NOX

After-hours HVAC scheduling made easy

Welcome to 7NOX!

This guide provides step-by-step instructions for setting up and integrating the 7NOX Site Device with your BMS. Each section of the Guide also contains links to online videos covering the same steps. Find all 7NOX training resources on our Training Page. If you have issues with integration, please consult the Troubleshooting section of this guide before contacting 7NOX Support.

> ⓘ **Before you begin, you will need:**
>
> - 7NOX Site Device or 7NOX Niagara Module
> - Your Site ID & 7NOX Portal URL

7NOX System Requirements

Apple OS Version	IOS 11.2+
Android OS Version	4.0.3+
Browser	Edge 127.x+, Firefox 129.0.2+, Chrome 127.0.3396.87+
PC Monitor	1920 × 1080 (Recommended)

How to Use this Guide

The **System's Integrator Guide** includes special sections to help you easily learn the 7NOX system and quickly solve problems. Look for them throughout this Guide.

Tips and Tricks

Look for these special information boxes to gain knowledge and tips about using 7NOX.

i

NOX NOTE: These notes provide special information about features and functions of the 7NOX interface.

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Pro Tips give you useful strategies for using 7NOX to get more functionality and performance.

How-to Videos

Throughout this Guide, you will find links to training videos within each section. These videos demonstrate how to perform specific tasks. Use them to support your learning.
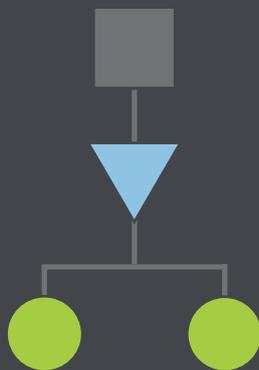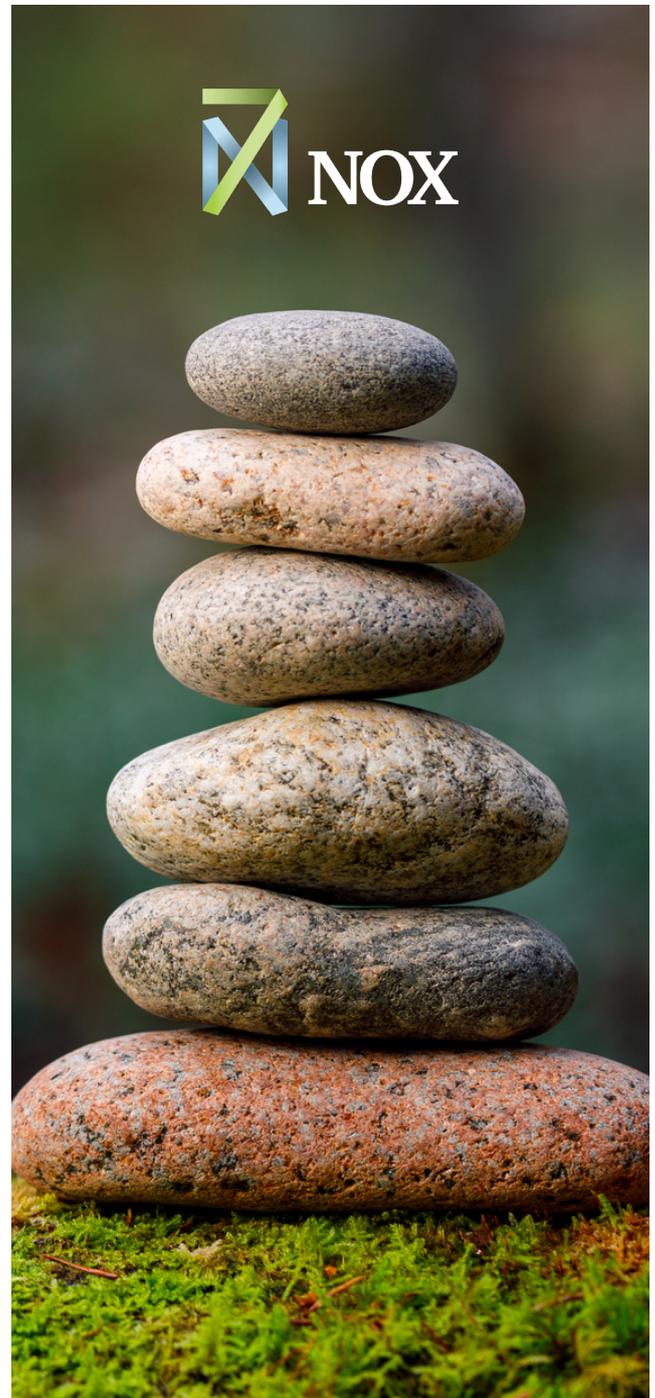
Look for this button

VIDEO>

Trouble shooting

Use the Troubleshooting Chart at the end of the Guide to solve common issues.

Contents

Go Mobile!

With the 7NOX mobile app, you can schedule on-the-go!

Download on the **Apple Store** or on **Google Play**.

Point Mapping

Standard Integration requires discovering BACnet points on the site device. Configuring point mapping ensures the site device can communicate via the BACnet protocol with your BMS. Point mapping identifies different building areas, such as floors or zones.

Obj Type	Obj Name	Description
Analog Value	Power1_xxxx	Optional. Energy consumed by the boiler when the building is billed (kWh).
Analog Value	Power2_xxxx	Optional – Energy consumed by the chiller when the building is billed (kWh).
Analog Value	WebSignalDuration_xxx	Total runtime for the current booking (minutes).
Binary Value	WebSignal_xxx	Boolean signal from 7NOX to initiate after-hours AC.
Binary Value	FloorOccupancy_xxx	Optional. BMS signal indicating normal building occupancy.
Binary Value	BmsDuration_xxx	Optional. Price override.
Analog Value	RemainingBookingDuration_xxx	Remaining runtime for the current booking (minutes).

XXXX = after-hours area. NOTE: The BACnet controller will need to poll or map the point from 7NOX device (e.g., a building with 2 floors, each floor has an after-hour point to turn on the associated floor).

| Obj Type	Obj Instance	Object Name
Analog Value	0	Optional – Boiler_Level1
Analog Value	1	Optional – Chiller_Level1
Binary Value	0	Optional –FloorOccupancy_Level1
Binary Value	1	WebSignal_Level1
Analog Value	2	Optional – Boiler_Level2
Analog Value	3	Optional – Chiller_Level2
Binary Value	3	Optional – FloorOccupancy_Level2
Binary Value	3	WebSignal_Level2

Network Firewall

Outbound Port (Router)

Source	Destination	Port	Description
7NOX	https://portal.7nox.com	443	Synchronize booking data

Inbound/Outbound (Local Network)

Source	Destination	Port	Description
7NOX	BACnet Controller	47808	After-hours point mapping
7NOX	NTP server	123	Time Synchronize

Typical integration setup using the 7NOX Site Device.
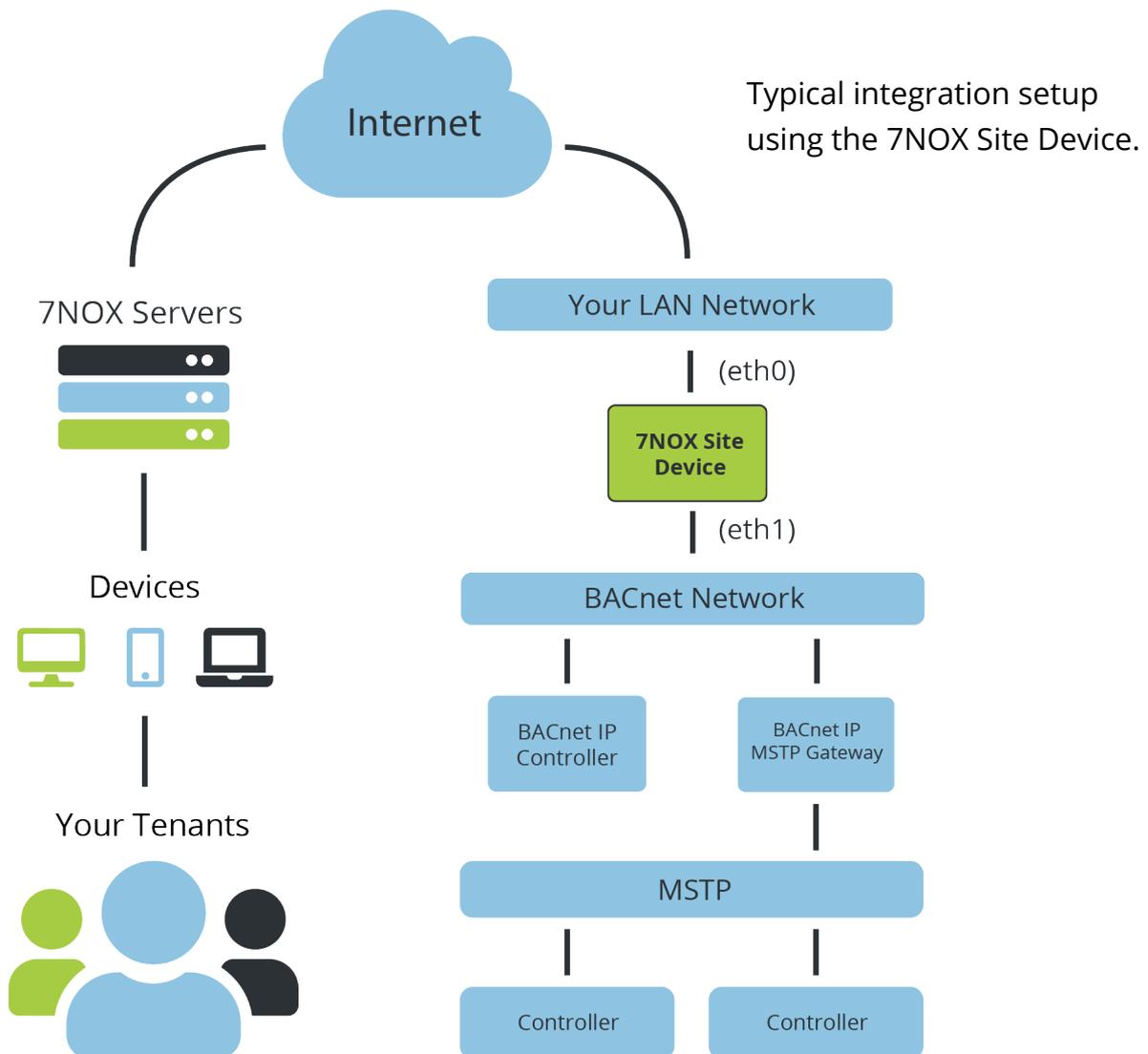
The 7NOX Site Device

The 7NOX Site Device is a compact Linux-based client that runs on low-resource hardware like a Raspberry Pi. The site device queries the 7NOX Portal's REST API to obtain bookings and communicate with your BMS via BACnet.

Note: This product should only be connected to an external power supply rated at 5V/2.5 A DC.

Device Specifications

Electrical

Input	Micro USB connector
Voltage (V, nominal)	5 VDC
Current (A, nominal)	2.5 A

Environmental

Operating Temp	0°C to 50°C

Hardware

Device type	Raspberry Pi 4B 4GB Board
Processor	Broadcom BCM2711, Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz
SD Card	32GB

Things you will need

- ✅ Site device & 5V power supply
- ✅ Network connection to the internet
- ✅ Computer
- ✅ USB-to-Ethernet adapter (Optional)

NOTE: If your BMS network is on a local area network and not connected to the internet, you will also need a USB-to-Ethernet adapter.

Site Device Configuration

Follow these steps to connect to your 7NOX Site Device and discover it in your BMS.

1. Connect the 5-volt power supply to your site device and wait for it to power up.
2. Next, connect to your on-board Ethernet port **(eth0)** to your internet network.
3. If needed, you should now plug your USB-to-Ethernet adapter into the site device's USB slot **(eth1)**.

eth0 — connecting site device to the internet
eth1 — connecting it to a LAN

eth0   eth1
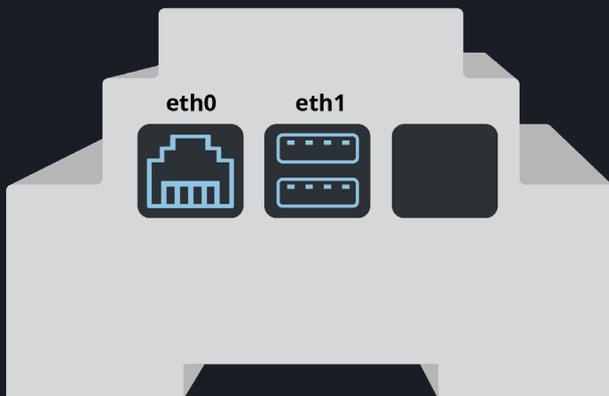
[Watch Video!](#)

4. Open a web browser and navigate to **http://7nox-site-device.local**
5. Log in using the credentials provided:

Username: **admin**
Password: **7Nox**

Configuration Tabs

Once connected, you will have access to five main configuration tabs.

Network

DHCP is enabled by default for both eth0 and eth1. To set static IP configurations, simply disable DHCP and enter your desired settings for IP address, subnet mask, gateway, and DNS. Hit the submit button.

7NOX App

In the 7NOX App tab, you will find the BACnet settings: BACnet ID, Port, and IP address. If you are using the eth1 port with a USB-to-Ethernet adapter, your BACnet IP address should be the same as your eth1 IP address. The Log Mode is set to 3 by default. Mode 3 will record all activities into a flat file. Modes 1 and 2 record less information and are not recommended.

The database should be reinitialized when configuring the site device for a different site.

The 7NOX Site ID and URL are unique to your site, and both will be provided to you at the time of activation. Enter both in the "Site ID" and "URL" fields. Finally, hit the Submit button. Then reboot the device. The page will refresh. The remaining tabs and their funtions include:

Firmware — Upgrading the device's firmware using a firmware file.

System — Setting time zone, downloading logs or reinitializing the database.

Troubleshooting — Running diagnostics and download error logs.

Change Password — Changing Site Device login credentials.

Discovery & Integration

1. After configuring and rebooting your site device, you can now open your BACnet discovery tool. The example below uses Niagara Workbench.

2. Begin by clicking on the BACnet network under drivers in the navigation tree. Once the page has loaded, click on Discover.


[Watch Video!]
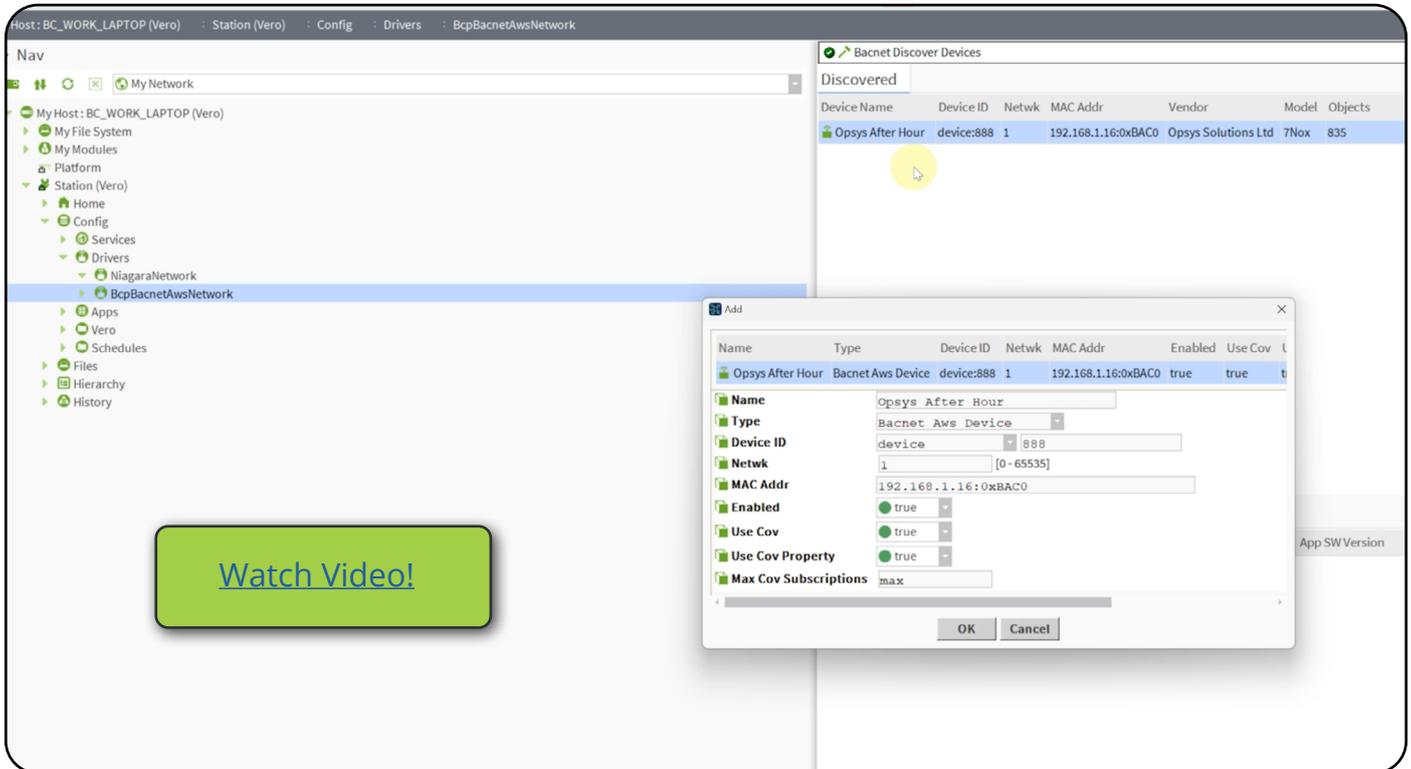
3. Once the discovery has finished, you will see the **OpSys After Hours device** appear in the discovered devices window. Select the device and add it. Once added, it will appear under the navigation window.
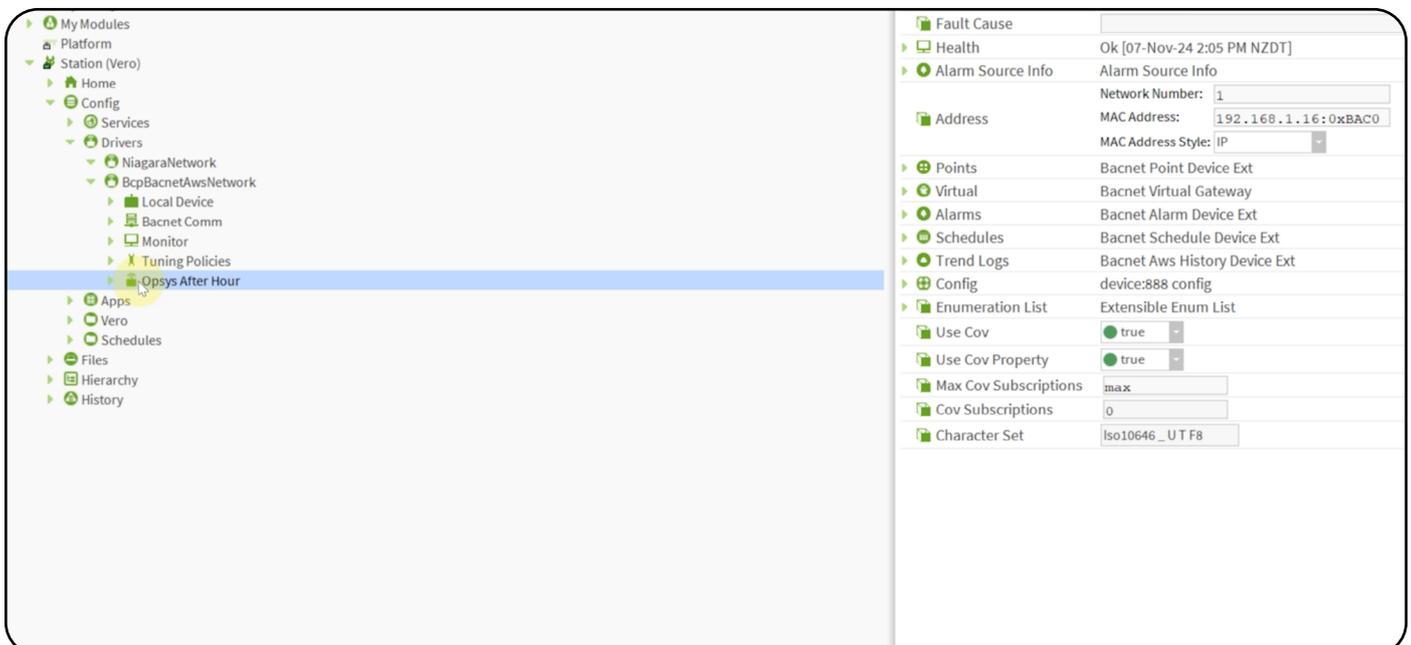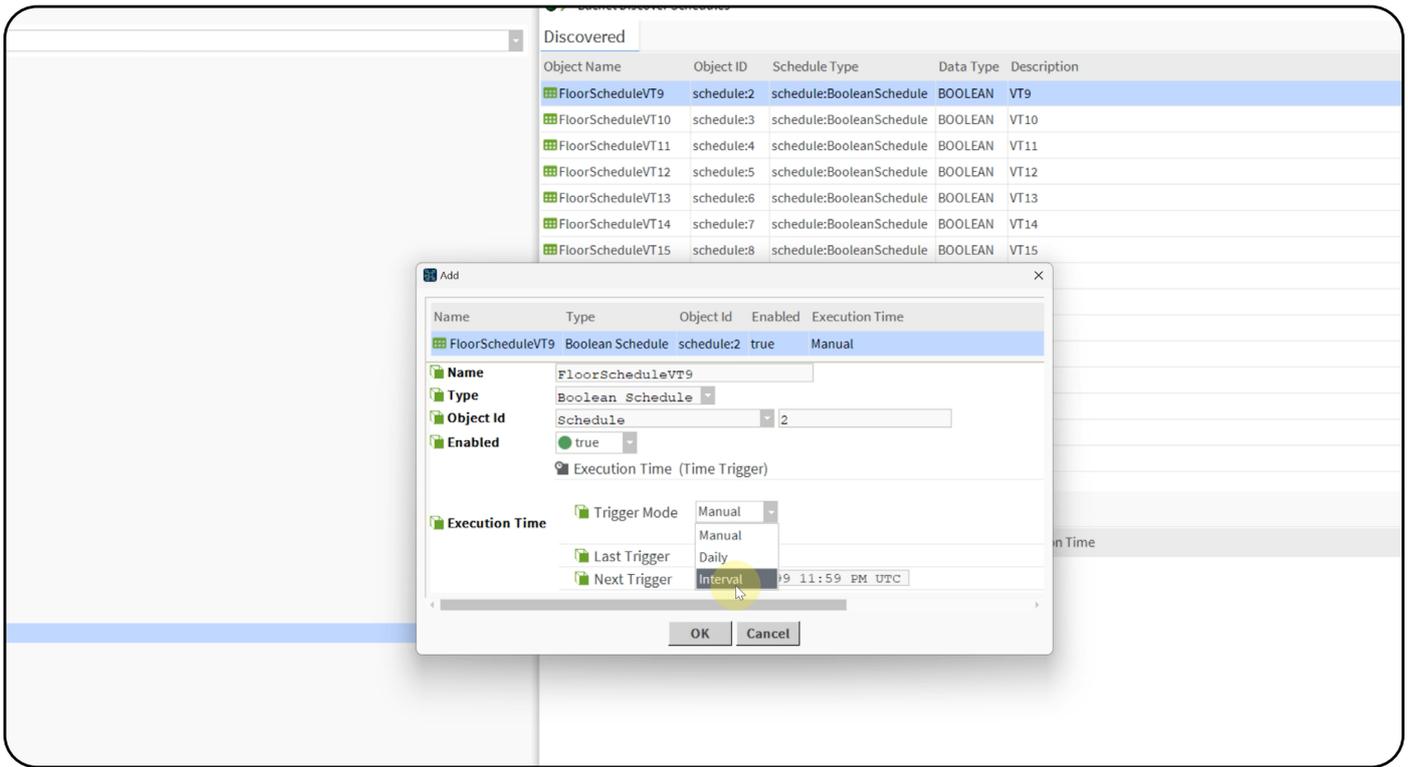
4. Click on the BACnet Network and select **Discover**. Once the 7NOX Site Device appears, add it to your network.
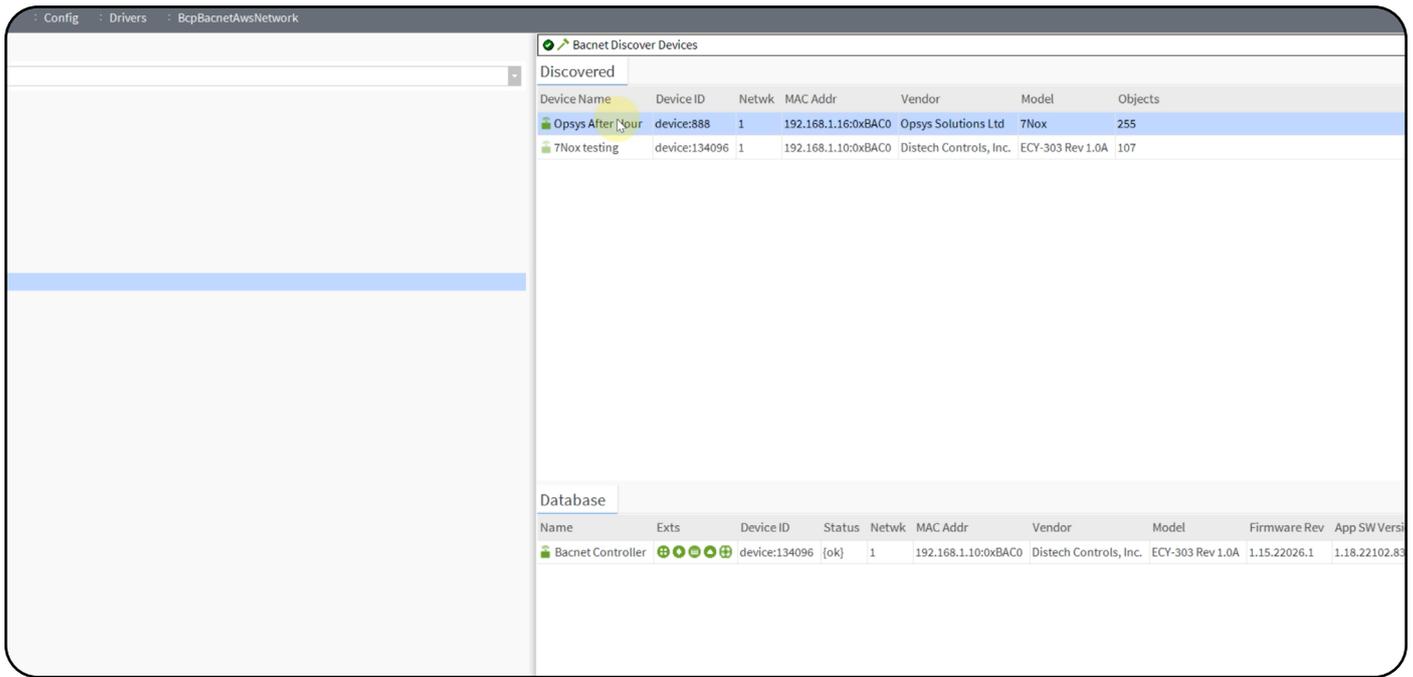
5. Open the 7NOX Site Device and go to the **Schedules** section.
6. Select **Schedule Import Manager** and click **Discover**.
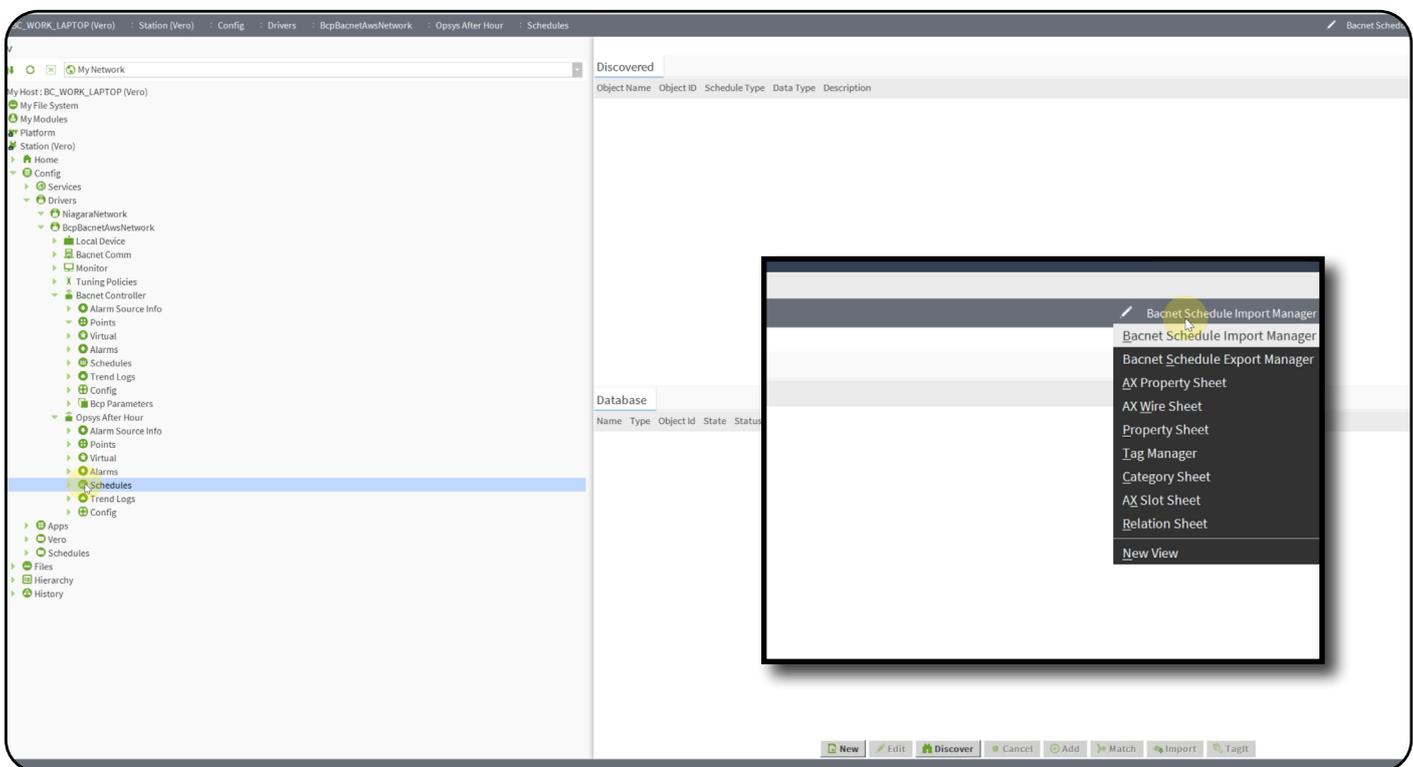
7. Open the schedule, change the trigger mode from **Manual** to **Interval** and click '**OK**.'


8. Return to the **BACnet schedules** and open the **Schedule Export Manager.**
9. Click **Discover** to find your schedule.
10. Choose your level (e.g., *Level 9 Schedule*), and **rename it** (e.g., *Level 9 Schedule AH*). Renaming ensures no conflicts with other schedules.
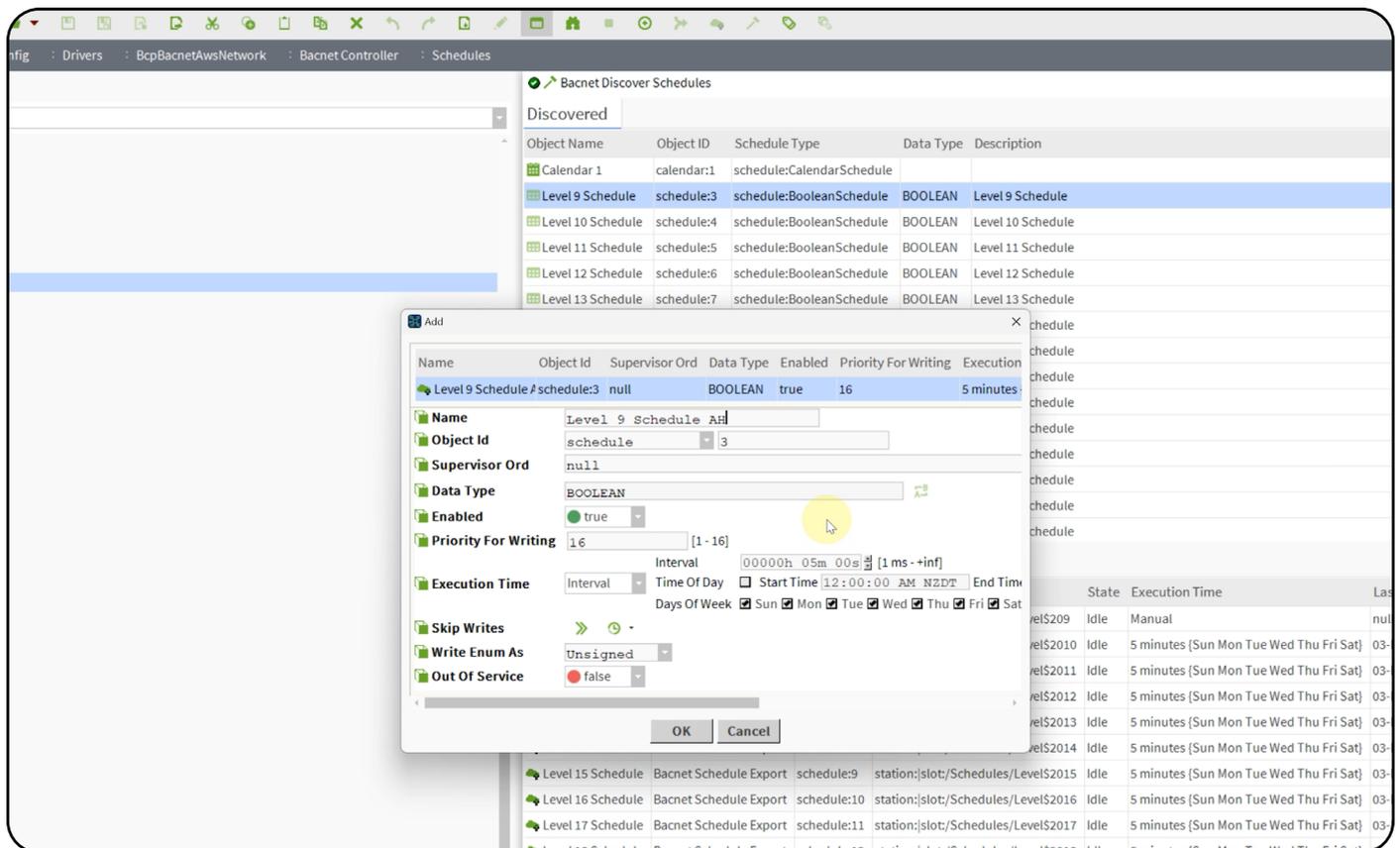
11. Set the **Supervisor ORD** to match the new schedule. This links the Supervisor to the 7NOX system. You should now see your unique after hours schedule in the BACnet schedules.
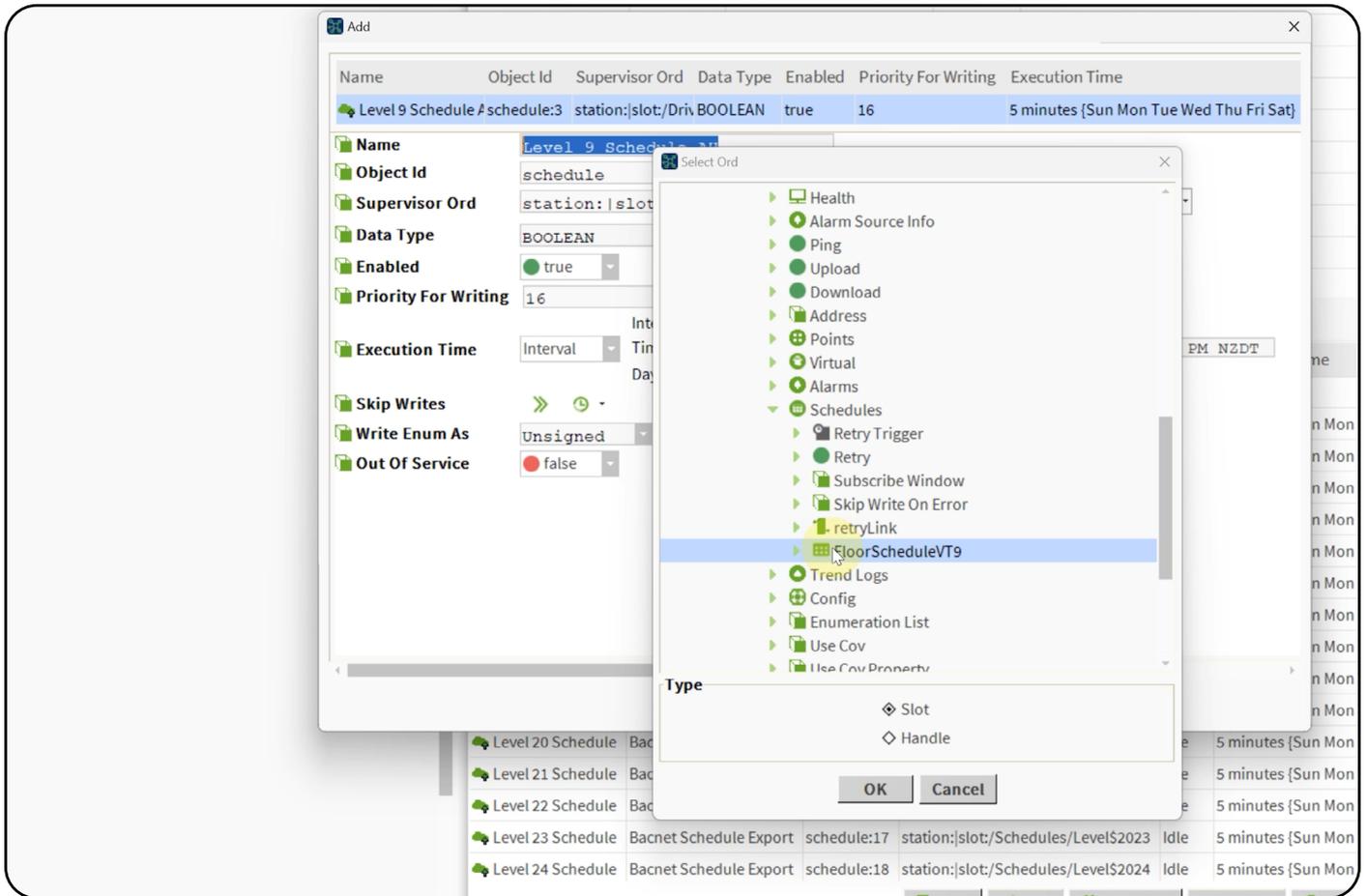
12. You should now see your **unique after hours schedule** in the BACnet schedules.
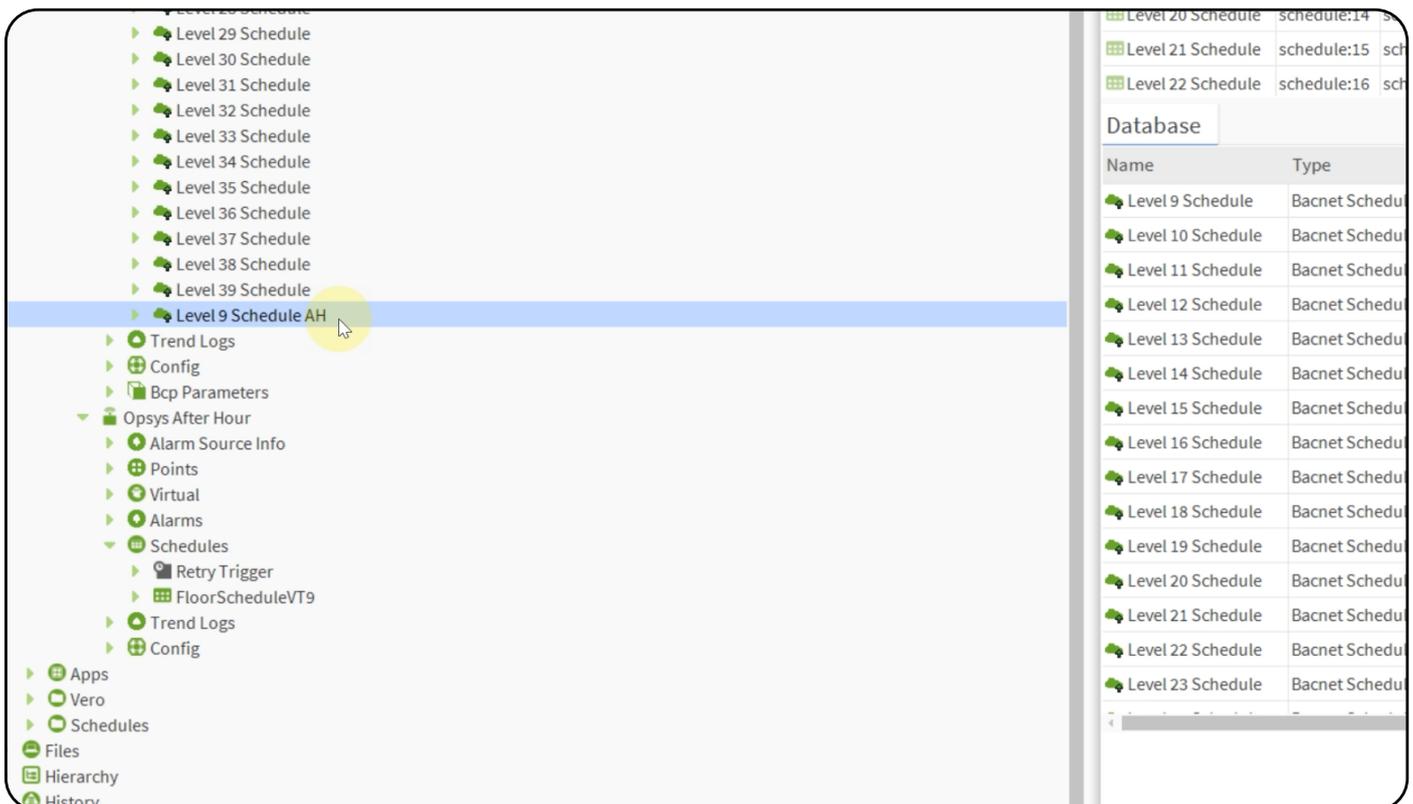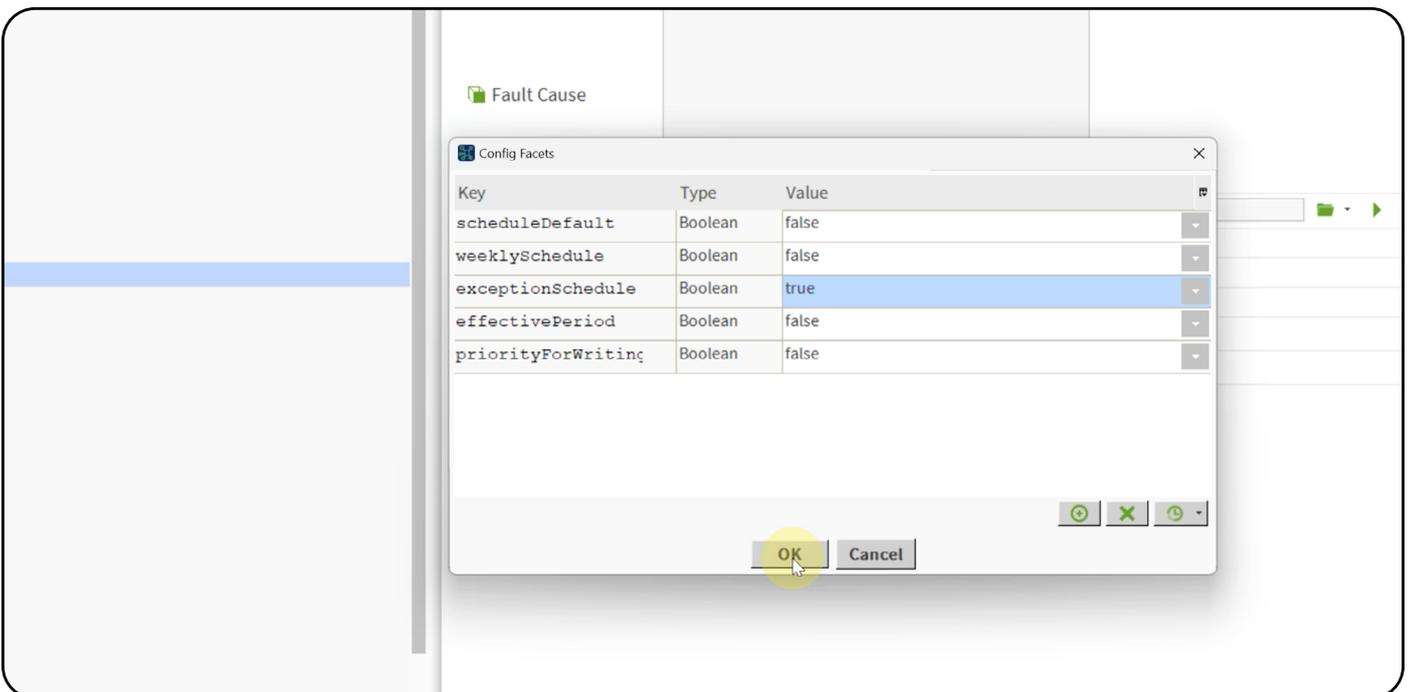
13. Select it and adjust the write priorities to ensure proper control. Set the following:

```
scheduleDefault   =  true
weeklySchedule   =  true
effectivePeriod    =  true
priorityForWriting =  true
```
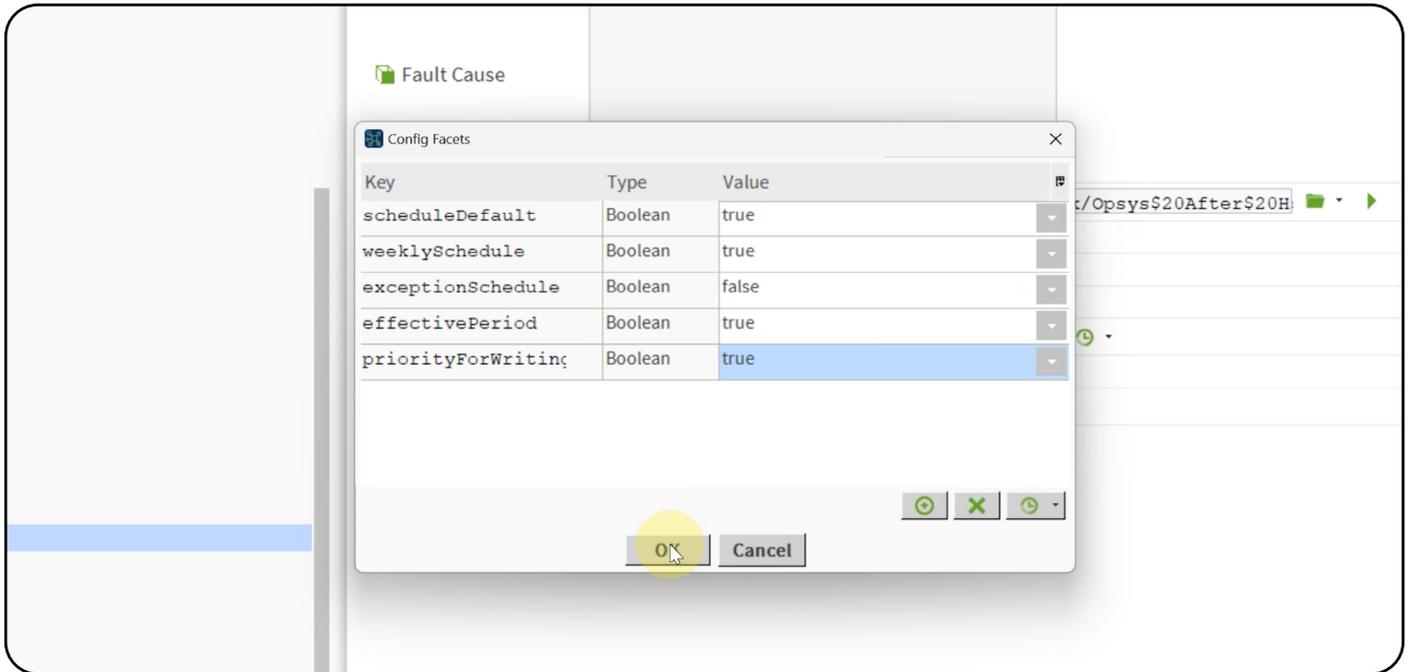

14. Now open the existing schedule and set its 'exceptionSchedule' to 'True.' This ensures exceptions take priority over the default schedule. Hit the save button.

15. Once the polling interval has fired the trigger, you can check to see if the 7NOX portal bookings are syncing with your schedules. To check, go back to the 7NOX Site Device and open the Special Events tab under schedules.
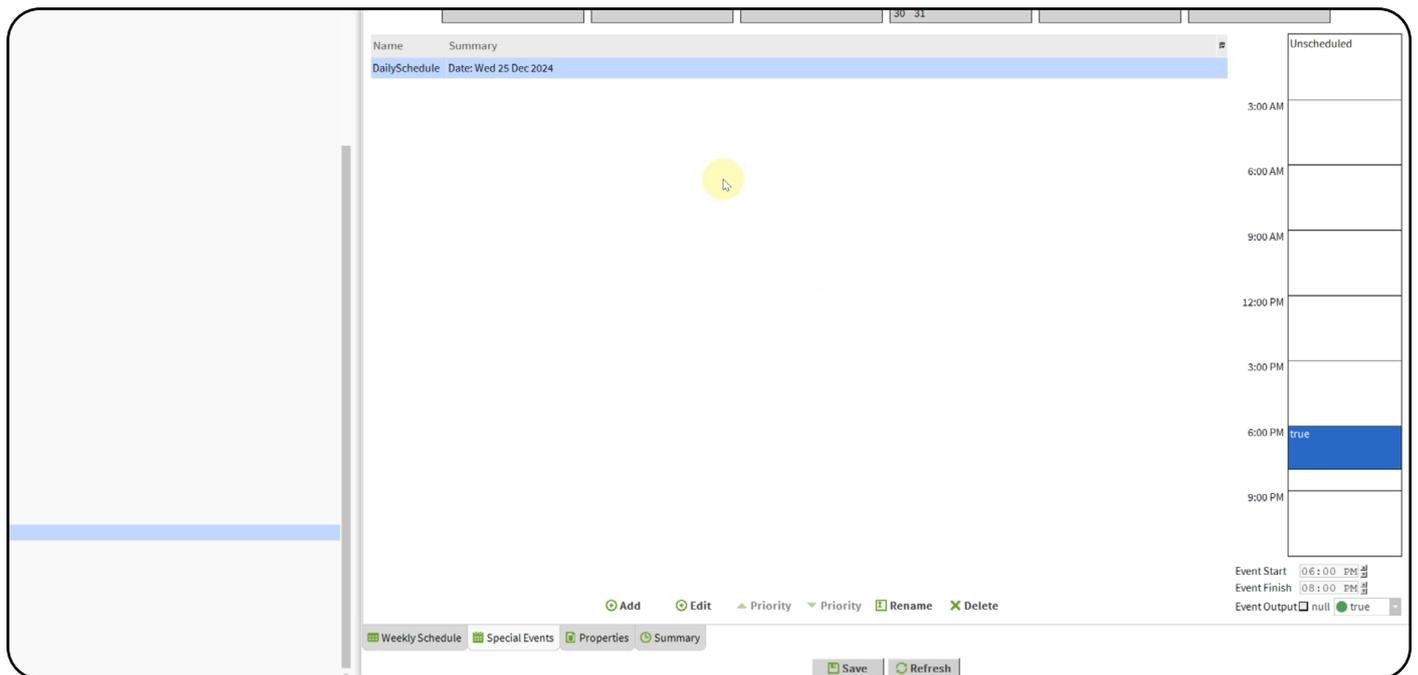
In the image above, you will see the booking for your level. If everything is showing correctly, your integration is complete.

16. Repeat the same process for all your remaining levels.

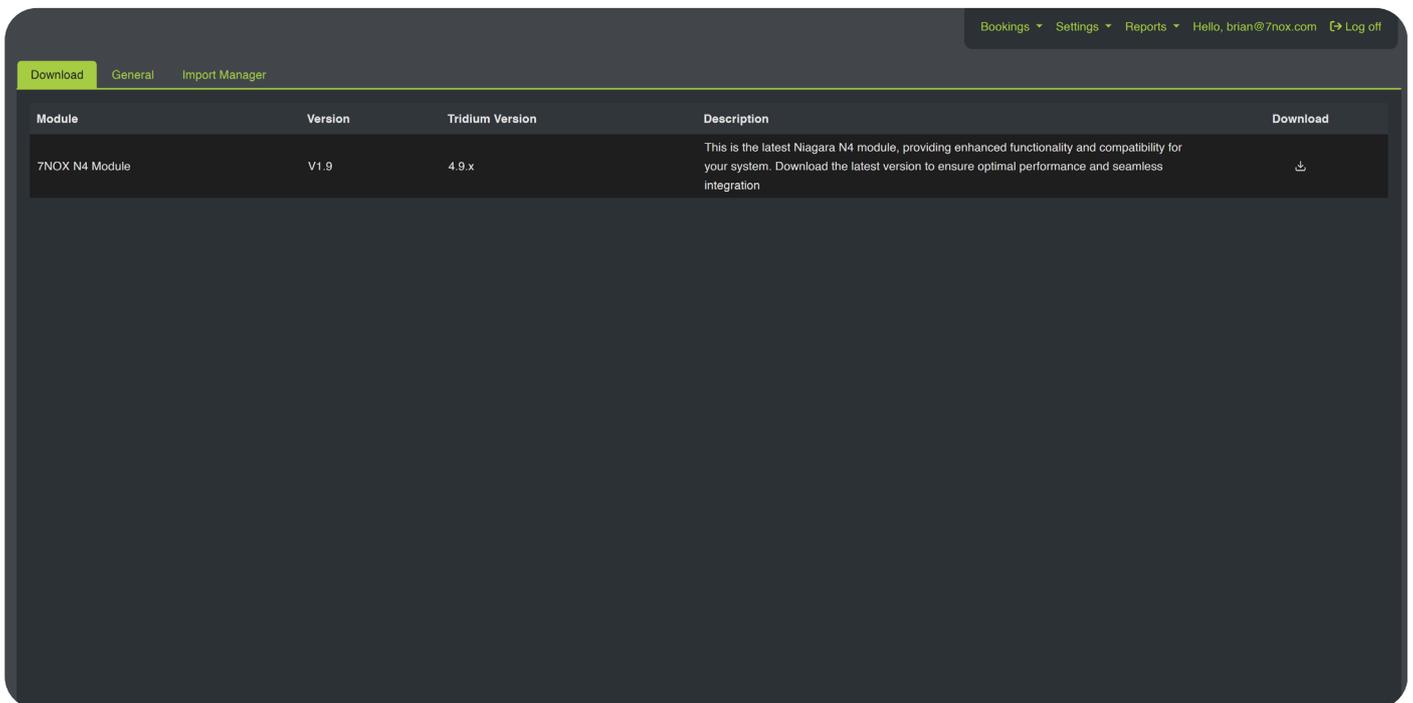# Niagara Integration

Follow these steps to connect to use the 7NOX Niagara Module to connect to your BMS.

Install the 7NOX Module

> **!** Before you begin, you'll want to **close your Niagara Workbench® supervisory app** and ensure that the station is not running in application director. If it is running, stop it and close Workbench.

1. Login into your 7NOX Portal instance. Navigate to the **Platform Manager** under the settings menu. In the "Download" tab, you find the Niagara Module. Once the module is downloaded, copy and paste the .jar file into the Niagara 4 modules folder. Now, start up Workbench again.

Bookings ▾   Settings ▾   Reports ▾   Hello, brian@7nox.com   ⟶ Log off

| Download | General | Import Manager |

Module	Version	Tridium Version	Description	Download
7NOX N4 Module	V1.9	4.9.x	This is the latest Niagara N4 module, providing enhanced functionality and compatibility for your system. Download the latest version to ensure optimal performance and seamless integration	⤓

Add 7NOX Network to Niagara Module & Discover Site

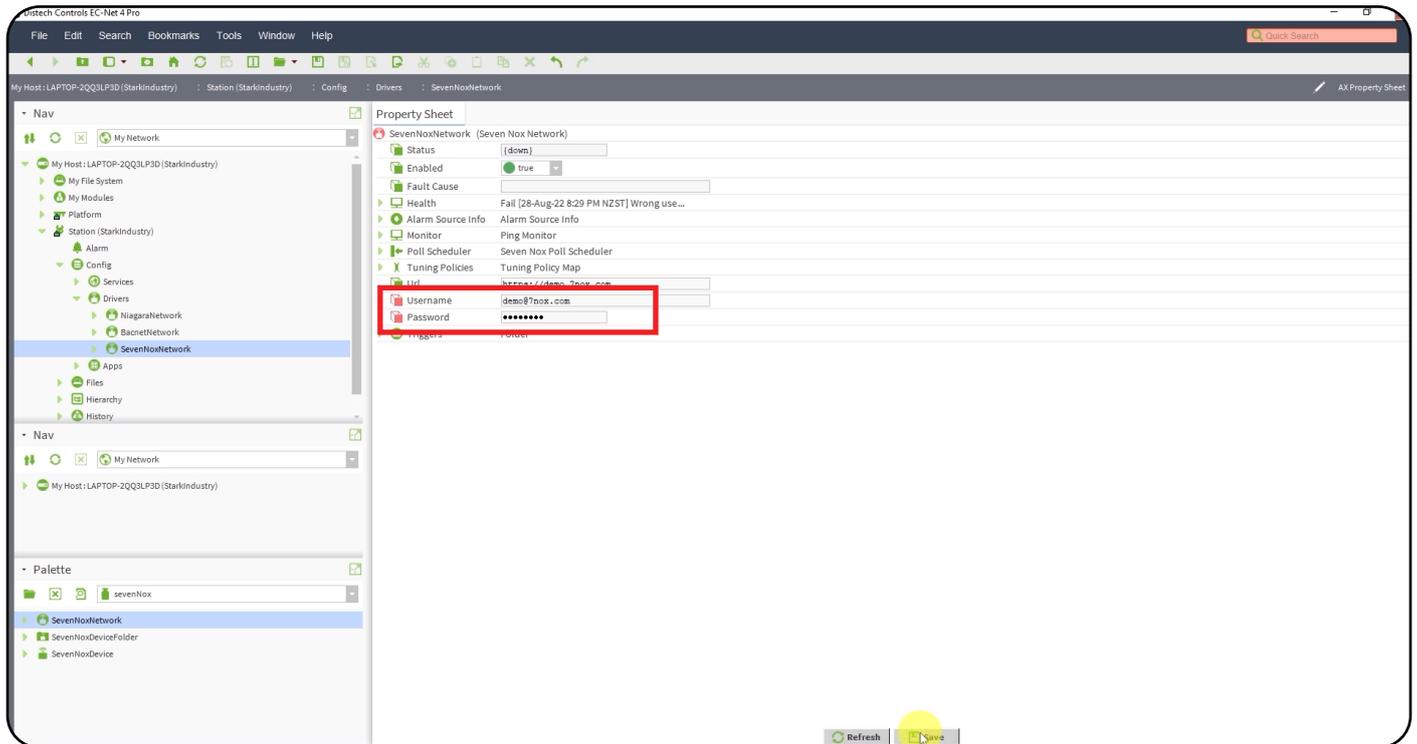1. Start "Station" under Application Director.
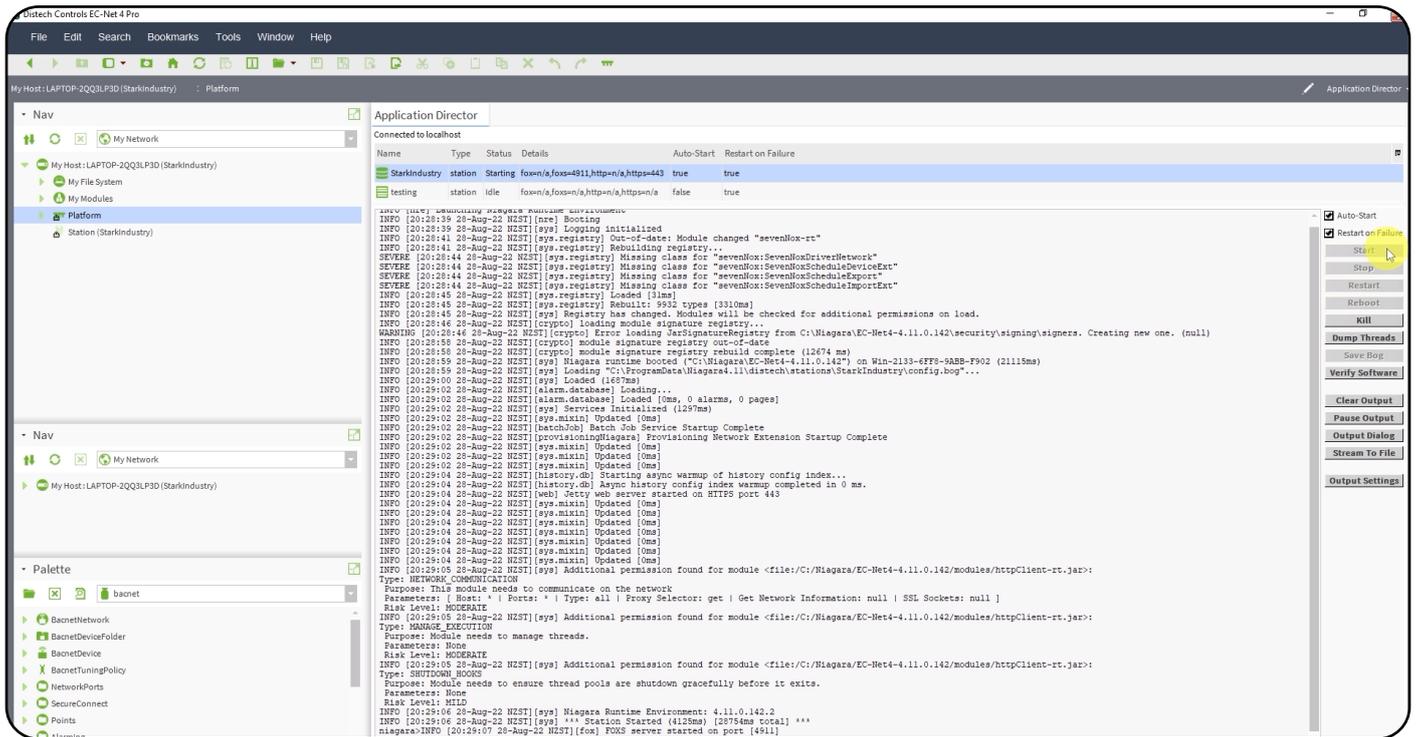
2. Locate the "sevenNox" module in the Palette

3. Drag and drop the **"SevenNoxNetwork"** module into the **"Drivers"** folder (Station -> Config->Drivers).
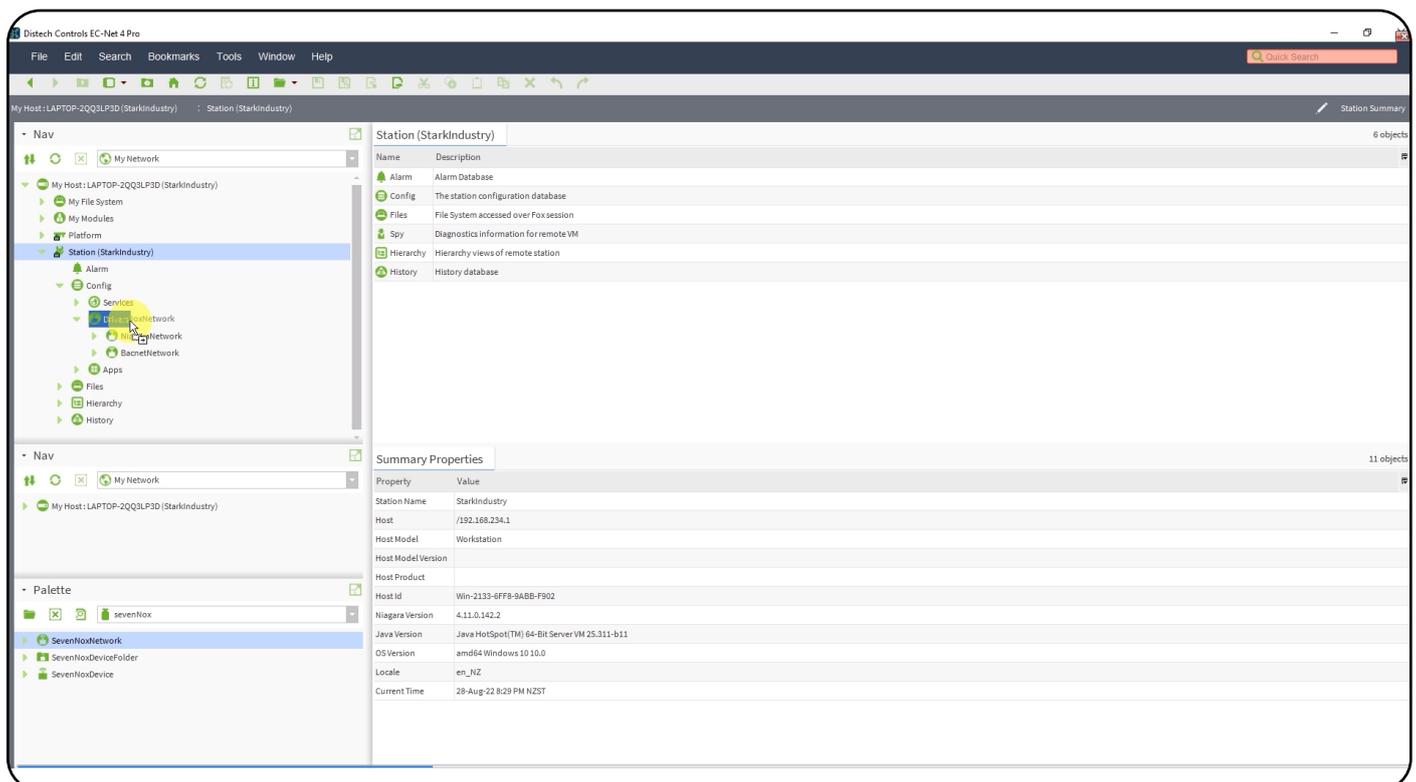
4. **Right click on the "SevenNoxNetwork" module. Under "Views" choose the "AX Property Sheet".**

5. In the Property Sheet, enter your 7NOX username and password. Hit the "Save" button.

6. Ping the network by right clicking the "SevenNoxNetwork">Actions>Ping. If correctly configured, the status will show "OK".

7. Double click on the "SevenNoxNetwork" module. Hit the "Discover" button to discover the control points. Drag and drop the site into the "Database".
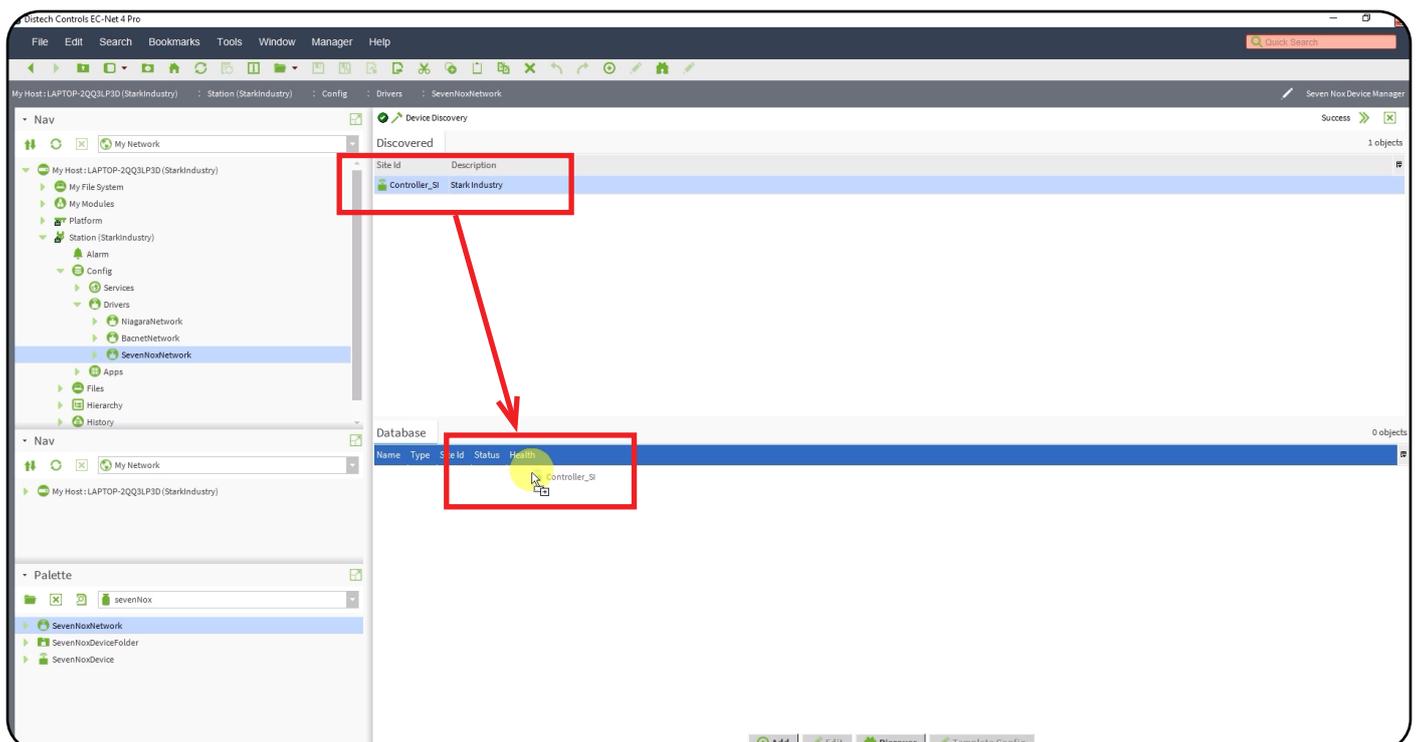
Retrieve Data from 7NOX Using "Get" Functions

Right clicking on the "SevenNox" module and choosing the "Actions" menu will reveal four different "Get" functions for retrieving data from the 7NOX platform.

Get All Schedules

The "Get All Schedules" function will retrieve data from the 7NOX Floor Manager.
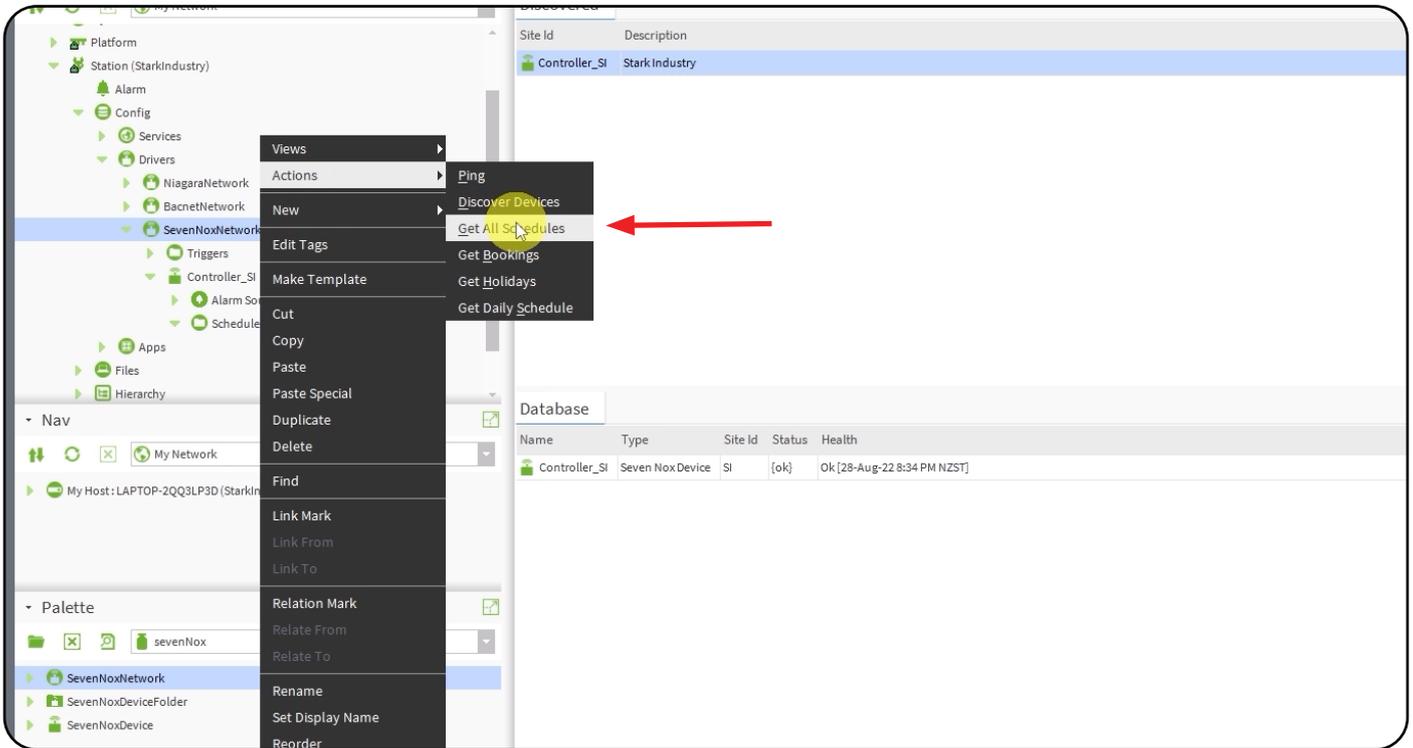
Executing this function populate all zones under the "Schedules" section of the "Controller" folder.
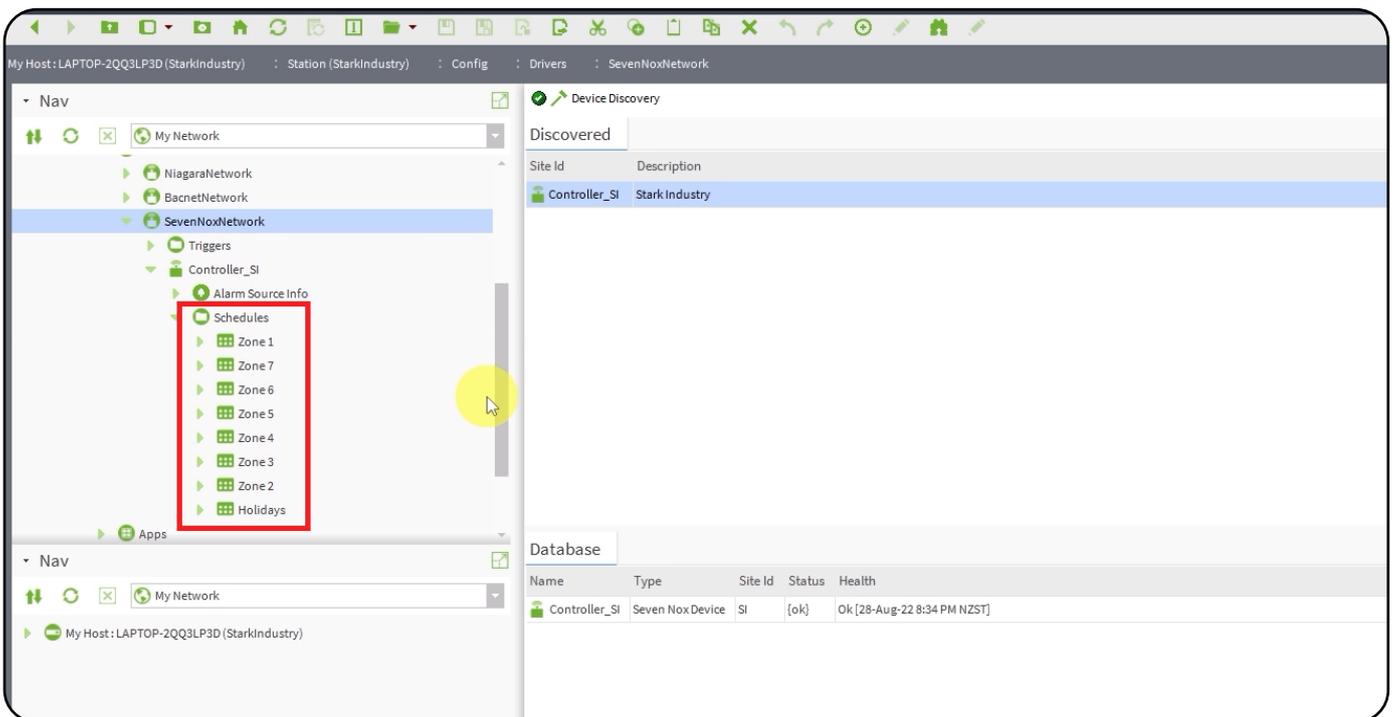
Get Bookings

The "Get Bookings" function retrieves data from the "Create a Single Booking" section of the 7NOX portal.
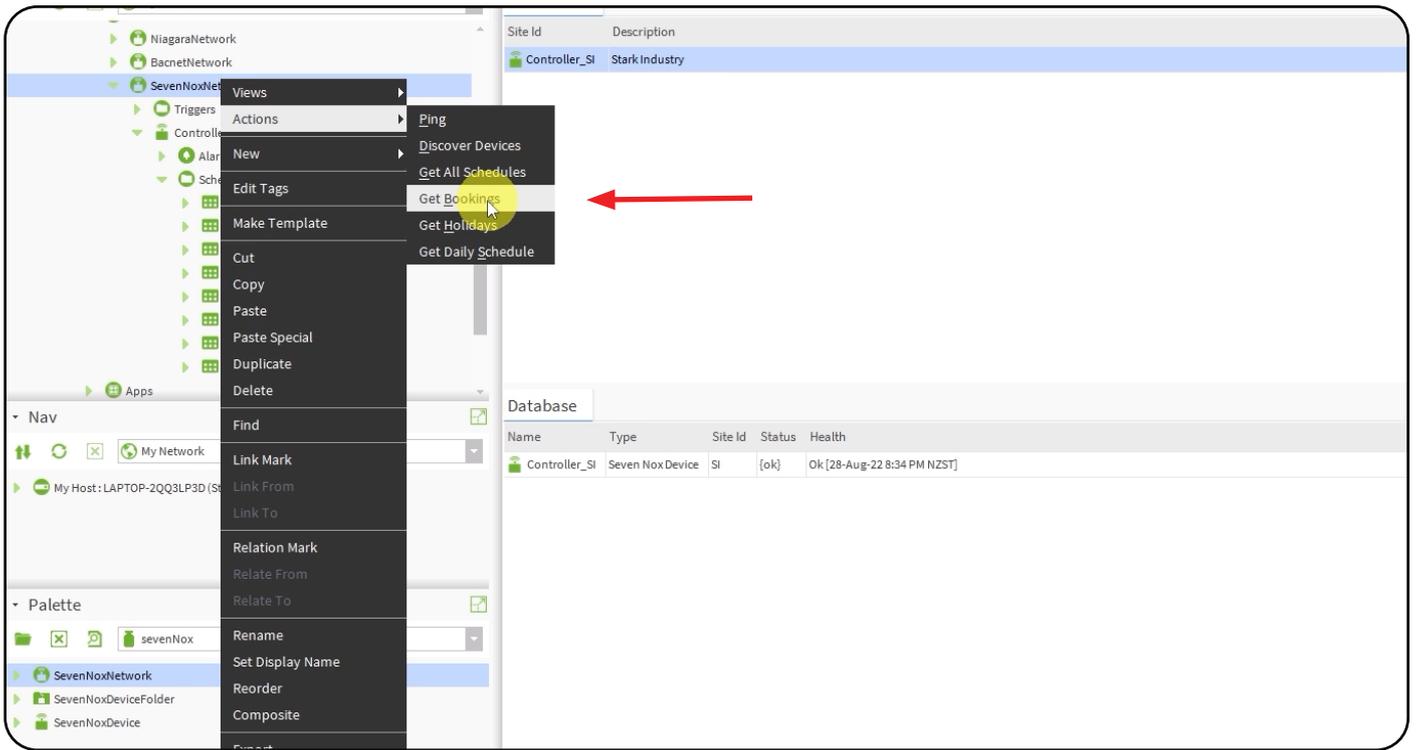
Once "Get Bookings" is initiated and the transfer refreshed, all 7NOX bookings will appear in the "Special Events" tab.
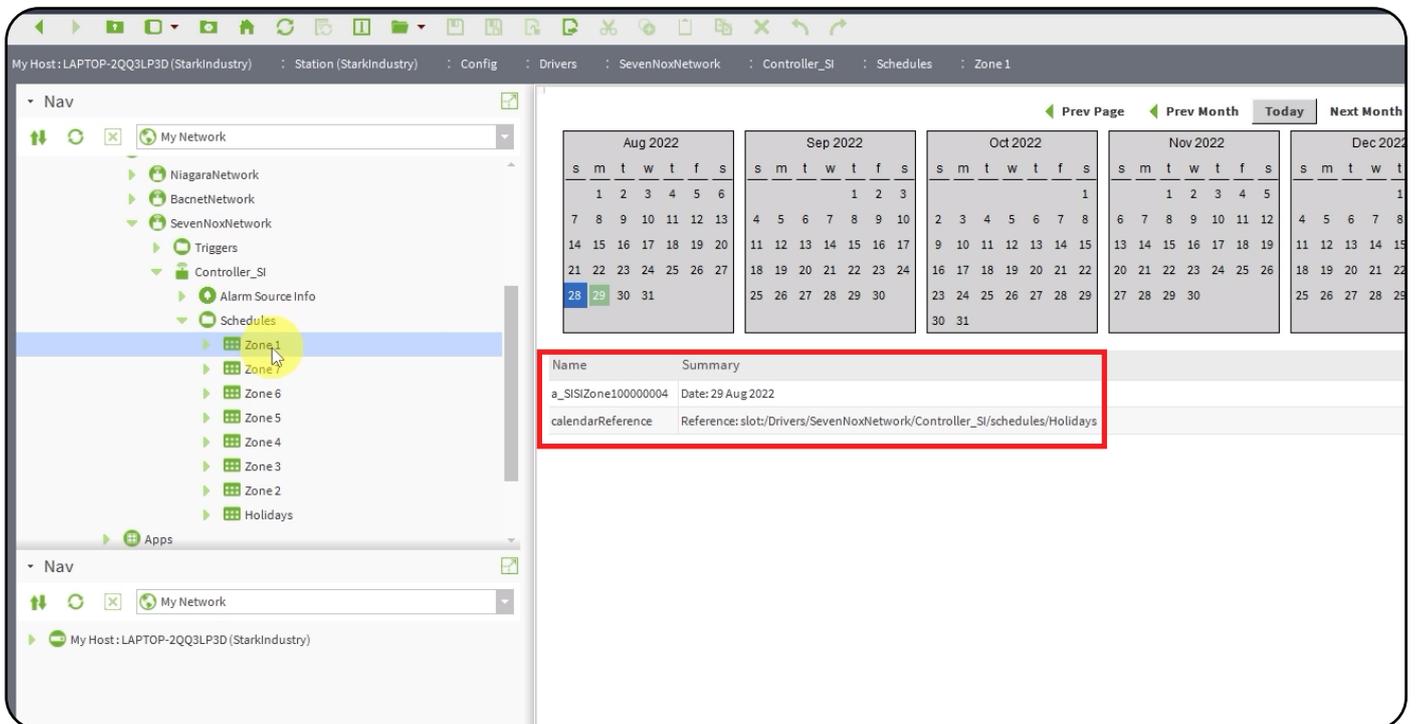
Get Holiday

This function gathers data from the 7NOX **Holiday Manager**.
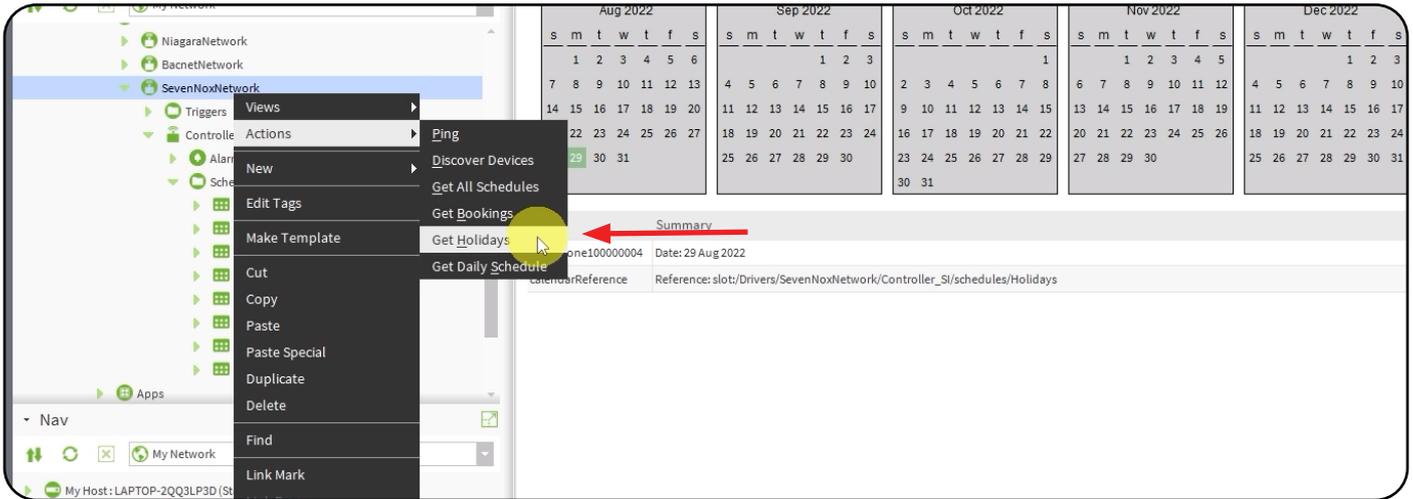
Get Daily Schedule

The "Get Daily Schedule" function retrieves information from the 7NOX **Site Manager** page.
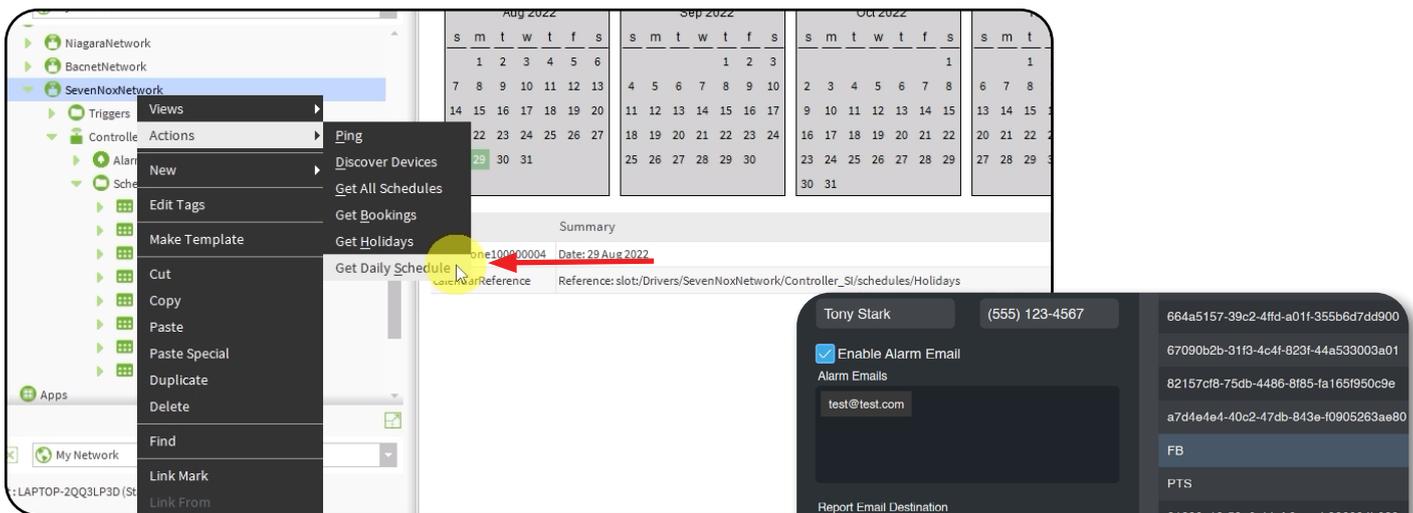
If you're using 7NOX to schedule after hours services, then you would select the days and times which make up your normal business hours. Ticking these boxes will determine those hours. The "Get Daily Schedule" function would then pull those selected days and times into Niagara.

However, if you're using 7NOX as a simple scheduler for booking rooms at any time, then you would leave these boxes unticked. This would essentially tell Niagara that there are no "normal" business hours for your site and that tenants are open to book services at any time and day.
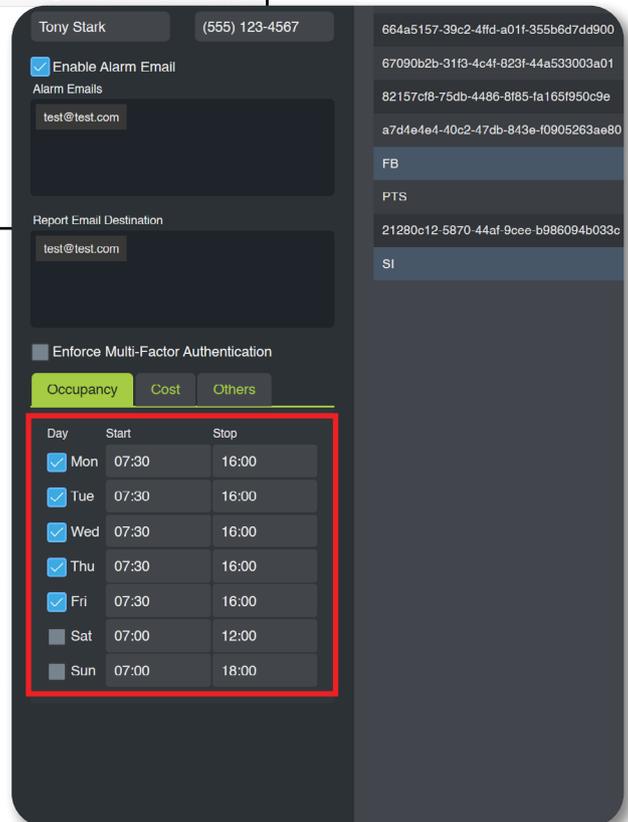
Setting up Triggers

1. All four of the "Get" functions have "Triggers," which you can use to adjust the parameters of the data transfer. To access the triggers, right click on the SevenNoxNetwork module, click on the views tab, choose the AX Property Sheet. Then click on "Triggers".
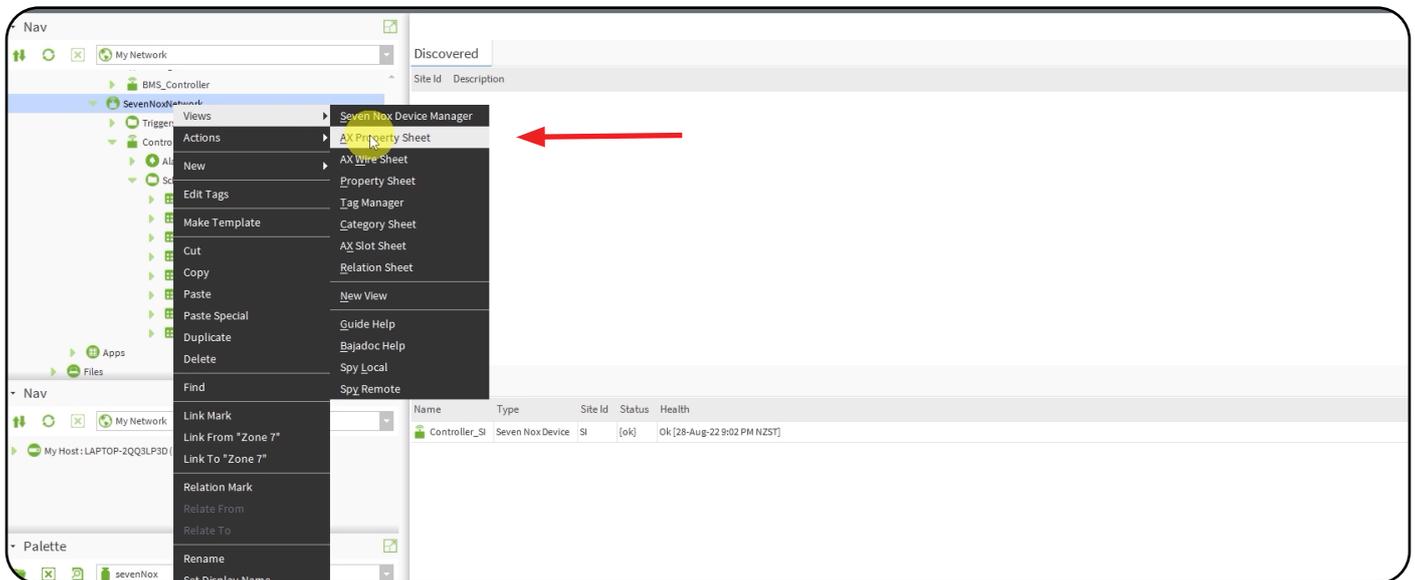

2. The Trigger Mode is set to "Daily" by default; however, you can reset this parameter to "Manual" or "Interval" and customize the transfer. The same adjustments can be made for GetBookings, GetDailyEvents, and GetHolidays.
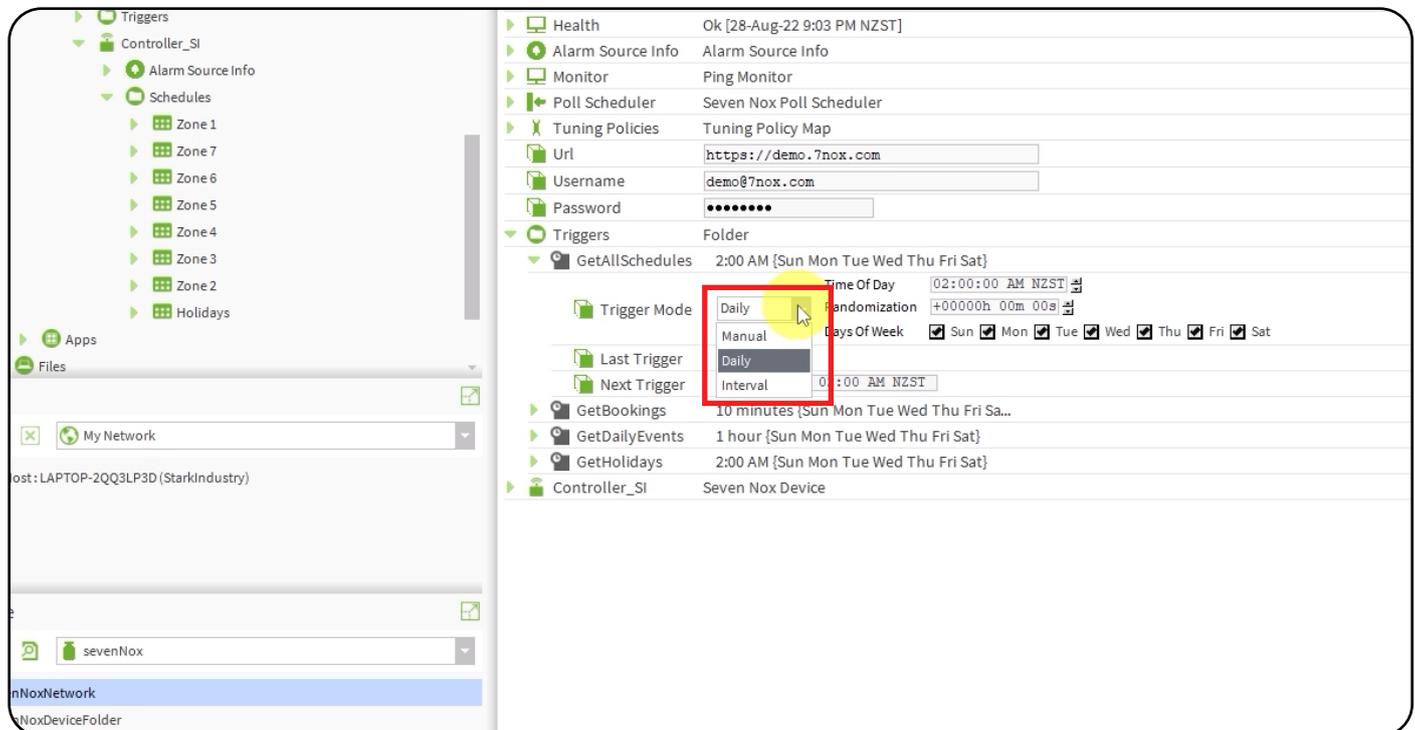

3. Generally, the GetBookings trigger is the most important because the other three are one-off transfers, while the bookings data is set to update every ten minutes. However, you can change this frequency if you like.
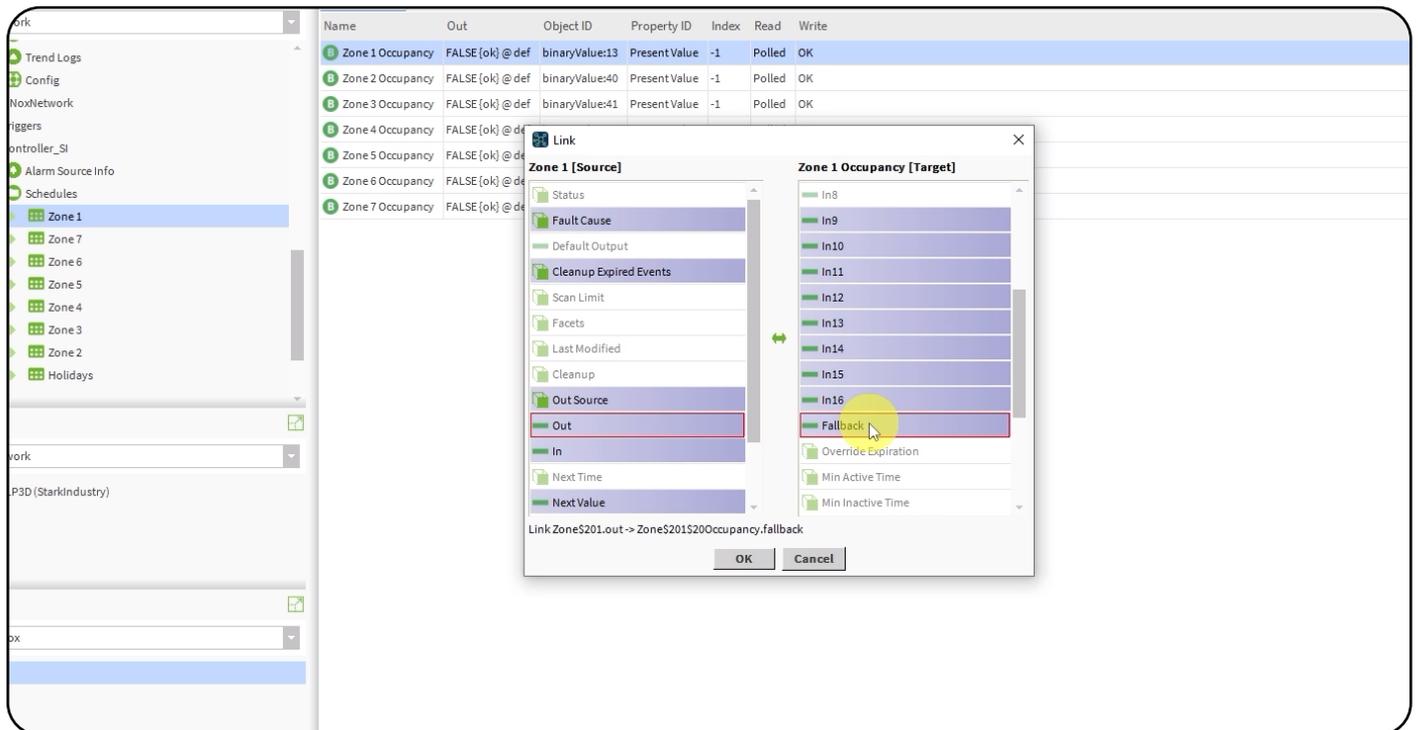
Method 1: Link Marking

1. To link a schedule to a control point, right click on schedule zone and click "link mark".
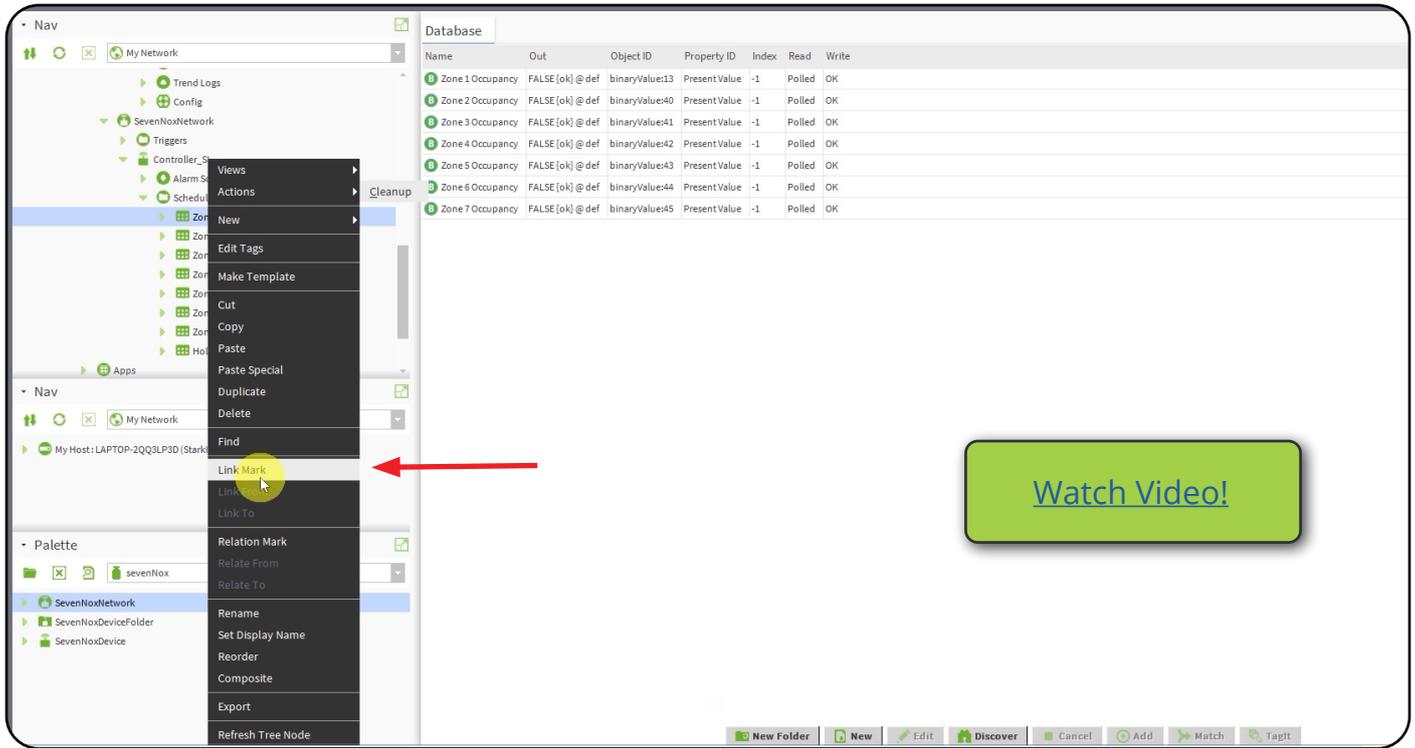
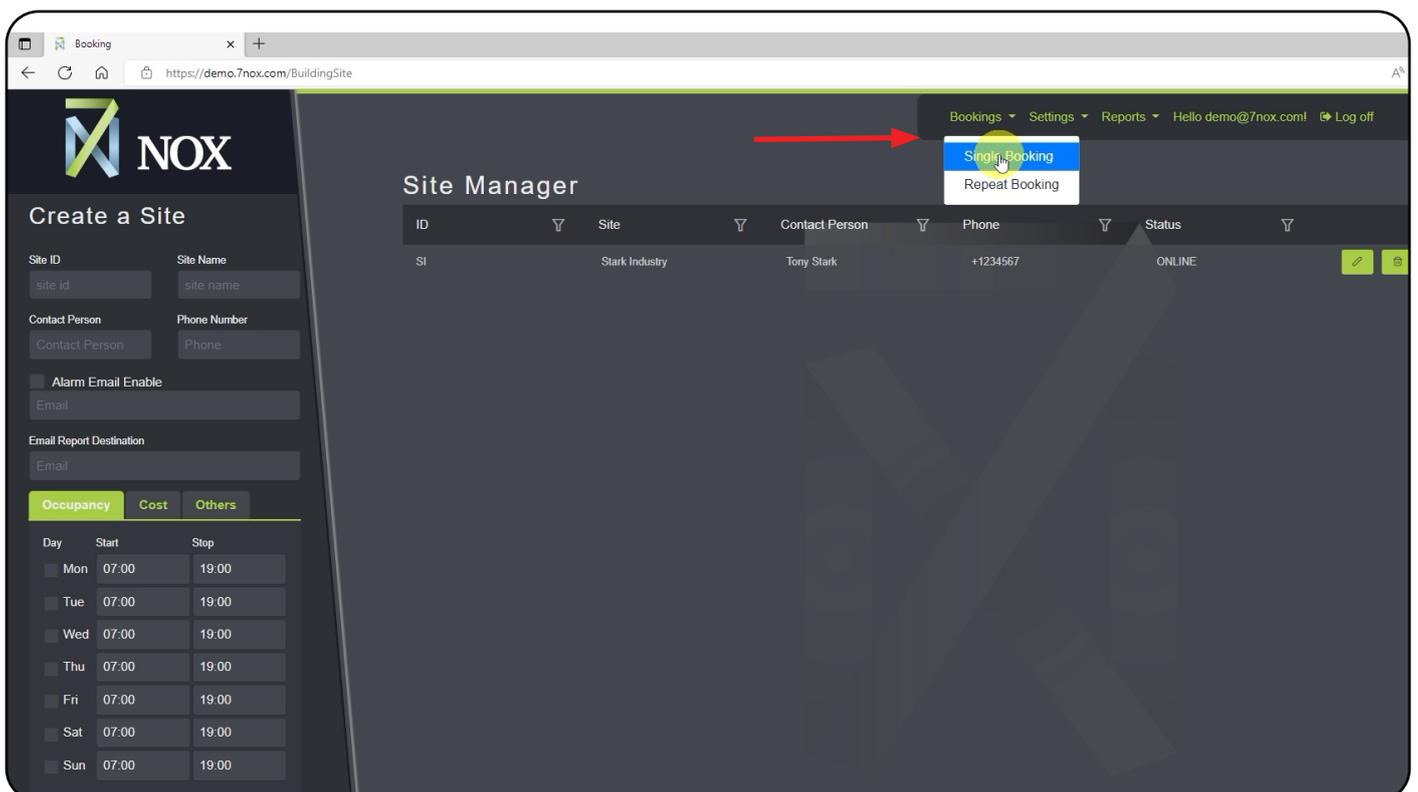2. Right click on the corresponding BMS point and choose "Link From".
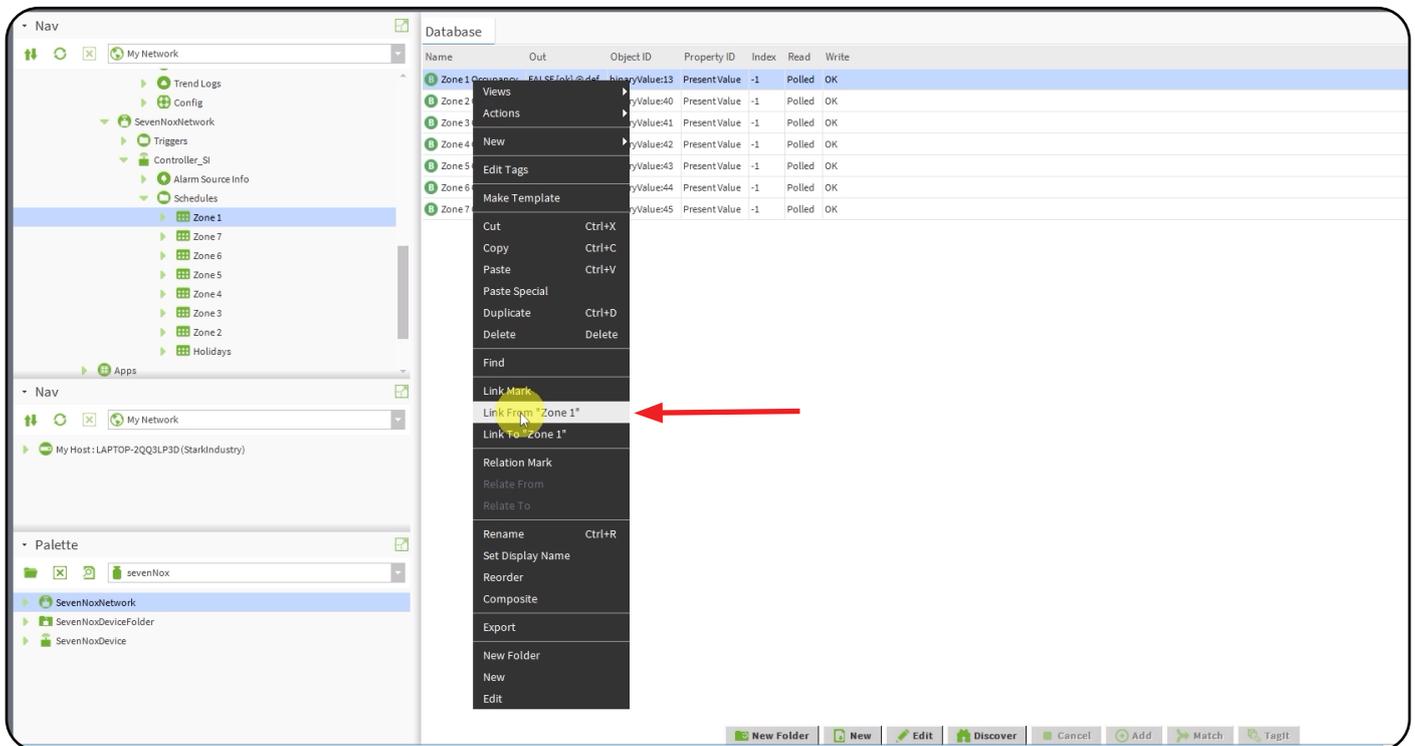
3. In the popup window, choose "Out" as your Zone source and "Fallback" as your Zone target.
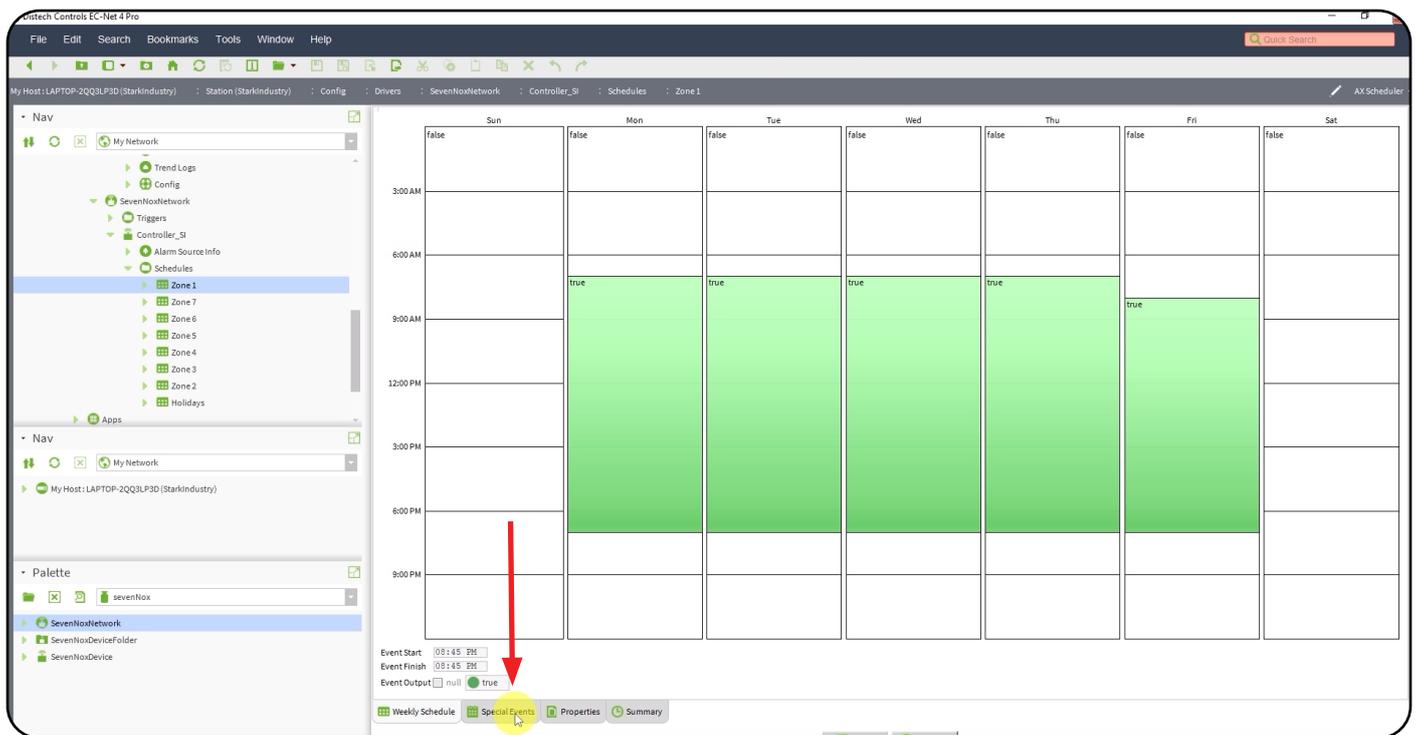

4. Finally, click Ok. Follow this process for the remaining schedules and points.
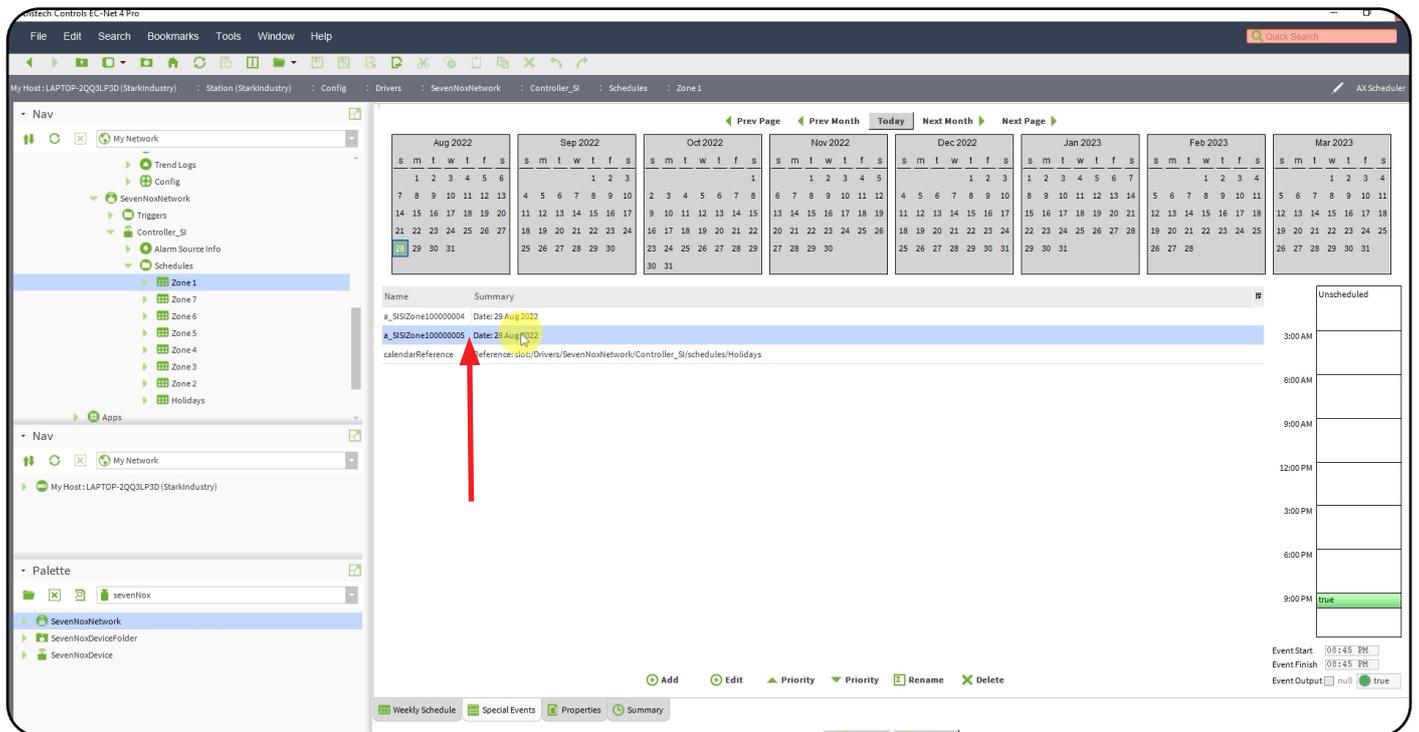
Test the System

1. Make a booking in the 7NOX portal and checking to see if the Niagara schedule objects update in the Workbench.

2. Go to your Zone (e.g. Zone 1) and select the "Special Events" tab.
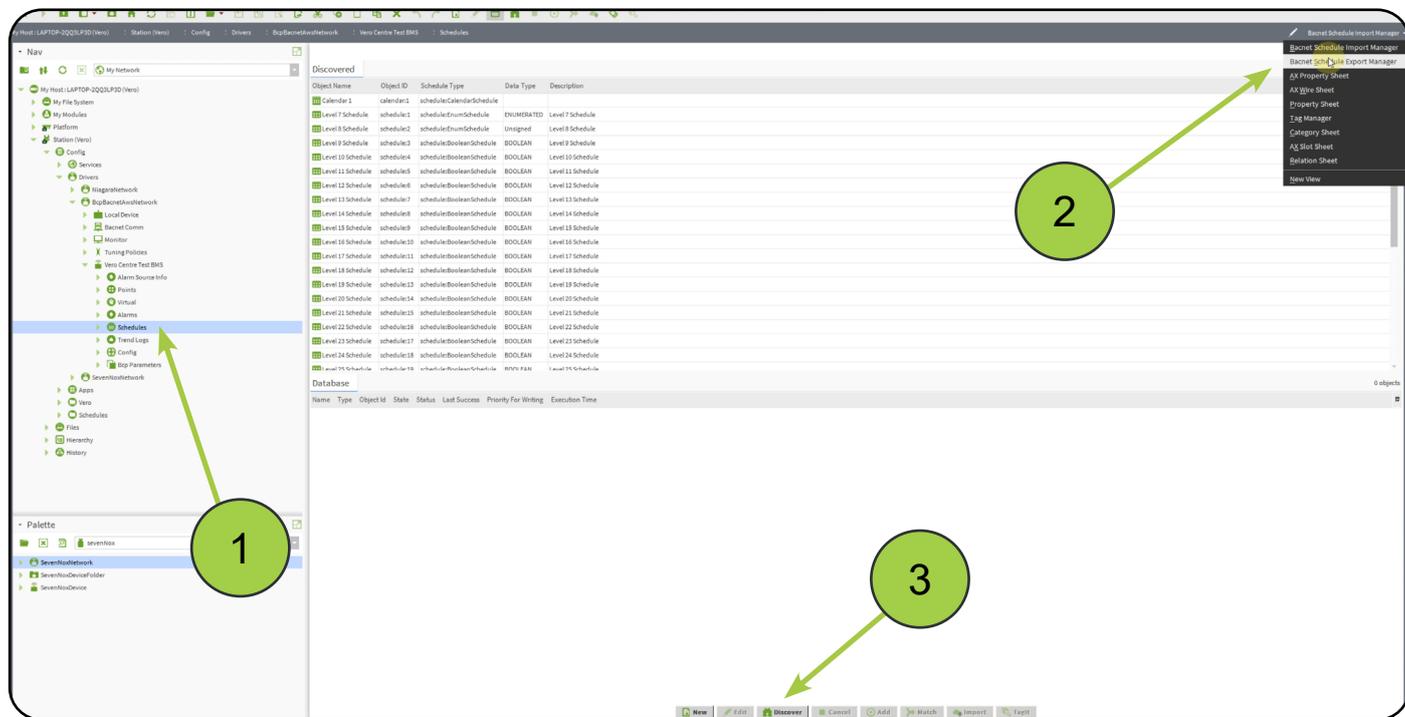

3. Trigger the GetBookings function once again. If the integration is working properly, the booking you created on the 7NOX portal will appear.
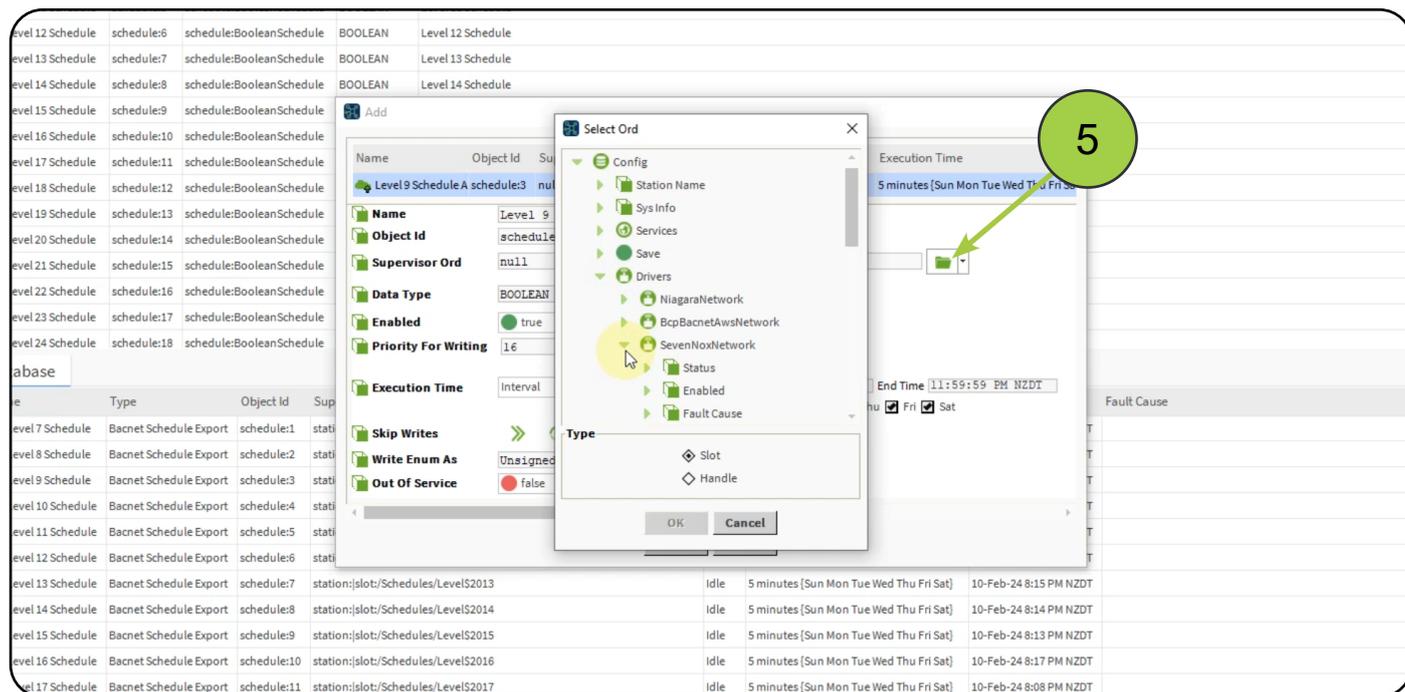
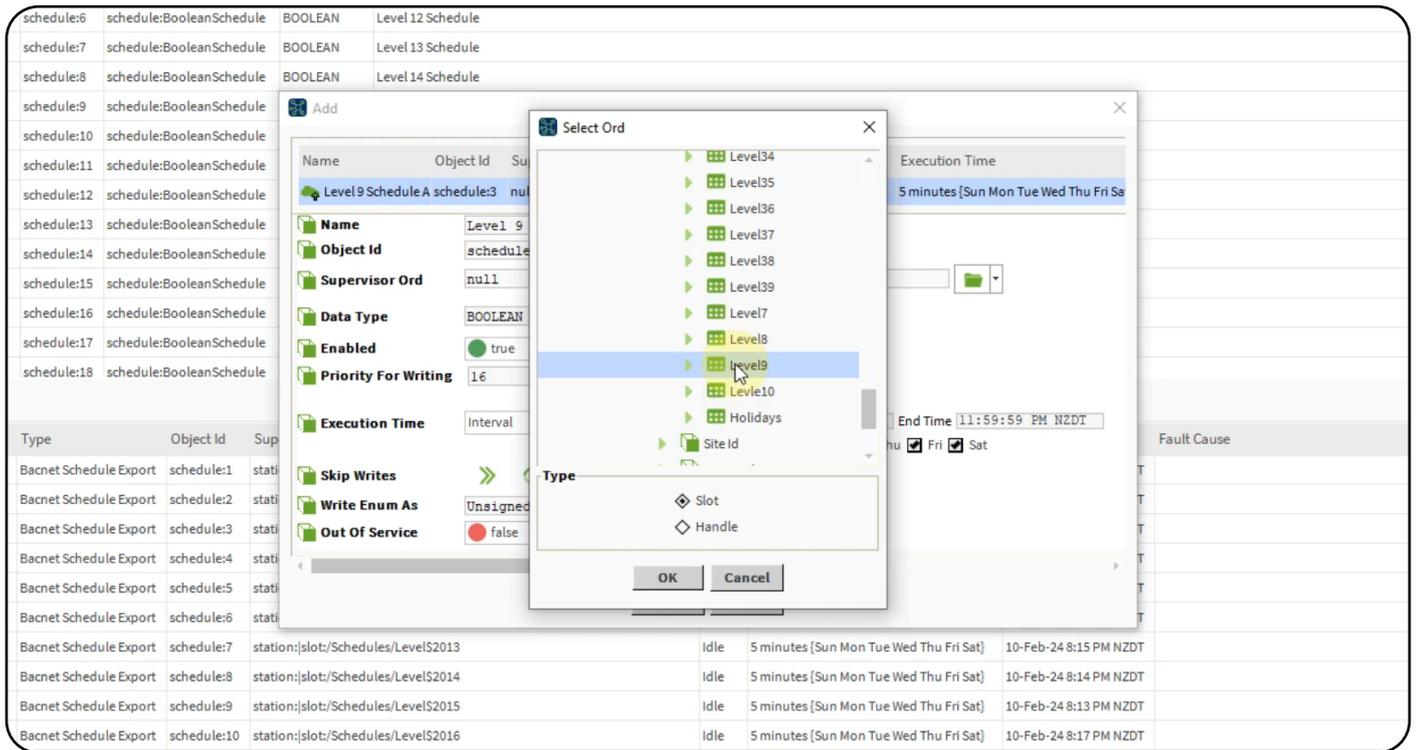# Method 2: Interfacing Existing BACnet Schedules

1. Open the BACnet schedules
2. Then open the Schedule Export Manager
3. Click the Discover button

4. Choose a schedule and rename it to something unique. Example: "Level 9 AH"

5. Click the Supervisor ORD folder.

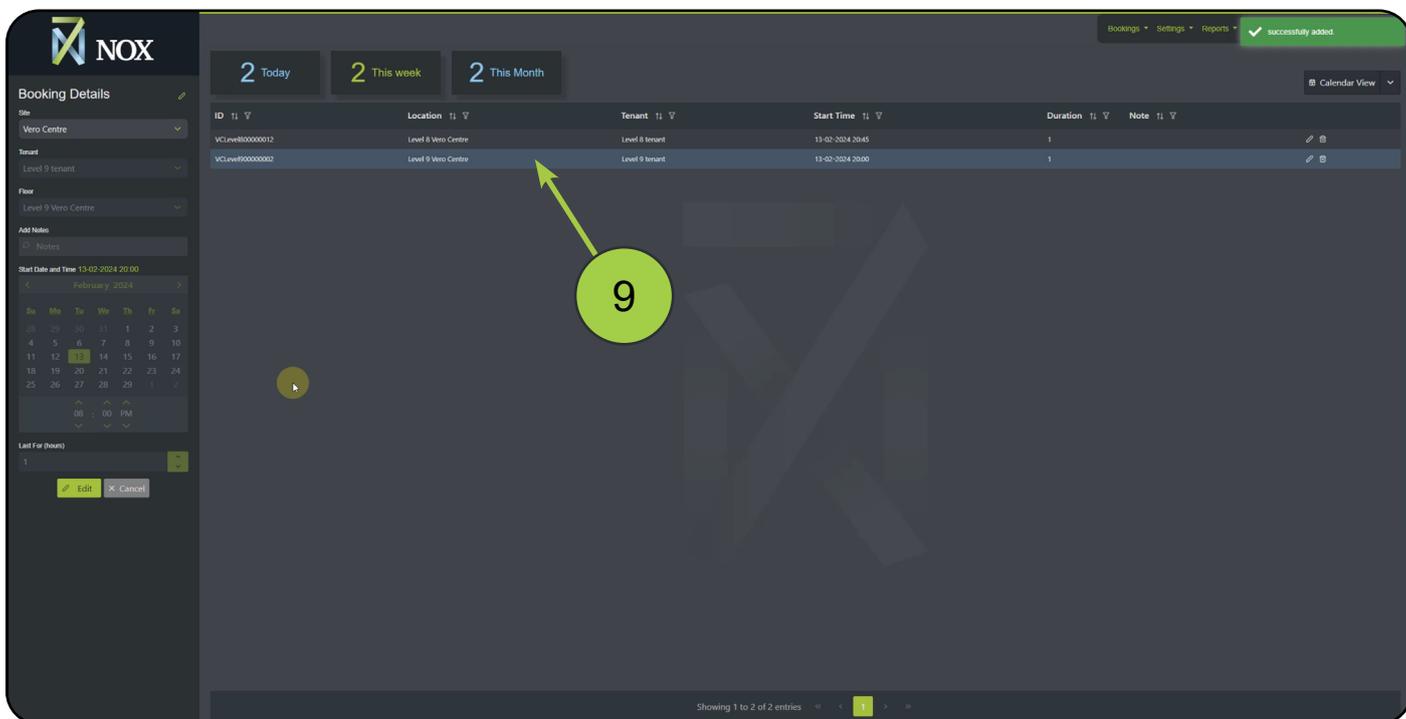6. Connect the new schedule to the new 7NOX schedule. This links the Niagara supervisor to the 7NOX system.

7. Now, configure the schedules to eliminate conflicts. To do this, configure the Skip Writes property. Under the existing BACnet Schedule, configure the exception schedule as **True**. And hit save.
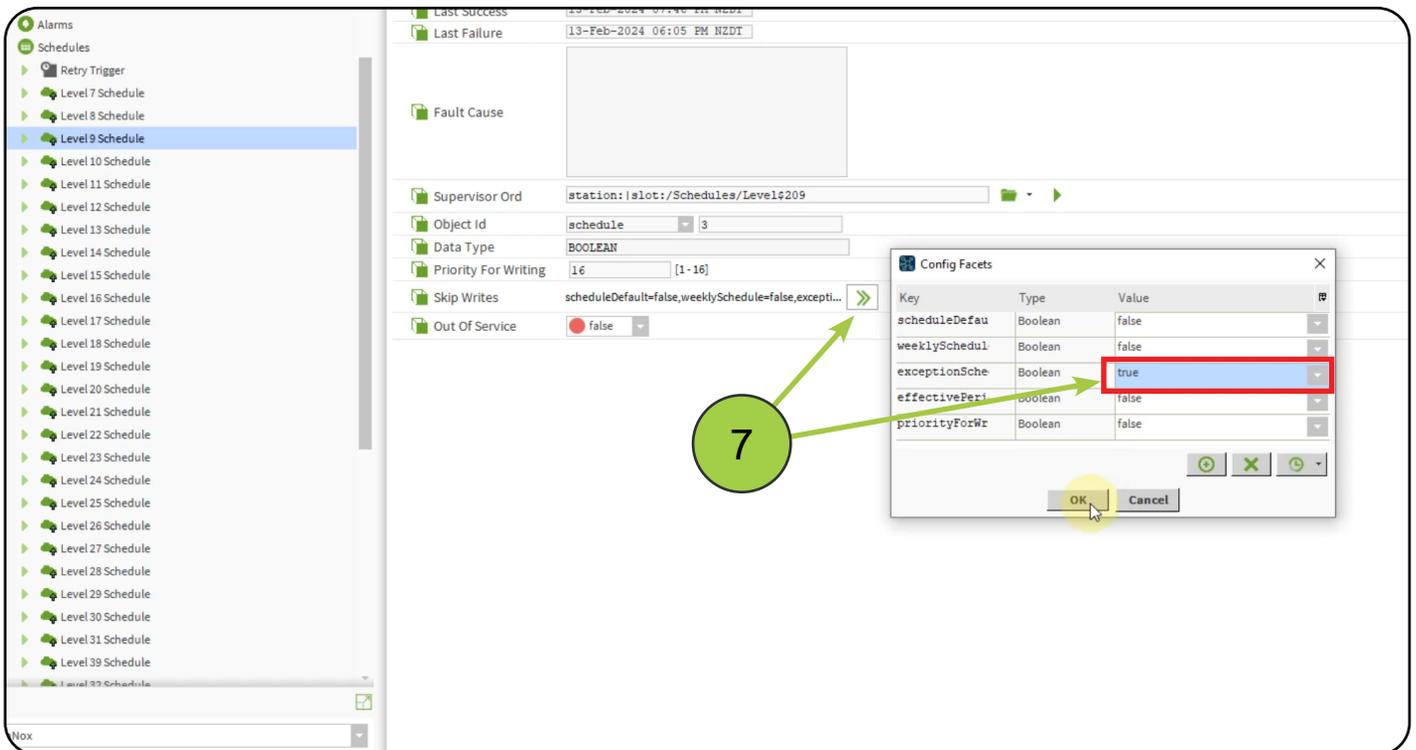
8. Next, locate your after-hour schedule and configure the default and weekly schedule as True. And hit save.
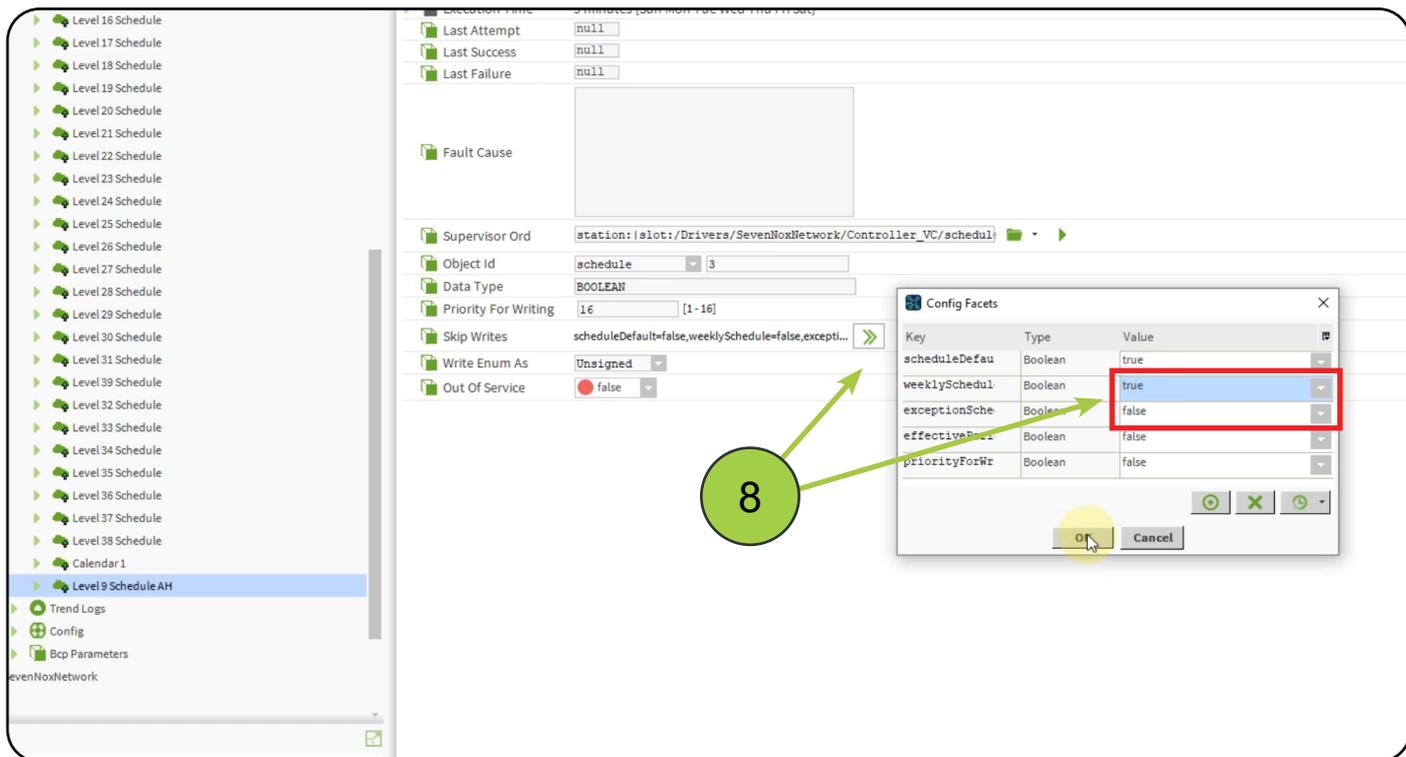

9. Log into the 7NOX portal and create a booking by selecting your level, tenancy and floor. Choose the date and time. And hit create.

10. Choose **"Get Bookings"** from the **Actions** menu to execute the trigger.

NOX NOTE: Triggers are set to 10 mins by default. You can change that value anytime.
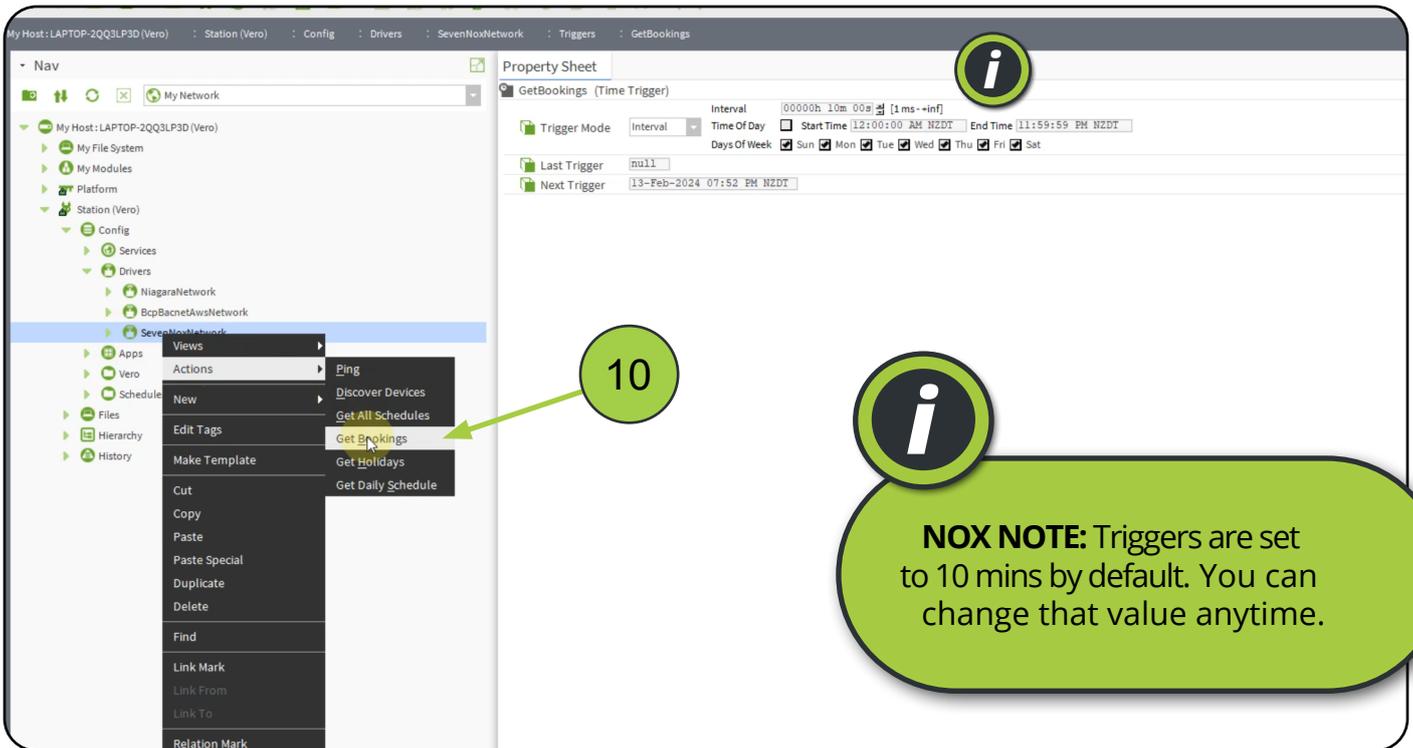
11. Navigate to the level where you created the booking. You should now see your booking listed as a special event.
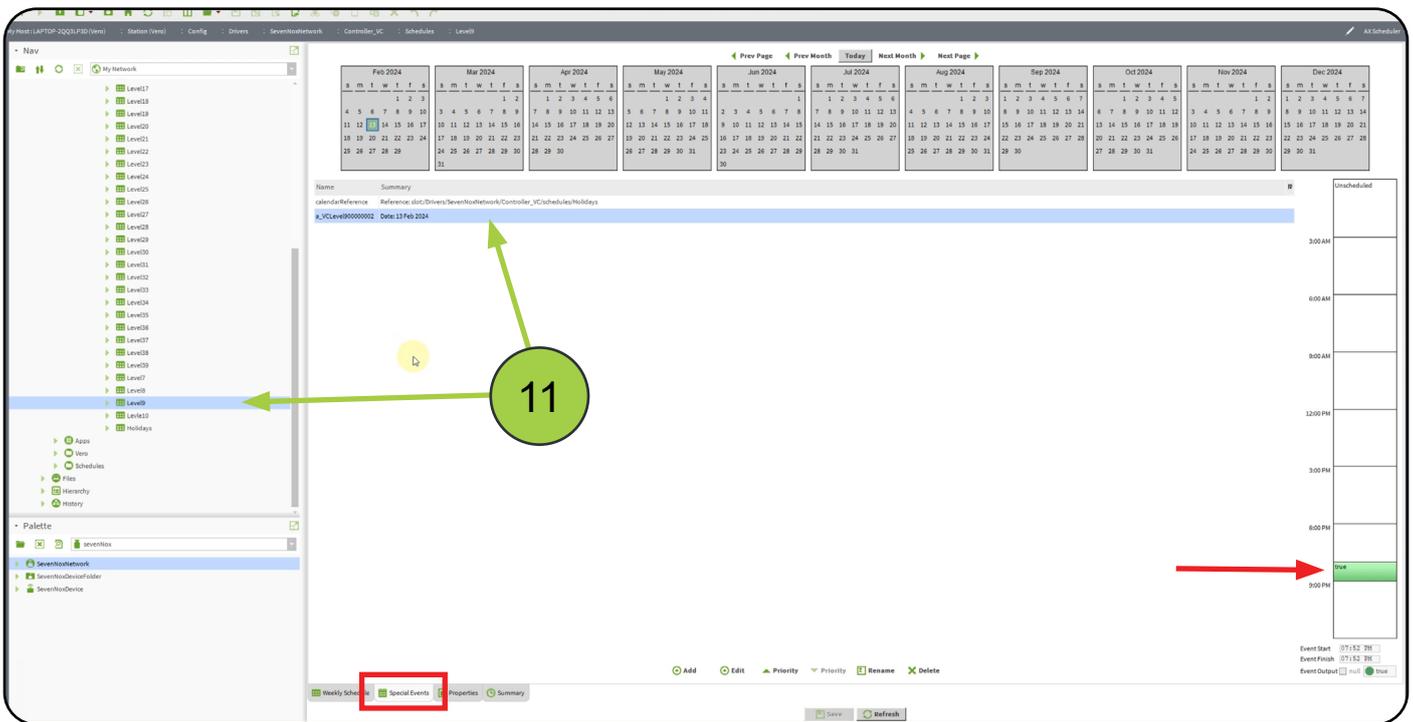
12. Simply follow these sames steps for the remaining levels.

Platform Manager

Location: **Main Menu > Settings > Platform Manager**

The Platform Manager is where managers can download 7NOX modules, add T&C's to your portal front end, or make **bulk changes** to your sites' floors, tenants and users.
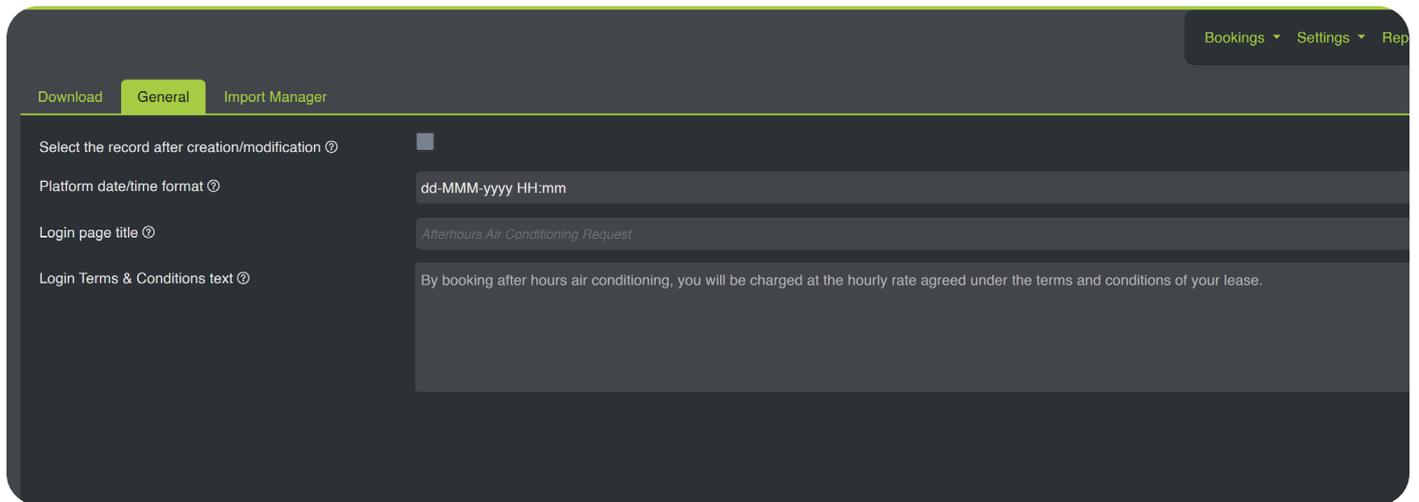
Download the 7NOX Niagara Module

You can download the Niagara Module from within the Platform Manager in the **Download tab**.
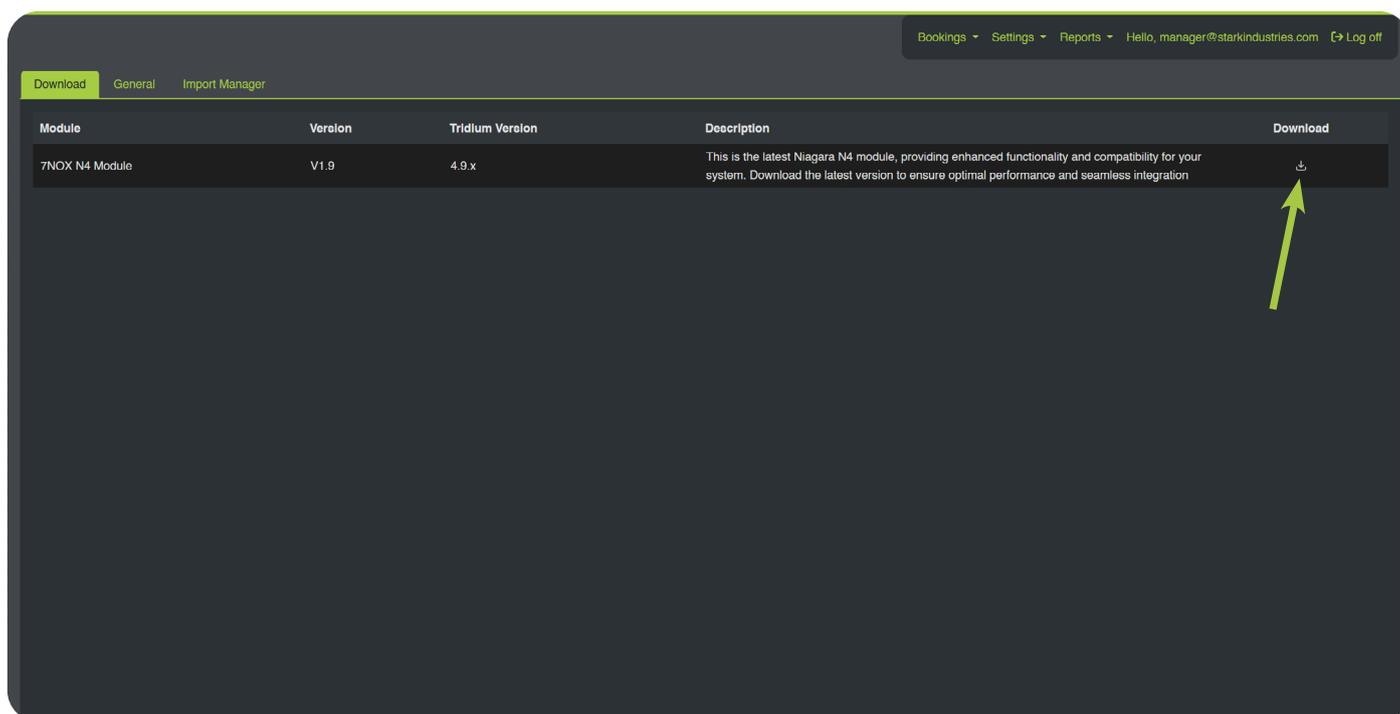
After downloading the 7NOX Niagara Module, you can find integration how-to videos and PDF manuals on our Training page.

Here are the settings you can change in the General tab of the Platform Manager
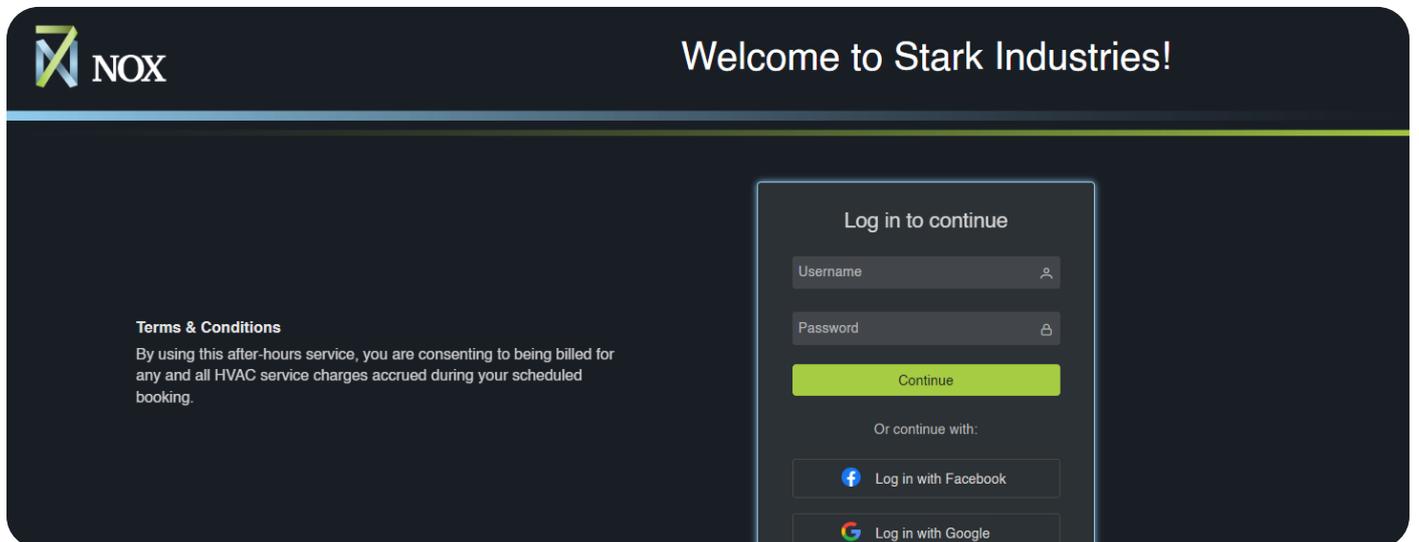

Login Page title

Change the title of your login page to reflect what you want your tenants to see when logging in. Can you add your company name or a custom greeting.

Login Terms & Conditions text

Create a T&Cs statement or other disclaimer at the front of your login page.

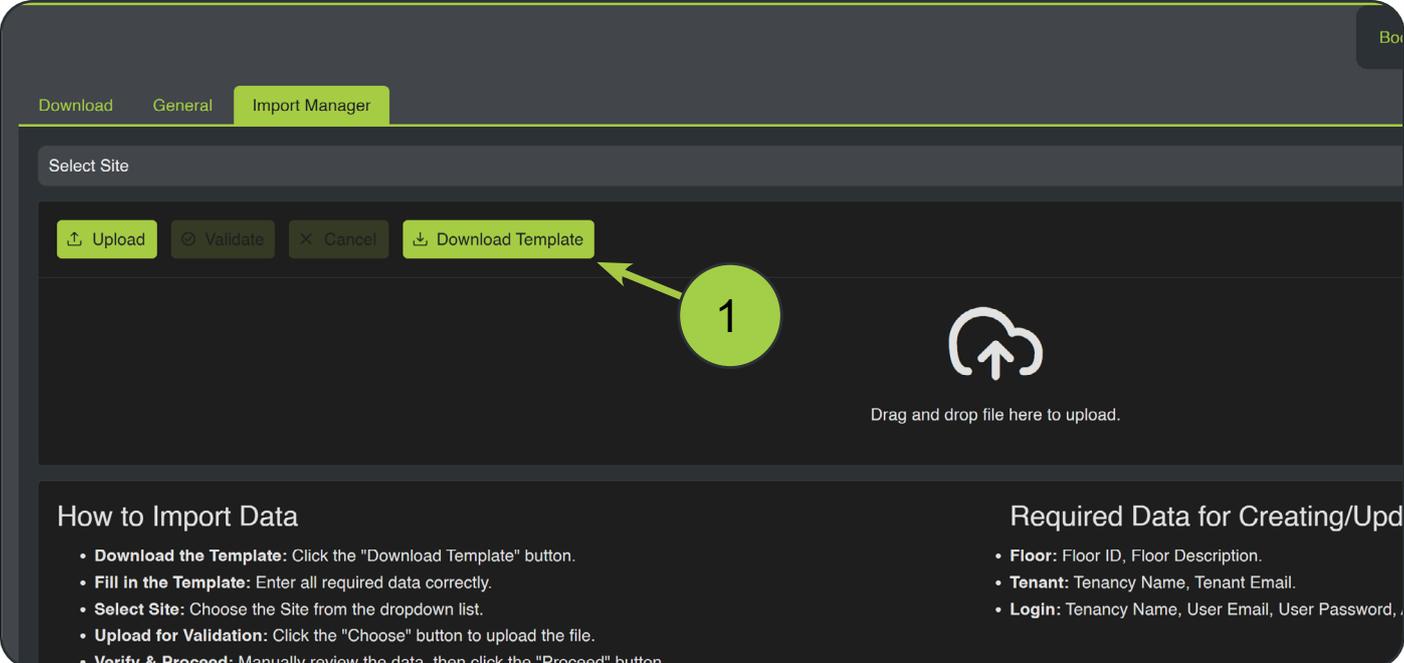## Select the record after creation/modification

When creating or editing records like bookings, you can choose whether the system continues to select the record after you've created or de-selects it. This can save time if you're creating many records one after another.

Platform date/time format

This is your platform's master date/time format. Setting it applies it to any record (e.g., booking, tenant) that is not associated with a site or associated with multiple sites.

Import Manager

By using the Import Manager, you can save time when making bulk changes to your floors, tenants and users.

1. Download the Template: Click the "Download Template" button.

The 7NOX Import Manager Template is an Excel file you can download and use to make quick, bulk changes to your sites. **With the exception of the Floor ID**, you can change any or all of these parameters within the same template upload.
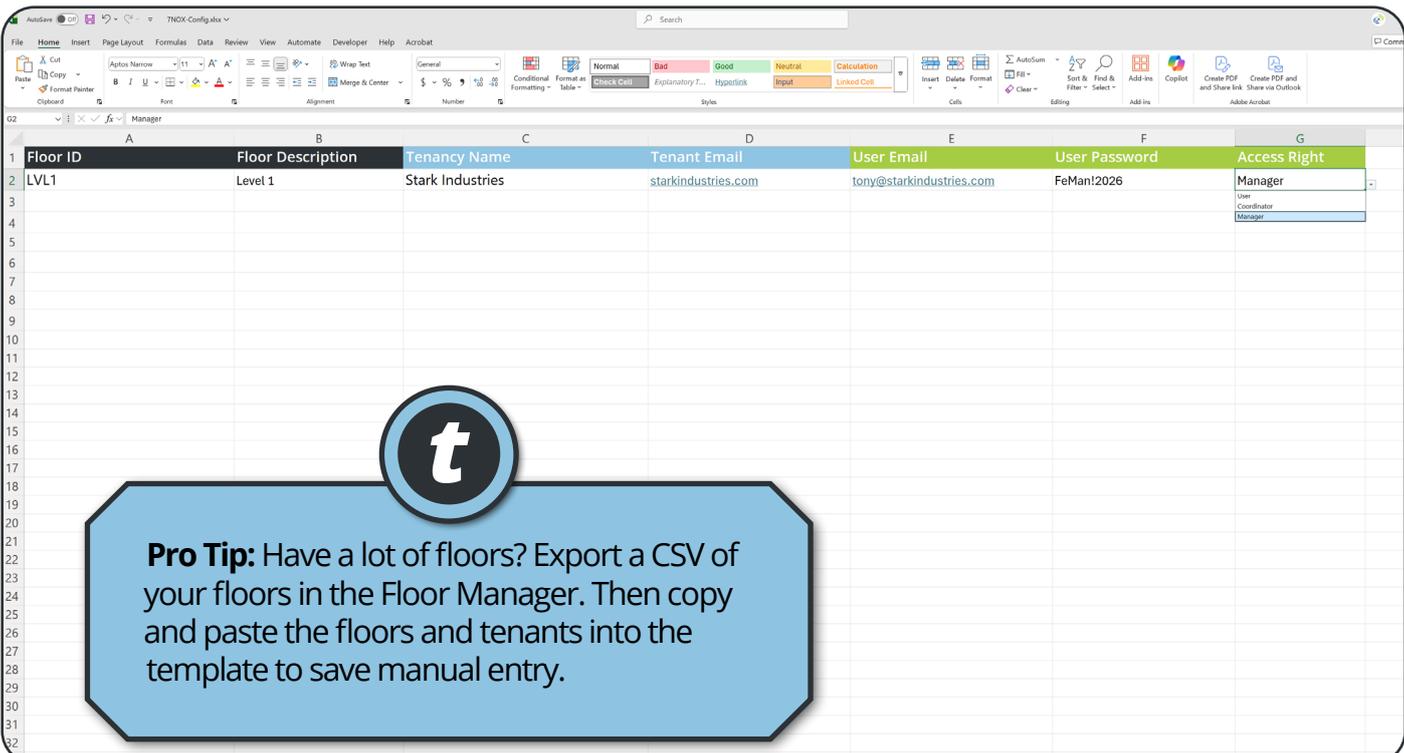
Pro Tip: Have a lot of floors? Export a CSV of your floors in the Floor Manager. Then copy and paste the floors and tenants into the template to save manual entry.

2. Fill in the Template: Enter all required data correctly.

In order to create and/or update records using the template you must include all required information:

Import Manager Required Information

	Floor ID	Floor Description	Tenancy Name	Tenant Email	User Email	User Password	Access Right
Floor	✅	✅					
Tenant			✅	✅			
Login			✅		✅	✅	✅

In the example below, a manager is using the Import Manager Template to update one user and create five new ones. For the "tony@starkindustries" user, the manager is changing the password and upgrading the access right to "manager".

In addition, the manager is adding five brand new users. Because all required information is supplied (Tenancy Name, User Email, User Password, and Access Right) the 7NOX system can make the required changes. **NOTE:** although the "tony@starkindustries.com" user already exists, the Tenancy Name is _still required_ to update the password and access right.

	Tenancy Name	Tenant Email	User Email	User Password	Access Right	
cription						
	Stark Industries		tony@starkindustries.com	FeMan!2026	Manager	
	Stark Industries		pepper@starkindustries.com	Rescue#2026!	Coordinator	
	Stark Industries		happy.hogan@starkindustries.com	ArcReactor#7N	User	
	Stark Industries		jarvis.ai@starkindustries.com	A1Systems!7N	User	
	Stark Industries		riri.williams@starkindustries.com	IronHeart^26	User	
	Stark Industries		finance@starkindustries.com	ArcReactor#7N	User	

3. Hit the Upload button in the Import Manager and select the prepared template file.
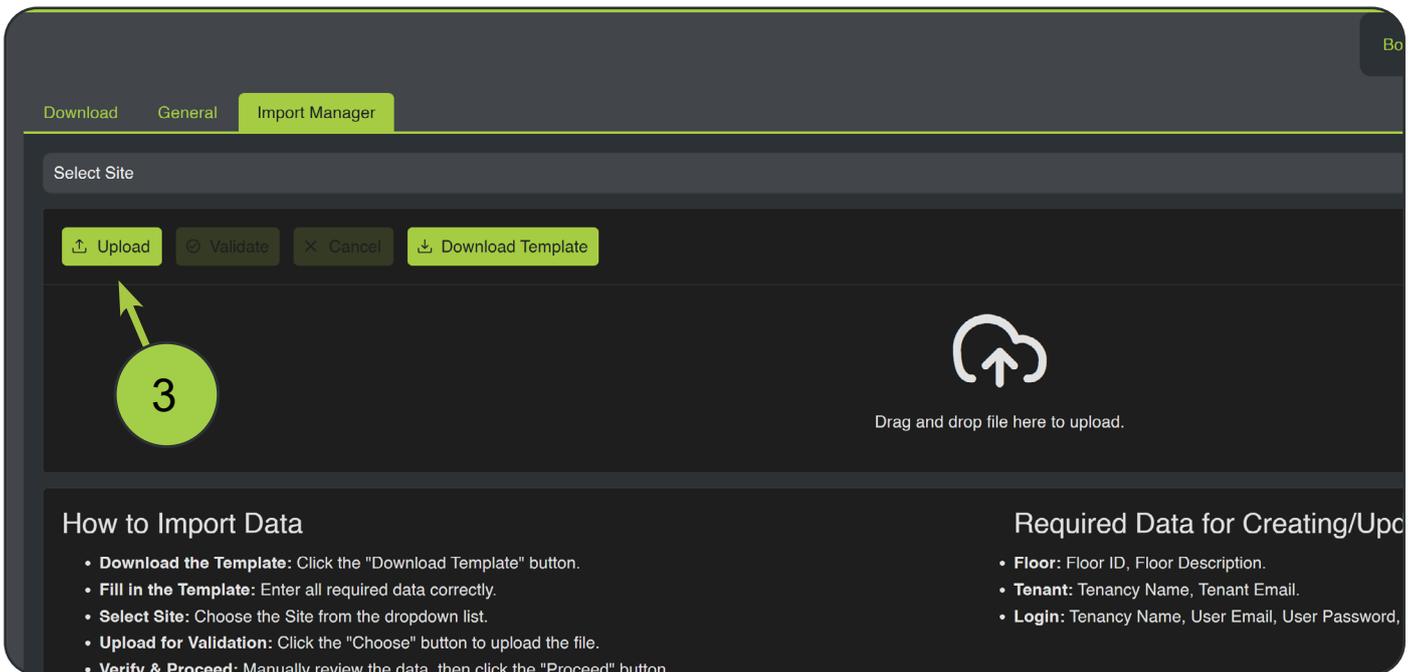
You should now see your file name appear in the Import Manager window.

4. Choose the appropriate site from the dropdown and hit the Validate button
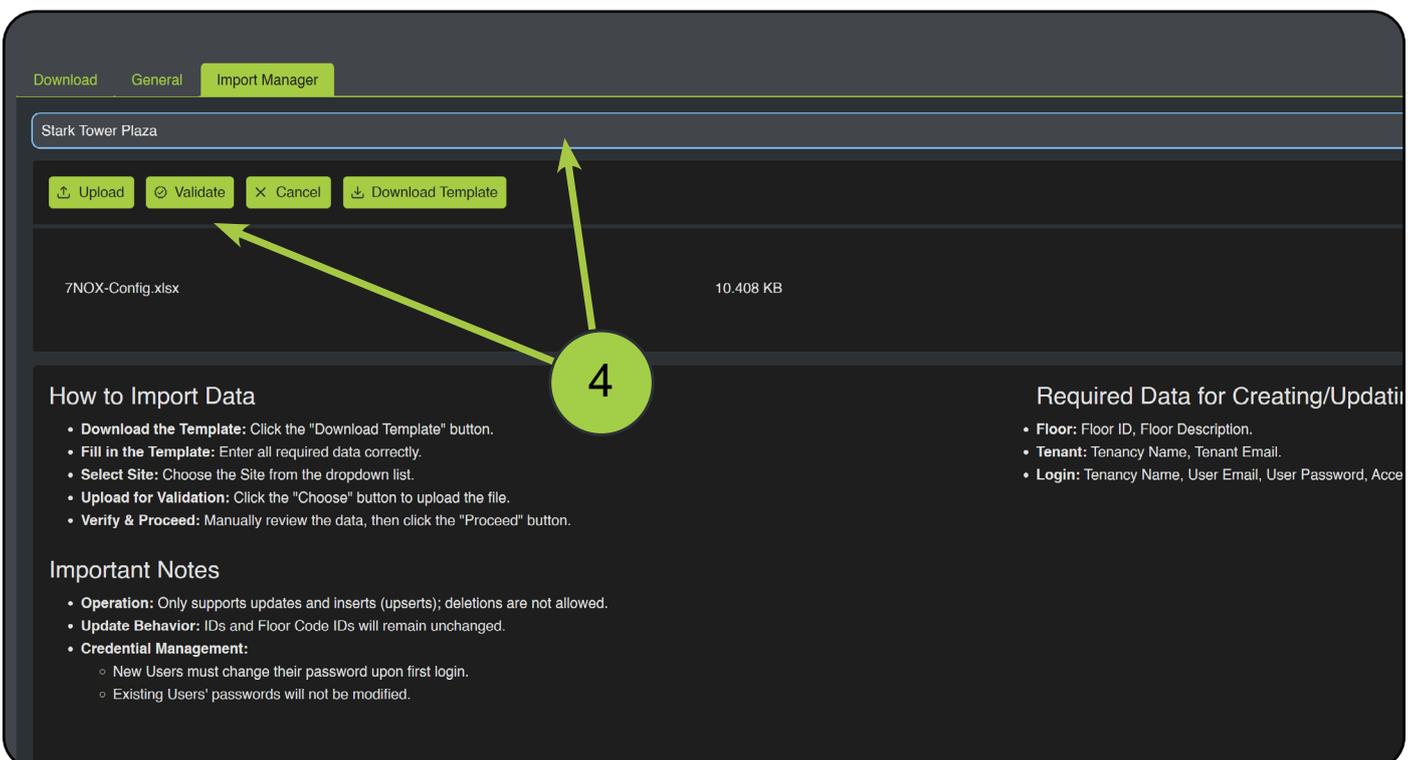
5. Select the appropriate tab for validating actions

The validation window has three different tabs for confirming changes for importing floors, tenants, and logins. Using the previous example, the manager would select the Import Logins tab to view the actions being taken for the updates.

NOX NOTE: When a record isn't going to be changed, it will say "No Action" in the Actions column.

6. Verify & Proceed: Manually review the data, then click the "Proceed" button.

In the "Actions" column above, we can validate the account changes:

- Five new user accounts are set to **"Create New Record"**
- The existing "tony@starkindustries.com" is set to **"Modify Existing Record. Fields: User Access."**
- All of the new correct passwords are now showing in the "Password" column.

These changes align with the intended changes, so we can hit the Proceed button to complete the import process.

Troubleshooting Chart

User can't sign into account

Wrong Username	Wrong password	Wrong URL	Account Disabled
↓	↓	↓	↓
Reset Username	Reset password	Sign into your Portal, NOT 7nox.com	Enable Account

User Can't make booking

Not Assigned Tenant	Not Assigned Site	Site Device Offline	No Holiday Created
↓	↓	↓	↓
Assign User to Tenant	Assign User to Site	Call Tech Support	Create Holiday

Can't View Tenant

Not Assigned Tenant
↓
Assign Tenant

Didn't Receive Monthly Emails

Email Not Listed in Email Report Desgination
↓
Add Email

Can't Create New Login

Email Already Used
↓
Choose New Username / Enable Account Status

Document Revisions

This document is version controlled via the use of revision numbers. The revision numbers will be incremented each time the document is changed. A minor revision will be indicated by a change to the number to the right of the point, such as from 1.1 to 1.2. Normally the document will only be formally re-distributed when the major version changes, indicated by a change in the number to the left of the point, such as from 1.2 to 2.0.

Revision	Date	Comments
1	14/01/2026	v3.5.0

Additional Resources

- Site Device Configuration (Video)
- Site Device Standard Integration (Video)
- Manager Guide
- Ops Teams FAQ
- 7NOX Blog

7NOX is a product of OpSys Solutions Ltd, a New Zealand-based hardware and software developer. Visit our website. We're located at 17 Nixon Street, Grey Lynn, Auckland 1021