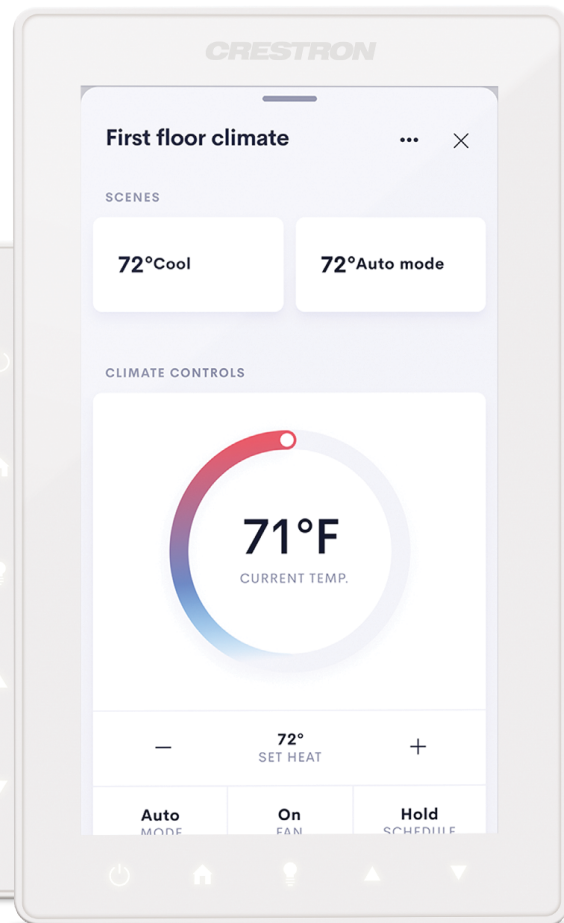
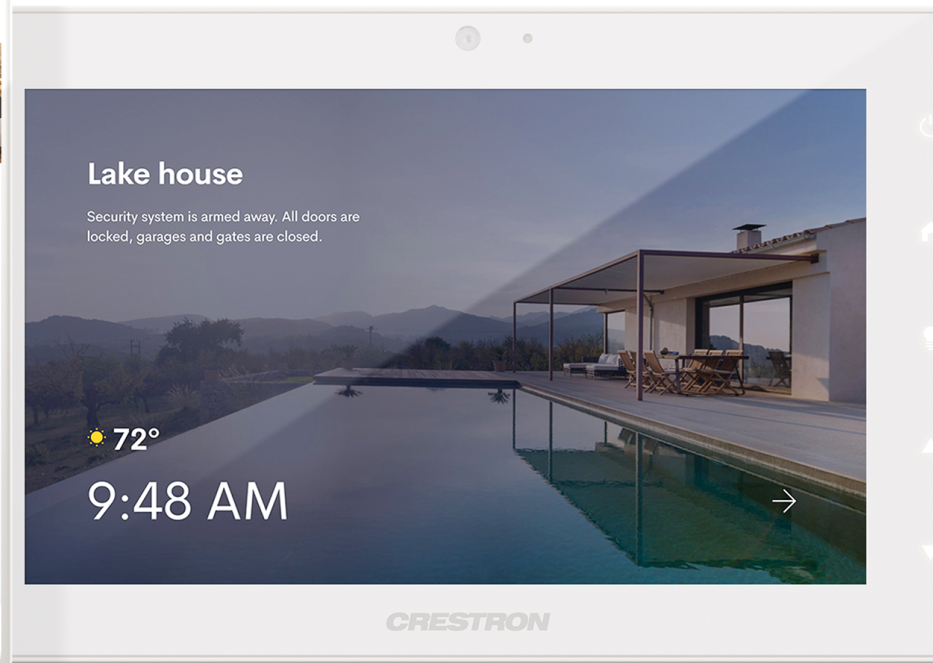
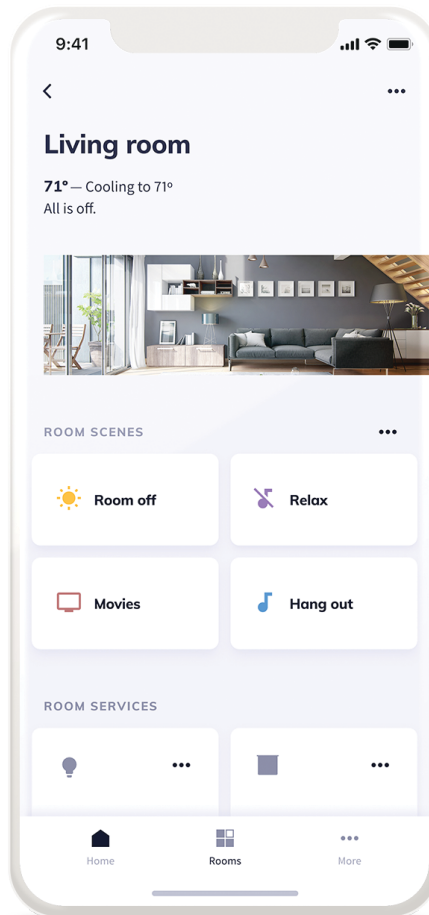
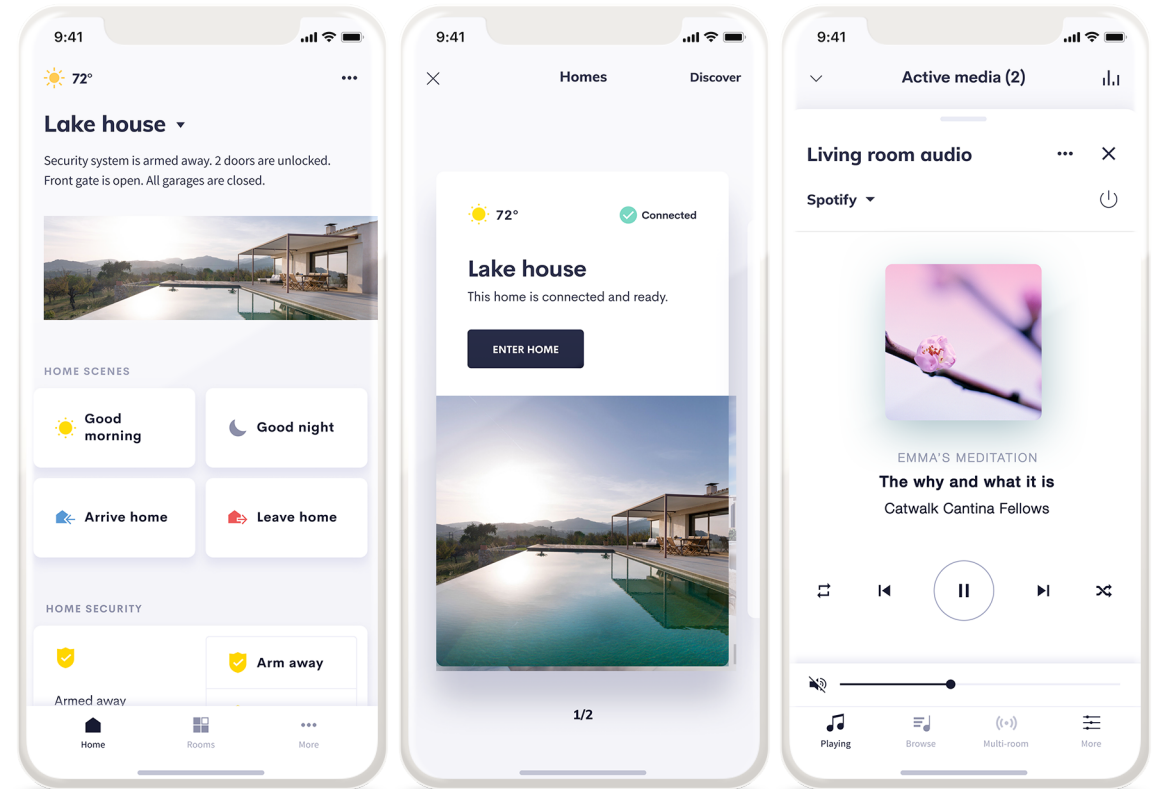


# CRESTRON HOME



# CRESTRON **HOME** | OS 3

- Major evolution of the Pyng OS
- Completely redesigned UI
  - Fully native applications
  - TSW touchscreens
  - iPhone® and iPad®
- **And by the way... BACnet  
thermostats are already in OS 3**

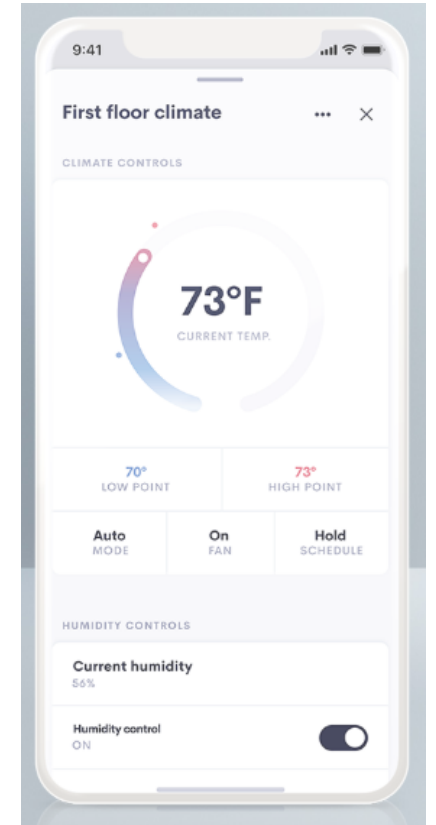


# CRESTRON **HOME** | OS 3

## BACnet Thermostat Integration

- Native BACnet Thermostats built right into OS 3
- Customize the BACnet objects in the Crestron Home Setup App to match your particular installation
- To users, these will appear just like a native Crestron thermostat
- Ideal for MDUs or large homes with commercial-style HVAC systems
- Mass-deploy hundreds or thousands of MDU units by pushing out config data from the myCrestron management service.

**BACnet**



# CRESTRON HOME | OS 3

## CoolAutomation Partnership

- Native BACnet to communicate to CoolAutomation devices over BACnet IP

CoolMasterNet



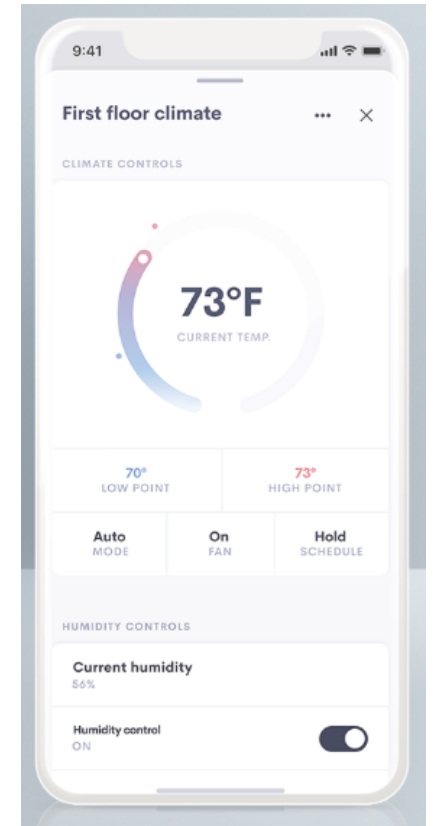
CoolPlugs + CoolLinkHub



CoolLinkBridge



# BACnet

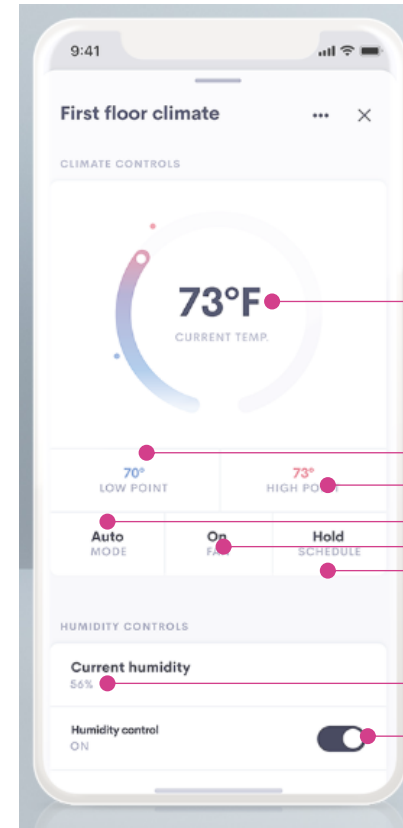




# CRESTRON HOME | OS 3

## Mapping Concept

- Each Element on the UI maps to a specific BACnet Object ID and Value



**BACnet**

Id 10

Id 31

Id 32

Id 20

Id 21

Id 22

Id 50

Id 70

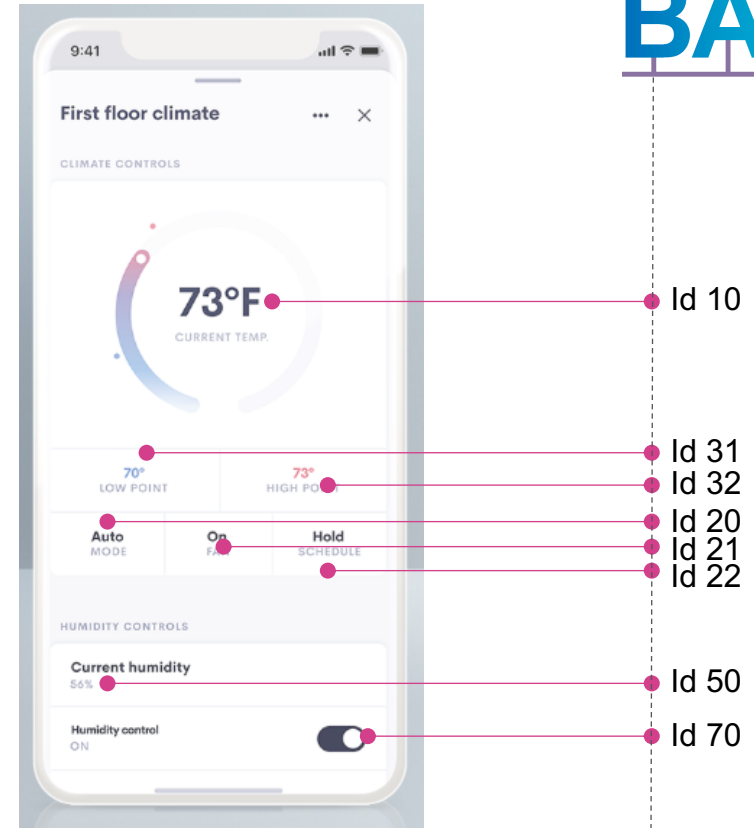
# Getting Started

## Our Goal

We are building this type of mapping that will differ for each thermostat

# CRESTRON HOME | OS 3

## BACnet

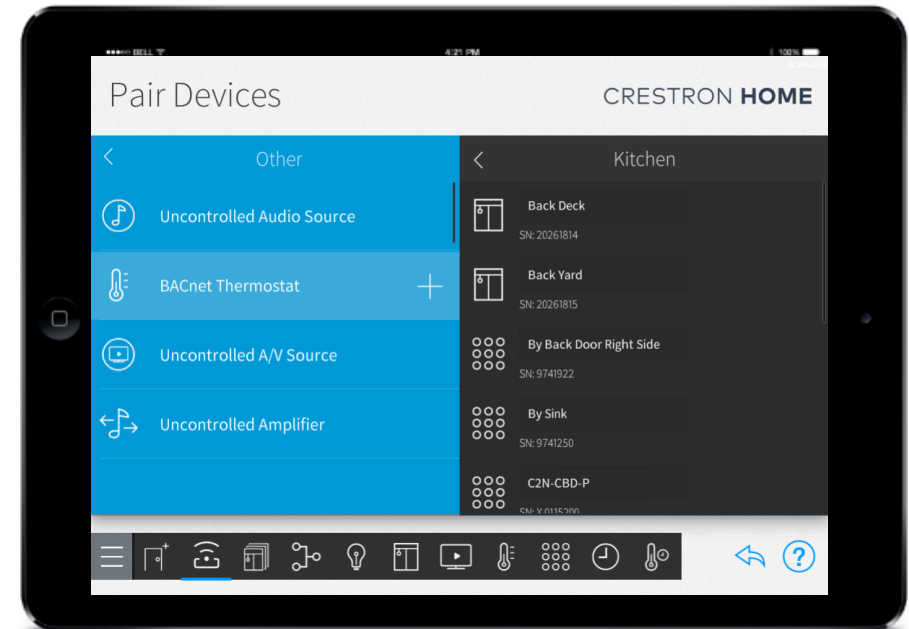


# BACnet and CoolMasterNet Integration

CRESTRON **HOME** | OS 3

## Before you start

- Get Crestron Home Setup app from the App Store
- Upgrade from OS 2 to OS 3



# BACnet Integration

CRESTRON **HOME** | OS 3

## To Get Started

### 1. Update to OS 3

1. Online videos to step you through that

### 2. CP4-R manual if you get stuck

1. CP4-R manual covers BACnet
2. CP4-R manual also covers CoolMaster integration

Download from the [CP4-R product page](#)

#### Appendix K: Integrate CoolMasterNet by Cool Automation

Native BACnet thermostats will now be built right into Crestron Home OS 3 to provide complete HVAC control of advanced VRF air conditioning systems.

**NOTE:** Dual mode cannot be used if the heat and cool objects have the same Object ID.

##### Add the BACnet Thermostat to the system:

1. Tap the **Pair Devices** button on the **Setup** screen, or the Pair Devices button on the setup menu, to display the **Pair Devices** screen.
2. Select the room where the device is installed from the **Select a room** menu.
3. Select **Other** from the **Device Types** menu.
4. Select **BACnet Thermostat** from the **Other** menu.
5. Tap the plus button (+) and then assign a name to the to add the BACnet Thermostat to the system.

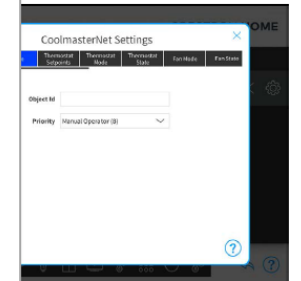
##### Configure the BACnet Thermostat

To configure the BACnet Thermostat with the Crestron Home system:

##### **NOTE:**

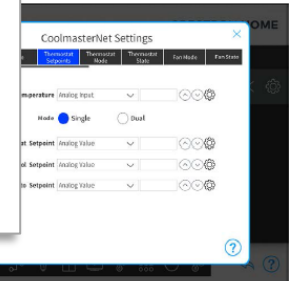
- The CoolMasterNet must be properly installed and wired in order to function properly. Refer to the CoolMasterNet documentation for details.

tings:  
Cnet ID to establish communications with the



ts: Enter the BACnet ID for the temperature Setoints.

Net does not support Dual mode.



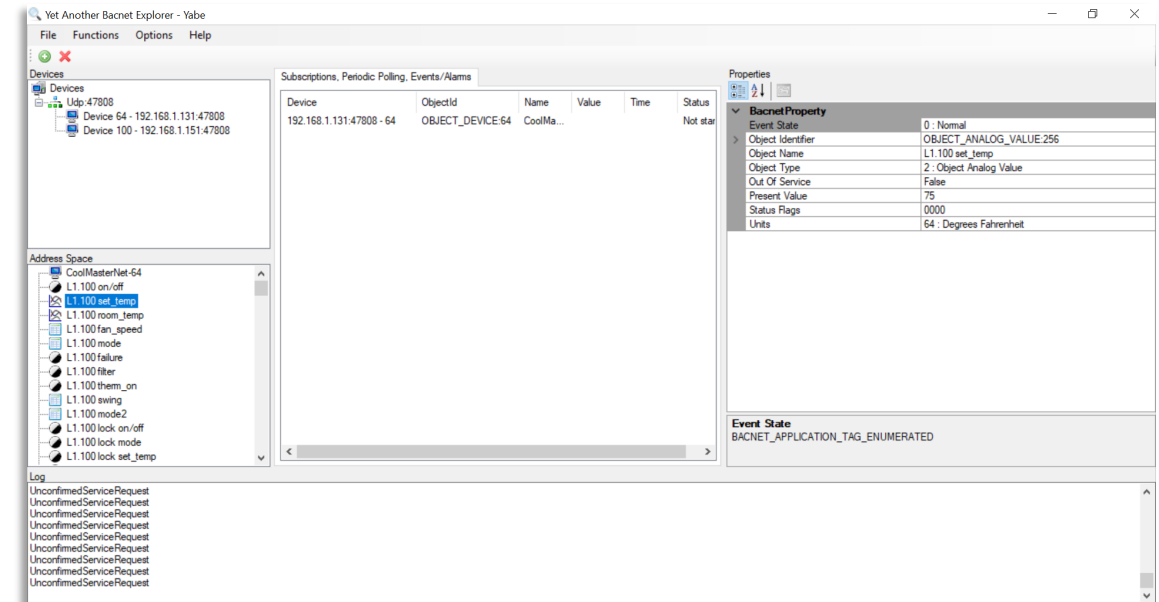
# BACnet Integration

CRESTRON **HOME** | OS 3

## To discover CoolAutomation devices via BACnet

Download Yabe (Yet Another BACnet Explorer)

<https://sourceforge.net/projects/yetanotherbacnetexplorer/>



# BACnet Integration

## CRESTRON HOME | OS 3

### Important!

CoolMasterNet/CoolLinkHub won't be discovered by Crestron Home, until you turn on BACnet

- Use [CoolAutomation BACnet Guidelines](#) or [Set-up utility](#) to check if BACnet enabled, otherwise contact CoolAutomation support to enable BACnet remotely.
- BACnet guidelines are same for all CoolAutomation products
- After enabling BACnet, distribute VA's, according BACnet Guidelines document

Note: When working with CoolMasterNet, [VA distribution can be done from touchscreen](#)

Click [here](#) to see how to distribute VA's .

Note: VA's can be distributed, only when [all](#) indoor units are connected.

### 2.2 BACnet IP Configuration

BACnet IP module is activated with below command:

```
>bacnet IP enable  
OK, Boot Required!
```

BACnet IP server is started by device only after it establishes an Ethernet link and gets proper IP address (dynamic via DHCP or static). Ethernet and IP management is done with **ifconfig** command that is out of the spec of this document.


To query BACnet IP status use **bacnet** command without parameters:

```
>bacnet  
Dev instance : 64 (0x000040)  
BACnet IP : enabled  
UDP port : 47808 (0xBAC0)  
BACnet MSTP : L3  
TS address : 64 (0x40)  
OK
```

The default UDP port number used by BACnet IP Server is 47808 (0xBAC0). This is "well-known" Ethernet port assigned for the BACnet IP protocol. If required port number can be changed (new port number in example below will be 503):

[www.coolautomation.com](http://www.coolautomation.com)

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 BACnet Integration Guidelines Rev 0.5

Configuration

7

```
>bacnet port 503  
OK, Boot Required!
```

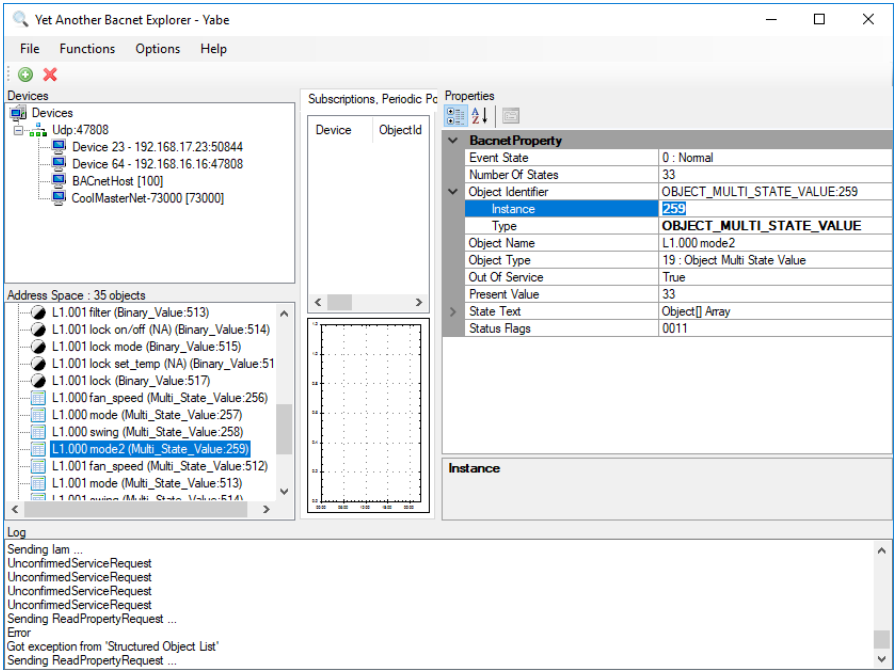
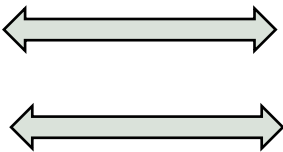
Next: VA's have to be configured to use BACnet IP Server. See: [VA's Configuration](#).



# Getting Started

CRESTRON HOME | OS 3

## Switching between Crestron Home Setup & Yabe



# Getting Started

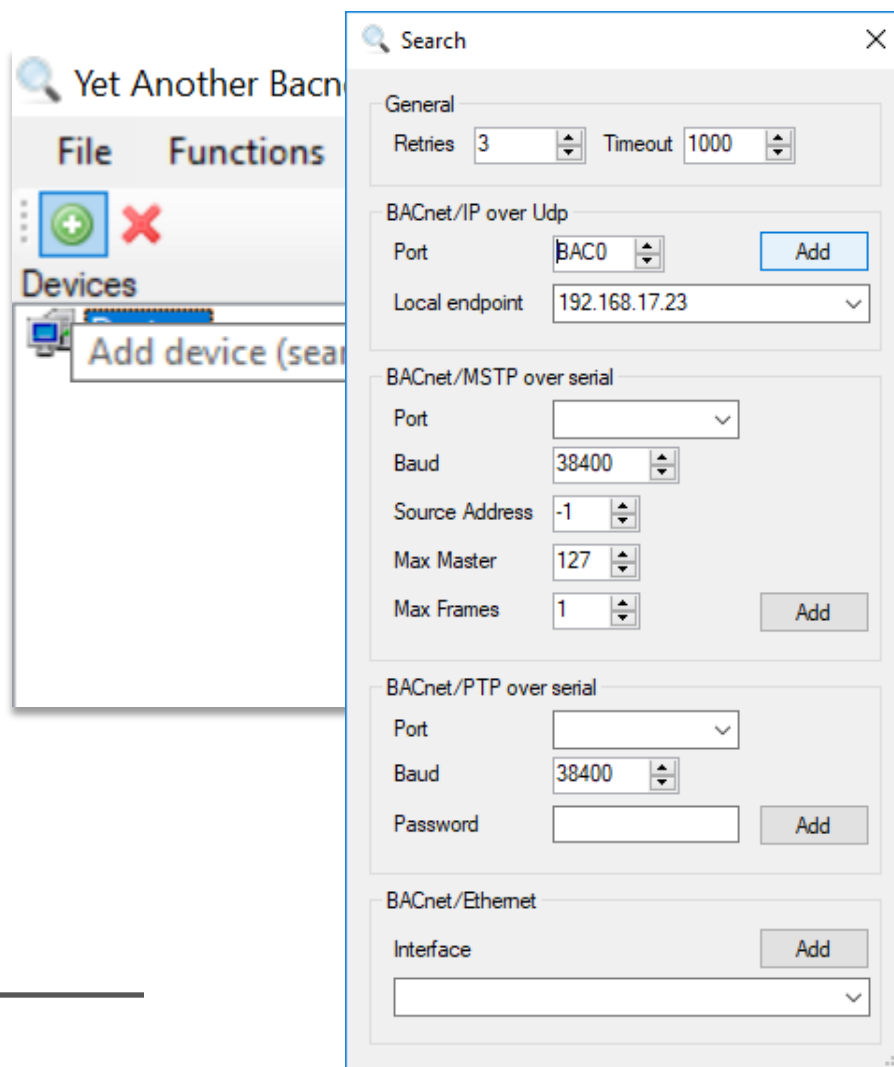
CRESTRON HOME | OS 3

## To get to the BACnet objects

e.g. CoolMasterNet(but same for other CoolAutomation devices)

Add CoolMasterNet to Yabe

- Press the green plus
- Then choose, “BACnet/IP over Udp”
- Click Add



# Getting Started

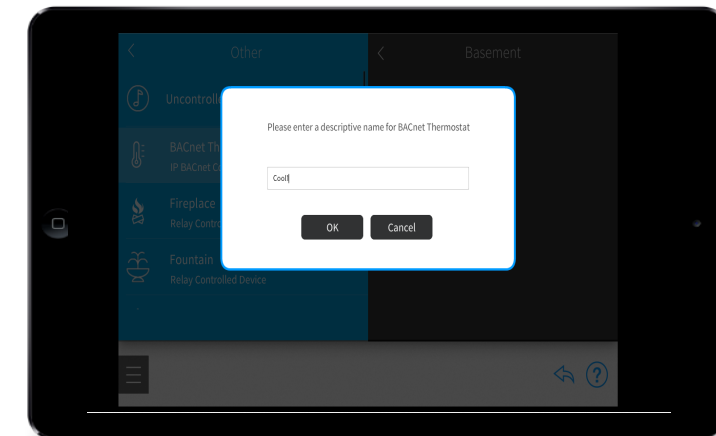
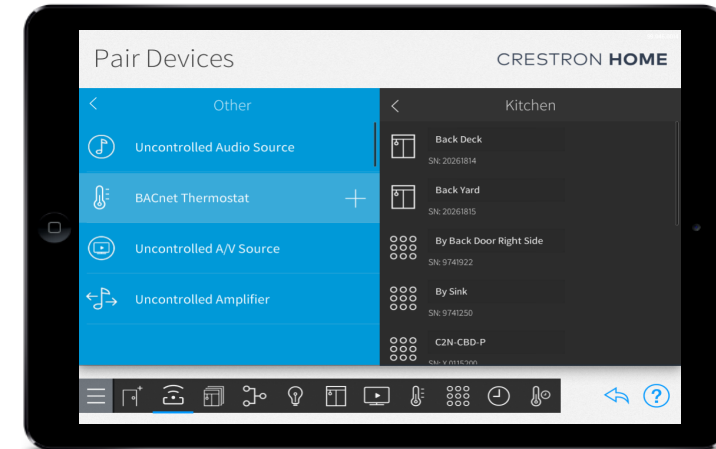
## CRESTRON HOME | OS 3

### On the Crestron Home Side

Add the BACnet thermostat to Crestron Home

- Go to the Gear menu to start configuring
- First thing we will need is the Object Id

Type in a name for the BACnet thermostat, and then click OK



# Identify CoolMasterNet (BACnet thermostat)

CRESTRON HOME | OS 3

## On the BACnet Explorer Side

Using your BACnet Device Explorer, locate and click on CoolMasterNet from the Device list on the top right.

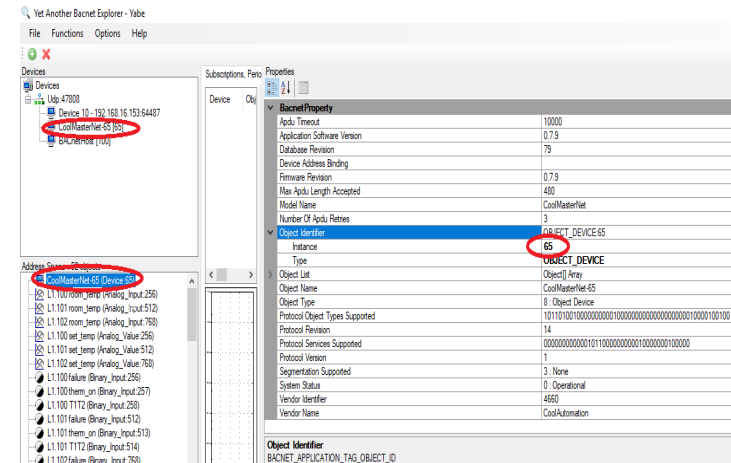
Locate and click on CoolMasterNet from the Address Space list on the bottom right

Locate and click on Object Identifier in the BACnet Property list

NOTE: in this set-up example Device ID was changed to 65. So here, Device

ID was discovered as 65,

**Default CoolAutomation Device ID (instance number) is 64.**

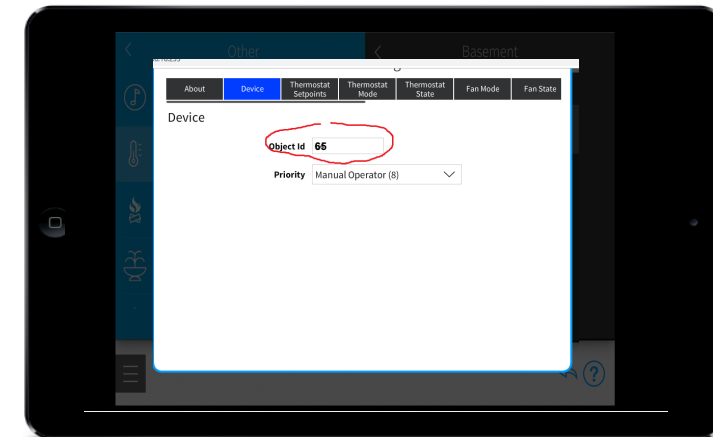


## On the Crestron Home Side

Back in the Crestron Home Setup window, under the Device menu, input the Instance number discovered through your BACnet device explorer as the Object id

Set the desired priority level

NOTE: All indoor units under the object id must have the **same priority level**.



# Configure Setpoint & Room Temperature

CRESTRON HOME | OS 3

## On the BACnet Explorer Side

Identify Setpoint Configuration Values

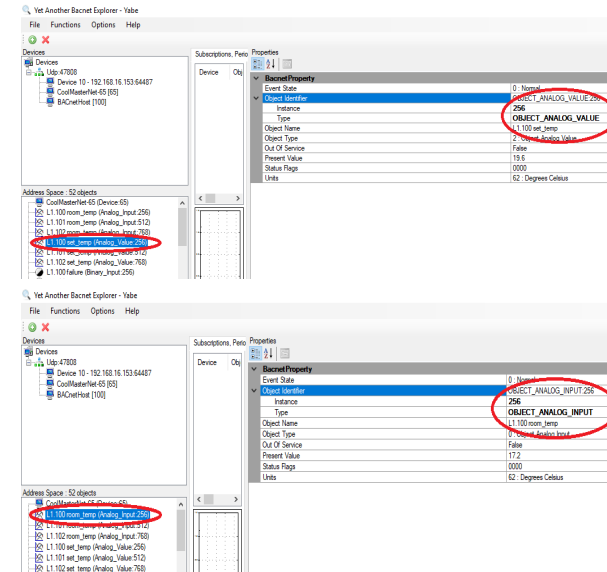
Locate and click on CoolMasterNet from the Device list on the top right.

Locate and click on CoolMasterNet from the Address Space list on the bottom right

From CoolMasterNet's sub-list, locate and click on XYZ set\_temp/ room\_temp, where XYZ represents the indoor unit being configured

Object Identifier in the BACnet Property list

Notate the Type and Instance values



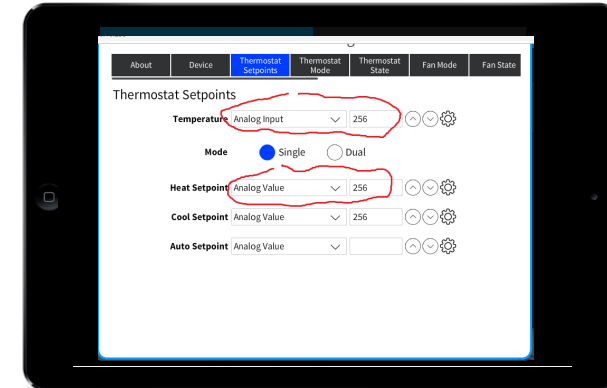
## On the Crestron Home Side

Click on the Thermostat Setpoints menu

Set the Mode to Single

Input the Instance Number and Type discovered through your BACnet device explorer for XYZ room\_temp in the Temperature field

Input the Instance Number and Type discovered through your BACnet device explorer for XYZ set\_temp in the Heat Setpoint field



# Configure Fan Speed

## On the BACnet Explorer Side

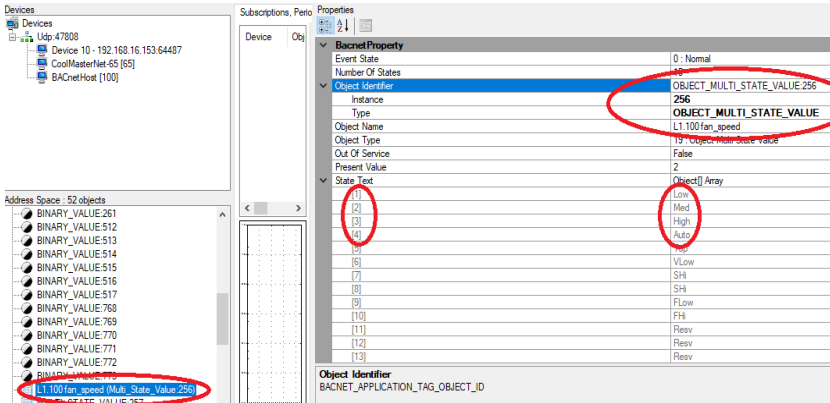
Locate and click on CoolMasterNet from the Device list on the top right.

CoolMasterNet's sub-list, locate and click on XYZ fan\_speed, where XYZ represents the indoor unit being configured

Locate and click on Object Identifier and State Text in the BACnet Property list

Notate the Object Identifier, Type, and Instance values

Notate the State Text and Object Array values



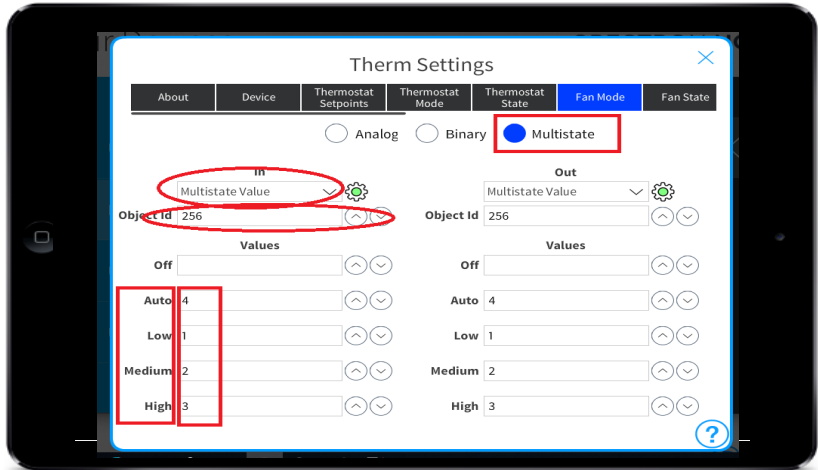
## On the Crestron Home Side

Click on the Fan Mode menu

Set the Fan Mode to **Multistate**

Input the Instance and Type discovered through your BACnet device explorer for the Dropdown Menu and Object Id field under both the in and out columns

Input the associated State Text and Object Array values discovered through your BACnet device explorer to their corresponding fields under both the in and out columns





# Configure Thermostat (Unit) Mode

## On the BACnet Explorer Side

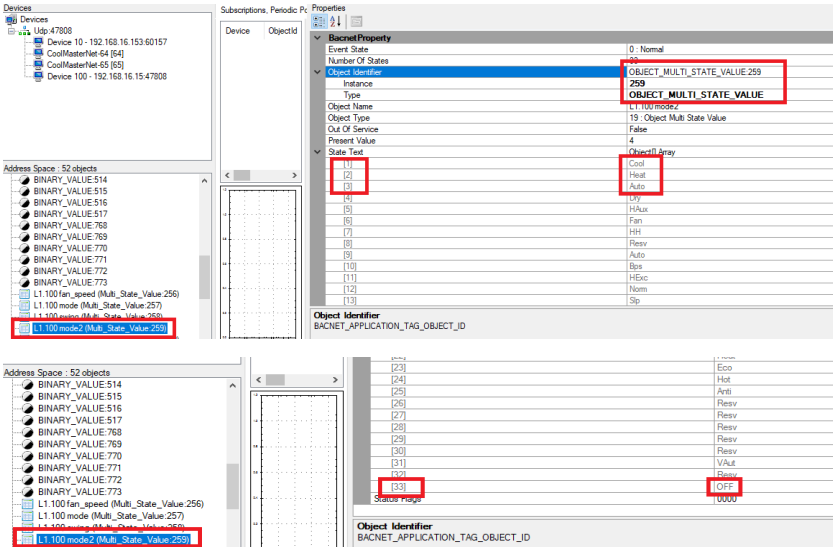
From CoolMasterNet's sub-list, locate and click on XYZ mode 2, where XYZ represents the indoor unit being configured

Locate and click on Object Identifier and State Text in the BACnet Property list

Notate the Object Identifier, Type, and Instance values

Notate the State Text and Object Array values

Notate the OFF Mode value, which may require scrolling, as it is often indexed within the State Text as 33



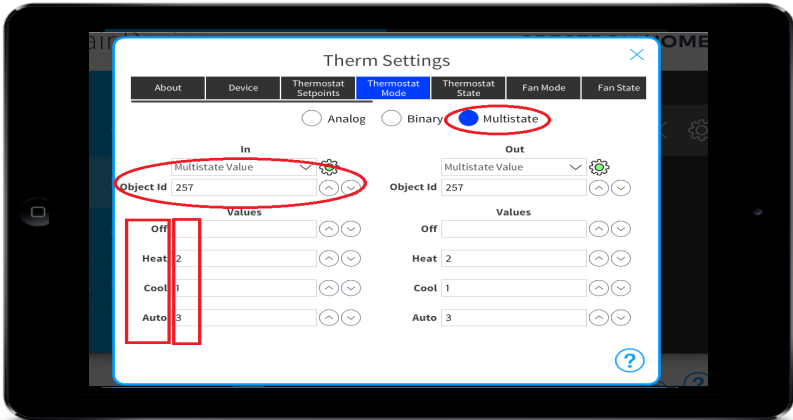
## On the Crestron Home Side

Click on the Thermostat mode menu

Set the Thermostat Mode to Multistate

Input the Instance and Type discovered through your BACnet device explorer for the Dropdown Menu and Object Id field under both the in and out columns

Input the associated State Text and Object Array values discovered through your BACnet device explorer to their corresponding fields for both In and Out



# Getting Finished

CRESTRON **HOME** | OS 3

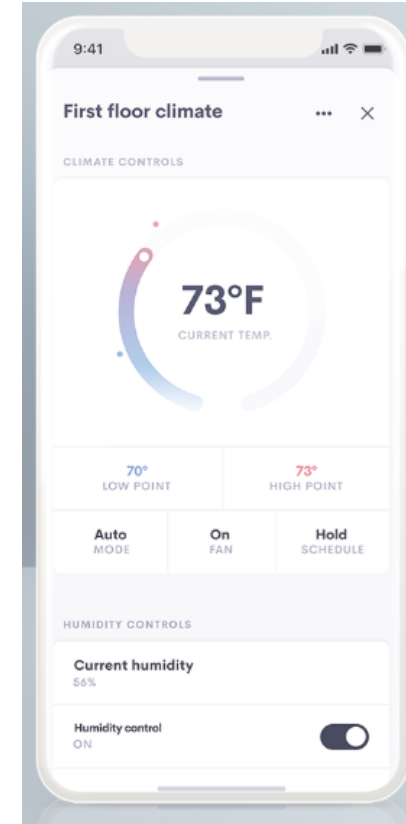
**Congrats!**

**CoolMasterNet has now been integrated with Crestron Home!**

Return from installation mode to Home's main page and select Climate to begin controlling and managing the units

## Test from Crestron Home

Go back and modify the mapping if you need to



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# CRESTRON **HOME** | OS 3

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## MDUs

- BACnet is ideal for MDUs or large homes with commercial-style HVAC systems
- Mass-deploy hundreds, or thousands, of MDU units by pushing out config data from the myCrestron management service.
- How to mass-deploy?
  1. Create your configuration once. Setup all of your BACnet IDs.
  2. Test on 1 system
  3. Register on myCrestron and make sure your config is backed up there.
  4. Generate Deployment Code
  5. Enter Deployment Code on N other units to pull down that same configuration

