

MANUAL - INSTALLATION





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PRODUCT OVERVIEW

Safety Precautions

Short circuit or incorrect wiring may permanently damage the controls or other equipment. Ensure proper wiring practices are followed. If a control failure could lead to personal and/or property damage, the installer must add safety/interlock devices to protect against these events.

Introduction

The Disio Cloud is a complete BACnet Building Management (BMS) solution for small to medium sized networks. The Disio Cloud hosts all web pages containing graphics and BACnet points reported by the system controllers.

The Disio Cloud is accessed from any computer or smart device (tablet or mobile phone) on the local network using a web browser. Remote access is possible from across the globe through www.disio.io/

Contained within the Cloud are pre-loaded templates with graphics and points lists for the popular Price controls. Changes to the graphics or the creation of new custom graphics are supported from within the web interface.

Disio Cloud can be ordered as DISIO-CLOUD, which contains all of the parts required to network all of the controls, connect them to the Disio Cloud, and then interface them to the building LAN system at a single point. When ordered with the factory mounted enclosure, all controls will come pre-wired and ready for field install.

Disio Cloud Features

Features of the Disio Cloud include:

- Accessibility from www.disio.io through any web browser on a laptop, smart phone, or tablet.
- Two-Factor Authentication
- Multiple simultaneous users
- Support for Email and SMS alerts based on user-defined conditions
- Automatic point charting
- Easy to use Weekly Schedule

INSTALLATION & MOUNTING INSTRUCTIONS

Location

The DISIO-CLOUD components should be mounted in an accessible location close to a network connection. Price suggests mounting these components in the network or server room.

The DISIO-CLOUD, PRTU-BAC-RTR, and PRTU-IP-SWITCH should all be mounted together.

MOUNTING DETAILS MOUNTING DETAILS MOUNTING DETAILS MOUNT TOGETHER IN SERVER ROOM

ORDER OPTIONAL FACTORY PROVIDED PANEL

HUB SETUP

Disio Hub Setup

The Disio Cloud is pre-loaded with device templates. To apply these templates, the controllers on the job must be manually assigned by their BACnet address.

The Disio Cloud is accessed through an internet browser. Price recommends using a laptop for the initial setup.

Access to Disio Cloud Hub

The following two pages are also available as a quick start guide and can be accessed using the QR code on the Hub.

SCAN FOR HUB QUICKSTART



CLOUD STRUCTURE DISIO-CLOUD PRICE ROOFTOP CONTROLLER PRICE INTELLIGENT CONTROLLER PRODICY DIFFUSER

HUB SETUP

Disio Hub Quick Start

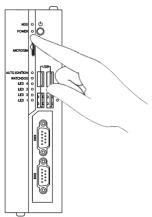
QUICK START ▼

DISIO HUB QUICK START | GETTING ONLINE VIA THE LAN/WAN

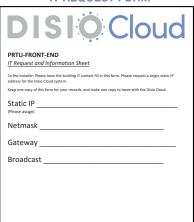
The following is a brief overview of the steps required to startup the Disio Hub and get it connected to the customers local area/wide area network.

- 1. Have the building IT department fill out the "IT Request and Information" sheet included in the Cloud Panel and at the end of the Disio Cloud Manual.
- 2. Mount and power the panel.
- 3. Verify LED power light is illuminated blue on the Disio Hub.

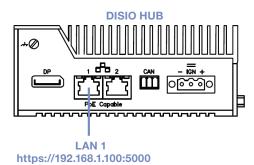
DISIO HUB POWER LED



IT REQUEST FORM



4. Connect an ethernet cable from a PC to (LAN 1) on the Disio Hub.

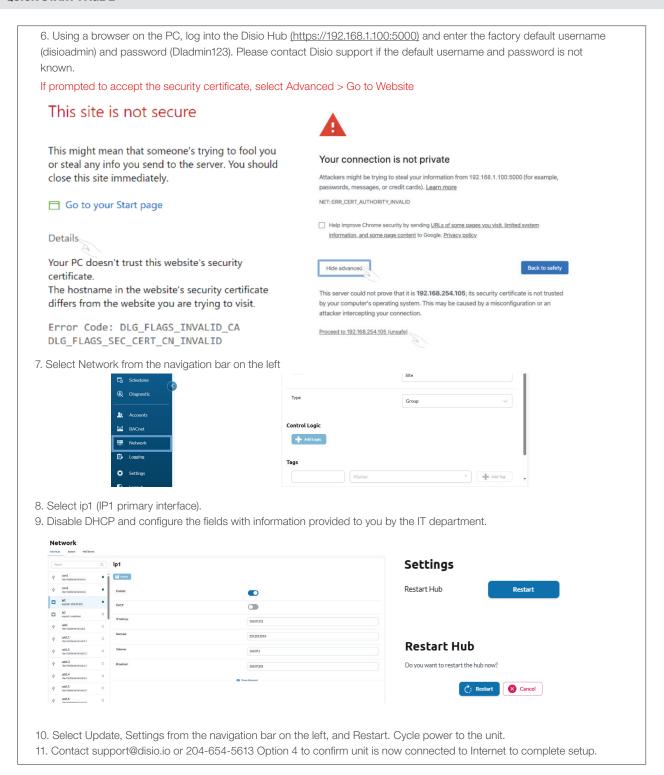


- 5. Configure your PC's IP address as follows:
- IP Address: 192.168.1.101Subnet Mask: 255.255.255.0
- Router/Default Gateway: 192.168.1.1

HUB SETUP

Disio Hub Quick Start Continued

QUICK START PAGE 2 ▼

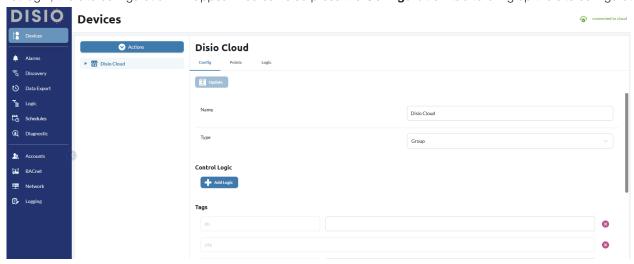


HUB SETUP

Set Site Name

The site name entered here will appear in the Cloud to identify the Hub

1. On first login, the site configuration will appear. You can also press the **Configuration** tab to bring up the site configuration.



- 2. Enter the site name under Name.
- 3. Press the update button to apply these changes.

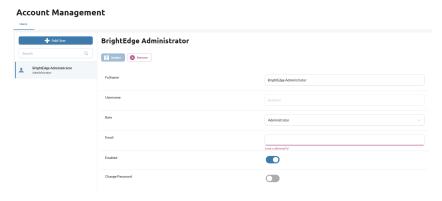
HUB SETUP

Creating A New User

User accounts are strongly recommended for adding new devices, configuring alarms to device points, and enabling logic.

- 1. From the left menu, select **Accounts**.
- 2. A list of the current users and their roles will generate. Roles are used to assign separate access levels.



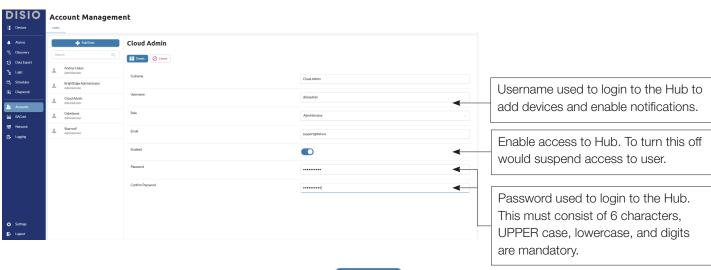


See below table for access levels for each Role that can be assigned to users.



+ Add User

- 3. To create a new user, click the button +Add User.
- 4. Enter the credentials for the new user.



5. When finished entering new user settings, press ${\bf Create}$.

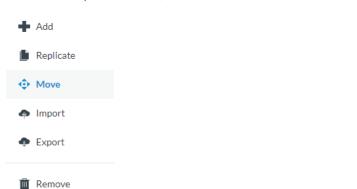


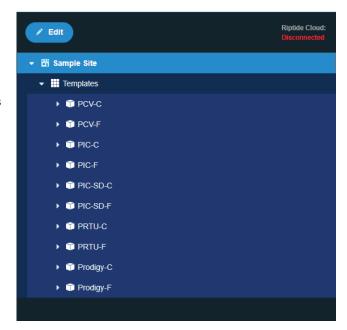
HUB SETUP

Adding Devices Using Built In Templates

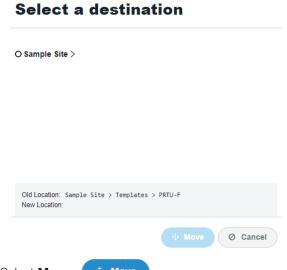
The Disio Hub is provided with pre-built device templates that include pre-configured BACnet points for monitoring and control. These can be located under the **Templates** group in the device tree.

- 1. Select the drop down arrow, left of the site name to reveal the **Templates** group in the device tree to view the available templates.
- 2. Each device template is organized by the product name and temperature units.
- 3. Select your device from the device tree. Once the product name is highlighted, select **Edit** from the top left corner.
- 4. From the drop down menu, select Move





- 5. A window will appear to map a new destination for the device template.
- 6. Left click on your site name, At the bottom of the window, the New Location listed should be your site name..







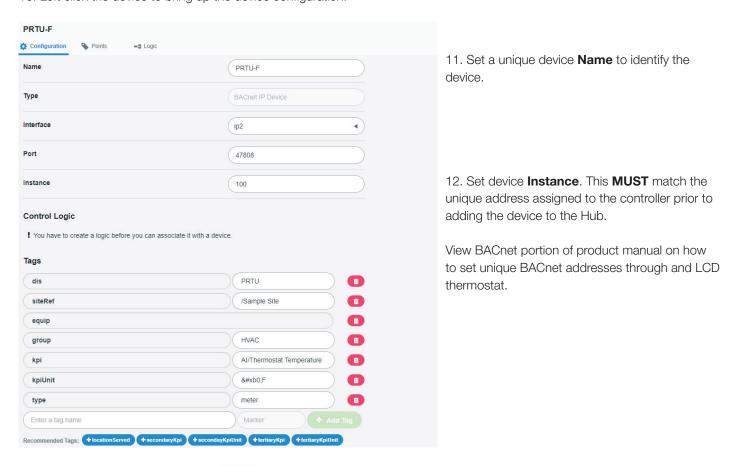


HUB SETUP

8. The Hub will move the device to the selected location. This may take a minute. When finished, the window will report the device successfully moved. Select Close O Close to close this window.

Select a destination Select a destination Moving Successfully moved the node from /Sample Site/Templates Move /Sample Site ⊘ Close

- 9. The device will now appear under the site name in the device tree.
- 10. Left click the device to bring up the device configuration.



13. Select **Save** to apply changes.

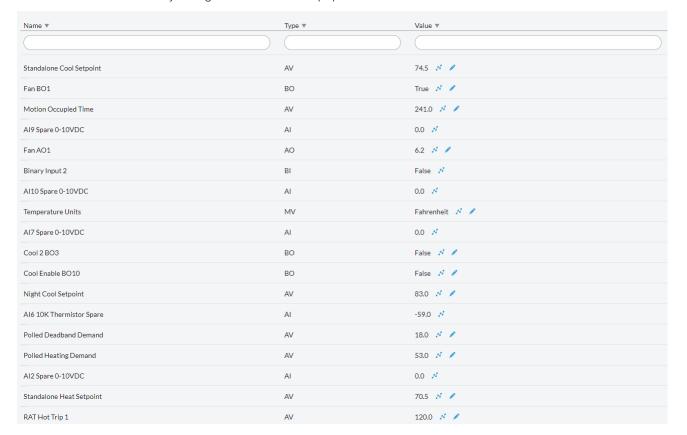


HUB SETUP

14. Now that the device has been added, select the Points beneath the assigned device name.



15. If the device was correctly configured live values will populate:



NOTE: If values display as N/A check device configuration in Hub, the BACnet Address at the device, and the BACnet network connections.

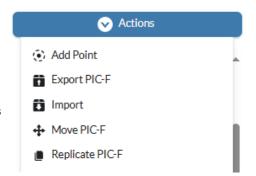
HUB SETUP

Adding Multiple Of The Same Device

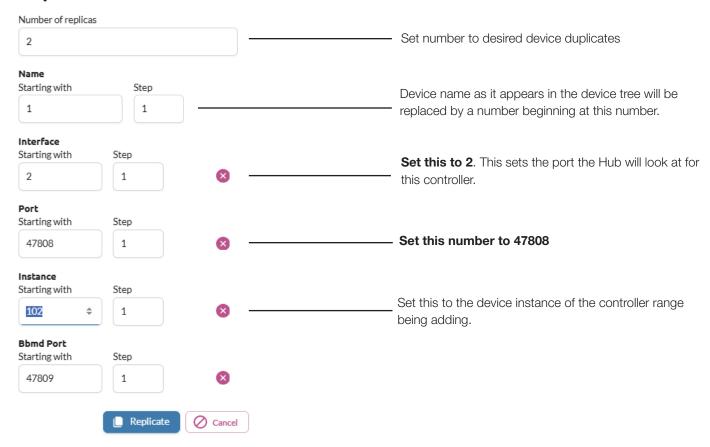
Adding multiples of the same device can be a fast way to duplicate the configuration of one device and apply it to several devices.

1. After adding and saving the configuration of your first device (in this example a Price Intelligent Controller (PIC), left click on the device you would like to add multiples of in the device tree.

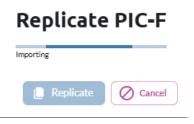
- 2. Select Actions at the top of the device tree and Replicate.
- 3. A replication window will open. Devices that will be added to the Hub can be manually entered here.



Replicate PIC-F



4. Select the Replicate button. The Hub will begin replicating the information provided.





5. The replicated device(s) will now appear in your device tree configured to the set parameters.

HUB SETUP

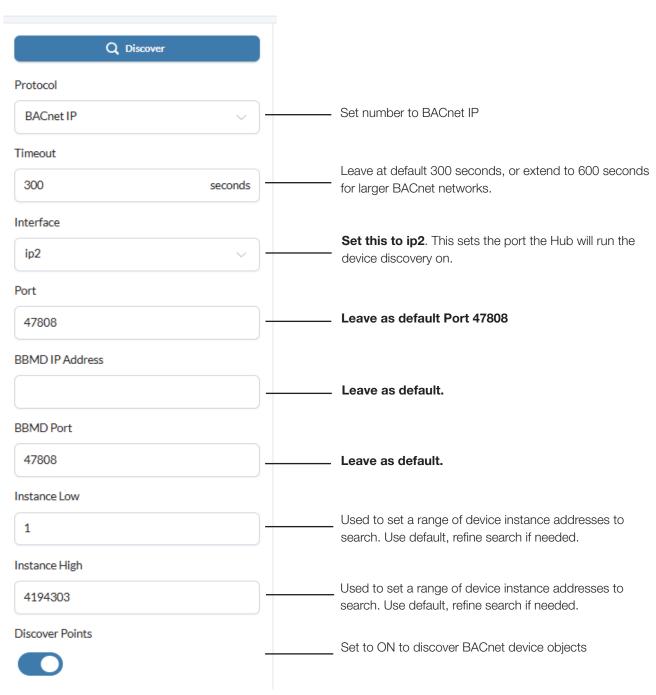
Adding Devices With The Discovery Tool

The Discovery tool can be used to scan and display all the BACnet devices available on a network, and selectively pull devices into the Disio Hub.

- 1. From the left menu, select **Discovery**.
- 2. Enter the range settings of your discovery search:



Discovery



HUB SETUP

3. Select the **Discover** button at the top once you've completed all your discovery credentials



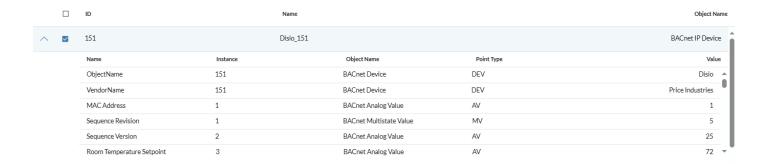
4. The hub will now initiate the Discovery scan. A detailed progress bar will show how many seconds remain in the scan and how many devices were discovered. and report when complete.



5. Select the BACnet devices you would like to add to the Disio Hub by selecting the checkbox beside the entry.



6. For more information on the device and the points available, you can click the drop down beside the entry.



NOTE: If no devices are found, press the Reset button above the device scan and reinitiate the device scan or refer to troubleshooting section to adjust device scan configuration.

HUB SETUP

8. The tool bar above the device scan allows two export methods for your discovered devices:



Import Into Device Tree - Imports selected devices into the Device Tree. This process can take up to 5 minutes to complete and will require a refresh of your browser.



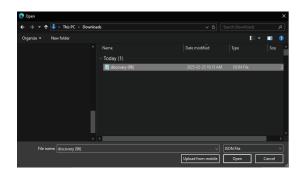
Export as JSON - Downloads selected devices into a JSON file that can be imported into the hub to add devices.

- 9. To add a JSON file to the hub, return to the device page with your device tree and select Actions.
- 10. From the drop down, select **Import**.
- 11. An Import Entries window will appear. Select the Browse option.
- 12. Locate your JSON file (likely the downloads folder) and select Open.
- 13. Import Entries window should now show your JSON file. Select the Import button.









Import Entities



14. The import button will change to Importing. Disio Hub will now import your device into the device tree. This process may take several minutes to complete.

Import Entities



15. Your device will now be populated into the device tree.

CLOUD SETUP

Accessing the Cloud (for the first time)

To view a Hub/Building in the Cloud the installer MUST reach out to Price Industries to add the Hub online once it has been powered, assigned a static IP, and connected to the building LAN via ethernet with access to the internet. Price will provide a username and password specific to this site.

Support Email: support@disio.io

controls@priceindustries.com

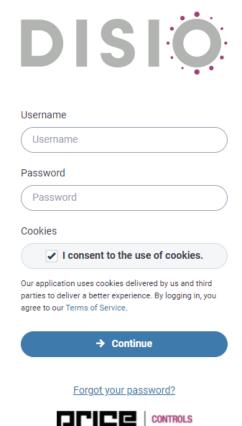
Phone: 204.654.5613 (Option 4)



Accessing the Cloud

Once the Hub has been added online and a user had been provided login credentials, the following steps will grant access to the Cloud:

- 1. Visit https://cloud.disio.io/
- 2. Enter your assigned username and password. Please contact Disio support if this account is not known or you are connecting to the Cloud for the first time.
- 3. Consent to the use of cookies by clicking the check box.
- 4. Select Continue.



5. A 6-digit verification code will be sent to the email address and phone number assigned to the account username. This is mandatory to login to the Cloud and must be entered in the provided time (120 seconds) before the code expires.

NOTE: If you did not receive an email containing this information check your inbox junk folder and that the address noreply@disio.io is white-listed.

CLOUD SETUP

Syncing The Hub To The Cloud

To apply changes applied in the Hub (such as adding new devices, configuring alarms or schedules), the Hub must be synced to the Cloud.

NOTE: You must have Administrative Access to sync the Hub to the Cloud.

- 1. Enter your login credentials at https://cloud.disio.io/. If you are unsure what these credentials are, contact Disio support.
- 2. Once you've logged into the Disio Cloud, select the Hub Administration option from the left toolbar:



Organizations

3. Select the Sites tab at the top:

Administration

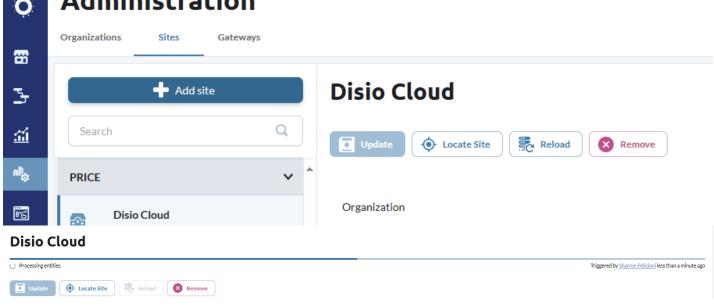
Sites

4. Select your site from the left side and select the Reload button.

Administration

Organizations
Sites Gateways

Gateways



Disio Cloud



Triggered by Sharron Felicioni less than a minute ago

- 5. Wait a few minutes for the Cloud to sync with the hub. The Status Bar will alert if the changes were applied to failed.
- 6. Press the Broom icon at the bottom of the Tool Bar to clean your cache, then refresh your web browser.



CLOUD SETUP

Tool Bar

Once logged into the Cloud a series of icons will appear on the left side of the screen. These can be used to navigate the Cloud.



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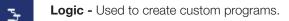
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Charting - Used to generate, export, and view equipment point data that is logged.

Hub Administration - Sync hub to cloud.

8.2 **Graphics -** Create and assign graphics to equipment.

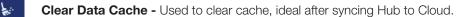
Notifications - Configure alarm distribution such as email and SMS settings.

Reporting - Generate reports that are emailed at desired frequency to monitor equipment.

Schedule - Set on and off times for equipment.

Users/Account Management - Create new accounts, configure access levels, and assign roles to users.

Support - Disio Support Center



Inbox - Active alerts assigned to user.

User Account - Review user account, switch to Dark Mode, or Logout.

CLOUD SETUP

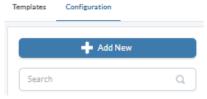
Graphics

The Disio Cloud comes equip with pre-loaded and configured graphical templates for Price equipment.

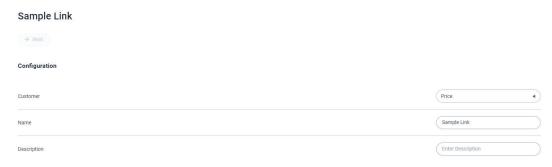
- 1. To apply a template to a discovered graphic, select the Graphics icon from the Tool Bar.
- 2. At the top of the navigation, select Configuration and, +Add New



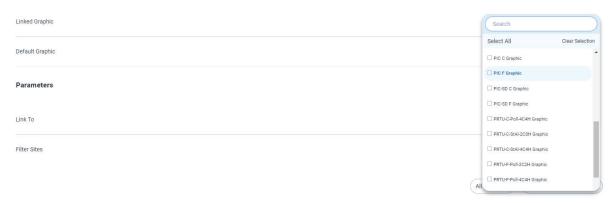
Graphics



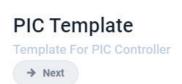
3. This will create a new Graphics Configuration window. From here enter your configuration:



4. Under **Graphics Template** select the Graphic for your controller from the drop down. Example: If adding a standard PIC controller, select PIC-C or PIC-F depending on desired temperature units.



- 5. Under **Default Graphic** select whether you would like the default to be the summary page (a hart of the room temperature) or a graphic based summary.
- 6. Select **Next** at the top under the name of your Graphic when you've selected your parameters.



CLOUD SETUP

Parameters

7. A new field will appear called **Parameters** will appear at the bottom. Select the drop down and select **Equipment**.

Equipment Filter Sites Disio Cloud Linked Equipment All Search Q

- 8. A second drop down will appear called **Filter Site**. Select your site name.
- 9. A list of all the linked equipment on that site will appear. The search bar can be used to filter through your equipment by the name assigned to it.

To assign your template to a controller, simply select the $\boldsymbol{\mathsf{Link}}$ button.

NOTE: You can assign the sample template to multiple pieces of equipment.



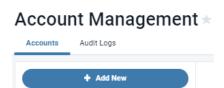
CLOUD SETUP

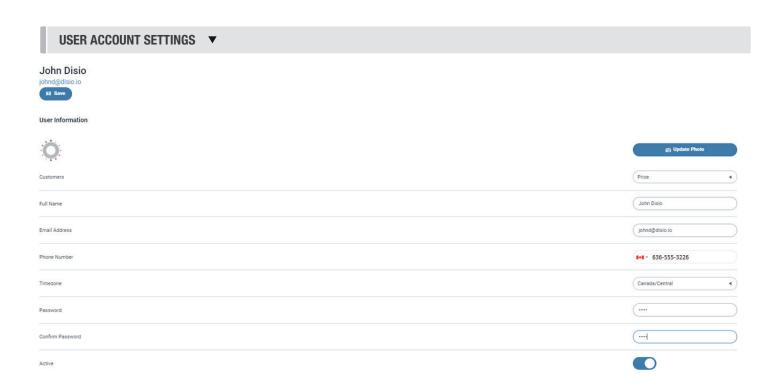
Account Management

Multiple user accounts with separate access levels can be configured in the Disio Cloud. Contact information, such as an email address in a users account will be used to send alerts and reports when assigned to a specified user.

- 1. To create a new account, select the + Add New button just below Account Management.
- 2. This will create a new user field. Enter the credentials of the new user and select **Save** to apply changes.

NOTE: Passwords must contain UPPER case, lower case and numbers.





CLOUD SETUP

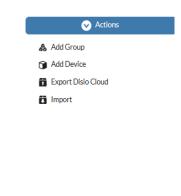
Adding Device Templates

Price provides pre-built templates for the Disio Hub and Cloud that can be found on the www.disio.io website. The following instruction can be used to add a device template to your Hub.

- 1. Select the **Action** button at the top of the device tree and click on **Import**.
- 2. An import Configuration window will appear. Click Select File.

Import Entities





3. You will now need to locate the Hub templates for your controller. Each Price controller has it's own pre-configued .json template.

NOTE: If you have downloaded your templates from the www.disio.io website, try searching your downloads folder for your downloaded templates.

4. The Import Configuration screen will now show the selected template file and allow a device name to be entered before adding it to the Hub. Select Import and the devices will begin to upload.

Import Entities

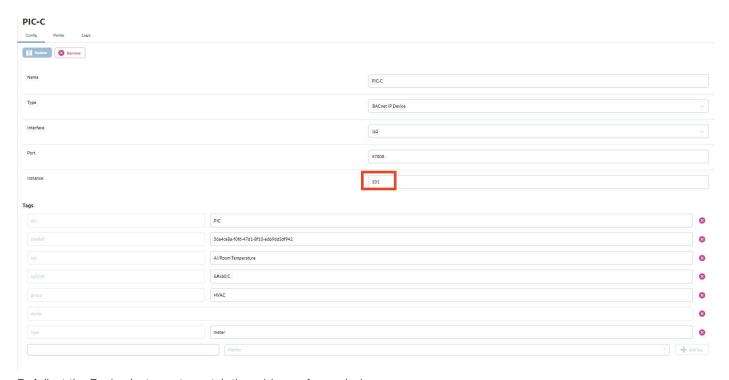


5. Your device will now be populated in the device tree:



CLOUD SETUP

6. You will now need to configure your device. Left click on the device in the Device Tree on the left side of the screen. This will bring up the Configuration:



7. Adjust the Device Instance to match the address of your device.

NOTE: You must press UPDATE to apply these changes.

BACNET ROUTER CONFIGURATION

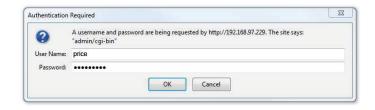
PRTU-BAC-RTR (BACnet Router Configuration)

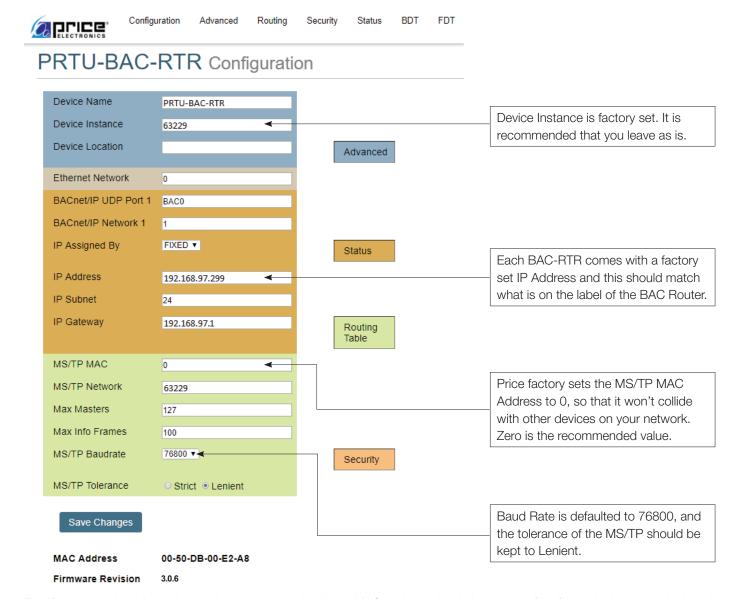
If you want to log into the BAC Router to check any settings, you need to set your machine to a Static IP; something close to the IP address located on the front of the router, but not the same.

Type the IP address (192.168.97.299 for example) on the front of the router into a web browser, and a log in prompt will appear.

When prompted, enter the following:

a. User Name: price b. Password: price1999





The IP address should match what is on the router itself, the MAC address should be set to 0 (zero) and the baud rate is defaulted to 76800.

TROUBLESHOOTING

Hub Won't Connect to Cloud

You will need a laptop to perform these steps.

- 1. Verify that the power and ethernet lights are illuminated.
 - If the ethernet light is not illuminated check the ethernet cable connected to WAN switch.
 - If ethernet is connected on both ends replace the cable.

Display	Elements	Color	Status	Meaning
PWR	Device State	Green	Lights up	Supply voltage is on, Device is ready for operation
			None	Supply voltage is too low, Device is not ready for operation

- 2. Set laptop IP address to an address on the same subnet as the Disio Hub.
- 3. Connect cable from laptop directly into Disio Hub, Ethernet Port 1.
- 4. Open a terminal/command prompt and ping the Disio Hub at the previously configured IP address. If this fails, go back to step 4 and set the Disio Cloud IP address.
- 5. Set laptop IP address to the address assigned to the Disio Hub.
- 6. Disconnect the Disio Hub from the switch and connect laptop to the same port the Disio Cloud was connected to.
- 7. Open a terminal/command prompt and ping the assigned default gateway. If this fails, contact IT and verify the assigned network settings.
- 8. Open a terminal/command prompt and ping app.turntide.com. If this fails contact IT and verify the assigned DNS settings.
- 9. If you are able to ping the default gateway and app.riptideio.com contact IT and verify the following ports are opened outbound/ egress:

Direction	Destination	Protocol	Port
REQUIRED NETWORK PORT CONFIGURATIONS			
Egress	Brainbox Al Cloud	MQTT	TCP/8883
Egress	Brainbox Al Cloud	SSH	TCP/3199
Egress	Brainbox Al Cloud	HTTPS	TCP/443
Egress	Configurable	DNS	UDP/53
Egress	Configurable	NTP	UDP/123
POSSIBLE NETWORK PORT CONFIGURATIONS			
Ingress	Brainbox Al Hub	BACnet	UDP/47813
Egress	Protocol Specific	HTTP	TCP/80

Internal DNS settings may be needed for some sites. The IT provider may need to ensure traffic is allowed to the following URLs:

apps.turntide.com r2d2.riptisde.com machines.riptideio.com

10. If the above steps have been completed and the Disio Hub still does connect to the Cloud please contact support at controls@priceindustries.com.

TROUBLESHOOTING

Can't Direct Connect to Hub

Incorrect Username & Password

If you are able to access the Hub UI login page but unable to login, you may be using the wrong username & password. The Hub UI does not use the same user login as issues for the Disio Cloud web and mobile application. If you do not know the Hub UI login, check the label on your physical Disio Cloud hub for login credentials.

Incorrect IP Address

To directly connect to the hub, the IP address on your computer must be on the same IP subnet as the Disio Hub. At default this is 192.168.1.xxx. Check to make sure that you have a static OP address of 192.168.1.xxx (suggested: 192.168.1.105). These guides will show you how:

Windows: https://www.hellotech.com/guide/for/how-to-set-static-ip-windows-10

MAC: https://www.macinstruct.com/node/550

Wrong Web URL

When first shipped Disio Hub is accessed at its default address from any major web browser by entering the url https://192.168.1.100:5000. You must be directly connected to the hub and have both https at the beginning and :5000 at the end.

If the Hub's IP address has already been configured for the site, the hub can be reached at https://<Hub_IP_Address>:500 where <Hub_IP_Address> is the IP address configured.

Fault Physical Connection

To access the Disio Hub directly the computer you are using must be connected to the Disio Hub with an ethernet cable. One end must be plugged into your computer and the other end either directly into IP 1 ethernet port on the Disio Hub or into a network switch that is also connected to IP 1 on the Disio Hub. Check all the ethernet cables are properly plugged in and the cables are not faulty.

Testing The Connection

If you still cannot reach the Disio Hub, test the connection with a ping. In Windows, open the Command Prompt program or on MAC open Terminal. Enter the line: ping 192.168.1.100

If the IP address of the hub has been changed enter the Hub's IP in place of 192.168.1.100

If the response line reads host unreachable or Request Timeout the connection is not active. If it says 64 bytes from 192.168.1.100 and lists a time=xx.xxx ms then the connection is active. Reopen your web browser, double check the web address and try again.

TROUBLESHOOTING

Changes In Hub UI Not Reflected In Cloud

Sync the Hub to the Cloud

For changes in the Hub to reflect in the Cloud the hub must be synced to the Cloud. This action must be performed through the Cloud web page.

NOTE: You must have Administrative Access to sync the Hub to the Cloud.

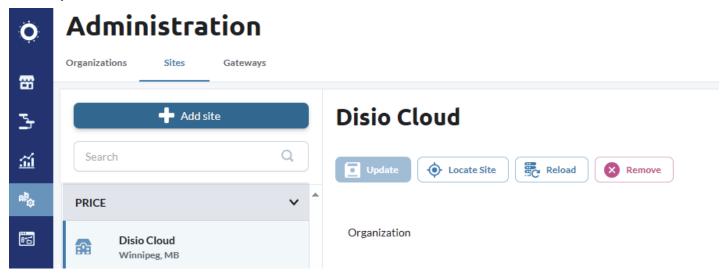
- 1. Log Into Disio Cloud via disio.io
- 2. Once you've logged into the Disio Cloud, select the Hub Administration option from the left toolbar:
- 3. Select the Sites tab at the top:

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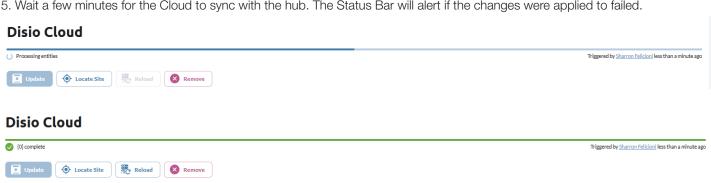
Administration

Organizations Sites Gateways

4. Select your site from the left side and select the Reload button.



5. Wait a few minutes for the Cloud to sync with the hub. The Status Bar will alert if the changes were applied to failed.



6. Press the Broom icon at the bottom of the Tool Bar to clean your cache, then refresh your web browser.



TROUBLESHOOTING

Some Or No Devices Discovered

Discovery Timeout Too Short

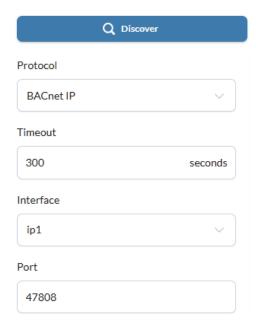
If not all the devices on a network are found while running discovery the timeout in seconds may have been too low, especially on larger BACnet networks. Adjust the timeout length up and rerun discovery.

Inconsistent Baud Rate Settings

Every BACnet device on the same MS/TP network must be communicating at the same baud rate (speed). Price equipment, including the BACnet Router, come configured to a baud rate of 76800 (default). Check all devices and make sure they have the same configured baud rate.

Duplicate MAC Addresses

Every BACnet MSTP device must be configured with a unique MAC address at the device. If several devices are missing from discovery, it's possible multiple devices have been programmed with the same MAC address. Check the user guide for the BACnet device and assign it a unique MAC between 1 and 126. The Disio Cloud Hub is generally configured with a MAC of 0 or 127.



APPENDIX A

Hardware Specifications

Power Requirements	9~48 VDC, 35W (Typical)		
Processor And Memory	Intel Atom X6425E Quad-Core, 2.0~3.0 GHZ, 8G DDR4 Memory		
Communication ports	[2] Ethernet Port 10/100/1000 Mnps (Default IP Address: 192.168.1.100:5000) [2] USB 3.2 Gen 2 Type-A Ports [2] USB 2.0 Type-A Ports		
Size	7.09" x 4.84" x 1.97"		
Weight	3.2lb (1451g)		

APPENDIX B

IT Request and Information Form

FORM ▼



PRTU-FRONT-END

IT Request and Information Sheet

To the installer: Please have the building IT contact fill in this form. Please request a single static IP address for the Disio Cloud system.

Keep one copy of this form for your records, and make one copy to leave with the Disio Cloud.

Static IP	
(Please assign)	
Netmask	
Gateway	_
Broadcast	

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