

Settings and Configuration

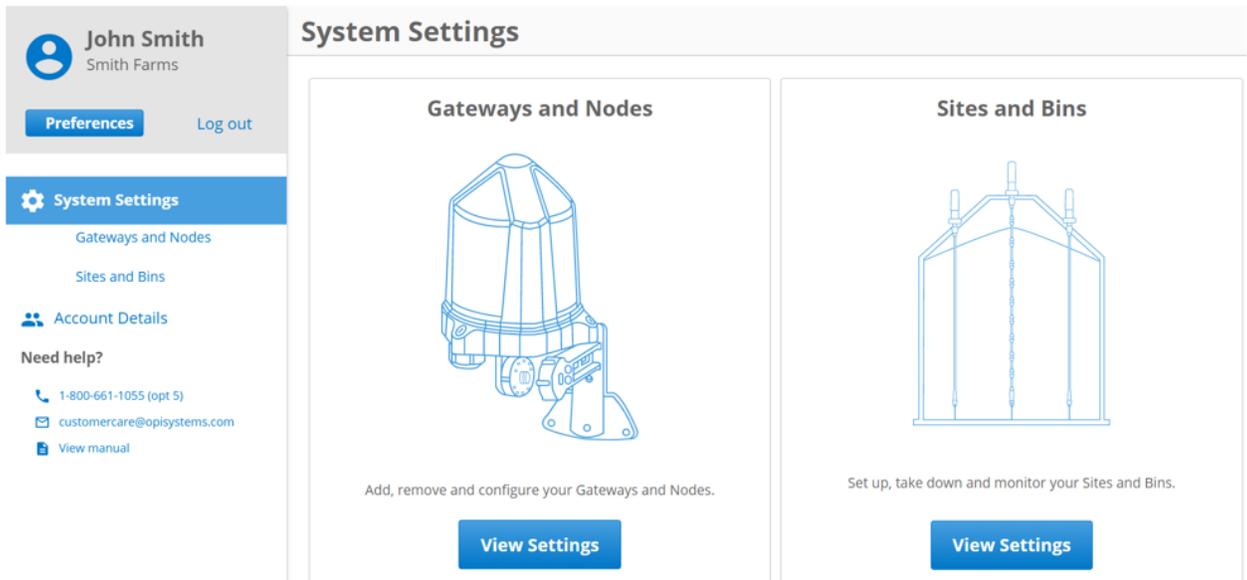
This section covers the setup and configuration of the physical hardware installed at the site. It is important that these steps are followed accurately to ensure all equipment is working as expected and reporting data

The instructions in this section will cover the configuration of the following items:

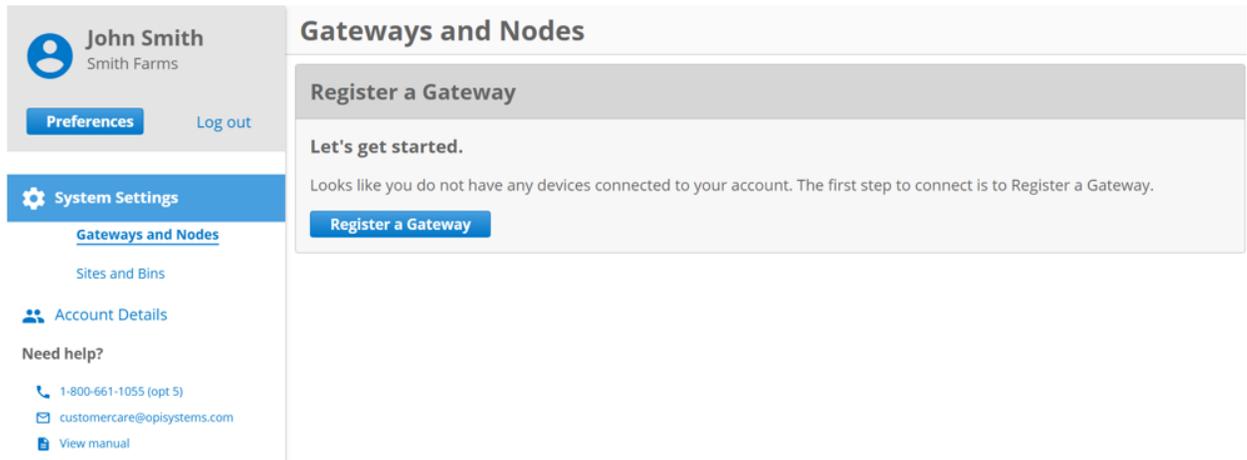
- **Gateways**
- **Cable Nodes**
- **Fan Node Radio**
- **Sites**
- **Bins**
- **Cables**
- **Weather Station**

4.2.1 Gateways

1. Tap the **View Settings** button to start the process of registering a Gateway.



2. Tap **Register a Gateway**



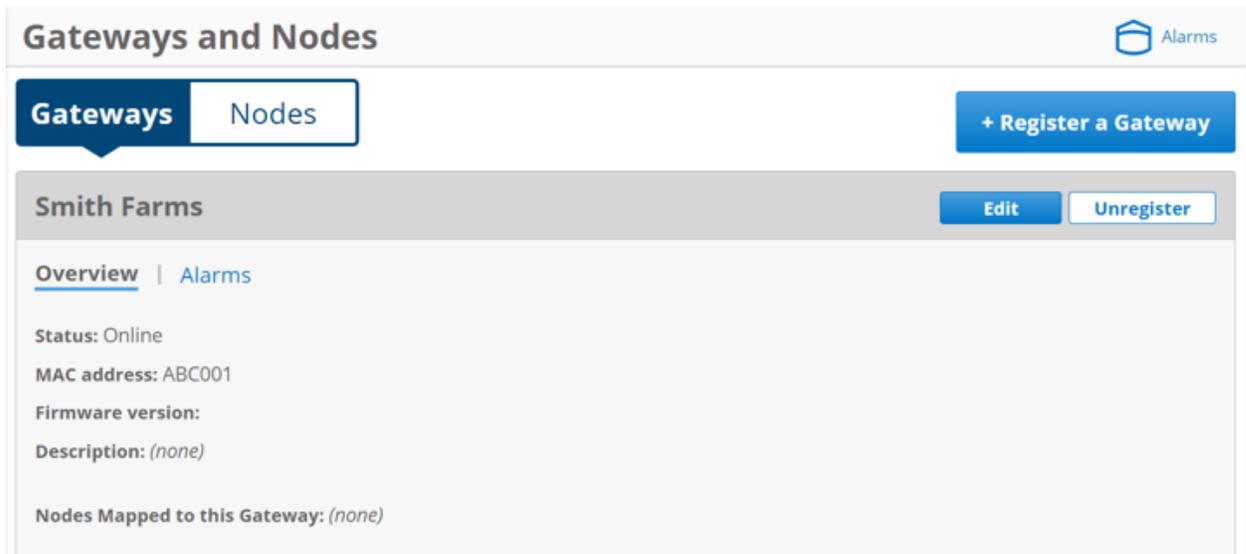
3. A pop up will appear. **Fill in** all applicable information (MAC Address, PIN and Gateway Name).

Note: In certain instances, the PIN # on the Gateway sticker may only have 3 digits. If this is the case add a zero before the first digit when entering the PIN #. (e.g., 0123)

The screenshot shows a registration form with the following fields: a text box containing 'ABC001', a 'PIN' field with a 'What's this?' help icon and the value '1234', a 'Gateway Name' field with the value 'Smith Farms', and an optional 'Description' text area. At the bottom are two buttons: a blue 'Register' button and a 'Cancel' link.

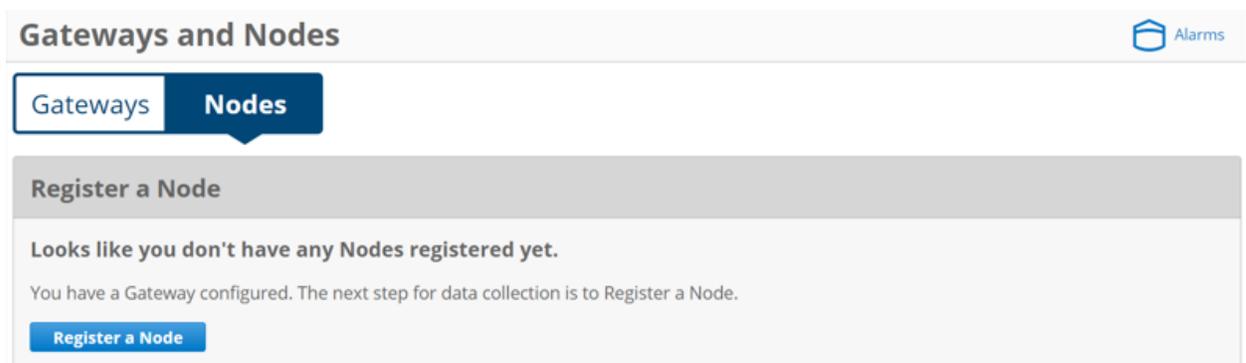
4. Tap **Register** button to finish the process.

Note: When the registration of the Gateway has been complete, you should see the following screen. It is important that the **Status** appear as Online. This way you will know it has been successful. It might take a couple of minutes to show the online status.



4.2.2 Cable Nodes

1. Tap the **Nodes** button to start the process of registering a Cable Node.



2. Tap **Register a Node** button.
3. A pop up will appear. **Fill in** all applicable information (MAC Address, PIN, and Node Name).

Note: In certain instances, the PIN # on the Cable Node sticker may only have 3 digits. If this is the case add a zero before the first digit when entering the PIN #. (e.g., 0123)

Enter Node Details



To register your Node, please fill out the details below.

MAC address

PIN

Node name

Description (optional)

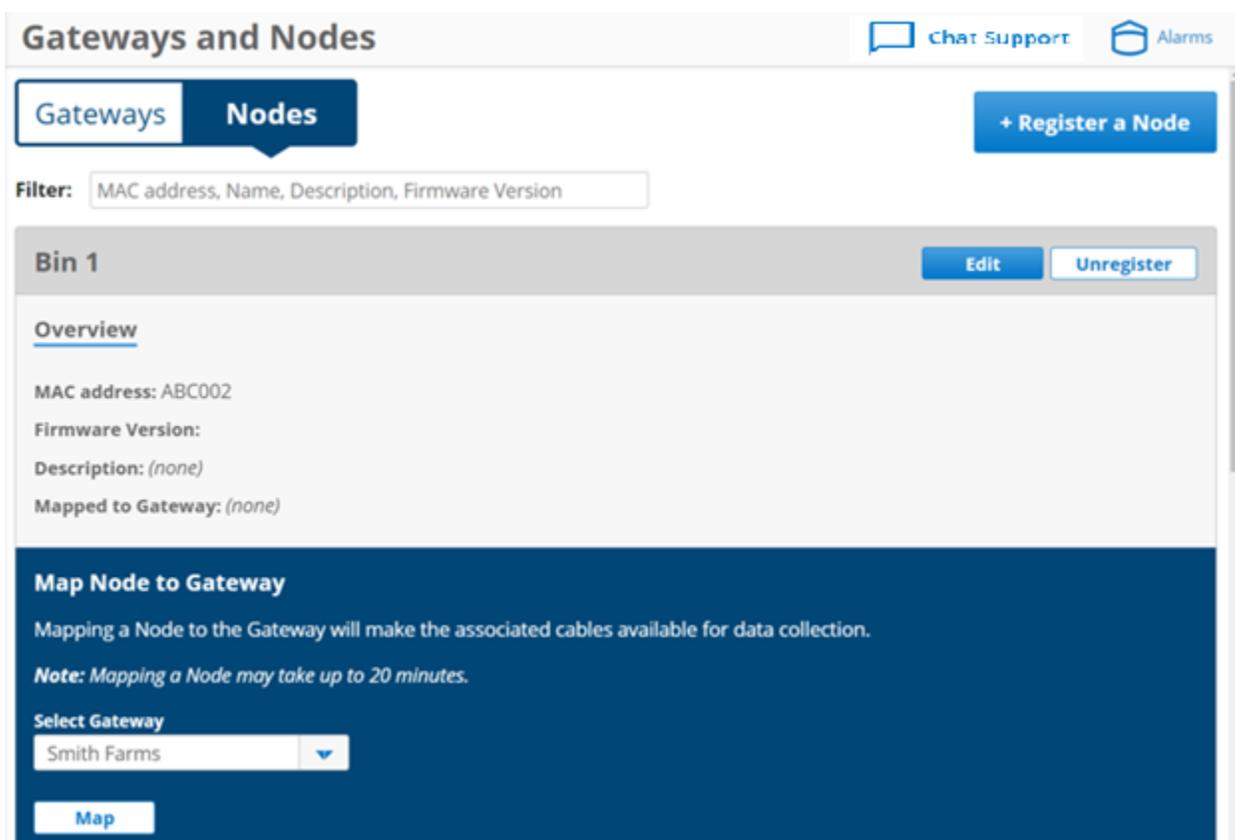
Register

Cancel

4. Tap **Register** button to finish the process.
5. Repeat the Cable Node registration process for all the Nodes that have been installed at the site until complete.

Note: Once all the Cable Node have been registered, they will need to be **Mapped** to the associated Gateway onsite.

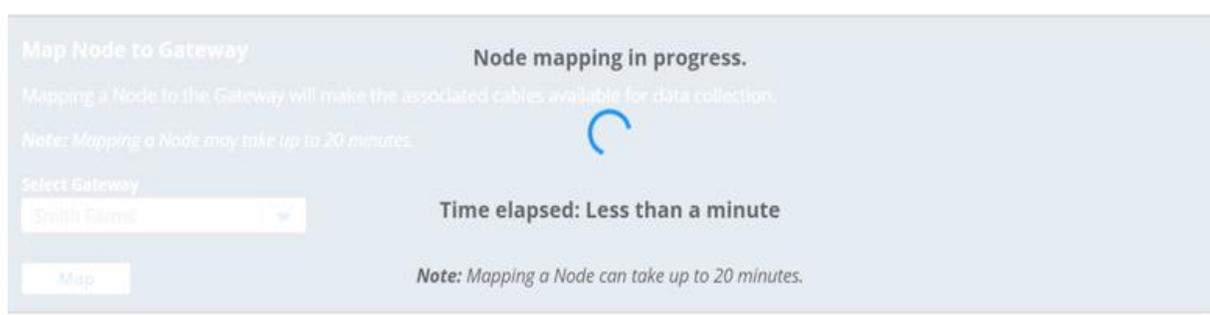
1. Using the Filter select the Cable Node needing to be mapped to a Gateway.



Note: If there are multiple Gateways registered use the dropdown list to select the appropriate one the Cable Node needs to be mapped (associated) to.

- 2. Select the appropriate Gateway from the dropdown list and tap the **Map** button.

Note: Mapping typically takes a couple minutes per Cable Node. During this process, the time elapsed will be displayed on the screen. If it takes longer than 20 minutes a time out message will appear. This typically indicates a communication issue.



Note: Once a Cable Node has been mapped to a Gateway the cables associated to the Node will be displayed as shown below.

The screenshot shows a web interface titled "Gateways and Nodes". At the top right, there are icons for "Weather" and "Alarms". The main content area is for "Bin 1", with "Edit" and "Unregister" buttons. Below this, there are tabs for "Overview" and "Cables (3)". A table displays three cables with columns for Cable Type, MAC, Number, Channel, Sensors, Bin, and Pos. Below the table is an "Unmap Node" section with a warning message and an "Unmap" button.

Cable Type	MAC	Number	Channel	Sensors	Bin ↑	Pos
Moisture	ABC002	1	2	7		
Temperature	ABC002	2	2	6		
Temperature	ABC002	3	2	6		

4.2.4 Register Fan Node Radio

1. Tap the **Nodes** button to start the process of registering a Fan Node Radio.
2. Tap **Register a Node** button.
3. A pop up will appear. **Fill in** all applicable information (MAC Address, PIN, and Node Name)

Note: In certain instances, the PIN # on the Fan Node Radio sticker may only have 3 digits. If this is the case add a zero before the first digit when entering the PIN #. (e.g.,

Enter Node Details ✕

To register your Node, please fill out the details below.

MAC address

PIN

Node name

Description (optional)

Register Cancel

4. Tap **Register** button to finish the process.
5. Repeat the Node registration process for all the Fan Node Radio that have been installed at the site until complete.

4.2.5 Map Fan Node Radio to Gateway

1. Using the Filter select the Fan Node Radio needing to be mapped to a Gateway.
2. If there are multiple Gateways, select the appropriate one from the dropdown list and tap the **Map** button.

Note: Mapping typically takes a couple minutes per Fan Node Radio. During this process, the time elapsed will be displayed on the screen. If it takes longer than 20 minutes a time out message will appear. This typically indicates a communication

Note: Once a Fan Node Radio has been mapped inputs (Weather Station) or outputs (Fans) that are connected to the Fan Node using registered Fan Node Radio will automatically be displayed as shown below.

Gateways and Nodes

Bin 1 FNR Edit Unregister

1 Fan Nodes connected.

[Overview](#) | [Control Outputs \(2\)](#) | [Weather Stations \(1\)](#)

Signal Strength: 80%

Battery: 100% (50V)

MAC address: ABC003

Firmware Version:

Fan Node (MAC #HABC001) Firmware Version: 1.0.1

Description: *(none)*

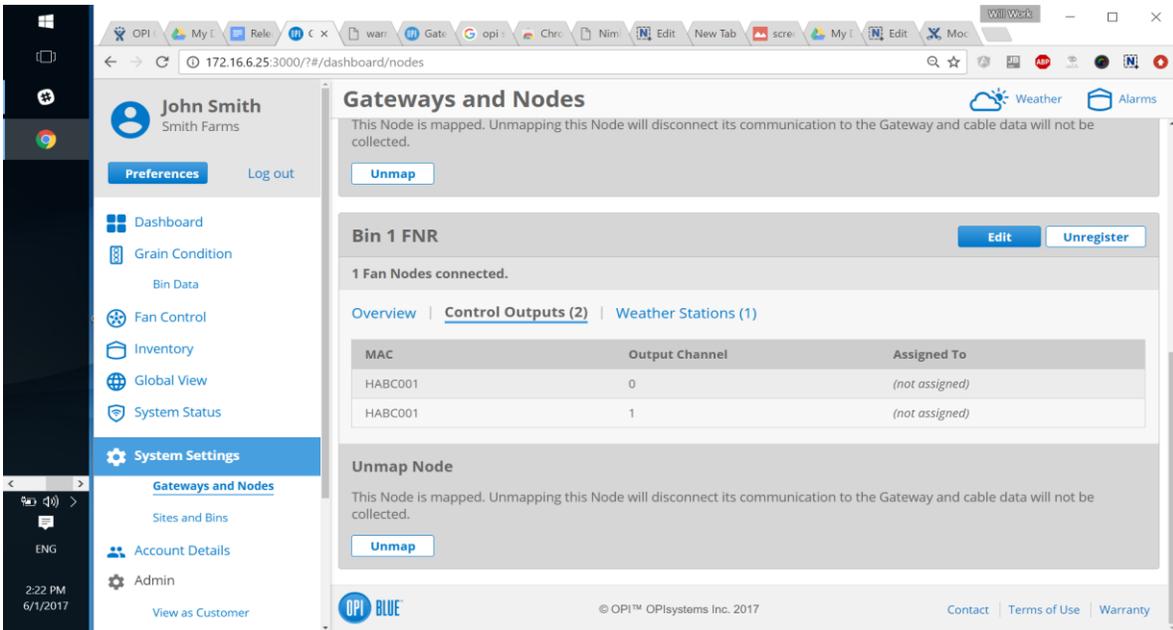
Mapped to Gateway: [Smith Farms](#)

Unmap Node

This Node is mapped. Unmapping this Node will disconnect its communication to the Gateway and cable data will not be collected.

Unmap

Tap on either the **Control Outputs** or **Weather Station** to provide additional information by displaying the connected devices.



MAC	Output Channel	Assigned To
HABC001	0	<i>(not assigned)</i>
HABC001	1	<i>(not assigned)</i>

Note: The Weather Station Icon  will appear at the top right-hand corner once a Fan Node with a Weather Station has been mapped.

4.2.6 Create a Site

Note: Because the online system needs to match the physical sites, you will need to create the site and the associated bins on that site. If there is more than one site (Gateway in use) there will need to be multiple sites created.

1. From the menu tap on **Sites and Bins**.
2. Tap **Create a Site** button.
3. Fill in the required information, **Site Name** along with **Latitude** and **Longitude**.

Create a Site

Site Name

Description (optional)

Latitude

Longitude

[📍 Use your current location](#)

Note: If you are unsure of the Latitude and Longitude of your site location, you can use the map feature provided. Simply scroll on the map to the appropriate location and click on the location to place a marker. Once a marker has been placed the Latitude and Longitude fields will auto populate with the information. Using the **Satellite** view on the map can aid in finding the exact location more easily.

Location Picker

You may click on the map to update Latitude and Longitude.



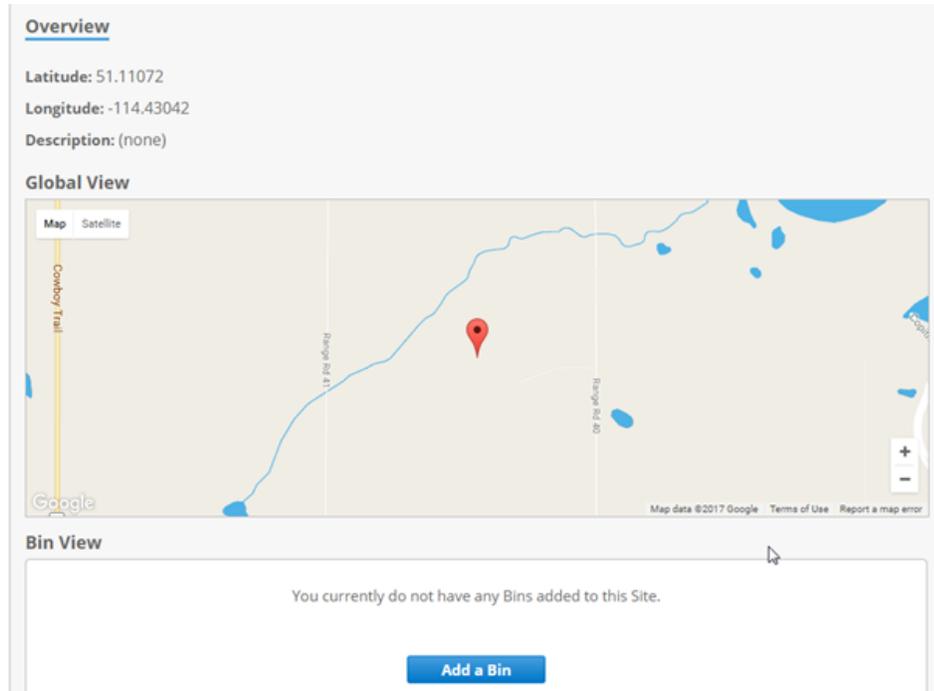
4. If there is a Weather Station to be associated to this site, **place a checkmark** in the Weather Station box.
5. Tap the **Save** button.

Note: If there are addition sites, repeat the previously noted steps until all sites have been created. If there are no additional sites. Move onto creating bins to be added to the site(s).

4.2.7 Create Bins

Note: Creating Bins for a site is a relatively simple seven step process. The seven steps include: **Bin Details**, **Grain Info**, **Bin Parameters**, **Alarm Details**, **Add Cables**, **Add Weather Station** (if applicable), **Add Fans** and/or **Heaters**. (if applicable).

1. Tap the **Add a Bin** button located at the bottom of the Sites screen, located below the map. Alternatively, you can tap **Bins** button and the **Create a Bin** button within the bins screen.



Bin Details

1. A pop up will appear on the screen. **Enter** all necessary Bin Details (Bin Name, Floor Type and using the drop-down Add to Site)

Enter Bin Details 1 2 3 4 5 6 7

To create a Bin, please enter the details below.

Bin Name

Floor Type

Description (optional)

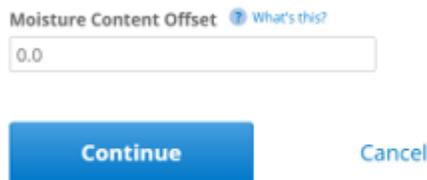
Add to Site

2. Tap the **Continue** button.

Enter Grain Info

3. A pop up will appear on the screen. **Enter** all necessary Grain Info (Meter Type, Grain Type, Class, Curve (Curve will auto populate if only one exists)).

Note: After all pertinent information has been entered, you will notice a **Moisture Content Offset** field. This field would be used if you notice a variance in the moisture readings in systems and those measured at the place you market your crop. OPIsystems Inc. has developed all the grain curves in house and they are calibrated for specific moisture meters. This greatly enhances the moisture reading data accuracy. Should you have any questions regarding the Moisture Meter selection or grain curves please contact OPIsystems Inc. at 1-800-661-1055 (Opt. 1)



The screenshot shows a mobile application interface for entering 'Moisture Content Offset'. At the top, the text 'Moisture Content Offset' is displayed next to a small blue icon and the text 'What's this?'. Below this is a white text input field containing the value '0.0'. At the bottom of the pop-up, there are two buttons: a blue button labeled 'Continue' and a grey button labeled 'Cancel'.

4. Tap the **Continue** button.

Enter Bin Parameters

5. A pop up will appear on the screen. **Enter** all necessary Bin Parameter Info (Fill Date, Bin Capacity, Price and Grain Level).

Note: There are two options for the Grain Level. Select **Auto Detect** or **Set Manually**. With the auto detect selected the system uses the cable data to determine the grain level in the bin by determining what sensors are in the grain and which are not. If it is set to manual a Level field appears and the bushel count of the grain in storage would be put into this field.

6. Tap the **Continue** button.

Enter Alarm Details

7. A pop up will appear on the screen. **Enter** all necessary Alarm Details, making sure a checkmark is in both the **Maximum Temperature Reached** and **Temperature Rate of Rise** to activate them.

Enter Alarm details 4 5 6 7

Please select the types of alarms you would like to receive for this bin.
Note: you may configure email and SMS alarm notifications in [Preferences](#).

Maximum Temperature Reached

Maximum Temperature
30.0 °C

Temperature Rate of Rise

Rate of Rise
5.0 °C per Week

Continue Cancel

8. Tap the **Continue** button.

Add Cables

Note: Any cables that have been connected to a Cable Node will appear under the **Cable Available to Add** section.

9. To add a cable(s) into a bin Tap the **+** at the end of a chosen cable.

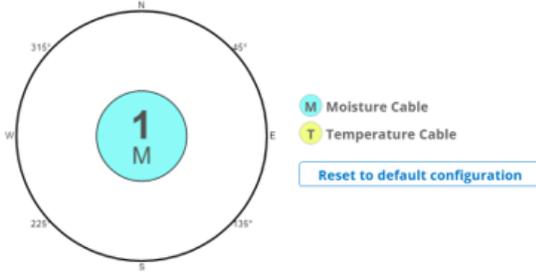
Cables Available to Add

Type	Node	MAC	Channel	Number	Sensors	
Moisture	Bin 1	ABC002	2	1	7	+
Temperature	Bin 1	ABC002	2	2	6	+
Temperature	Bin 1	ABC002	2	3	6	+

The cable will move from the **Cables Available to Add** section to the **Added Cables** section and the added cable will appear inside the bin as shown below.

Add Cables ✓ ✓ ✓ ✓ 5 6 7 ✕

If you do not want to set up cables at this time, you may [skip this step](#).



Added Cables

Cable Position	Node	MAC	Channel	Number	Sensors	
1	Moisture	Bin 1	ABC002	2	1	7

Cables Available to Add

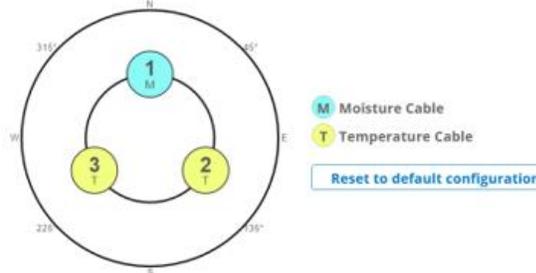
Type	Node	MAC	Channel	Number	Sensors
Temperature	Bin 1	ABC002	2	2	6
Temperature	Bin 1	ABC002	2	3	6

Continue **Cancel**

10. Repeat the process to add until all specified cables have been added to the bin.

Add Cables ✓ ✓ ✓ ✓ 5 6 7 ✕

If you do not want to set up cables at this time, you may [skip this step](#).



Added Cables

Cable Position	Node	MAC	Channel	Number	Sensors	
1	Moisture	Bin 1	ABC002	2	1	7
2	Temperature	Bin 1	ABC002	2	2	6
3	Temperature	Bin 1	ABC002	2	3	6

11. *If necessary, you can reposition the cables within the bin to ensure the proper location. Tap the  located at the end of a specified cable to start the relocation process.

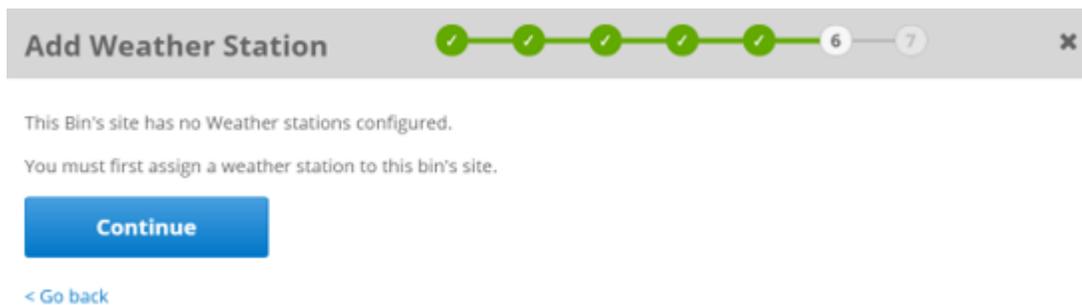
Added Cables

Cable Position	Node	MAC	Channel	Number	Sensors		
1	Moisture	Bin 1	ABC002	2	1	7	
Set angle (61-179) <input type="text" value="0"/> ° Select radius <input type="text" value="1"/> 							  
2	Temperature	Bin 1	ABC002	2	2	6	
3	Temperature	Bin 1	ABC002	2	3	6	

Note: When relocating cable(s) you can change the angle in which the cable angle has been set, in addition to changing the radius in which the cable has been positioned.

4.2.7 Add Weather Station

12. A pop up will appear if a Weather Station has been installed and you will be asked for confirmation to add to the bin/site. Tap the **Continue** button.



13. Any Weather Stations installed will be listed. **Select** the radio with the associated Weather Station or **Select** None if there will not be a Weather Station.

Add Weather Station

Select a weather station for this Bin.

Weather Station on "Bin 1 FNR" (MAC #HABC001)
 None

Note: only Weather Stations for this Bin's Site are listed.

[< Go back](#)

14. Tap the **Continue** button.

4.2.8 Add Fan

Note: The final step in the process will be to add any fans associated to the applicable bin.

15. Use the **drop-down arrow** to select the appropriate Node with Fan Control Outputs (There might be many to chose from depending how many bins have fan control hardware installed on them.)

Add Fan

If you do not want to add a fan at this time, you may [skip this step](#).

To add a fan, please enter the details below.

Node with Fan Control Output [What's this?](#)
 Bin 1 FNR (MAC #HABC001)

Output Channel [What's this?](#)
 1

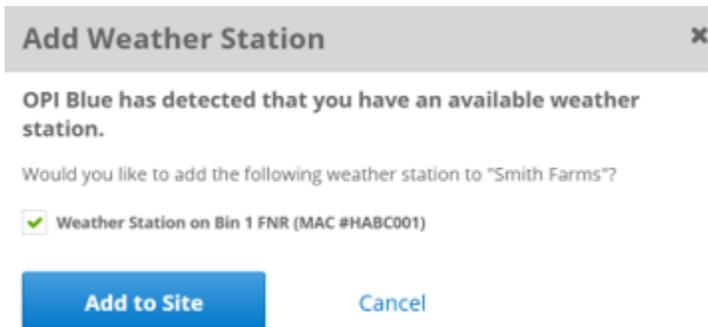
[< Go back](#)

16. Tap the **Save** button. (A confirmation message shown below will appear.)



4.2.9 Add a Weather Station to an Existing Site

1. From the menu Tap **Sites and Bins** and scroll down. Tap the **Add Station** button.
2. An **Add Weather Station** pop up will appear on the screen. There might be more than one Weather Station visible depending on how many are installed. **Place** a checkmark in the box beside the Weather Station to be added to the site.



Note: Once the Weather Station has been added it will appear in the following manner on the Bins page. Providing valuable Temperature, Humidity readings for Ambient Conditions in addition to providing an Equilibrium Moisture Content (EMC) value.

Sites and Bins Weather Fans Alarms

Sites **Bins** Create a Bin

Filter:

Bin 1 Edit Delete

Overview | Grain Info | Parameters | Alarm details | Cables | Weather | Fans

This Bin is utilizing weather data from:
Weather Station on "Bin 1 FNR" (MAC #ABC003)

Ambient Conditions

Ambient Temperature: 10.0°C Ambient Humidity: 65.0%

Ambient Moisture Content (EMC): 8.8%

Note: The Fans connected into a system are displayed under the specific bin that the fan is installed on. They appear as a **Node with Fan Output**. (In the example below FNR (MAC #HABC001))

Sites and Bins Weather Fans Alarms

Description: Bin 1 Description
Site: Crossfield Farms

Bin 1 Edit Delete

Overview | Grain Info | Parameters | Alarm details | Cables | Weather | Fans

Node with Fan Output: Bin 1 FNR (MAC #HABC001)
Output Channel: 1

Remove Fan