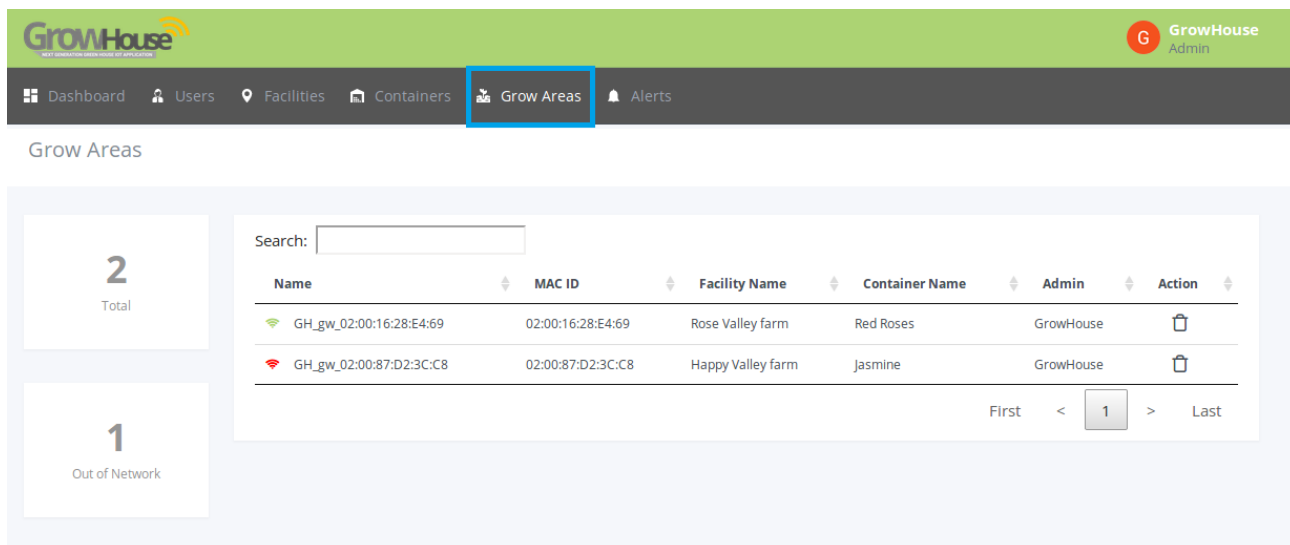


Figure 31: Grow Areas Page





- Grow Areas page will open up and a list of existing grow areas added by logged in user will be shown.
- Grow Areas page shows the total number of Grow Areas and the number of Grow Areas that are Out of network. Online Grow Areas are shown with  icon. Out of network Grow Areas are shown with  icon. Refreshing the page will show the latest status of Grow Areas.







Grow Areas

2  
Total

1  
Out of Network

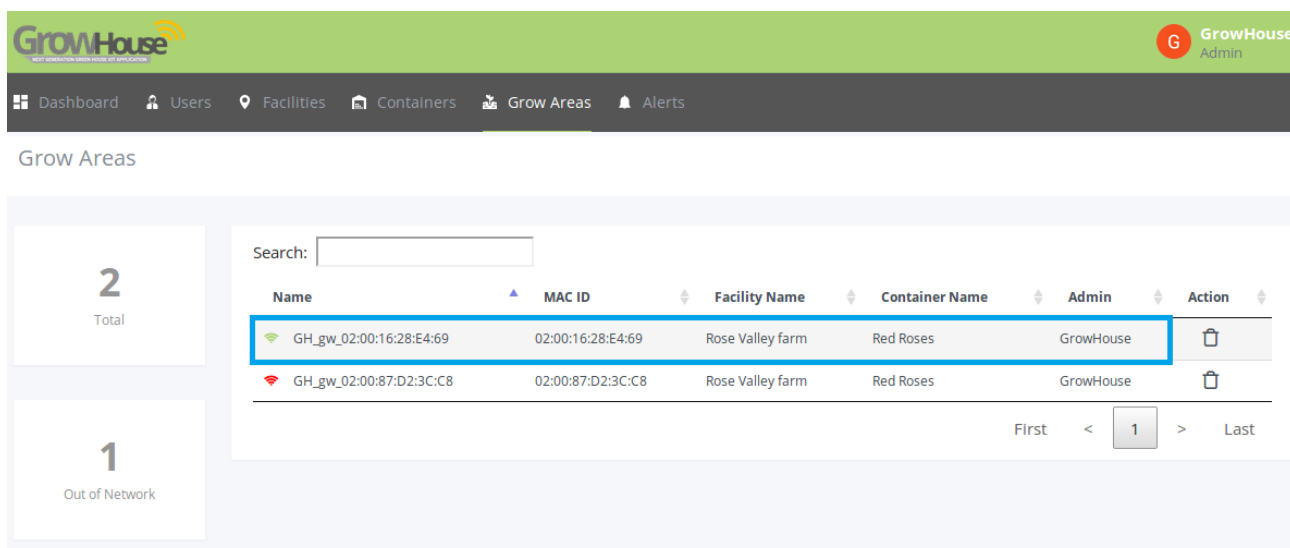
Search:

Name	MAC ID	Facility Name	Container Name	Admin	Action
 GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse	
 GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Happy Valley farm	Jasmine	GrowHouse	

First < 1 > Last

Figure 32: Grow Areas List

- To view a particular Grow Area, click anywhere on the respective row.







Grow Areas

2  
Total

1  
Out of Network

Search:

Name	MAC ID	Facility Name	Container Name	Admin	Action
 GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse	
 GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Rose Valley farm	Red Roses	GrowHouse	

First < 1 > Last

Figure 33: View Particular Grow Area

- Grow Area contains Sections, Devices, Rules and Groups features.

The screenshot displays the GrowHouse Admin interface. The top navigation bar includes links for Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The main content area is titled "Grow Areas / GH\_gw\_02:00:16:28:E4:69".

On the left, there are two summary cards: "2 Total" and "0 Out of Network".

The central table lists Grow Areas with columns: Name, MAC ID, Facility Name, Container Name, and Admin. The table contains two entries, with the second entry (GH\_gw\_02:00:16:28:E4:69) highlighted in blue. Below the table is a pagination bar showing "First", "<", "1", ">", and "Last".

On the right, a detailed view for the selected Grow Area is shown. It includes the Grow Area Name "GH\_gw\_02:00:16:28:E4:69" and the Location "Alamo, California, United States". Below this, there are two sections: "Soil Nodes" with a value of 2 and "Light Nodes" with a value of 3. At the bottom, there are four toggle buttons: "Sections" (active), "Devices", "Rules", and "Groups".

**Figure 34: Grow Area's Section Devices Rules**

### 4.6.1 Delete Grow Area

Gateway can be deleted by admin user. During Gateway deletion, following operations will be performed in background:

- Delete LED Node profiles.
- Delete LED Node desired values.
- Delete LED Node channel configurations.
- Delete Device property mappings.
- Delete Grow Section devices.
- Delete Devices.
- Delete Alerts from cloud.
- Delete Grow Section Rules.
- Delete Grow Sections.
- Delete Groups.
- Delete Grow Area assignee.
- Delete Gateway.

Perform below steps to delete Gateway based on online or offline status of Gateway.

#### 4.6.1.1 Deleting an online Gateway

- Before deleting online Gateway, It is required to check online or offline status of devices, which are provisioned under that gateway.
- Upon Gateway deletion, online devices will be deleted from Growhouse web portal and will be un-provisioned, hence those device can be available for re-provisioning again within same Gateway or other.
- However, upon Gateway deletion, offline devices will be deleted from Growhouse web portal but offline devices will still be in provisioned state and will not be re-discoverable.
- To make such devices re-discoverable again, perform Factory reset of offline devices. Refer [Section 9.2](#) and [Section 9.3](#) on how to perform factory reset of LED node and Soil node respectively.

Perform below steps to see status of device and then steps to delete the Gateway.

- Select “Grow Areas” tab to see list of Grow Areas.

Grow Areas

Name	MAC ID	Facility Name	Container Name	Admin	Action
GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse	
GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Happy Valley farm	Jasmine	GrowHouse	

First < 1 > Last

**Figure 35: Grow Areas List**

- Click on “Devices” button, to see status (online/offline) of Devices.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69

2 Total

0 Out of Network

Search:

Name	MAC ID	Facility Name	Container Name	Admin
GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Rose Valley farm	Red Roses	GrowHouse
GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse

First < 1 > Last

Grow Area Name: GH\_gw\_02:00:16:28:E4:69  
Location: Alamo, California, United States

Soil Nodes: 2 | Light Nodes: 3

Sections Rules Devices Groups

**Figure 36: Devices of Gateway**

- A list of existing devices provisioned under particular Gateway will be shown.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Devices

2 Total

1 Out of Network

Search:

Name	Device UID	Device Type	Grow Section	Action
Rose led	000D6FFFFE6CCBA8	Led Node		
Rose soil	000D6FFFFE659C3A	Soil Node		

First < 1 > Last

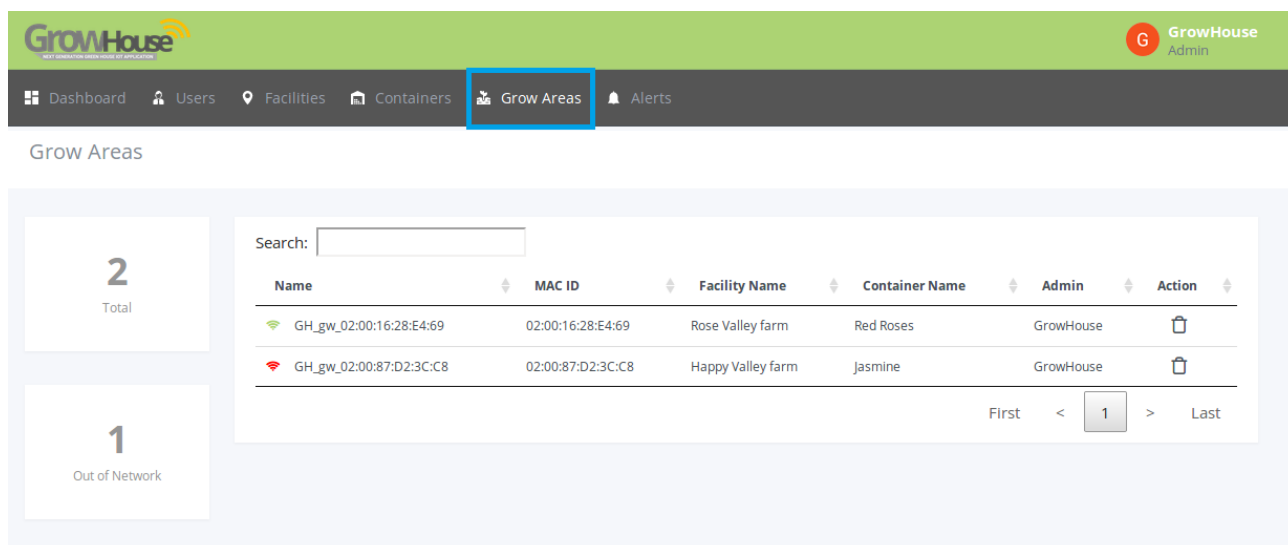
**Figure 37: Devices List**

For example, Rose led is shown as online. Therefore, after Gateway deletion process, Rose led will be deleted from Growhouse web portal and will be available for re-provisioning within same Gateway or other Gateway.

But, Rose soil is offline. Therefore, Rose soil will be deleted from Growhouse web portal but still it will be in provisioned state and will not be re-discoverable again.

To make Rose soil re-discoverable again, factory reset of Rose soil will be required.

- Follow below steps to delete an online Gateway.
- Select “Grow Areas” tab to see list of Grow Areas.



GrowHouse Admin





Dashboard Users Facilities Containers **Grow Areas** Alerts

Grow Areas

2 Total

1 Out of Network

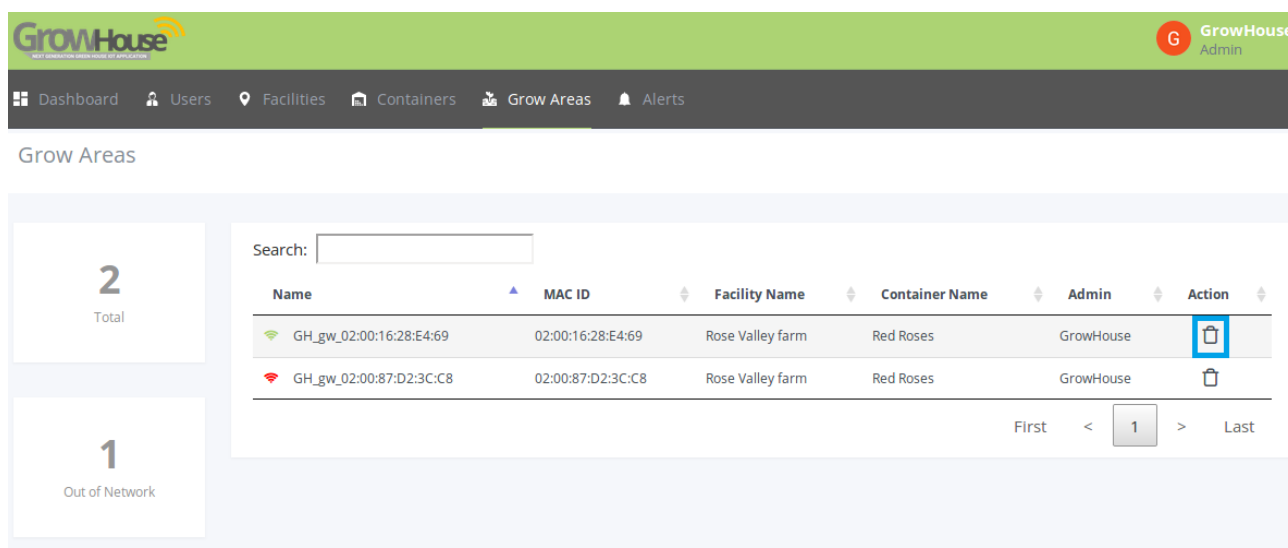
Search:

Name	MAC ID	Facility Name	Container Name	Admin	Action
 GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse	
 GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Happy Valley farm	Jasmine	GrowHouse	

First < 1 > Last

Figure 38: Grow Areas List

- Click on delete icon  .



GrowHouse Admin





Dashboard Users Facilities Containers **Grow Areas** Alerts

Grow Areas

2 Total

1 Out of Network

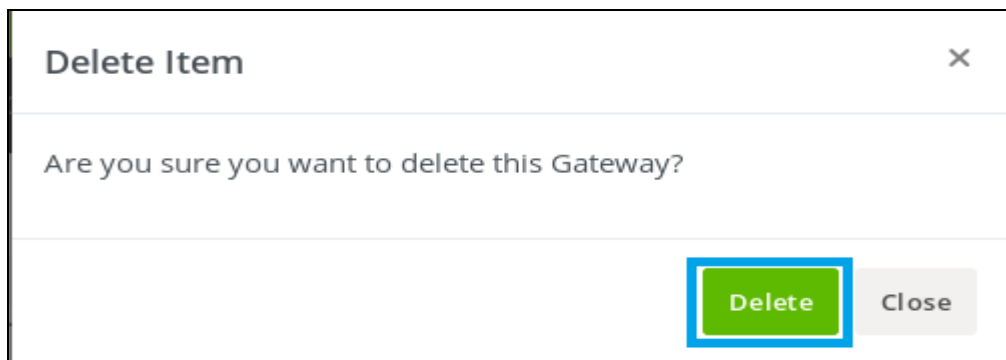
Search:

Name	MAC ID	Facility Name	Container Name	Admin	Action
 GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse	
 GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Rose Valley farm	Red Roses	GrowHouse	

First < 1 > Last

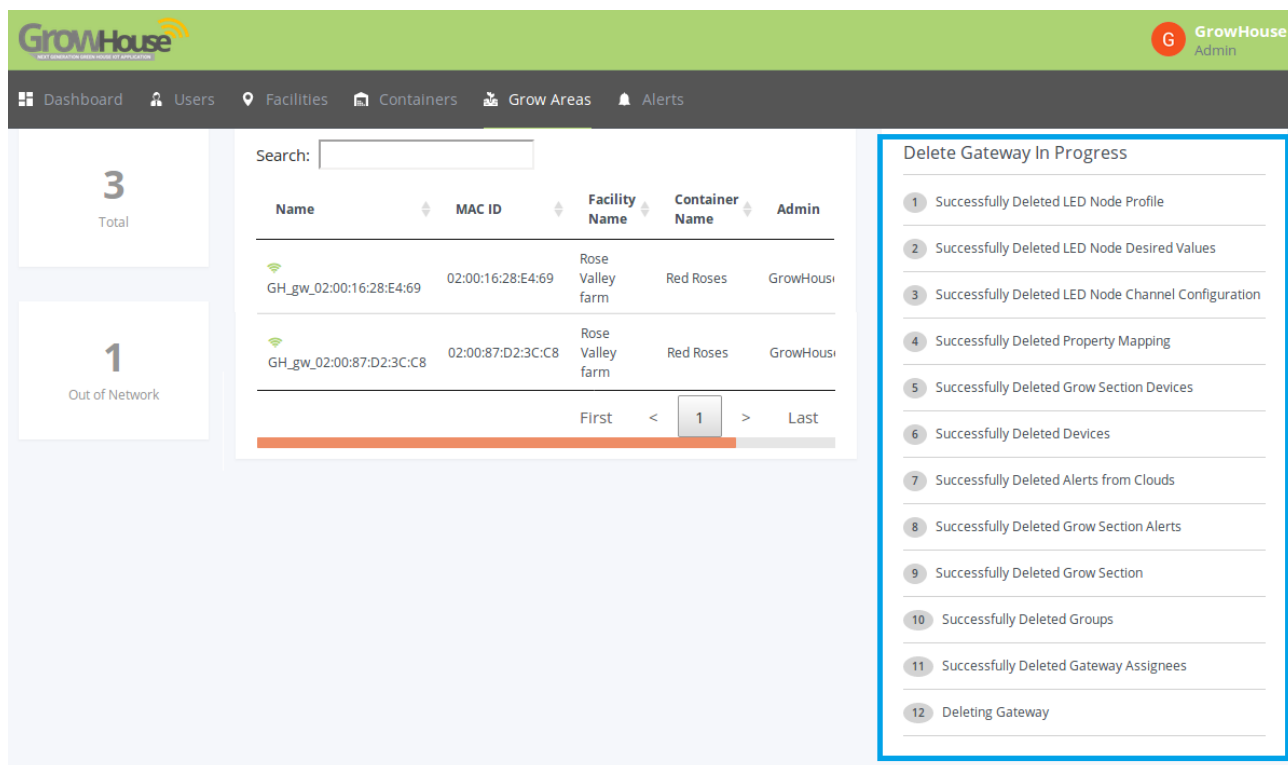
Figure 39: Deleting an Online Grow Area

- Click on “Delete” button.



**Figure 40: Delete an Online Grow Area Confirmation**

- Grow Area deletion process will be initiated, and the progress will be displayed as shown in below image.




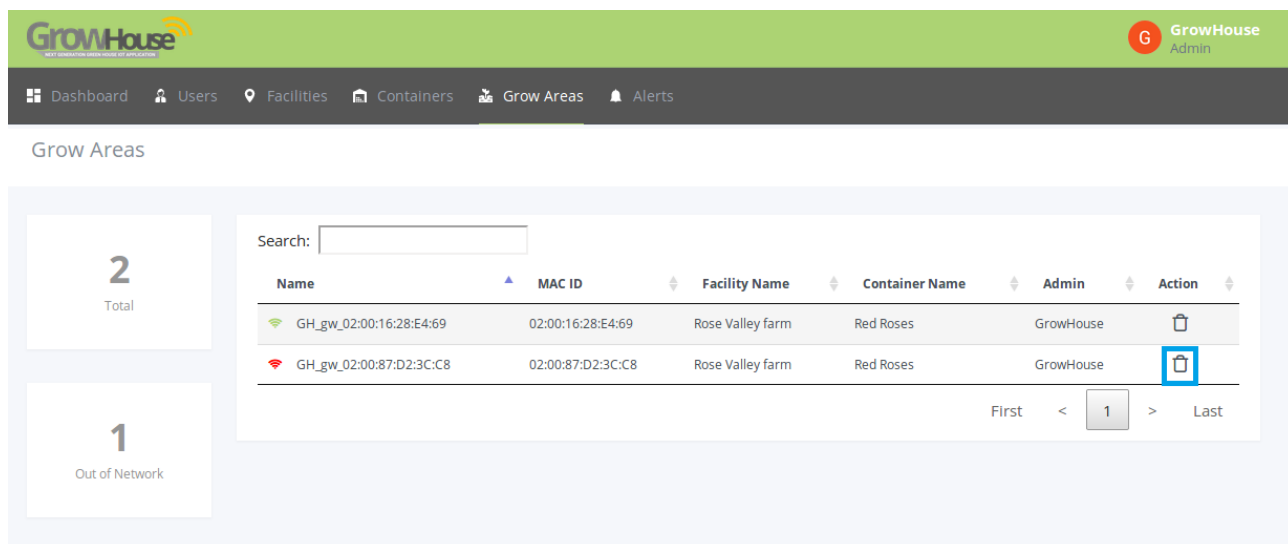
**Figure 41: Delete Grow Area Process**

- “Grow Area deleted successfully” message will be displayed after successful deletion of Grow Area.

#### 4.6.1.2 Deleting an offline Gateway

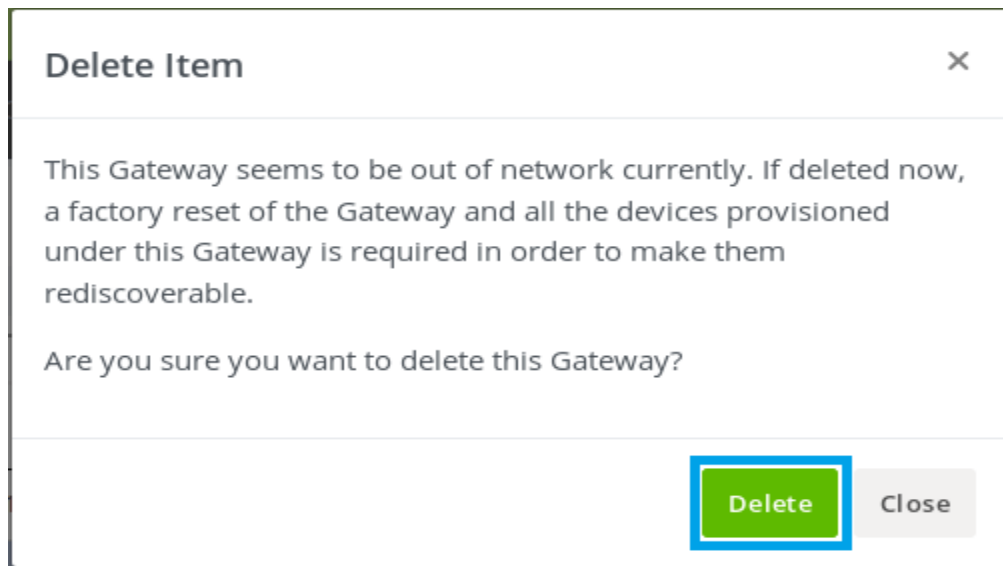
- If user deletes an offline Gateway, then Gateway and all provisioned devices under such Gateway will be deleted from Growhouse web portal but the Gateway and devices will still be in provisioned state and will not be re-discoverable.

- Factory reset of deleted Gateway and all provisioned devices under deleted Gateway would be required to make such Gateway and Devices to be re-discoverable. Refer [Section 9.2](#), [Section 9.3](#) and [Section 9.4](#) on how to perform factory reset of Gateway, LED node and Soil node respectively.
- Below are the steps to delete an offline Gateway.
- Click on delete icon 



**Figure 42: Deleting an Offline Grow Area**

- Click on “Delete” button if you are sure to delete an offline Gateway.



**Figure 43: Delete an Online Grow Area Confirmation**

- “Grow Area deleted successfully” message will be displayed after successful deletion of Grow Area.



## 4.7 Devices

Devices are added by admin user. This is done using Growhouse Mobile Application and Devices in the field. Refer *ei\_Growhouse\_Mobile\_Application\_User\_Manual.pdf* on how to add devices.

- User can view and control devices through selecting “Devices” button of a particular Gateway.
- Click on “Devices” button.

The screenshot shows the GrowHouse Admin dashboard. The top navigation bar includes links for Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The main content area displays the 'Grow Areas / GH\_gw\_02:00:16:28:E4:69' page. On the left, there are two summary cards: '2 Total' and '0 Out of Network'. The central table lists devices with columns for Name, MAC ID, Facility Name, Container Name, and Admin. The right sidebar shows the 'Devices' button highlighted in a blue box, along with other options like Sections, Rules, and Groups.

Name	MAC ID	Facility Name	Container Name	Admin
GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Rose Valley farm	Red Roses	GrowHouse
GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse

**Figure 44: Devices of Gateway**

- A list of existing devices provisioned under particular Gateway will be shown.
- Devices screen shows the total number of devices and number of devices that are out of network. Online devices are shown with icon. Out of network devices are shown with icon. Refreshing the page will show the latest status of the devices.

The screenshot shows the 'Devices List' page in the GrowHouse Admin dashboard. The top navigation bar is the same as in Figure 44. The main content area displays the 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Devices' page. On the left, there are two summary cards: '2 Total' and '1 Out of Network'. The central table lists devices with columns for Name, Device UID, Device Type, Grow Section, and Action. The right sidebar is not visible in this screenshot.

Name	Device UID	Device Type	Grow Section	Action
Rose led	000D6FFFFE6CCBA8	Led Node		
Rose soil	000D6FFFFE659C3A	Soil Node		

**Figure 45: Devices List**

Note: If device does not send a heartbeat for 15 minutes or more, then that device will be considered as out of network.

### 4.7.1 View Device

- Click on respective device row to view and control devices.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Devices

2 Total

0 Out of Network

Search:

Name	Device UID	Device Type	Grow Section	Action
Rose led	000D6FFFFE6CCBA8	Led Node		
Rose soil	000D6FFFFE659C3A	Soil Node		

First < 1 > Last

Figure 46: View Device

#### 4.7.1.1 Soil Node

- To see live chart, click on “Live Chart” button.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Devices / Rose soil

2 Total

0 Out of Network

Search:

Name	Device UID	Device Type	Grow Section	Action
Rose led	000D6FFFFE6CCBA8	Led Node		
Rose soil	000D6FFFFE659C3A	Soil Node		

First < 1 > Last

Device Name: Rose soil

Device Type: Soil Node

History Live Chart

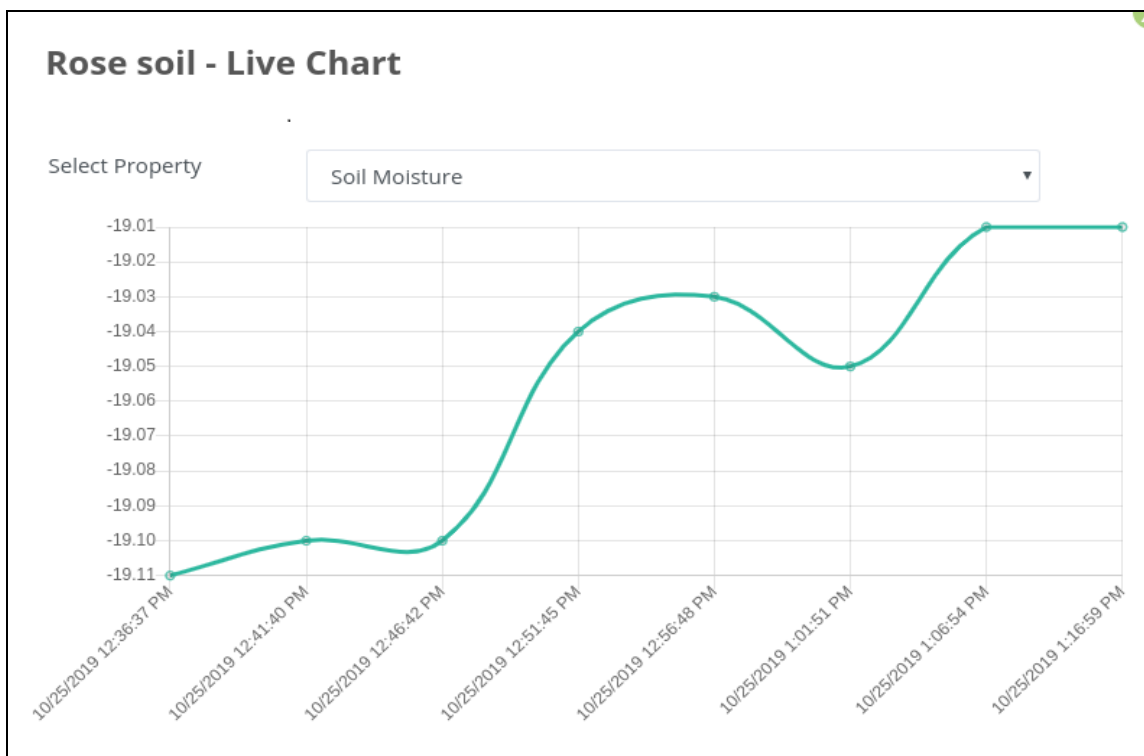
07/11/2019 7:33 PM Soil pH: 10.23

07/11/2019 7:29 PM Battery Voltage: 2.80

07/11/2019 7:33 PM Soil Moisture: 10.41

Figure 47: Soil Node Device

- Select desired device property from drop down. The data would be plotted on the graph on real time basis as and when received from respective Soil Node. Below image shows live chart of “Soil Moisture” property.



**Figure 48: Soil Node Device Live Chart**

Note: Data reporting interval for each property of Soil Node is of 5 min.

- To see device history chart, click on “History” button.

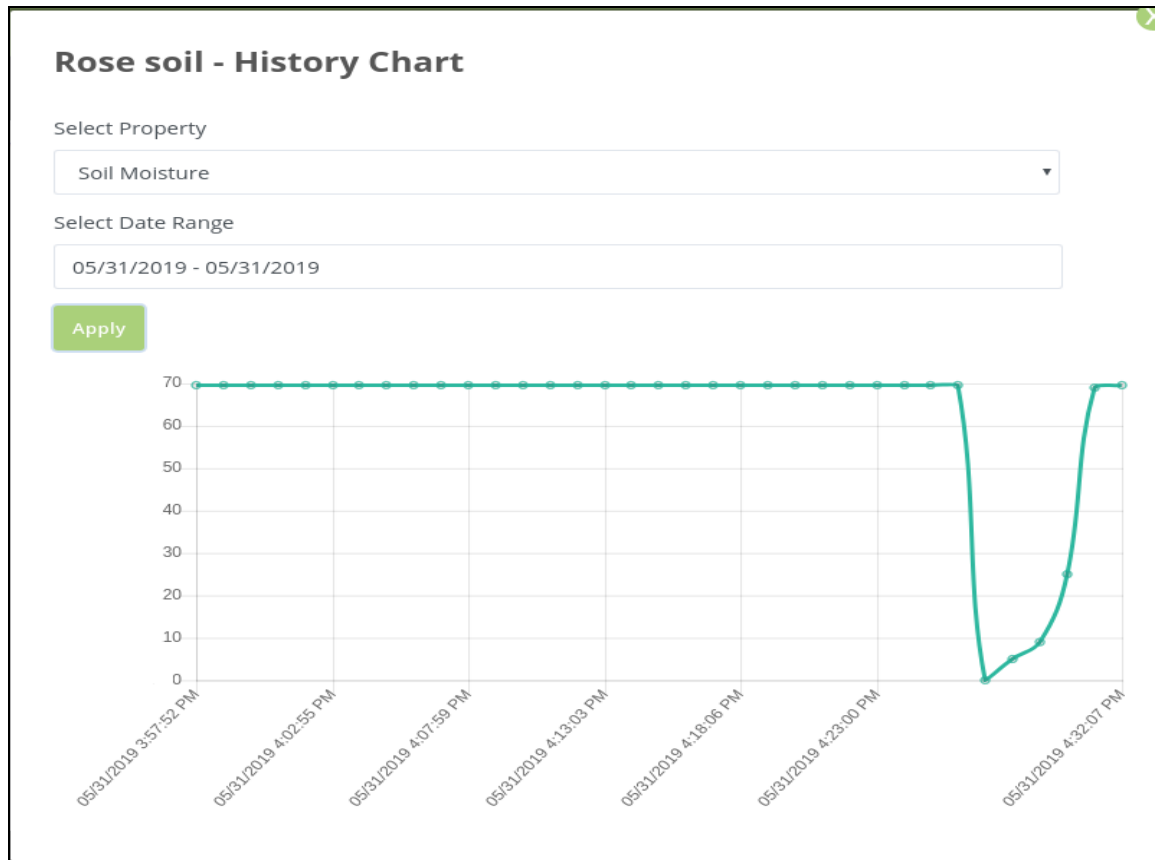
The screenshot shows the GrowHouse Admin interface. The top navigation bar includes links for Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The main content area displays the 'Rose soil' device history. On the left, there are two summary cards: '2 Total' and '0 Out of Network'. The central table lists the devices, with the 'Rose soil' device selected. The right sidebar shows the device details for 'Rose soil', including the device type 'Soil Node' and the 'History' button highlighted in blue.

Name	Device UID	Device Type	Grow Section	Action
Rose led	000D6FFFFE6CCBA8	Led Node		
Rose soil	000D6FFFFE659C3A	Soil Node		

Device Name: **Rose soil**  
 Device Type: Soil Node  
 07/11/2019 7:33 PM Soil pH: **10.23**  
 07/11/2019 7:29 PM Battery Voltage: **2.80**  
 07/11/2019 7:33 PM Soil Moisture: **10.41**

**Figure 49: Soil Node Device History**

- Select desired device property.
- Select date range.
- Below image shows history chart of “Soil Moisture” property.



**Figure 50: Soil Node Device History Chart**

#### 4.7.1.2 LED Node

- Click on particular LED Node device to set the channel intensity of LED Node.
- Select desired intensity level for each channel.

The screenshot shows the GrowHouse Admin interface. The top navigation bar includes links for Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The user is logged in as 'GrowHouse Admin'. The breadcrumb trail indicates the current location: Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Led Nodes / Rose led.

On the left, there are two summary cards: '3 Total' and '0 Out of Network'. The main content area features a table of LED nodes with columns for Name, Device UID, Device Type, Grow Section, and Action. The table lists three nodes, with the third one, 'Rose led' (Device UID: 000D6FFFFE6CCBA8), selected.

The right sidebar shows the configuration for the selected 'Rose led' device. It includes a 'Device Name' field, a 'Device Type' dropdown set to 'Led Node', and a 'Profile' dropdown set to 'Select profile'. Below these are 'Apply', 'Create', and 'Delete' buttons. The 'Channel Configuration' section, highlighted with a blue border, shows six channels with their respective intensity sliders and percentages: CH 1 : R (30%), CH 2 : UVA (22%), CH 3 : NW (27%), CH 4 : A (28%), CH 5 : FR (30%), and CH 6 : NC (0%). At the bottom of this section are 'Set' and 'Clear' buttons.

Figure 51: LED Node

- Click on “Set” button. This will actually set the channel intensity on LED Node.

The screenshot displays the GrowHouse Admin interface. At the top, the navigation bar includes links for Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The breadcrumb trail shows the path: Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Led Nodes / Rose led.

On the left, a summary box indicates 3 Total nodes and 0 Out of Network nodes.

The central table lists the nodes:

Name	Device UID	Device Type	Grow Section	Action
Rose led west corner	000D6FFFFE6CCD1F	Led Node		
Rose led east corner	000D6FFFFE6659F47	Led Node		
Rose led	000D6FFFFE6CCBA8	Led Node		

Below the table is a pagination control showing 'First', '<', '1', '>', and 'Last'.

The right panel shows the configuration for the selected 'Rose led' device. It includes a 'Device Name' field, a 'Device Type' dropdown set to 'Led Node', and a 'Profile' dropdown set to 'Select profile'. Below these are 'Apply', 'Create', and 'Delete' buttons.

The 'Channel Configuration' section shows the date and time '07/31/2019 1:42 PM' and six channels with their respective intensity sliders and percentages:

- CH 1 : R: 30%
- CH 2 : UVA: 22%
- CH 3 : NW: 27%
- CH 4 : A: 28%
- CH 5 : FR: 30%
- CH 6 : NC: 0%

At the bottom of the configuration panel, there are 'Set' and 'Clear' buttons. The 'Set' button is highlighted with a red box.

**Figure 52: Set LED Node Channel Intensity**

- “Set Channel configuration values successfully” message will be displayed after successful setting of LED channel intensity.

#### 4.7.1.2.1 Create LED Node Profile

Below image shows how to create profile for LED Node.

- Click on “Create” button.

The screenshot shows the GrowHouse Admin interface. The top navigation bar includes 'Dashboard', 'Users', 'Facilities', 'Containers', 'Grow Areas', and 'Alerts'. The breadcrumb trail is 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Led Nodes / Rose led'.

On the left, there are two summary cards: '3 Total' and '0 Out of Network'.

The main content area displays a table of LED nodes:

Name	Device UID	Device Type	Grow Section	Action
Rose led west corner	000D6FFFFE6CCD1F	Led Node		
Rose led east corner	000D6FFFFE659F47	Led Node		
Rose led	000D6FFFFE6CCBA8	Led Node		

Below the table is a pagination control showing 'First', '<', '1', '>', and 'Last'.

On the right, the 'Device Name' is 'Rose led' and the 'Device Type' is 'Led Node'. The 'Profile' dropdown is set to 'Select profile'. Below this are three buttons: 'Apply', 'Create' (highlighted with a blue box), and 'Delete'.

The 'Channel Configuration' section shows the date and time '07/31/2019 1:42 PM' and six channels with their respective percentages:

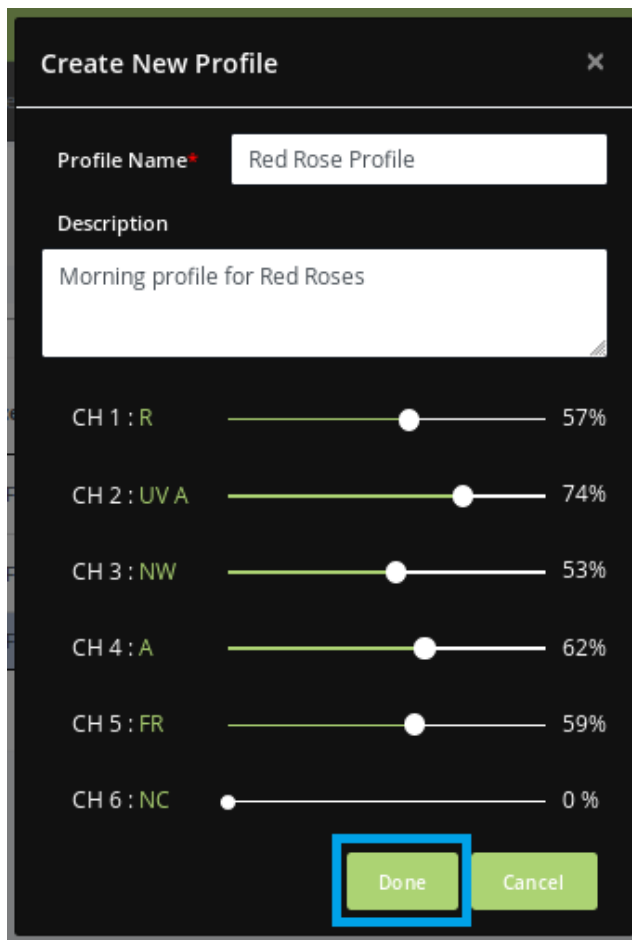
- CH 1 : R — 30%
- CH 2 : UV A — 22%
- CH 3 : NW — 27%
- CH 4 : A — 28%
- CH 5 : FR — 30%
- CH 6 : NC — 0%

At the bottom of the configuration section are 'Set' and 'Clear' buttons.

Figure 53: Create LED Node Profile



- Enter the desired Profile name.
- Set desired intensity level for each channel.
- Click on “Done” button.



**Create New Profile** [X]

Profile Name: Red Rose Profile

Description: Morning profile for Red Roses

Channel	Intensity (%)
CH 1 : R	57%
CH 2 : UVA	74%
CH 3 : NW	53%
CH 4 : A	62%
CH 5 : FR	59%
CH 6 : NC	0%

Buttons: Done, Cancel

**Figure 54: LED Node Profile – Profile details**

- “Profile created successfully” message will be displayed on successful creation of Profile.

#### 4.7.1.2.2 Set LED Node Profile

- Select desired profile to be applied on LED Node from drop down.
- Click on “Apply” button. User will be shown individual channel intensity that would be set on LED Node at preset of 100%.

The screenshot displays the GrowHouse Admin interface. On the left, there are two summary cards: '3 Total' and '0 Out of Network'. The main content area features a table of LED nodes. The table has columns for Name, Device UID, Device Type, Grow Section, and Action. Three nodes are listed, all of type 'Led Node'. The third node, 'Rose led' with UID '000D6FFFFE6CCBA8', is selected and highlighted. Below the table is a pagination control showing 'First', '<', '1', '>', and 'Last'. On the right side, a configuration panel for the selected 'Rose led' device is shown. It includes a 'Device Name' field, a 'Device Type' dropdown set to 'Led Node', and a 'Profile' dropdown set to 'Red Rose Profile'. Below these are 'Apply', 'Create', and 'Delete' buttons. The 'Apply' button is highlighted with a blue border. Further down, a 'Preset' slider is set to 100%. The 'Channel Configuration' section shows six channels with their respective intensities: CH 1: R (57%), CH 2: UV A (74%), CH 3: NW (53%), CH 4: A (62%), CH 5: FR (59%), and CH 6: NC (0%). At the bottom of this section are 'Set' and 'Clear' buttons.

Name	Device UID	Device Type	Grow Section	Action
Rose led west corner	000D6FFFFE6CCD1F	Led Node		
Rose led east corner	000D6FFFFE659F47	Led Node		
Rose led	000D6FFFFE6CCBA8	Led Node		

First < 1 > Last

Device Name: Rose led  
Device Type: Led Node  
Profile: Red Rose Profile  
Buttons: Apply, Create, Delete

Preset: 100%

Channel Configuration  
07/31/2019 1:42 PM

Channel	Intensity
CH 1: R	57%
CH 2: UV A	74%
CH 3: NW	53%
CH 4: A	62%
CH 5: FR	59%
CH 6: NC	0%

Buttons: Set, Clear

Figure 55: Apply LED Node Profile

- Select the desired Preset level through Preset bar.
- Click on “Set” button. This will actually set the channel intensity on LED Node.

The screenshot shows the GrowHouse Admin interface. On the left, there are two summary cards: '3 Total' and '0 Out of Network'. The main content area features a search bar and a table of LED nodes. The table has columns for Name, Device UID, Device Type, Grow Section, and Action. Three nodes are listed, all of type 'Led Node'. The third node, 'Rose led' with UID '000D6FFFFE6CCBA8', is selected. To the right of the table is a detailed configuration panel for the selected device. This panel includes a 'Device Name' field (Rose led), a 'Device Type' dropdown (Led Node), and a 'Profile' dropdown (Red Rose Profile). Below these are 'Apply', 'Create', and 'Delete' buttons. A 'Preset' slider is set to 100%. The 'Channel Configuration' section shows six channels with their respective intensity percentages: CH 1: R (57%), CH 2: UVA (74%), CH 3: NW (53%), CH 4: A (62%), CH 5: FR (59%), and CH 6: NC (0%). At the bottom of the configuration panel are 'Set' and 'Clear' buttons.

Name	Device UID	Device Type	Grow Section	Action
Rose led west corner	000D6FFFFE6CCD1F	Led Node		
Rose led east corner	000D6FFFFE659F47	Led Node		
Rose led	000D6FFFFE6CCBA8	Led Node		

First < 1 > Last

Device Name: Rose led  
Device Type: Led Node  
Profile: Red Rose Profile  
Buttons: Apply, Create, Delete

Preset: 100%

Channel Configuration  
07/31/2019 1:42 PM

Channel	Intensity
CH 1 : R	57%
CH 2 : UVA	74%
CH 3 : NW	53%
CH 4 : A	62%
CH 5 : FR	59%
CH 6 : NC	0%

Buttons: Set, Clear

**Figure 56: Set LED Node Channel Intensity as per Profile**

- “Set Channel configuration values successfully” message will be displayed after successful setting of LED channel intensity.

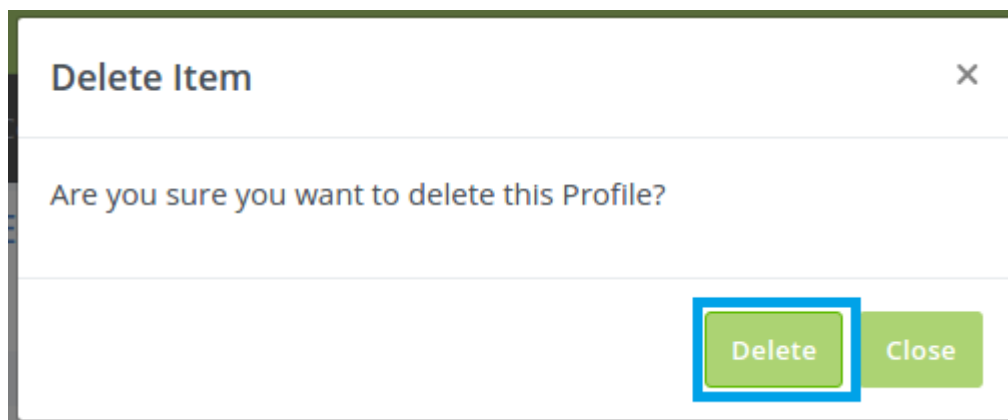
#### 4.7.1.2.3 Delete LED Node Profile

- Select desired profile to be deleted from drop down.
- Click on “Delete” button.

The screenshot shows the GrowHouse Admin interface. On the left, there are two summary cards: '3 Total' and '0 Out of Network'. The main area displays a table of LED nodes. The table has columns: Name, Device UID, Device Type, Grow Section, and Action. Three rows are listed, with the third row ('Rose led', '000D6FFFE6CCBA8', 'Led Node') highlighted. To the right of the table, there is a configuration panel for the selected 'Rose led' device. It shows 'Device Name: Rose led', 'Device Type: Led Node', and a 'Profile' dropdown set to 'Red Rose Profile'. Below this are 'Apply', 'Create', and 'Delete' buttons. The 'Delete' button is highlighted with a blue box. Further down, there is a 'Channel Configuration' section with six sliders (CH 1: R, CH 2: UV A, CH 3: NW, CH 4: A, CH 5: FR, CH 6: NC) and 'Set' and 'Clear' buttons.

**Figure 57: Delete LED Node Profile**

- Click on “Delete” button.




**Figure 58: Delete LED Node Profile Confirmation.**

- “Profile deleted successfully” message will be displayed after successful deletion of Group Profile.

## 4.7.2 Delete Device

Devices can be un-provisioned from the system by deleting them from Growhouse web portal.

### 4.7.2.1 Deleting an online Device

- If user deletes an online device then, device will be deleted from Growhouse web portal and will be un-provisioned from the system. Hence, device can be available for re-provisioning again within same Gateway or other.
- Click on delete icon .

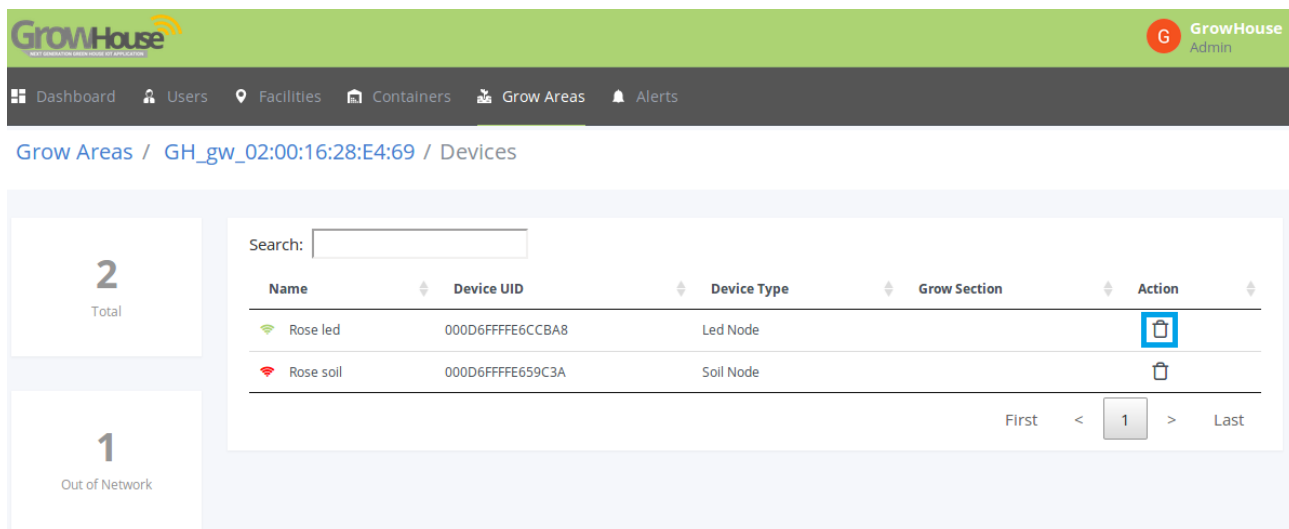


Figure 59: Deleting an Online Device

- Click on “Delete” button.

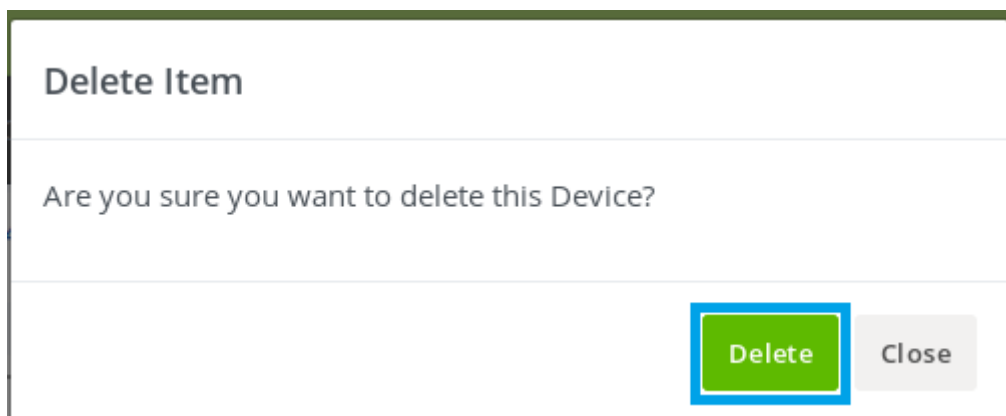

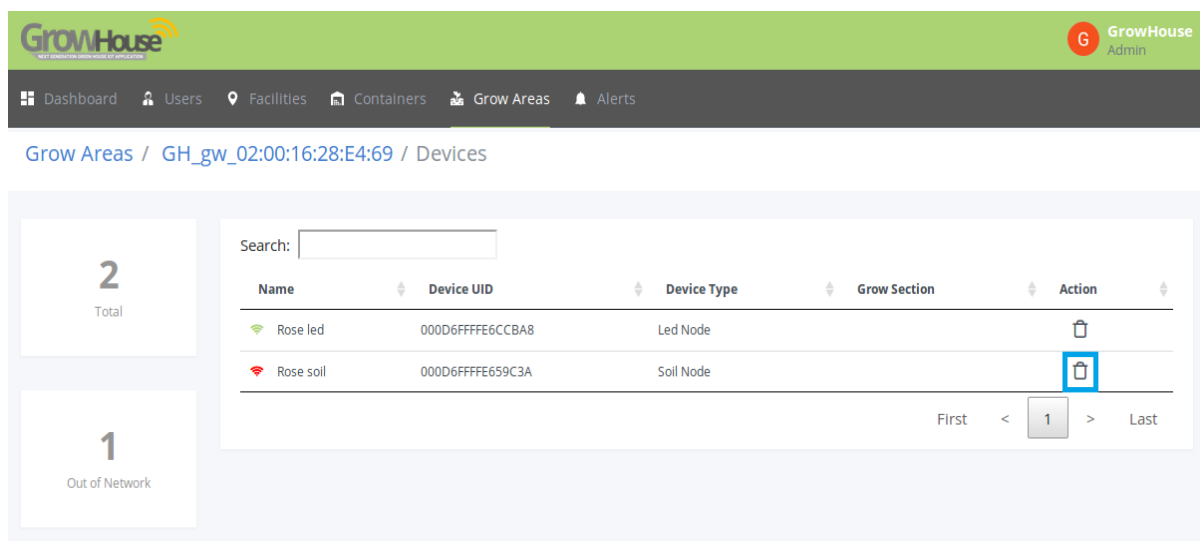


Figure 60: Deleting an Online Device Confirmation

- “Device deleted Successfully” message will be displayed on successful deletion of the device.

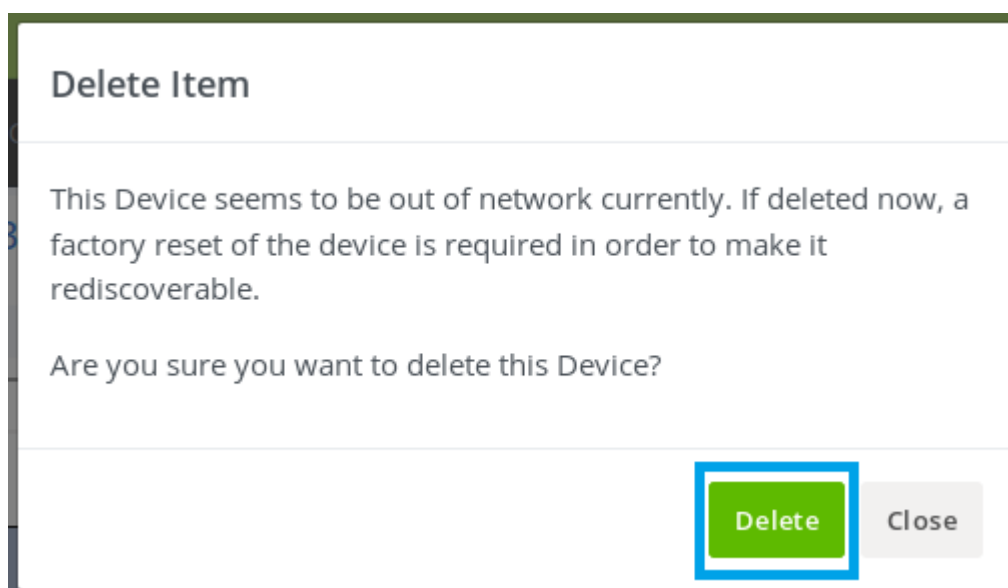
#### 4.7.2.2 Deleting an offline Device

- If user deletes an offline device then, device will be deleted from Growhouse web portal but device will still be in provisioned state and will not be re-discoverable.
- To make such device re-discoverable again, perform factory reset of that Device. Refer [Section 9.2](#) and [Section 9.3](#) on how to perform factory reset Soil Node and LED Node respectively.
- Click on delete icon  .



**Figure 61; Deleting an Offline Device**

- Read the message and Click on “Delete” button.



**Figure 62: Deleting an Offline Device Confirmation**

- “Device deleted Successfully” message will be displayed on successful deletion of the device.

Note: Deleting a device will not remove the Rules associated with the deleted device. User has to delete such Rules. Refer [Section 4.9.3.4](#) on how to delete Rule.



## 4.8 Groups

Each Gateway can have one or multiple Groups of LED Nodes. User can add one or multiple LED nodes into a Group which are provisioned under same Gateway. LED Nodes provisioned under different Gateway cannot be included in same Group. User can Create, View, Edit and Delete a Group. Each Group will have its own channel color configuration. User can also create one or multiple Profile in a group.

- User can view Groups through selecting “Groups” button of a particular Gateway.

**Figure 63: Groups of Gateway**

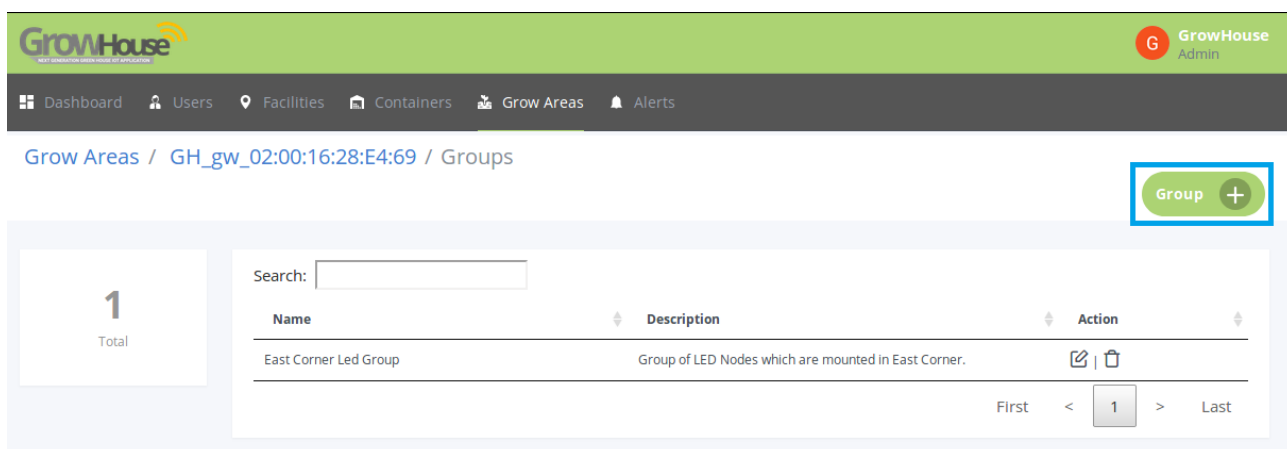
- A list of existing Groups created under particular Gateway will be shown.

**Figure 64: Groups List**



### 4.8.1 Create Group

- Click on “Group +” button to create new group.



**Figure 65: Create New Group**

- Enter the desired Group name.
- Enter the desired Group description.
- Select appropriate channel color configuration for each channel of Group.
- Click on “Find Devices” button to get the list of LED Nodes in selected Grow Area, which have same channel color configuration as selected for the Group.

### Create New Group

Group Name \*

West Corner Led Group

Description

Group of LED Nodes which are mounted in West Corner.

CH 1 \* CH 2 \* CH 3 \*

R UV A NW

CH 4 \* CH 5 \* CH 6 \*

A FR NC

Find Devices ✓

Done ✓

**Figure 66: Create New Group - Group's details**

- Under 'LED Nodes', a list of LED Nodes in the Grow Area having same channel configuration will be listed.
- Add LED Nodes to 'Apply To' list by checking the checkbox and clicking on '→' button. User can select single or multiple LED Nodes. LED Nodes selected under 'Apply To' are the Group devices. All the profile created for the Group will be applied to devices under 'Apply To'.
- Click on "Done" button.

### Create New Group

**Group Name \***

**Description**

**CH 1\***

**CH 2\***

**CH 3\***

**CH 4\***

**CH 5\***

**CH 6\***

Find Devices ✓

**Add Devices to Group**

**LED Nodes**

☒ Rose led : 000D6FFFE6CCBA8
 ☒ Rose led west corner : 000D6FFFI

☒

→

←

**Apply To**

Done ✓

**Figure 67: Create New Group - Group's details**

- "Group created successfully" message will be displayed on successful creation of Group.

## 4.8.2 View Group

- Click on respective group row to view Group details.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups

Group +

2  
Total

Search:

Name	Description	Action
East Corner Led Group	Group of LED Nodes which are mounted in East Corner.	
West Corner Led Group	Group of LED Nodes which are mounted in West Corner.	

First < 1 > Last

Figure 68: Groups List

- Individual channel configuration of the selected Group will be shown.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group

Group +

2  
Total

Search:

Name	Description	Action
East Corner Led Group	Group of LED Nodes which are mounted...	
West Corner Led Group	Group of LED Nodes which are mounted...	

First < 1 > Last

Group Name  
West Corner Led Group

CH 1 R	CH 2 UV A	CH 3 NW
CH 4 A	CH 5 FR	CH 6 NC

Devices Profiles Events

Figure 69: Group Details

#### 4.8.2.1 Group Devices

- Click on “Devices” button.

The screenshot shows the GrowHouse Admin interface. The top navigation bar includes 'Dashboard', 'Users', 'Facilities', 'Containers', 'Grow Areas', and 'Alerts'. The breadcrumb trail is 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group'. On the right, there is a 'Group +' button. The main content area has a summary card on the left showing '2 Total'. The central table lists groups, with 'West Corner Led Group' selected. The right sidebar shows the group name 'West Corner Led Group' and a 2x3 grid of channels (CH 1 to CH 6) with labels: R, UV A, NW, A, FR, NC. Below this grid, there are three buttons: 'Devices' (highlighted with a blue box), 'Profiles', and 'Events'.

**Figure 70: Devices of a Group**

- A list of all device which are added in selected Group will be displayed.

This screenshot shows the same interface as Figure 70, but with the 'Added Devices' list expanded. The 'Devices' button is still highlighted. The 'Added Devices' section shows a table with two columns: 'DEVICE UID' and 'DEVICE NAME'. The table contains two entries: '000D6FFFE6CCBA8' with 'Rose led' and '000D6FFFE6CCD1F' with 'Rose led west corner'.

DEVICE UID	DEVICE NAME
000D6FFFE6CCBA8	Rose led
000D6FFFE6CCD1F	Rose led west corner

**Figure 71: List of the device of a Group**

#### 4.8.2.2 Group Profiles

Group Profiles screen shows the total number of Group Profiles and their details which are created for a particular Group. It also allows user to add, view, edit, delete and set Group Profiles.

- Click on “Profiles” button.

The screenshot shows the GrowHouse Admin interface. The top navigation bar includes the GrowHouse logo and a user profile icon labeled 'GrowHouse Admin'. Below the navigation bar is a breadcrumb trail: 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group'. A 'Group +' button is visible in the top right corner. The main content area displays a summary card with the number '2' and the label 'Total'. Below this is a table with columns 'Name', 'Description', and 'Action'. The table lists two groups: 'East Corner Led Group' and 'West Corner Led Group'. The 'West Corner Led Group' is highlighted. To the right of the table is a sidebar for the 'West Corner Led Group' showing a grid of channels (CH 1 to CH 6) with labels: R, UV A, NW, A, FR, NC. Below the grid are three buttons: 'Devices', 'Profiles' (highlighted with a blue box), and 'Events'.

**Figure 72: Profiles of a Group**

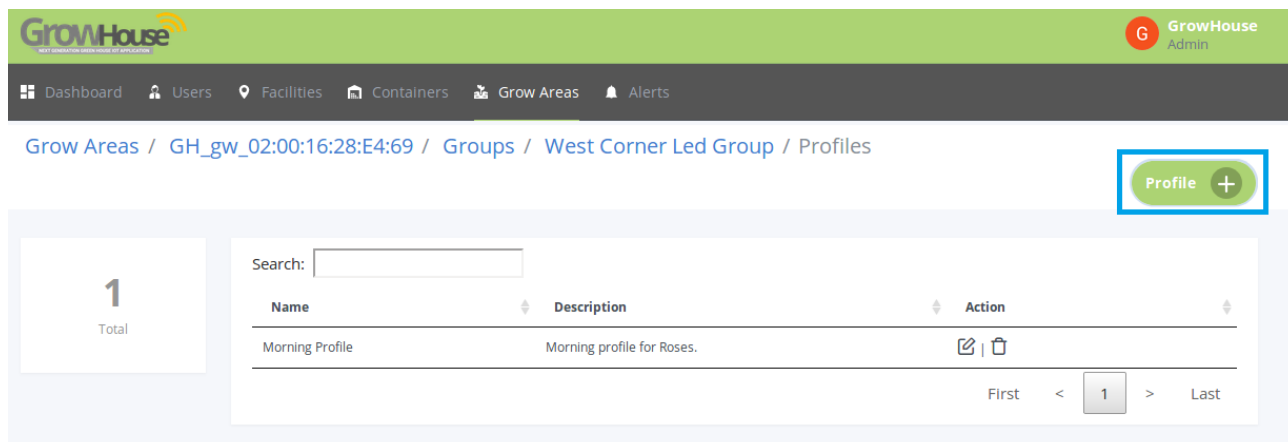
- A list of Profiles created in selected Group will be shown.

The screenshot shows the GrowHouse Admin interface. The top navigation bar includes the GrowHouse logo and a user profile icon labeled 'GrowHouse Admin'. Below the navigation bar is a breadcrumb trail: 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group / Profiles'. A 'Profile +' button is visible in the top right corner. The main content area displays a summary card with the number '1' and the label 'Total'. Below this is a table with columns 'Name', 'Description', and 'Action'. The table lists one profile: 'Morning Profile' with the description 'Morning profile for Roses.'. To the right of the table is a sidebar for the 'Morning Profile' showing a grid of channels (CH 1 to CH 6) with labels: R, UV A, NW, A, FR, NC. Below the grid are three buttons: 'Devices', 'Profiles' (highlighted with a blue box), and 'Events'.

**Figure 73: List of the Profiles of a Group**

#### 4.8.2.2.1 Create Group Profile

- Click on “Profile +” button to create a new Group Profile.



**Figure 74: Create New Group Profile**

- Enter the desired name of Group Profile.
- Enter the desired description of profile.
- Select the desired channel intensity for each channel.
- Click on “Done” button.

The 'Create New Profile' modal form contains the following fields and controls:

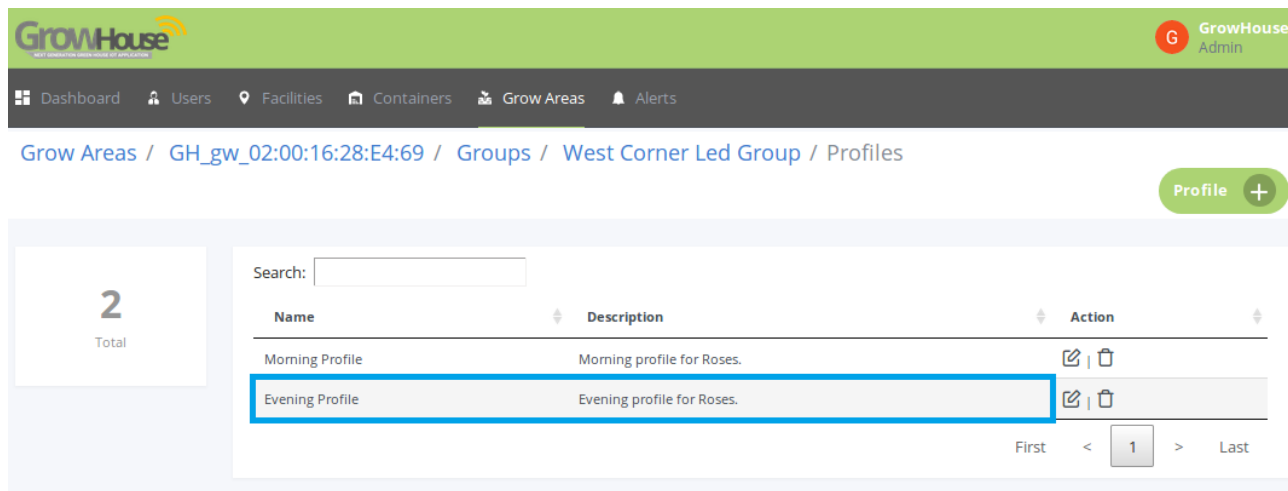
- Profile Name\***: Text input field containing 'Evening Profile'.
- Description**: Text area containing 'Evening profile for Roses.'
- Channel Intensity Settings**: Six sliders for different channels, each with a percentage value:
  - CH 1 : R: 14%
  - CH 2 : UV A: 32%
  - CH 3 : NW: 41%
  - CH 4 : A: 37%
  - CH 5 : FR: 15%
  - CH 6 : NC: 0%
- Buttons**: 'Done' and 'Cancel' buttons at the bottom. The 'Done' button is highlighted with a blue box.

**Figure 75: New Group Profile - Profile's Details**

- “Profile created successfully” message will be displayed on successful creation of Profile.

#### 4.8.2.2.2 Apply Group Profile

- Click on a particular Group Profile row.



GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group / Profiles

Profile +

2 Total

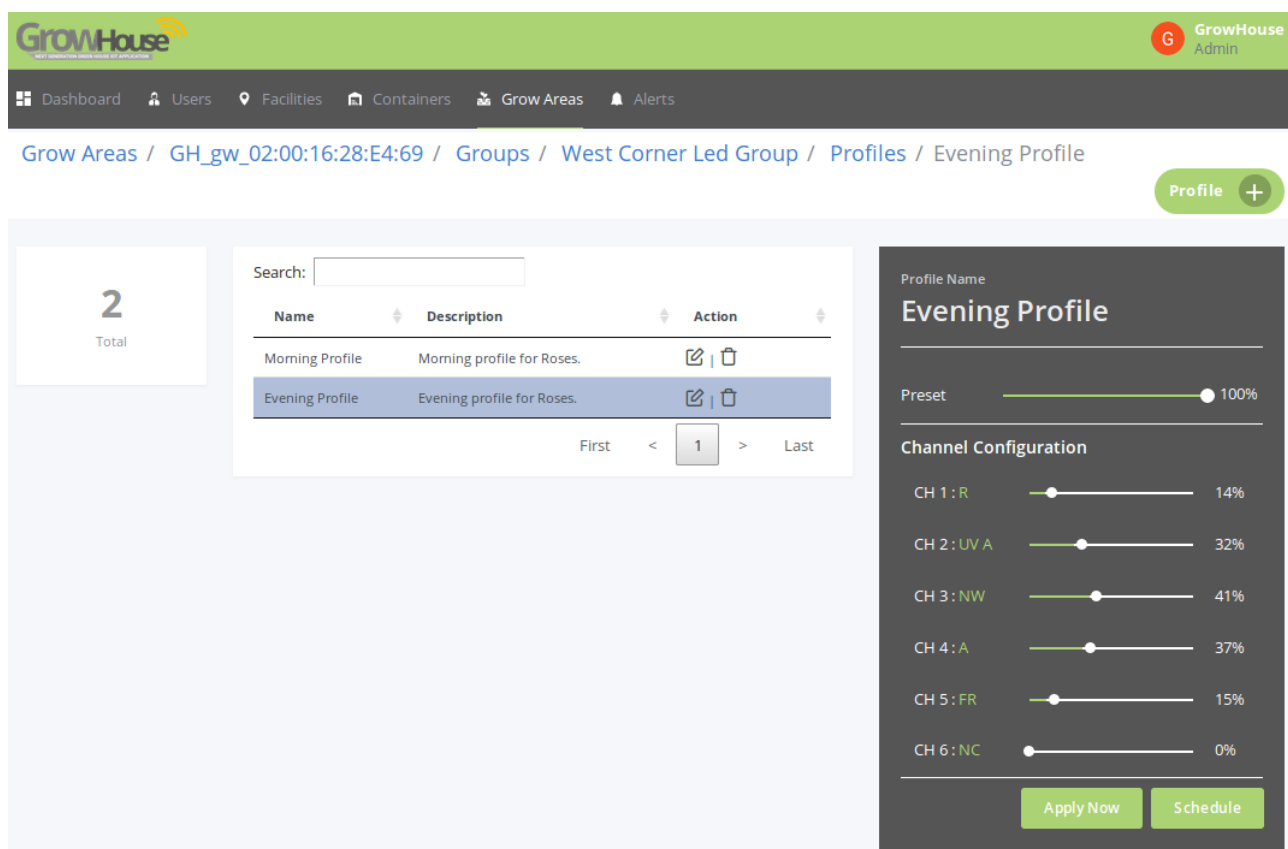
Search:

Name	Description	Action
Morning Profile	Morning profile for Roses.	<a href="#">Edit</a> <a href="#">Delete</a>
Evening Profile	Evening profile for Roses.	<a href="#">Edit</a> <a href="#">Delete</a>

First < 1 > Last

**Figure 76: List of the Profiles of a Group**

- User will be shown individual channel intensity that would be set on LED Nodes of the Group at preset of 100%.



GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group / Profiles / Evening Profile

Profile +

2 Total

Search:

Name	Description	Action
Morning Profile	Morning profile for Roses.	<a href="#">Edit</a> <a href="#">Delete</a>
Evening Profile	Evening profile for Roses.	<a href="#">Edit</a> <a href="#">Delete</a>

First < 1 > Last

Profile Name  
**Evening Profile**

Preset  100%

Channel Configuration

CH 1 : R	<input type="range"/>	14%
CH 2 : UV A	<input type="range"/>	32%
CH 3 : NW	<input type="range"/>	41%
CH 4 : A	<input type="range"/>	37%
CH 5 : FR	<input type="range"/>	15%
CH 6 : NC	<input type="range"/>	0%

Apply Now Schedule

**Figure 77: Profile Selection**

- Change the desired preset value through varying preset slider bar if required.
- Click on “Apply Now” button.

The screenshot displays the GrowHouse Admin interface. At the top, the navigation bar includes links for Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The breadcrumb trail shows the path: Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group / Profiles / Evening Profile. A 'Profile +' button is visible in the top right.

On the left, a summary card shows '2 Total'. The main content area features a table of profiles:

Name	Description	Action
Morning Profile	Morning profile for Roses.	
Evening Profile	Evening profile for Roses.	

Below the table is a pagination control showing 'First', '<', '1', '>', and 'Last'.

The right panel, titled 'Evening Profile', shows the 'Preset' value set to 50 (50%). Under 'Channel Configuration', there are six sliders with their respective values:

- CH 1 : R: 7%
- CH 2 : UV A: 16%
- CH 3 : NW: 21%
- CH 4 : A: 19%
- CH 5 : FR: 8%
- CH 6 : NC: 0%

At the bottom of the configuration panel, there are two buttons: 'Apply Now' (highlighted with a blue box) and 'Schedule'.

**Figure 78: Apply Selected Profile**

- “Profile applied successfully” message will be displayed after successful setting of LED channel intensity.



#### 4.8.2.2.3 Schedule Group Profile

User can schedule the Group Profile to be applied at desired time in future.

- Click on a particular Group Profile row.

The screenshot shows the GrowHouse Admin interface. The top navigation bar includes the GrowHouse logo, a user profile icon labeled 'GrowHouse Admin', and a menu with 'Dashboard', 'Users', 'Facilities', 'Containers', 'Grow Areas', and 'Alerts'. The breadcrumb trail is 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group / Profiles'. A green 'Profile +' button is in the top right. On the left, a summary card shows '2 Total'. The main area contains a table with columns 'Name', 'Description', and 'Action'. The table lists two profiles: 'Morning Profile' (Morning profile for Roses.) and 'Evening Profile' (Evening profile for Roses.). The 'Evening Profile' row is highlighted with a blue border. The 'Action' column for each row contains edit and delete icons. At the bottom right of the table, there are pagination controls: 'First', '<', '1', '>', and 'Last'.

**Figure 79: List of the Profiles of a Group**

- User will be shown individual channel intensity that would be set on LED Nodes of the Group at preset of 100%.

The screenshot shows the GrowHouse Admin interface with the 'Evening Profile' selected. The breadcrumb trail is 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group / Profiles / Evening Profile'. The 'Profile +' button is still present. The table from Figure 79 is shown, with the 'Evening Profile' row highlighted. The right panel, titled 'Evening Profile', shows a 'Preset' slider set to 100%. Below it is the 'Channel Configuration' section with six channels, each with a slider and a percentage value: CH 1: R (14%), CH 2: UV A (32%), CH 3: NW (41%), CH 4: A (37%), CH 5: FR (15%), and CH 6: NC (0%). At the bottom of this panel are 'Apply Now' and 'Schedule' buttons.

**Figure 80: Profile Selection**

- Select the desired preset level.
- Click on “Schedule” button.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group / Profiles / Evening Profile

Profile +

2 Total

Search:

Name	Description	Action
Morning Profile	Morning profile for Roses.	
Evening Profile	Evening profile for Roses.	

First < 1 > Last

Profile Name  
Evening Profile

Preset 50%

Channel Configuration

CH 1: R 7%

CH 2: UV A 16%

CH 3: NW 21%

CH 4: A 19%

CH 5: FR 8%

CH 6: NC 0%

Apply Now Schedule

Figure 81: Schedule a Group Profile

- Select the desired Start Date and Start Time.
- Select the desired repetition option from dropdown if required.
- Select the desired End Date If repetition option is selected.
- Click on “Apply” button.

Schedule Profile

Start Date\* 07/31/2019 Start Time\* 16:00

Repeat Every Sunday x Every Monday x +5


End Date\* 09/05/2019

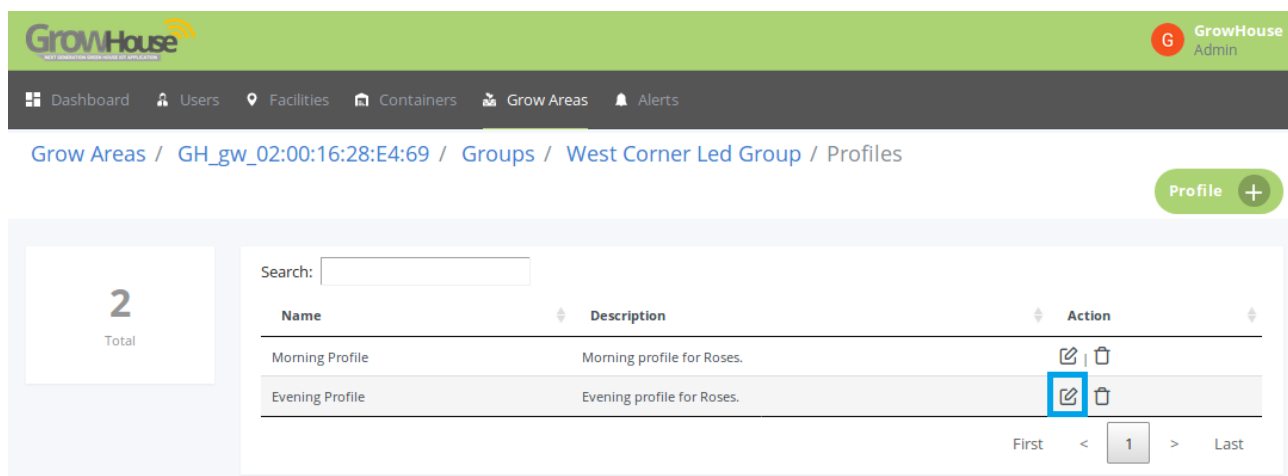
Apply

Figure 82: Schedule Group Profile - Schedule Detail

- “Profile scheduled successfully” message will be displayed on successful schedule of Group Profile.
- If there are two or more events scheduled for a Group to be triggered at exactly same time, the last event that is scheduled by the user will take priority and will be triggered at scheduled time.  
For example: If there are two events scheduled with following options where *Event2* is created after *Event1*.  
*Event1*: Start Date – 30-Oct-2019 and Start Time – 10:00 AM, Repeat every day and End Date as 30-Dec-2019.  
*Event2*: Start Date – 30-Oct-2019 and Start Time – 10:00 AM, Repeat every Friday and End Date as 30-Nov-2019.  
In this case, *Event2* will take priority and will trigger at schedule time and frequency.
- If there are two or more events scheduled for a Group and has overlapping of time, all the events will be triggered at respective start time.  
For example: If there are two events scheduled with following options irrespective of when these events were created.  
*Event1*: Start Date – 30-Oct-2019 and Start Time – 10:00 AM, Repeat every day and End Date as 30-Dec-2019.  
*Event2*: Start Date – 30-Oct-2019 and Start Time – 11:00 AM, Repeat every day and End Date as 31-Dec-2019.  
In this case, *Event1* will be triggered at 10:00 AM every day from 30-Oct-2019 till 30-Dec-2019. *Event2* will be triggered at 11:00 AM every day from 30-Oct-2019 till 31-Dec-2019.

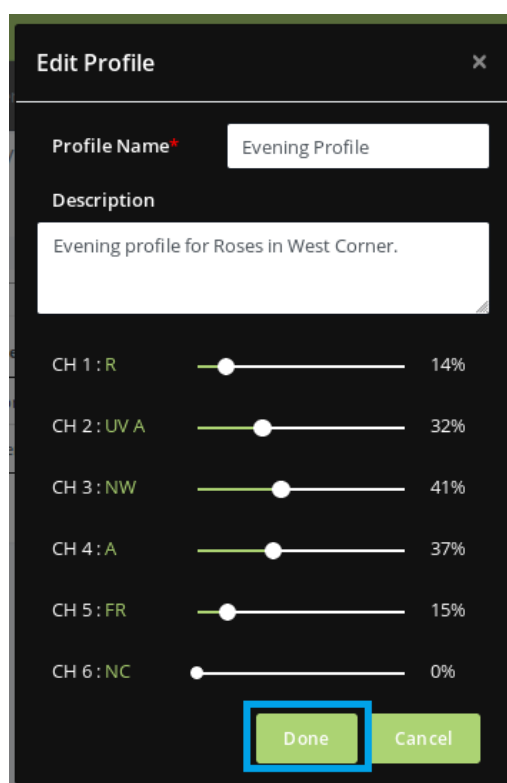
#### 4.8.2.2.4 Edit Group Profile

- Click on edit icon .



**Figure 83: Edit a Group Profile**

- Edit the desired Profile name and description.
- Change the desired intensity level for individual channel.
- Click on “Done” button.

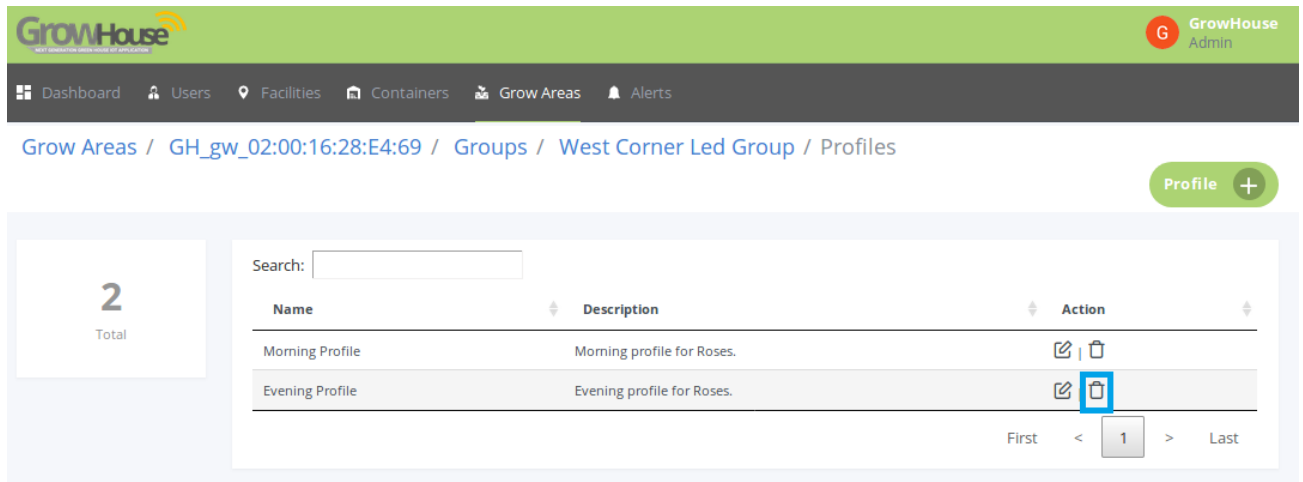


**Figure 84: Edit Group Profile - Profile's Details**

- “Profile edited successfully” message will be displayed on successful update of Group Profile.
- Previously scheduled events for this Group Profile will be applied on devices according to edited changes in the Group Profile.

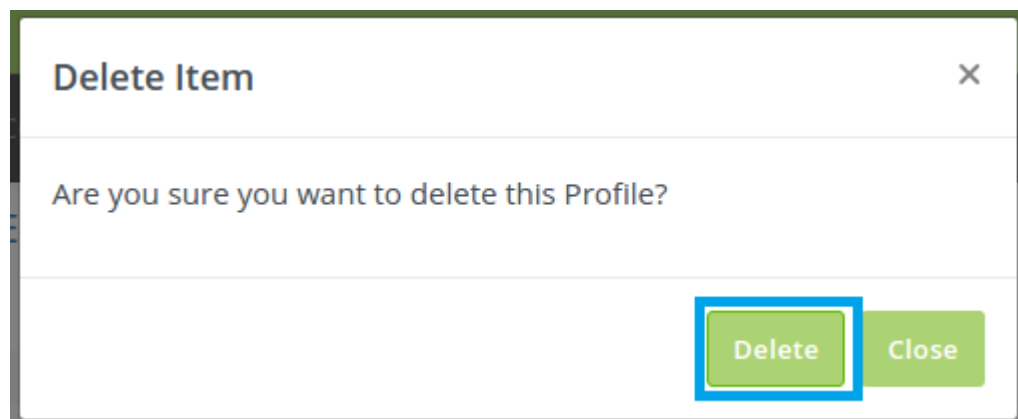
#### 4.8.2.2.5 Delete Group Profile

- Click on delete icon .



**Figure 85: Delete a Group Profile**

- Click on “Delete” button.



**Figure 86: Delete a Group Profile Confirmation**

- “Profile deleted successfully” message will be displayed after successful deletion of Group Profile.
- Delete operation will also delete all the events scheduled for this Group Profile.

#### 4.8.2.3 Group Events

- Click on “Events” button.

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group

Group +

2  
Total

Search:

Name	Description	Action
East Corner Led Group	Group of LED Nodes which are mounted...	
West Corner Led Group	Group of LED Nodes which are mounted...	

First < 1 > Last

Group Name  
West Corner Led Group

CH 1 R CH 2 UV A CH 3 NW  
CH 4 A CH 5 FR CH 6 NC

Devices Profiles **Events**

**Figure 87: Events of a Group**

- A list of all Events which are scheduled in selected Group will be displayed.

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Groups / West Corner Led Group / Events

2  
Events

Search:

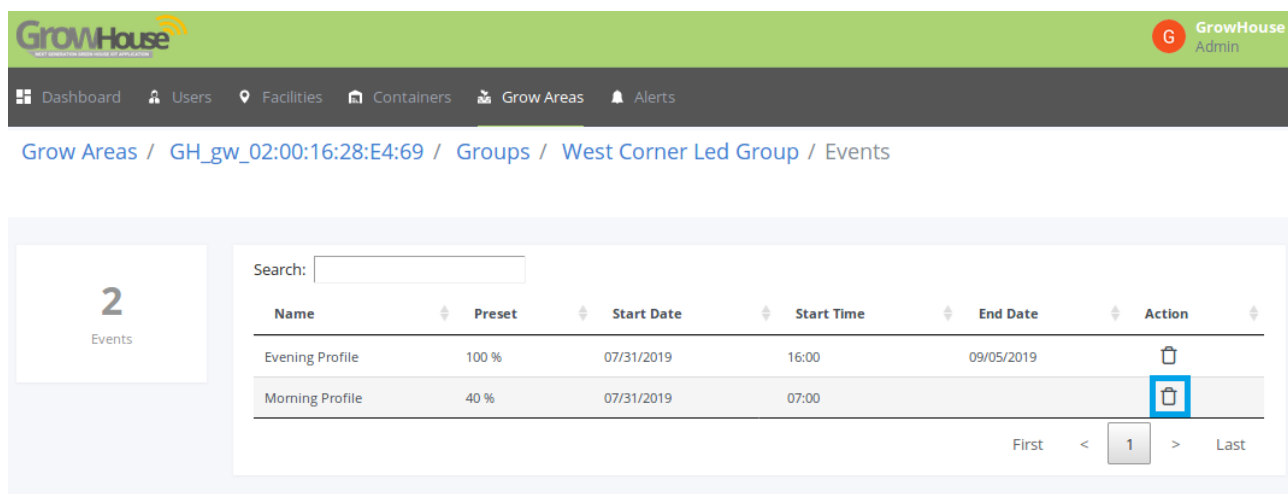
Name	Preset	Start Date	Start Time	End Date	Action
Evening Profile	100 %	07/31/2019	16:00	09/05/2019	
Morning Profile	40 %	07/31/2019	07:00		

First < 1 > Last

**Figure 88: List of Events**

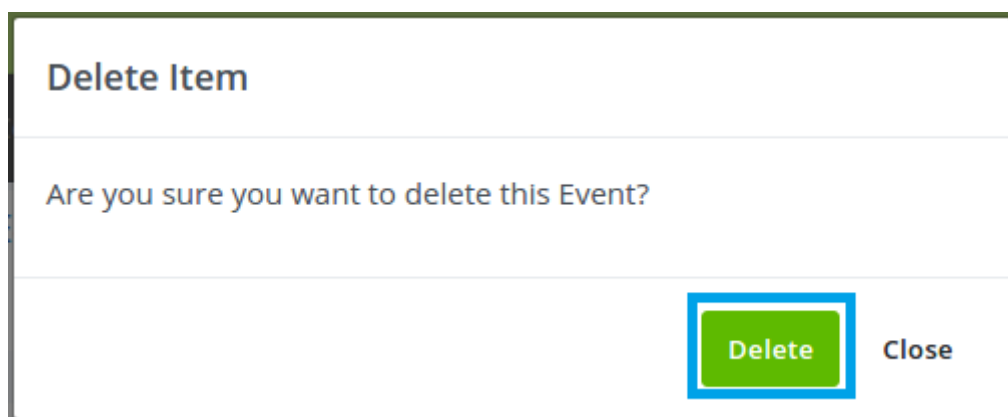
### 4.8.2.3.1 Delete Group Events

- Click on delete icon .



**Figure 89: Delete an Event of a Group**


- Click on “Delete” button.

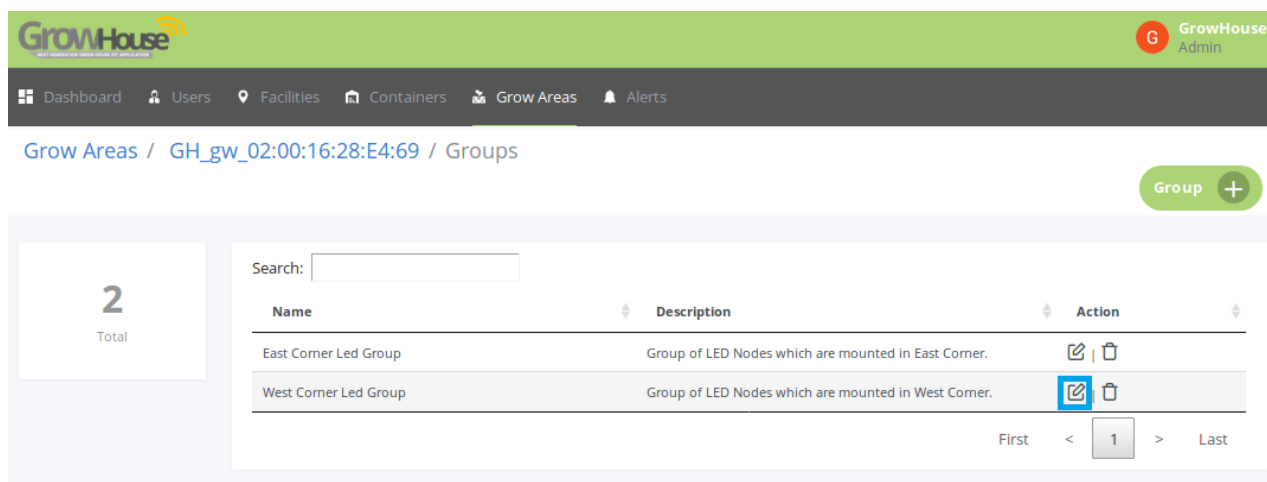


**Figure 90: Delete Event Confirmation**

- “Event deleted successfully” message will be displayed after successful deletion of Group Event.
- Once the event is deleted it will be cancelled and will not be triggered.

### 4.8.3 Edit Group

- Click on edit icon .

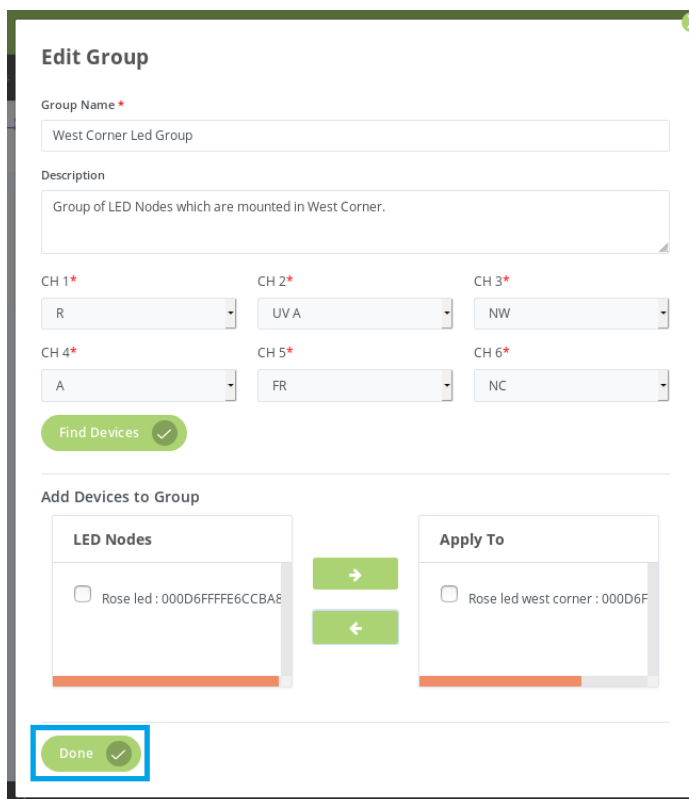


**Figure 91: Edit Group**

- Edit the required details.
- Click on “Done” button.

**Note:**

Channel color configuration fields cannot be modified.



**Figure 92: Edit Group - Group's Details**

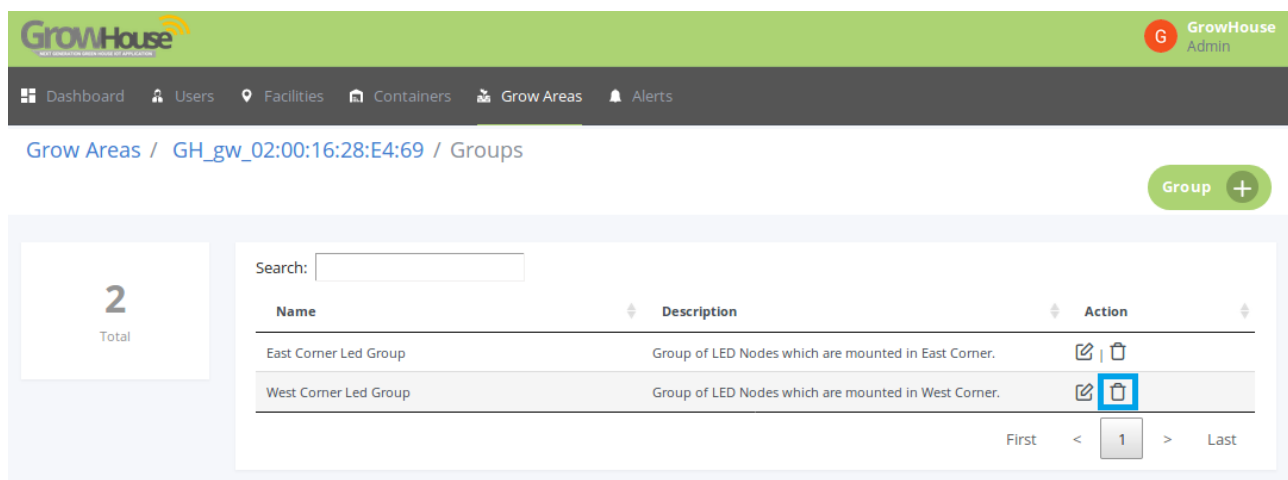
- “Group edited successfully” message will be displayed on successful update of Group.



- If the 'Apply To' list is edited, events scheduled on the Group will be applied to updated list of devices.

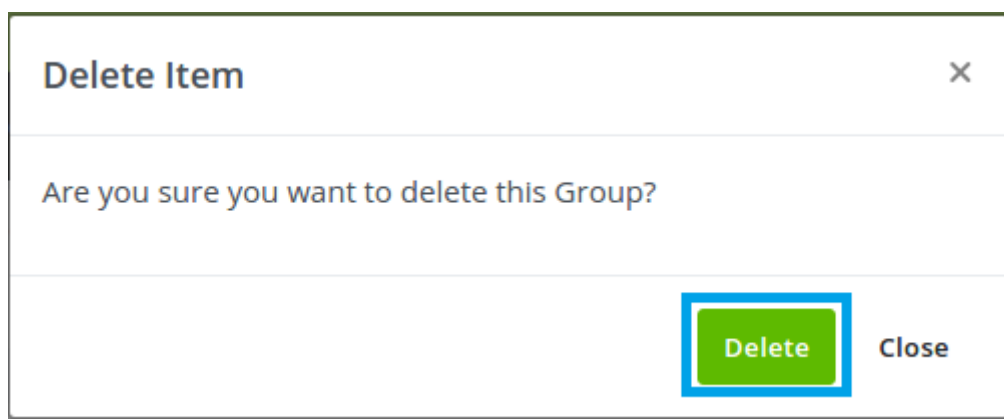
#### 4.8.4 Delete Group

- Click on delete icon  .



**Figure 93: Delete a Group**

- Click on “Delete” button.



**Figure 94: Delete Group Confirmation**

- “Group deleted successfully” message will be displayed after successful deletion of Group.
- Delete operation will also delete all the Group Profiles created for the Group and the events scheduled for Group Profiles.

## 4.9 Grow Sections

A Grow Area can be subdivided into smaller 'grow sections'. Section is a logical division of the Grow Area. Devices are assigned within a grow section. An admin user can create Rules using those devices. A “Default” grow section is created for a Grow Area by default. User can use this grow section to create rules. User can also create multiple (up to 12) grow section within Grow Area.

- Select particular Grow Area and click on “Sections” button to view Grow sections.

The screenshot shows the GrowHouse Admin interface. The top navigation bar includes Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The breadcrumb trail is 'Grow Areas / GH\_gw\_02:00:16:28:E4:69'. On the left, there are two summary cards: '2 Total' and '0 Out of Network'. The main content area displays a table of grow sections with columns: Name, MAC ID, Facility Name, Container Name, and Admin. The table lists two sections: 'GH\_gw\_02:00:87:D2:3C:C8' and 'GH\_gw\_02:00:16:28:E4:69'. The second section is highlighted. Below the table is a pagination bar showing 'First', '<', '1', '>', and 'Last'. On the right, a sidebar for the selected Grow Area 'GH\_gw\_02:00:16:28:E4:69' shows 'Soil Nodes: 2' and 'Light Nodes: 3'. It includes buttons for 'Sections' (highlighted with a red box), 'Rules', 'Devices', and 'Groups'.

Figure 95: Grow Section

- A layout of existing grow sections created under particular Gateway will be shown.

The screenshot shows the 'Grow Sections Layout' view in the GrowHouse Admin interface. The breadcrumb trail is 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Grow Sections'. There is an 'Add +' button in the top right. The main content area displays a large dashed box representing the layout. Inside this box, there is a smaller box labeled 'NAME\*' with the text 'Default' below it. A small 'x' icon is visible in the top right corner of the dashed box.

Figure 96: Grow Sections Layout

## 4.9.1 Create Grow Sections

- Click on “Add +” button to Create new section.

The screenshot shows the GrowHouse Admin interface. The top navigation bar includes the GrowHouse logo, a user profile icon labeled 'GrowHouse Admin', and a menu with 'Dashboard', 'Users', 'Facilities', 'Containers', 'Grow Areas', and 'Alerts'. The breadcrumb trail reads 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Grow Sections'. A green 'Add +' button is highlighted with a blue box in the top right corner. Below the breadcrumb, a dashed green box contains a form with a 'NAME\*' field and the text 'Default'.

**Figure 97: Create New Grow Section**

- Select layout.
- Enter desired grow section name.
- Click on “Save” button.

The screenshot shows the GrowHouse Admin interface with the 'Save' button highlighted in a blue box. The breadcrumb trail is 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Grow Sections'. A 'Select Layout' dropdown menu is open, showing various grid layouts. The main form area contains two sections: 'NAME\*' with the text 'East Corner' and 'NAME\*' with the text 'West Corner'. To the right, a sidebar displays 'Grow Area Name: GH\_gw\_02:00:16:28:E4:69', 'Location: Alamo, California, United States', and a 'List of Devices' section with 'Soil Nodes' and the number '1'.

**Figure 98: Create New Grow Section – Section details**

- “Grow Sections updated successfully” message will be displayed on successful creation of grow section.

## 4.9.2 Attach devices with Grow Sections

- Click on “Add +” button.

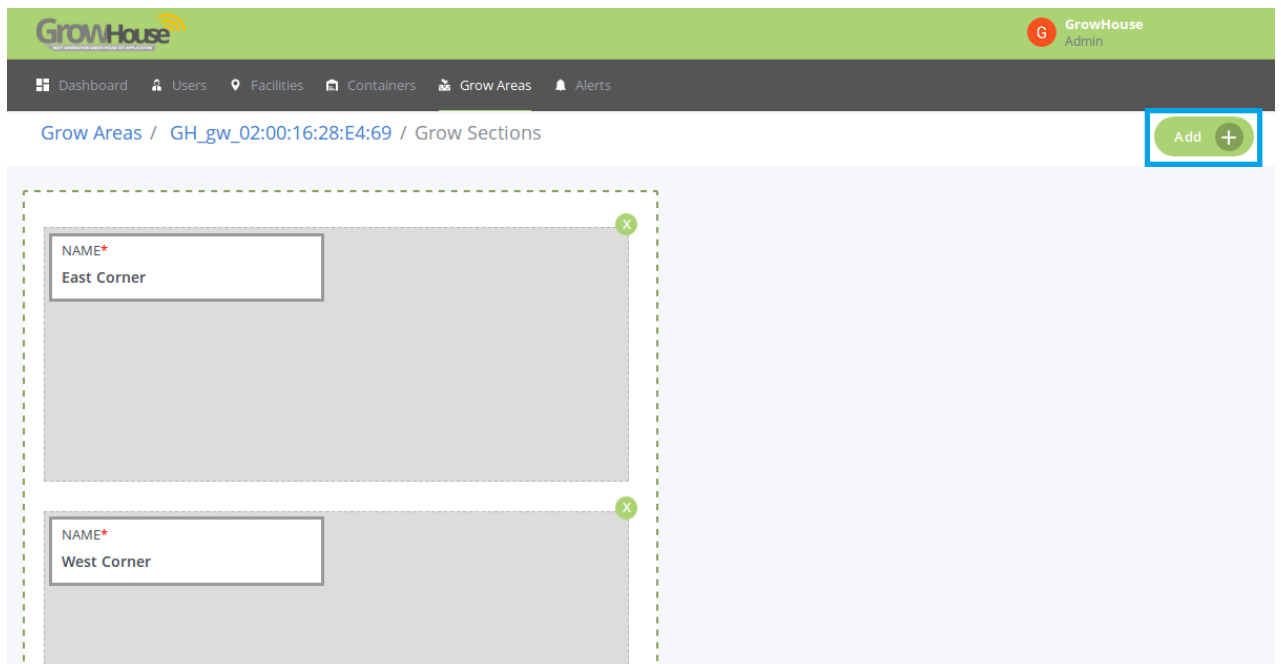


Figure 99: Add Devices into Grow Section

- Select grow section to which a device needs to be attached.
- Click on arrow (->) against desired device type. This will show all the devices.
- Click on arrow (<-) against the desired device. This will add particular device in the selected section.
- Click on “Save” button.
- “Grow Section updated successfully” message will be displayed after successfully attaching device with grow section.
- “This device is already attached with selected Grow Section. Try to attach with another Grow Section.” message will be displayed if the device is already attached with selected grow section.

The screenshot shows the GrowHouse Admin interface. The top navigation bar includes the GrowHouse logo and a user profile icon labeled 'GrowHouse Admin'. Below the navigation bar is a breadcrumb trail: 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Grow Sections'. The main content area is divided into two sections. On the left, there is a 'Select Layout' button and a 'Save' button. The central area contains a form for adding devices to a grow section. It has two input fields for 'NAME\*' with 'East Corner' and 'West Corner' as examples. Below these is a green box labeled 'Rose soil' with a green 'X' icon. On the right, there is a 'List of Devices' table. The table has a header with 'DEVICE UID' and 'DEVICE NAME'. The first row shows '000D6FFFFE659C3A' and 'Rose soil'. A green arrow icon is highlighted next to the first row, and a blue box highlights the 'Save' button.

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Grow Sections

Select Layout

Save

Grow Area Name  
GH\_gw\_02:00:16:28:E4:69  
Location: Alamo, California, United States

List of Devices

Soil Nodes

1

DEVICE UID	DEVICE NAME
000D6FFFFE659C3A	Rose soil

**Figure 100: Add Devices into Grow Section – Device details**

### 4.9.3 Grow Section Rules

Rules can be created using single or multiple devices within a grow section. The admin user must set conditions when a Rule is created. If those conditions are satisfied, then an alert will be generated.

Alerts will be displayed on following pages:

- Dashboard page: Random five alerts generated under particular Account.
- Facility page: Random five alerts generated under particular Facility.
- Container page: Random five alerts generated under particular Container.
- Grow Area page: Random five alerts generated under particular Grow Area.
- Alerts page: Generated alerts for all rules created for all Grow Area.

#### 4.9.3.1 Create Rule


Admin user can create a Rule by following below steps.

- It is required to have at least one Grow Section to create a Rule.
- Select “Sections” button for particular Grow Area.

The screenshot shows the GrowHouse Admin interface. At the top, there's a green header with the GrowHouse logo and a 'GrowHouse Admin' user profile. Below the header is a navigation bar with links: Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The main content area is titled 'Grow Areas / GH\_gw\_02:00:16:28:E4:69'. On the left, there are two summary cards: '2 Total' and '0 Out of Network'. The central part features a table with columns: Name, MAC ID, Facility Name, Container Name, and Admin. The table lists two grow sections, with the second one highlighted. To the right of the table is a sidebar for the selected grow section 'GH\_gw\_02:00:16:28:E4:69', showing its location and node counts (2 Soil Nodes, 3 Light Nodes). At the bottom of the sidebar, there are buttons for 'Sections', 'Rules', 'Devices', and 'Groups'. The 'Sections' button is highlighted with a red box.

Name	MAC ID	Facility Name	Container Name	Admin
GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Rose Valley farm	Red Roses	GrowHouse
GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse

**Figure 101: View Grow Section**

- Select grow section for which a Rule has to be created and click on  button.



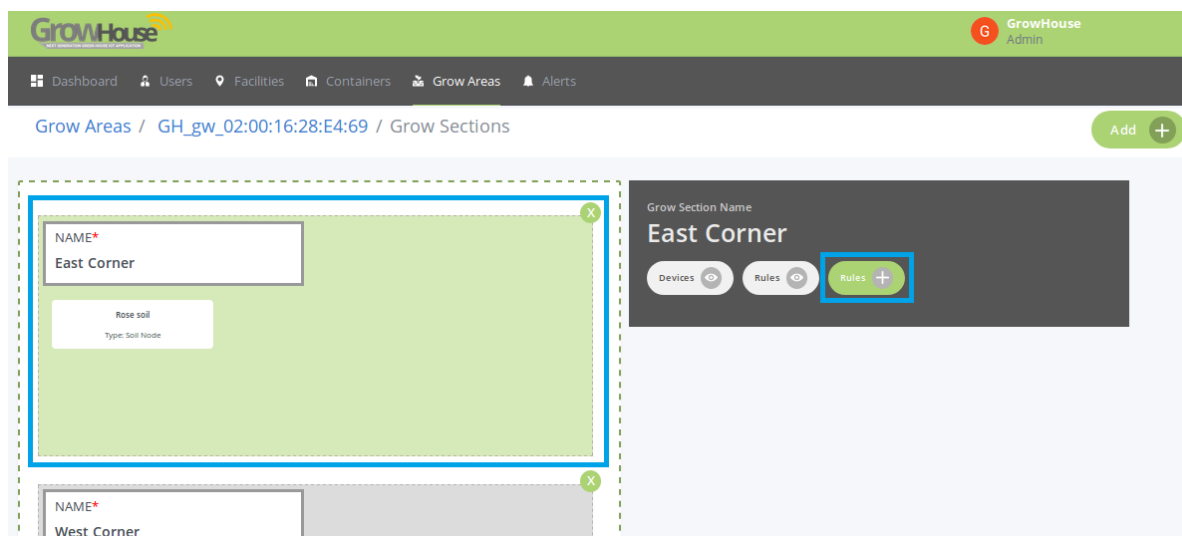


Figure 102: Create New Rule for a Grow Section

- Enter desired name of Rule.
  - Select desired device from drop down.
  - Select desired device property from drop down.
  - Select desired condition from drop down.
  - Enter appropriate value.
- For example, if the condition for Battery Voltage property is set as  $< 2.5$ , an alert will be generated if battery voltage of the selected Soil Node goes below 2.5.
- Click on "Submit" button.

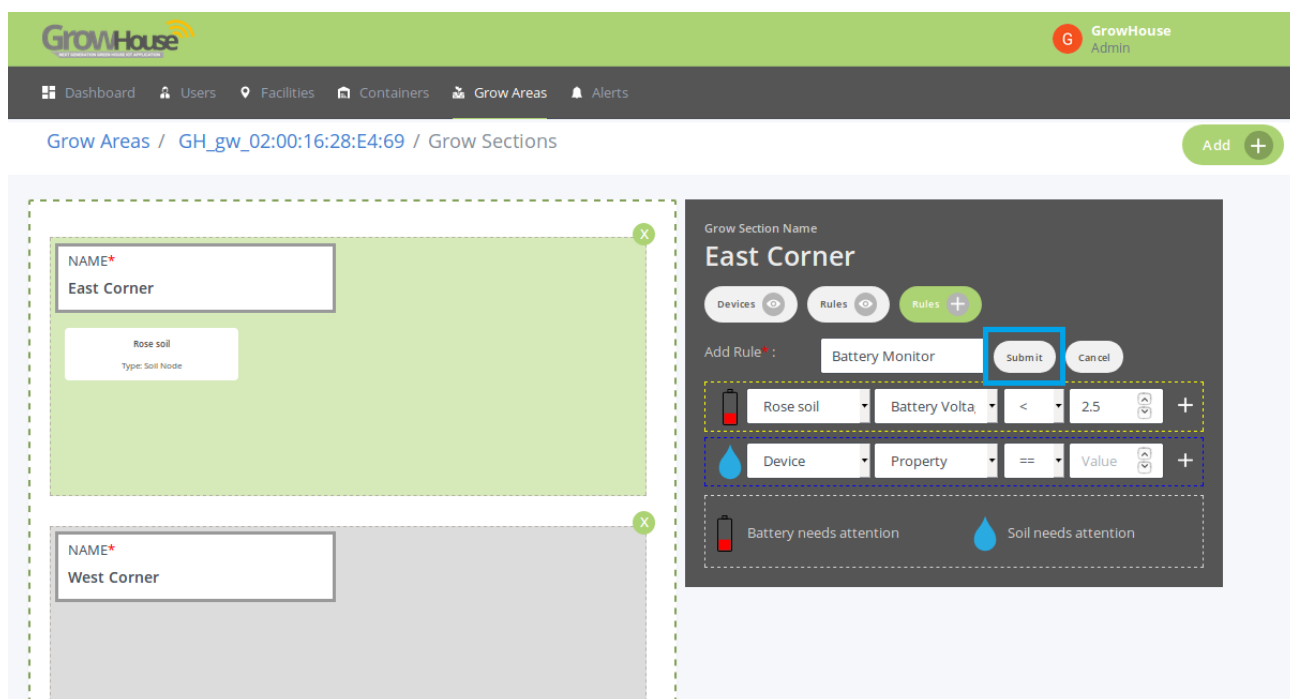


Figure 103: Create New Rule Field for Grow Section

- "Rule creation request sent successfully" message will be displayed on successful creation of Rule.

- To see created Rules for particular grow section, select particular grow section and click on “Rules” button.

- A list of Rules created for particular grow section will be shown.

The screenshot displays the GrowHouse Admin interface. At the top, the GrowHouse logo is on the left, and 'GrowHouse Admin' is on the right. A navigation bar below the logo contains links for Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The main breadcrumb path is 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Grow Sections'. An 'Add +' button is visible in the top right corner of the main content area.

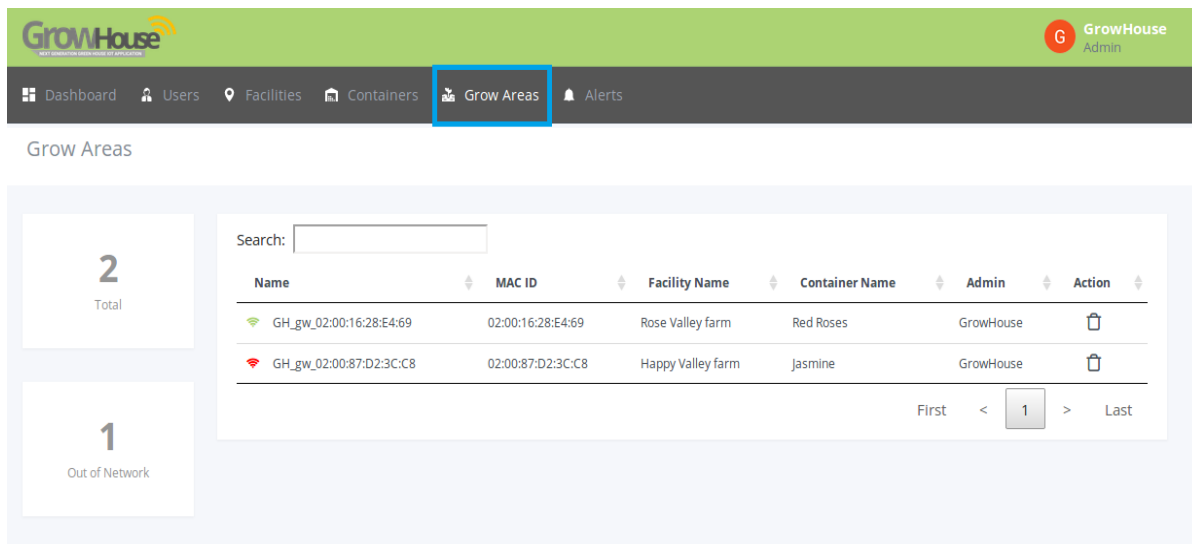
The main content area is divided into two columns. The left column shows a list of grow sections: 'East Corner' (with a 'NAME\*' label and a green 'x' icon) and 'West Corner' (with a 'NAME\*' label and a green 'x' icon). The right column shows the details for the 'East Corner' grow section. It has a title 'East Corner' and three tabs: 'Devices', 'Rules' (which is highlighted with a blue box), and 'Rules +'. Below the tabs, there is a section titled 'Added Rules:' containing a table with one rule: 'Battery Monitor'. This rule is also highlighted with a blue box. The table has columns for 'RULE NAME', a battery icon, a water drop icon, and an edit icon. Below the table, there are navigation links: '« Previous', '1', and 'Next »'. At the bottom of the right column, there are two status indicators: 'Battery needs attention' (with a battery icon) and 'Soil needs attention' (with a water drop icon).

**Figure 104: List of Rules per Grow Section**

#### 4.9.3.2 View Rule and its Alerts History

Admin user can view rule and rule history created under a particular Gateway by following below steps.

- Click on “Grow Areas” tab.



Grow Areas

2 Total

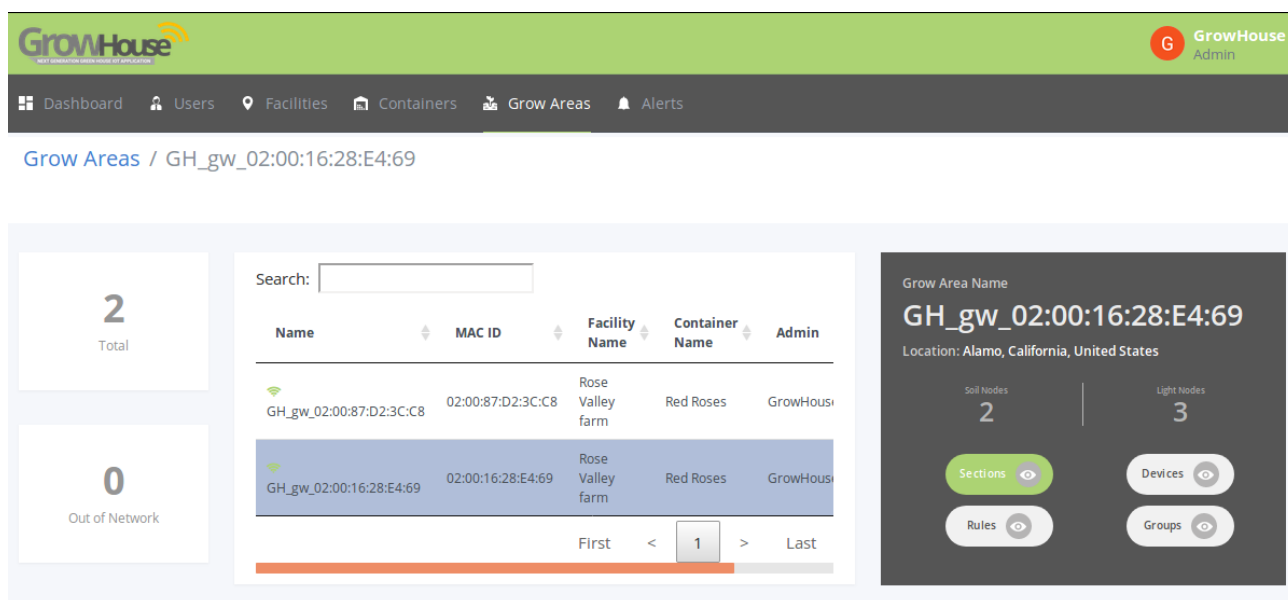
1 Out of Network

Name	MAC ID	Facility Name	Container Name	Admin	Action
GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse	
GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Happy Valley farm	Jasmine	GrowHouse	

First < 1 > Last

**Figure 105: Grow Areas List**

- Select a particular Gateway.



Grow Areas / GH\_gw\_02:00:16:28:E4:69

2 Total

0 Out of Network

Name	MAC ID	Facility Name	Container Name	Admin
GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Rose Valley farm	Red Roses	GrowHouse
GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse

First < 1 > Last

Grow Area Name  
**GH\_gw\_02:00:16:28:E4:69**  
Location: Alamo, California, United States

Soil Nodes: 2 | Light Nodes: 3

Sections

Rules

Devices

Groups

**Figure 106: Particular Grow Area Selection**

- Click on “Rules” button.

The screenshot shows the GrowHouse Admin interface. The top navigation bar includes the GrowHouse logo, a user profile icon, and a list of menu items: Dashboard, Users, Facilities, Containers, Grow Areas, and Alerts. The breadcrumb trail indicates the current location: Grow Areas / GH\_gw\_02:00:16:28:E4:69. The main content area is divided into three sections. On the left, there are two summary cards: '2 Total' and '0 Out of Network'. The central section displays a table of Grow Areas with columns for Name, MAC ID, Facility Name, Container Name, and Admin. The table lists two entries, with the second entry (GH\_gw\_02:00:16:28:E4:69) highlighted. On the right, a detailed view for the selected Grow Area is shown, including its name, location, and node counts. A sidebar on the right contains buttons for Sections, Rules, Devices, and Groups, with the 'Rules' button highlighted by a blue box.

**Figure 107: Rules of Particular Grow Area**

- A list of all Rules created under a particular Gateway will be shown.

The screenshot shows the GrowHouse Admin interface with the 'Rules' page selected. The breadcrumb trail is: Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Rules. The main content area features a table of rules for the selected Grow Area. The table has columns for Rule Name, Grow Area, Container, Facility, and Actions. Two rules are listed: 'Water [East Corner]' and 'Battery Monitor [East Corner]'. The 'Actions' column contains a trash icon for each rule. A sidebar on the left shows a summary card with '2 Total'. The bottom of the table includes pagination controls: First, <, 1, >, Last.

**Figure 108: List of Rules per Grow Area**

- Follow below process to view Alert history of a particular rule.
- Click on rule area.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Rules

2  
Total

Search:

Rule Name	Grow Area	Container	Facility	Actions
Water [East Corner]	GH_gw_02:00:16:28:E4:69	Red Roses	Rose Valley farm	
Battery Monitor [East Corner]	GH_gw_02:00:16:28:E4:69	Red Roses	Rose Valley farm	

First < 1 > Last

**Figure 109: Particular Rule section**

- Click on “History” button to see the Alerts history for a particular Rule.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Rules / East Corner

2 Total

Search:

Rule Name	Grow Area	Container	Facility	Actions
Water [East Corner]	GH_gw_02:00:16:28:E4:69	Red Roses	Rose Valley farm	
Battery Monitor [East Corner]	GH_gw_02:00:16:28:E4:69	Red Roses	Rose Valley farm	

First < 1 > Last

Rule Name: Water [East Corner]  
07/11/2019 11:52 PM  
Soil Moisture: 100

History

Last 3 hours Rule alerts

- 07/11/2019 11:52 PM  
Message : Soil needs attention
- 07/11/2019 11:51 PM

Figure 110: Rule History

- Select date range from drop down. Below image shows Alerts history for selected Rule.

Rule Alerts History

Select Date Range

07/11/2019 - 07/11/2019

- 07/11/2019 11:52 PM  
Message : Soil needs attention
- 07/11/2019 11:51 PM  
Message : Soil needs attention
- 07/11/2019 11:50 PM  
Message : Soil needs attention
- 07/11/2019 11:49 PM  
Message : Soil needs attention
- 07/11/2019 11:48 PM  
Message : Soil needs attention

« Previous 1 2 3 4 ... 39 Next »

Figure 111: Rule Alerts History List

### 4.9.3.3 Edit Rule

- Click on “Grow Areas” tab.

Grow Areas

2  
Total

1  
Out of Network

Search:

Name	MAC ID	Facility Name	Container Name	Admin	Action
GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse	
GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Happy Valley farm	Jasmine	GrowHouse	

First < 1 > Last

Figure 112: Grow Areas Page

- Select particular Gateway.

Grow Areas / GH\_gw\_02:00:16:28:E4:69

2  
Total

0  
Out of Network

Search:

Name	MAC ID	Facility Name	Container Name	Admin
GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Rose Valley farm	Red Roses	GrowHouse
GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse

First < 1 > Last

Grow Area Name  
**GH\_gw\_02:00:16:28:E4:69**  
Location: Alamo, California, United States

Soil Nodes: 2 | Light Nodes: 3

Sections

Devices

Rules

Groups

Figure 113: Grow Area Selection



- Select “Sections” button.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69

2 Total

0 Out of Network

Search:

Name	MAC ID	Facility Name	Container Name	Admin
GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Rose Valley farm	Red Roses	GrowHouse
GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse

First < 1 > Last

Grow Area Name  
GH\_gw\_02:00:16:28:E4:69  
Location: Alamo, California, United States

Soil Nodes 2 | Light Nodes 3

Sections Devices Rules Groups

**Figure 114: Grow Area Section Selection**

- Select the section and Click on “Rules” button.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Grow Sections

Add +

NAME\*  
East Corner


Rose soil  
Type: Soil Node

NAME\*  
West Corner

Grow Section Name  
East Corner

Devices Rules Rules +

**Figure 115: Grow Section Rules**

- Select the section and click on edit icon .

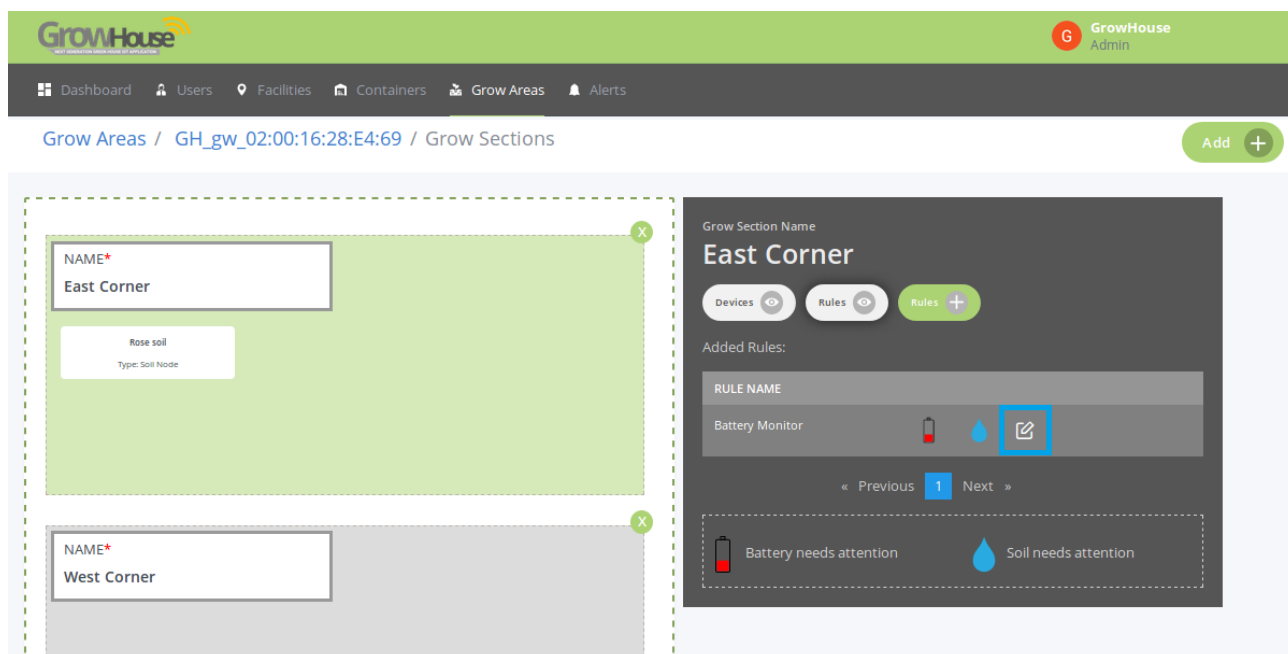


Figure 116: Edit Rules

- Edit required details.
- Click on “Submit” button.

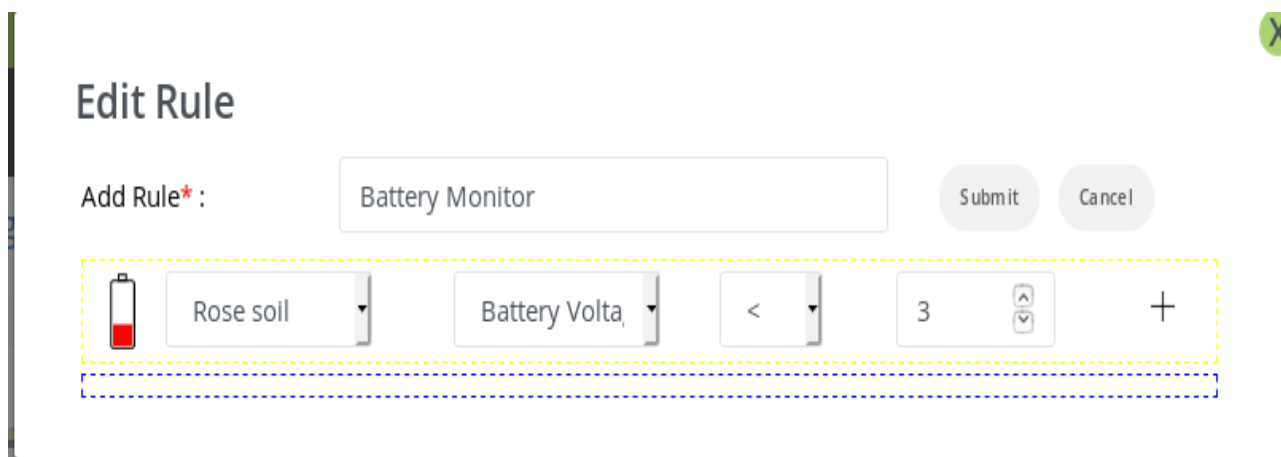


Figure 117: Edit Rules - Rule's details

- “Rule update request sent successfully” message will be displayed on successful update of rule.

#### 4.9.3.4 Delete Rule

Admin users can delete a Rule by following below steps.

- Click on “Grow Areas” tab

GrowHouse Admin

Dashboard Users Facilities Containers **Grow Areas** Alerts

Grow Areas

2 Total

1 Out of Network

Search:

Name	MAC ID	Facility Name	Container Name	Admin	Action
GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse	
GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Happy Valley farm	Jasmine	GrowHouse	

First < 1 > Last

Figure 118: Grow Areas Page

- Select particular Gateway.

GrowHouse Admin

Dashboard Users Facilities Containers Grow Areas Alerts

Grow Areas / GH\_gw\_02:00:16:28:E4:69

2 Total

0 Out of Network

Search:

Name	MAC ID	Facility Name	Container Name	Admin
GH_gw_02:00:87:D2:3C:C8	02:00:87:D2:3C:C8	Rose Valley farm	Red Roses	GrowHouse
GH_gw_02:00:16:28:E4:69	02:00:16:28:E4:69	Rose Valley farm	Red Roses	GrowHouse

First < 1 > Last

Grow Area Name  
GH\_gw\_02:00:16:28:E4:69  
Location: Alamo, California, United States

Soil Nodes: 2 | Light Nodes: 3

Sections Devices

Rules Groups

Figure 119: Grow Area Selection

- Click on “Rules” button.

The screenshot shows the GrowHouse Admin interface. The top navigation bar includes 'Dashboard', 'Users', 'Facilities', 'Containers', 'Grow Areas', and 'Alerts'. The breadcrumb trail is 'Grow Areas / GH\_gw\_02:00:16:28:E4:69'. On the left, there are two summary cards: '2 Total' and '0 Out of Network'. The main content area features a search bar and a table with columns: Name, MAC ID, Facility Name, Container Name, and Admin. The table lists two entries for 'GH\_gw\_02:00:16:28:E4:69'. To the right, a sidebar shows the 'Grow Area Name' and 'Location'. Below this, there are four buttons: 'Sections', 'Rules' (highlighted with a blue box), 'Devices', and 'Groups'.

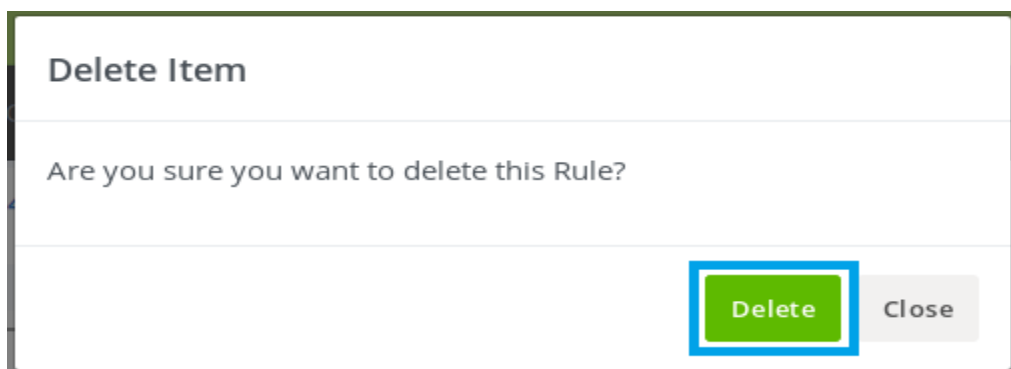
Figure 120: Grow Area Rules

- Click on delete icon  against the rule to be deleted.

The screenshot shows the 'Rules' page in the GrowHouse Admin interface. The breadcrumb trail is 'Grow Areas / GH\_gw\_02:00:16:28:E4:69 / Rules'. On the left, there is a summary card showing '2 Total'. The main content area features a search bar and a table with columns: Rule Name, Grow Area, Container, Facility, and Actions. The table lists two rules: 'Water [East Corner]' and 'Battery Monitor [East Corner]'. The 'Actions' column for the first rule has a delete icon (trash can) highlighted with a blue box. The table also includes pagination controls at the bottom.

Figure 121: Delete Rules

- Click on “Delete” button.



**Figure 122: Delete Rules Confirmation**

- “Rule deleted successfully” message will be displayed on successful deletion of Rule.

## 4.10 Alerts

Alerts page will show all the Alerts generated based on conditions of the Rules.

- Select “Alerts” tab.

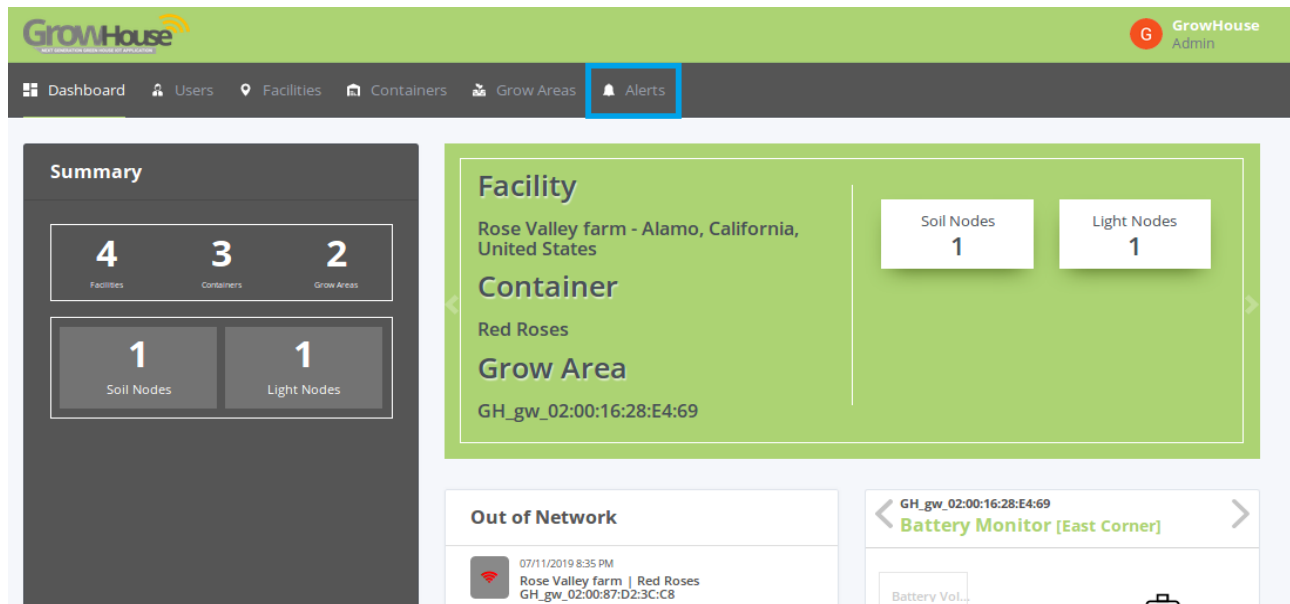


Figure 123: Alerts Page

- Below figure shows all Alerts for all Rules.

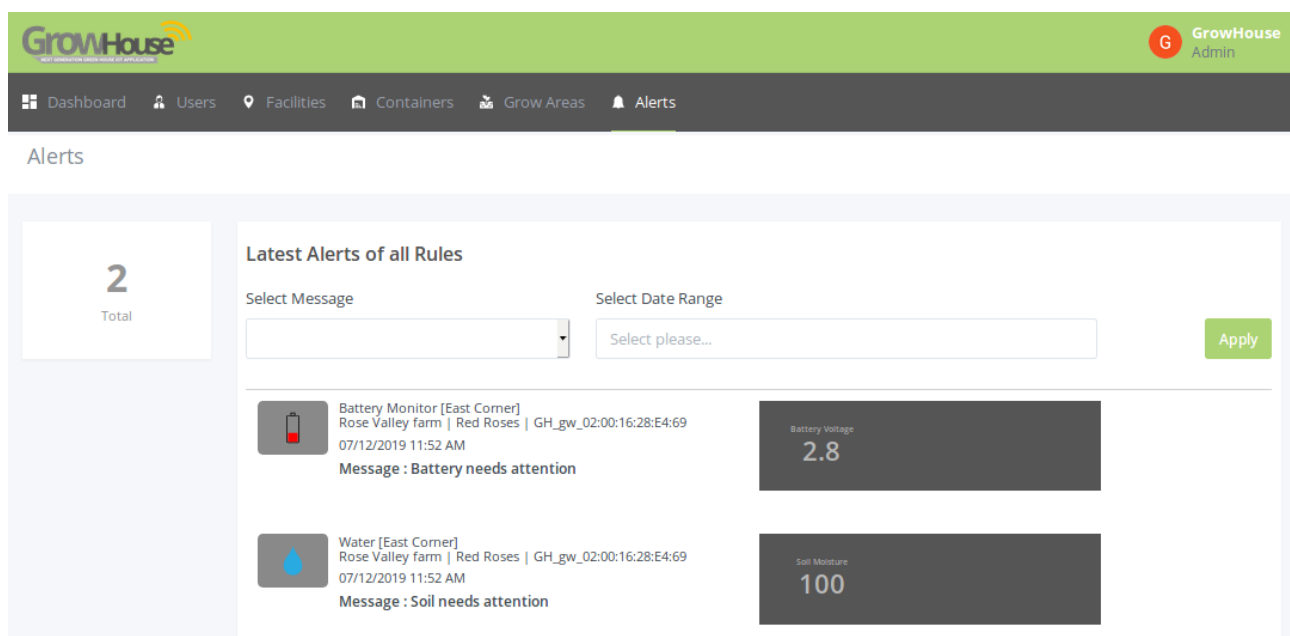







Figure 124: List of Alerts

➤ Following is the representation of alerts for various plant / atmospheric conditions:

Alert symbol	Condition of alert generation.
 Battery needs attention	<p>“Battery needs attention” alert will be generated when condition set for Battery Voltage in a rule is satisfied.</p> <p>For example, if the condition for Battery Voltage is set as <math>&lt; 2.5</math> then “Battery needs attention” will be generated when Battery Voltage goes below 2.5.</p>
 Soil needs attention	<p>“Soil need attention” alert will be generated when condition set for Soil pH or Soil Moisture value in a rule is satisfied</p> <p>For example, if the condition for Soil pH is set as <math>&lt; 5</math> OR Soil Moisture as <math>&gt; 50</math> then “Soil need attention” alert will be generated when Soil pH value goes below 5 OR Soil Moisture value goes above 50.</p>
 OK	<p>“OK” alert will be generated when any condition set for Soil pH, Soil Moisture or Soil battery voltage is ok.</p> <p>For example, if the condition for Soil pH is set as <math>&lt; 5</math> then “OK” alert will be generated when Soil pH value is more than 5.</p>
 Latest device information is not available	<p>“Latest device information is not available” alert will be generated when any device using which a Rule is created goes offline</p>
 Device is not available	<p>“Device is not available” alert will be generated when device is deleted from Grow house web portal but the Rule(s) created using a device is not deleted from Growhouse web portal</p>

**Table 6: Alerts Description**

## Sample Alerts:

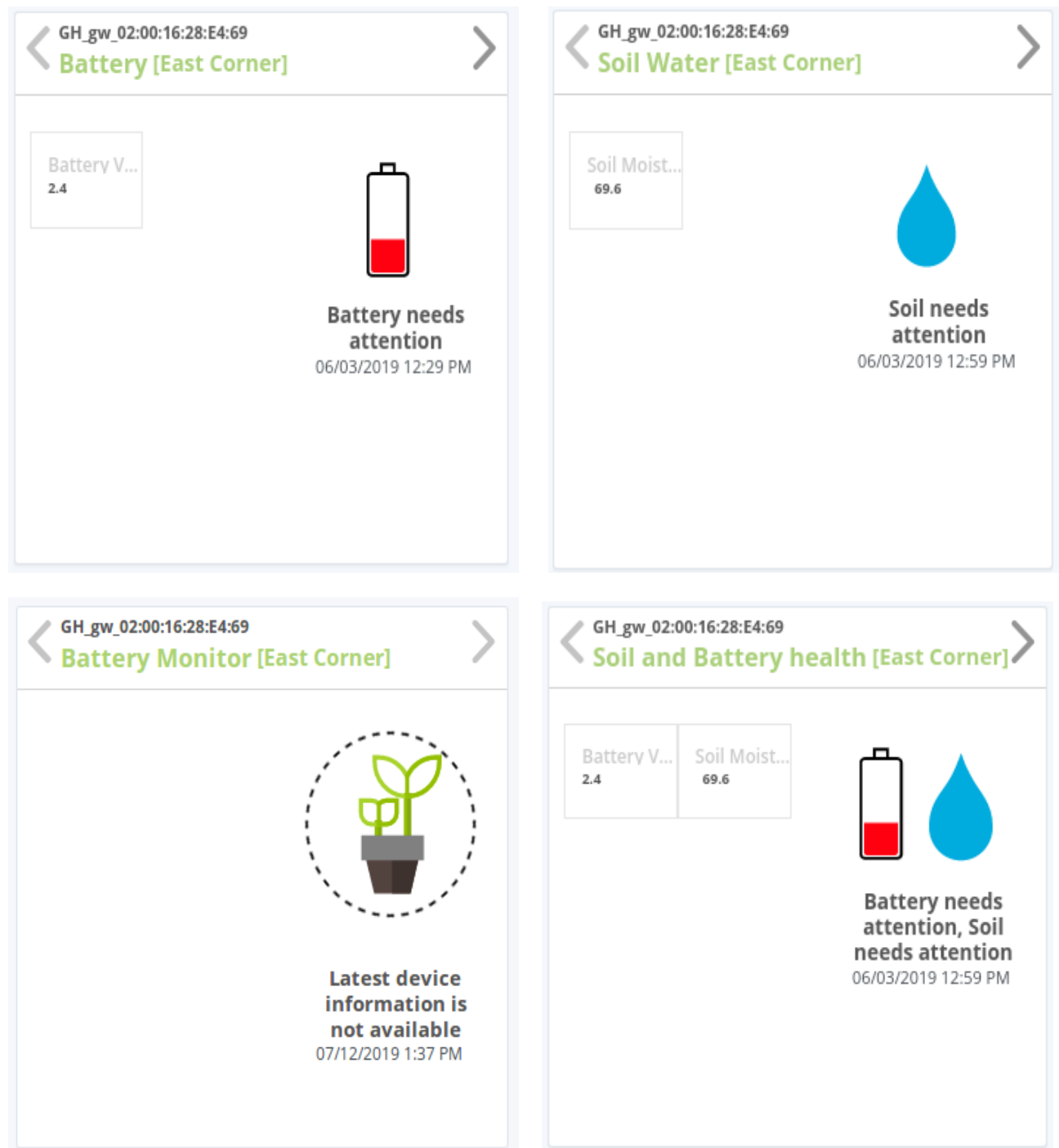


Figure 125: Sample Alerts



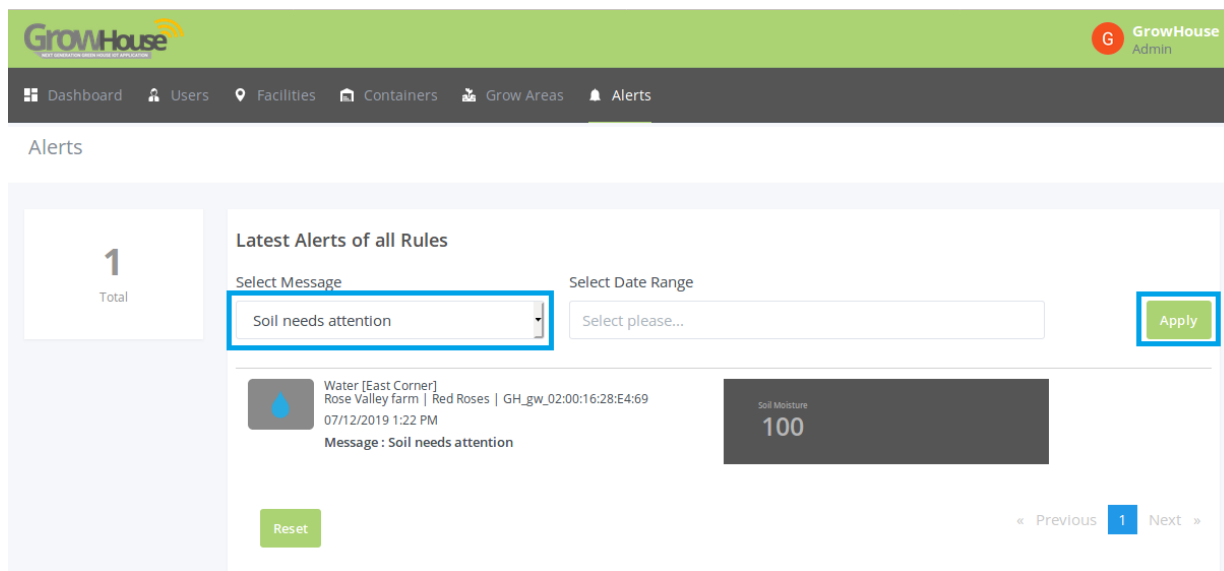
Here, GH\_gw\_02:00:16:28:E4:69 is the Grow Area name, Soil and Battery health is the Rule name and "East Corner" is the Grow Section name.



### 4.10.1 Alert filtration

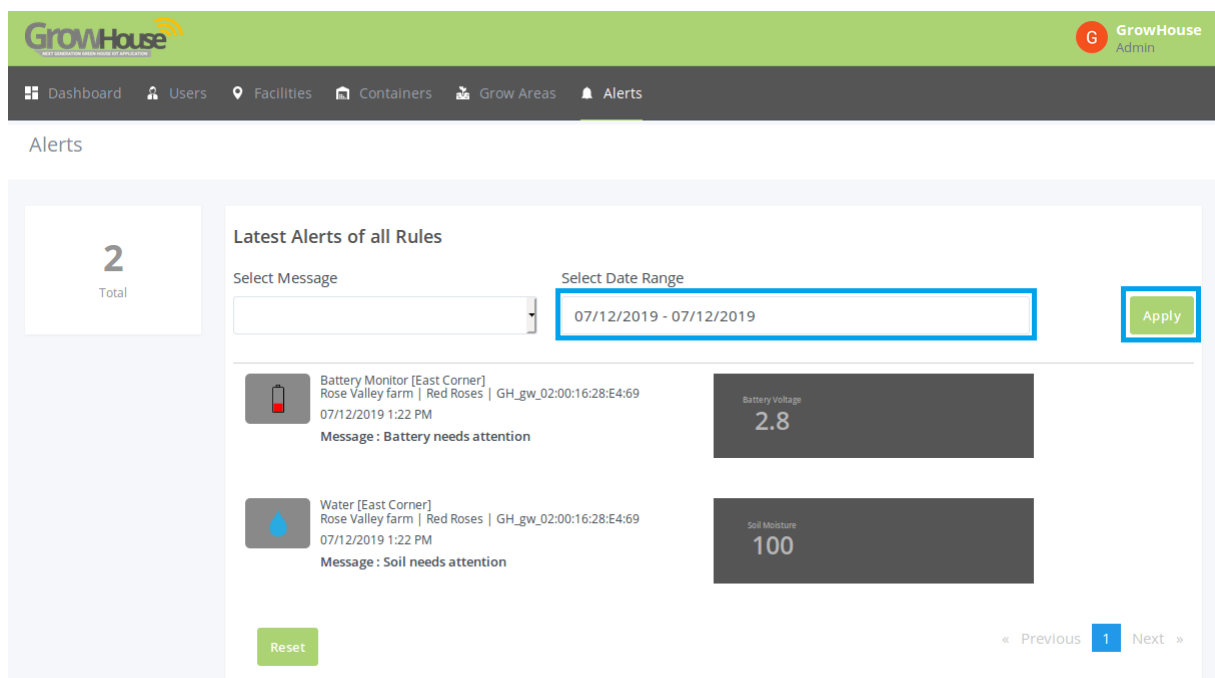
User can filter out alerts based on specific message or date range.

- Select Message from drop down menu to filter Alerts based on a message.
- Click on “Apply” button.
- Below image shows filtered out Alerts based on selected message.



**Figure 126: Alert Filter based on Message**

- Select Date Range from drop down Menu to filter Alerts based on a date range.
- Click on “Apply” button.
- Below image shows filtered out Alerts based on selected date range.



**Figure 127: Alert Filter based on Date Range**

## **4.11 Step by Step Instructions**

Refer sections 4.1 to 4.9.

## **4.12 Instructions/Conventions/Errors**

NA

## **4.13 Malfunctions**

NA

## **4.14 Emergencies/Messages**

NA

## **4.15 Specific Functionality Trouble Shooting**

## 5 LIMITATIONS AND CONSTRAINTS

NA

## 6 WARRANTY AND SUPPORT

NA

## 7 UPGRADE AND ADD ON MODULES

NA

## 8 TECHNICAL SUPPORT

Email ID: *growhouse@einfochips.com*

## 9 APPENDIX

### 9.1 Hardware Setup

This section describes the hardware setup for the Growhouse system.

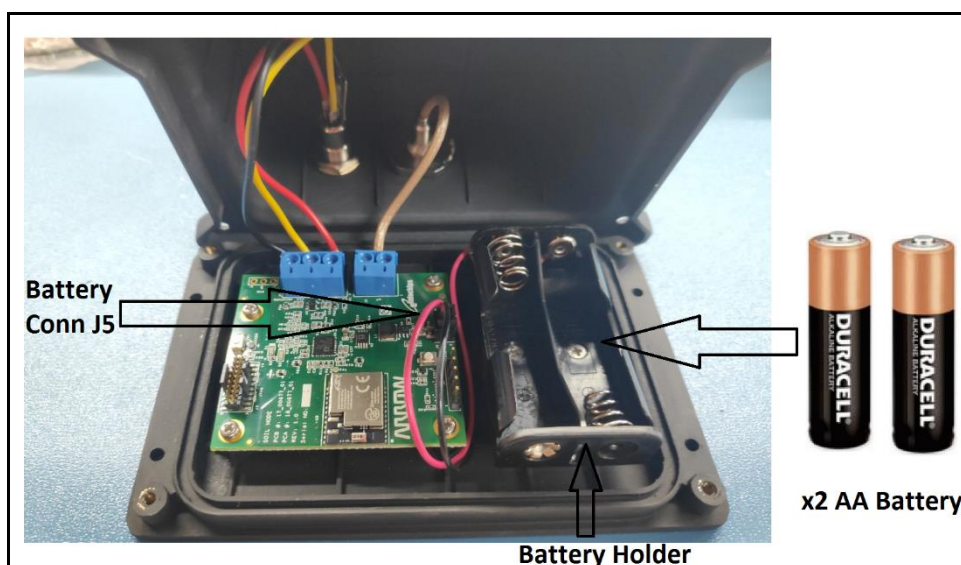
#### 9.1.1 Soil Node

1. A typical Soil Node is as shown in below image.



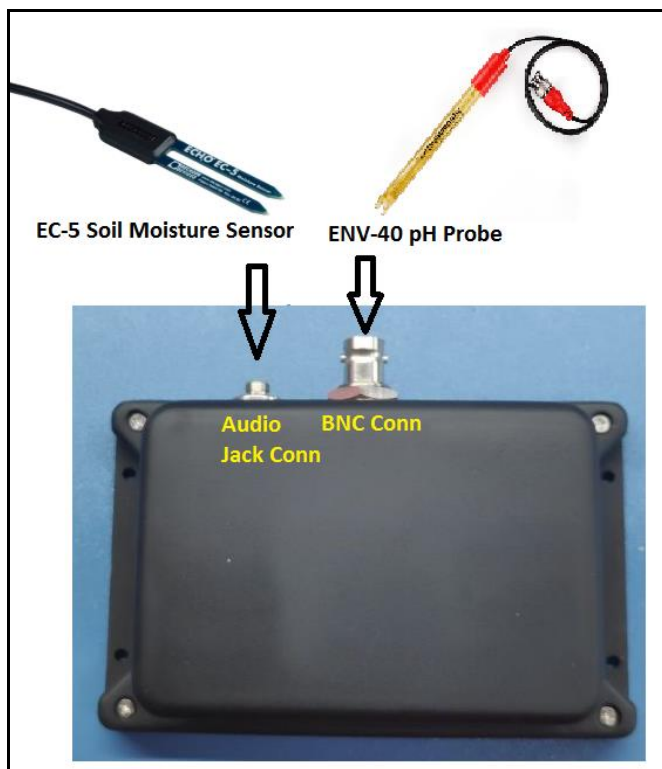
**Figure 128: Soil Node**

2. 2x AA batteries are required. Remove the top cover of Soil Node enclosure to install the batteries. After connecting the batteries connect battery cable at Battery Conn J5 as shown below.



**Figure 129: Soil Node- Battery Connections**

3. Replace cover, then install the moisture sensor using the audio jack, and the pH sensor using the BNC jack per image below.



**Figure 130: Soil Node – Sensor Connection**

4. Soil Node is now ready to be Provisioned/talk to Gateway.



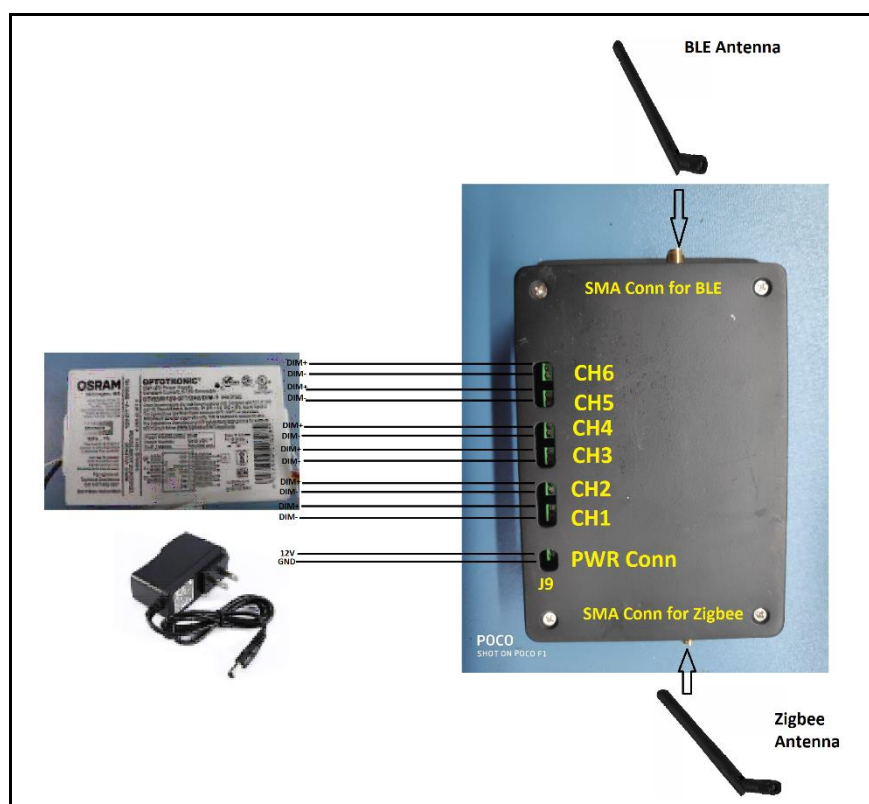
### 9.1.2 LED Node

1. A typical LED Node is as shown in below image



**Figure 131: LED Node**

2. Connect 2x external antennas. 6x independent 0-10V dimming output channels are provided for connecting to LED power supplies. Utilize as many channels as required. Once all required dimming channels are connected, connect the external power supply (12VDC, 1A) to the power input connection (J9).

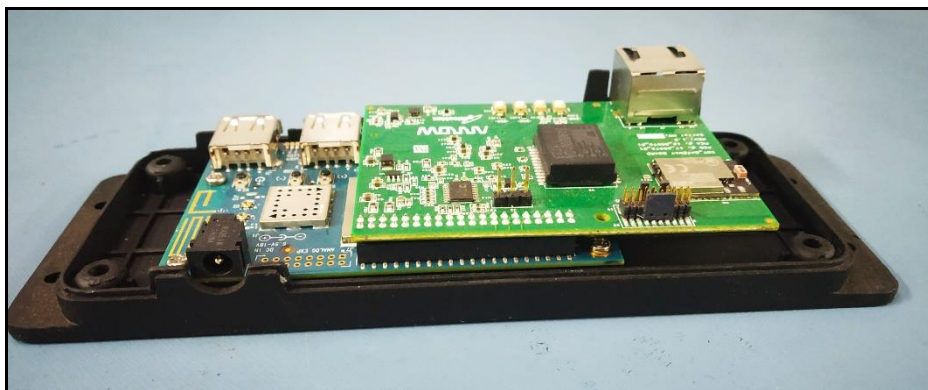


**Figure 132: LED Node – Power, Channels & Antenna Connections**

3. Now turn on the switch of external power supply to power up the LED Node. LED Node is now ready to be provisioned/talk to Gateway.

### 9.1.3 IOT Gateway

1. A typical IOT Gateway is as shown in below image.  
In below image, it can be seen that there are two boards in the IOT Gateway.
  - Dragon Board 410C
  - Mezzanine boardBoth the boards are stack with each other using board to board connectors.



**Figure 133: IOT Gateway**



**Figure 134: IOT Gateway – With Enclosure**

2. IOT Gateway has ethernet connectivity, which is used to connect it to the Growhouse web portal.  
Connect ethernet cable at J4 connector of IOT Gateway before powering it up.



**Figure 135: IOT Gateway – Ethernet connectivity**

3. Connect 12V external power adapter to dragon board 410C power connector. External power adapter rating must be: 12V @ 2A.



Figure 136: IOT Gateway – Power connection

4. Now switch on the power adapter to power the IOT Gateway. After IOT Gateway boots up, it is ready to be provisioned.

## 9.2 Factory Reset Soil Node

1. Make sure that Soil Node is setup and in power on state. Refer [Section 9.1.1](#) on how to setup the Soil Node.
2. Press and hold **SW2** switch of Soil Node for 5 seconds and then release. Refer below image to locate **SW2** on Soil Node.

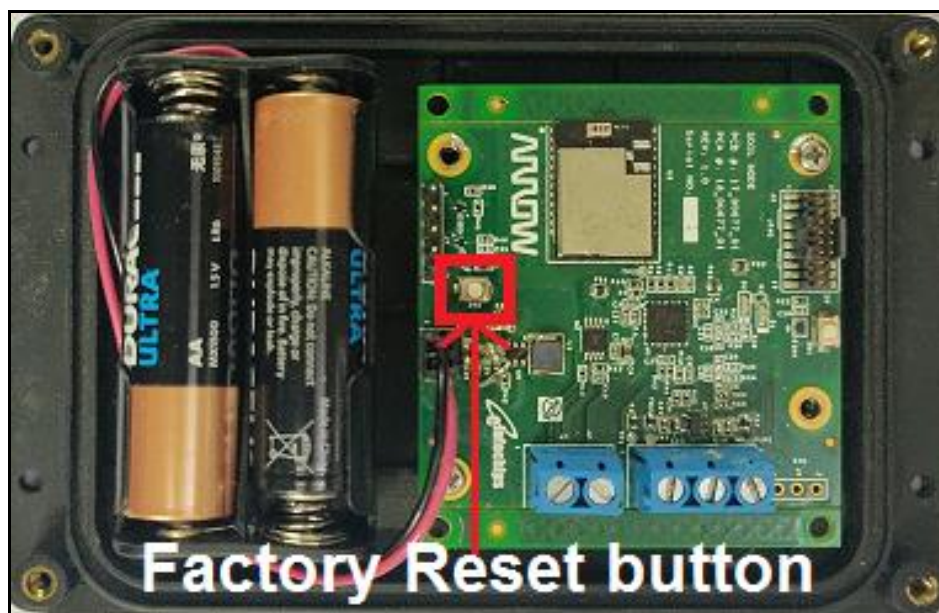


Figure 137: Soil Node – SW2 location

**Note:** If Soil node is not deleted from Growhouse web portal and user performs factory reset of Soil node then it is recommended to delete such Soil node from Growhouse web portal.



## 9.3 Factory Reset LED Node

### 9.3.1 Zigbee

1. Make sure that LED Node is setup and in Power on state. Refer [Section 9.1.2](#) on how to setup the LED Node.
2. Press and hold **SW4** switch of LED Node for 5 seconds and then release. Refer below image to locate **SW4** on LED Node.



Figure 138: LED Node – SW4 location

**Note:** If LED node is not deleted from Growhouse web portal and user performs factory reset of LED node then it is recommended to delete such LED node from Growhouse web portal.



### 9.3.2 BLE

1. Make sure that LED Node is setup and in Power on state. Refer [Section 9.1.2](#) on how to setup the LED Node.
2. Press and hold **SW3** switch of LED Node for 5 seconds and then release. Refer below image to locate **SW3** on LED Node.

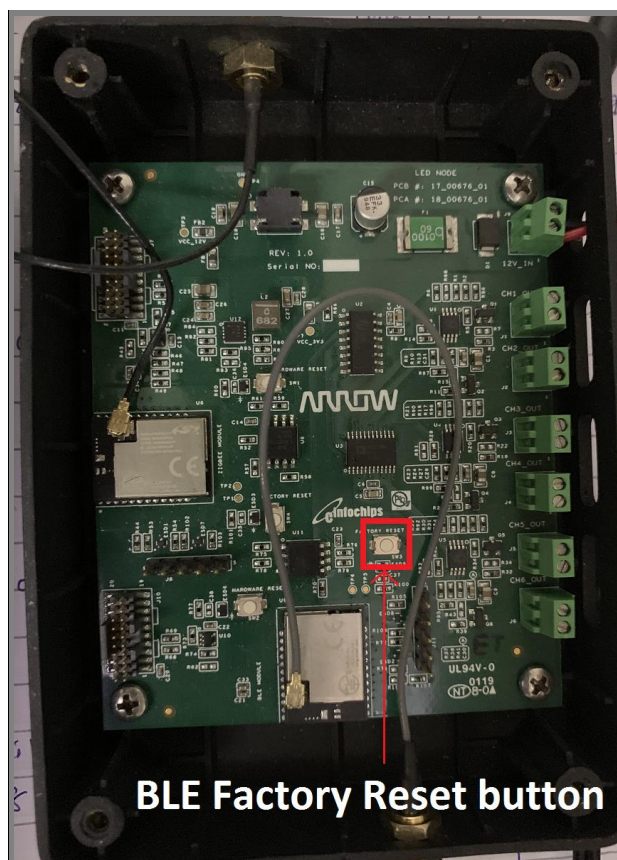


Figure 139: LED Node – SW3 location

## 9.4 Factory Reset IOT Gateway

1. Make sure that IOT Gateway is setup and in power on state. Refer [Section 9.1.3](#) on how to setup the IOT Gateway.
2. Press and hold **SW4** switch of IOT Gateway for 5 seconds and then release. Refer below image to locate **SW4** on IOT Gateway.

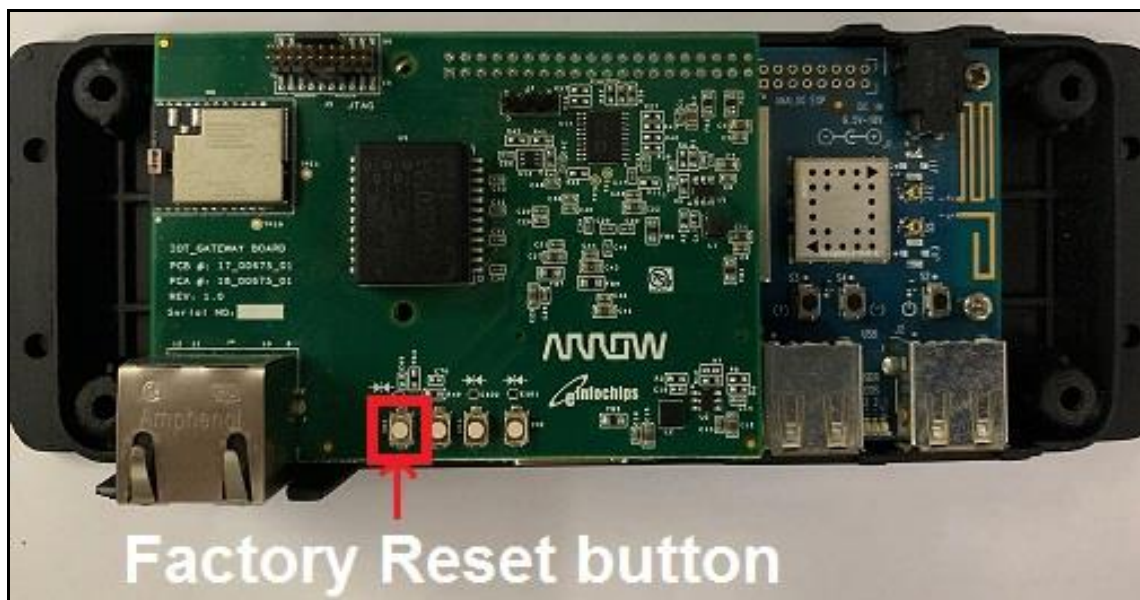


Figure 140: IOT Gateway – SW4 location

**Note:** If Gateway is not deleted from Growhouse web portal and user perform factory reset of Gateway then it is must to delete such Gateway from Growhouse web portal also otherwise such Gateway will not be discovered in Growhouse Mobile application.