EcoStruxure Driver for Niagara N4 & AX

User Guide

Contents

1 Introduction

Schneider Electric series of controllers for EcoStruxure[1] Building Operation – also known as SmartStruxure, SmartX, Struxureware – include modular AS-P and non-modular AS-B model of automation stations. They are very powerful IP devices with native I/O, multiple communication ports, built-in web-server and can be used as stand-alone controllers or as part of building management system under the supervision of Enterprise Server software.

EcoStruxure driver for Tridium Niagara enables communication with automation stations and enterprise Servers. It allows to read / write not only real time points, but also very complex data structures: point properties, histories and alarms. Now system integrators can combine best features of the two most powerful building management systems on the market.

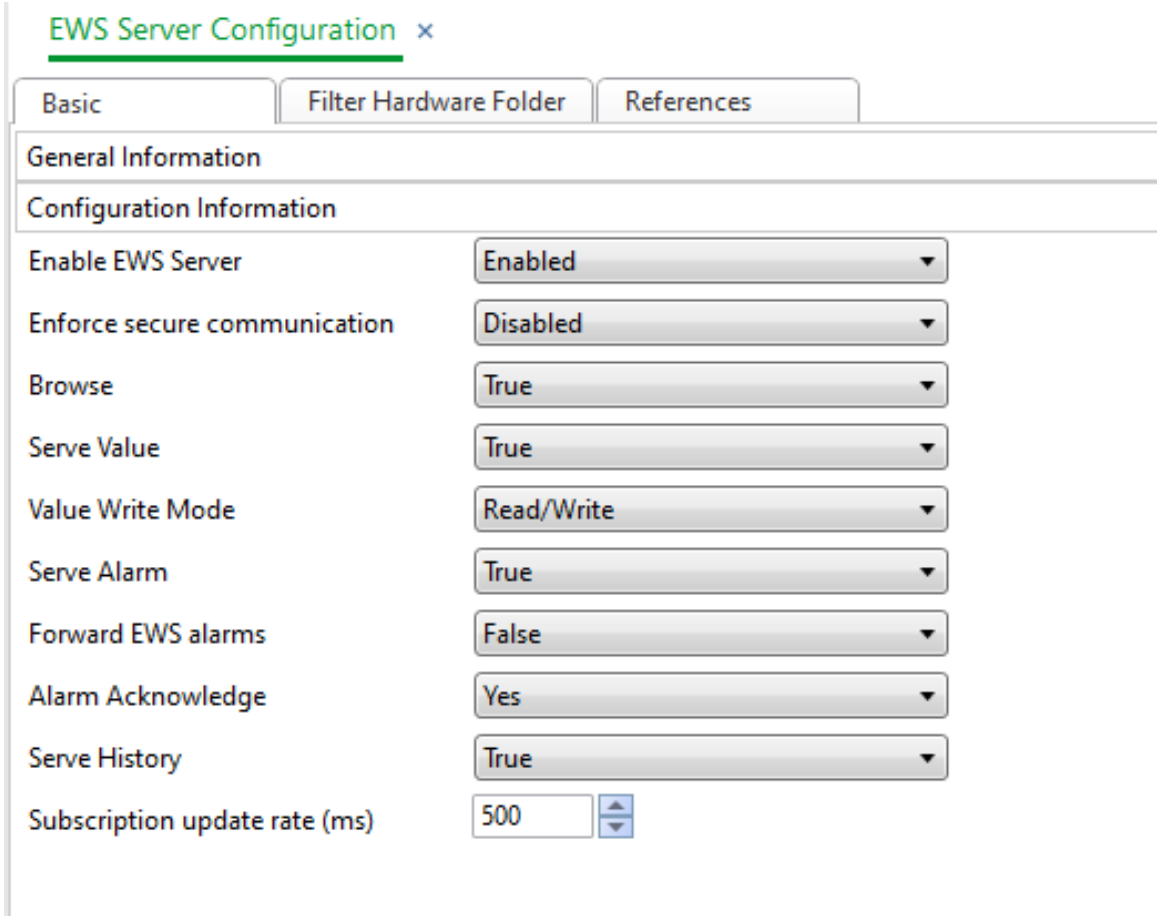
2 Requirements

- Niagara AX 3.8[2] / N4 4.0 or later powered device such as Jace 2 / 3 / 6 / 8000, Supervisor or their OEM versions
- EcoStruxure driver license
- EcoStruxure configuration via **Building Operation Workstation**. You will need to know the EcoStruxure system login and password in order to do that.

[1] All trademarks or registered trademarks are property of their respective owners
[2] If support for older Niagara versions is required, please contact the vendor

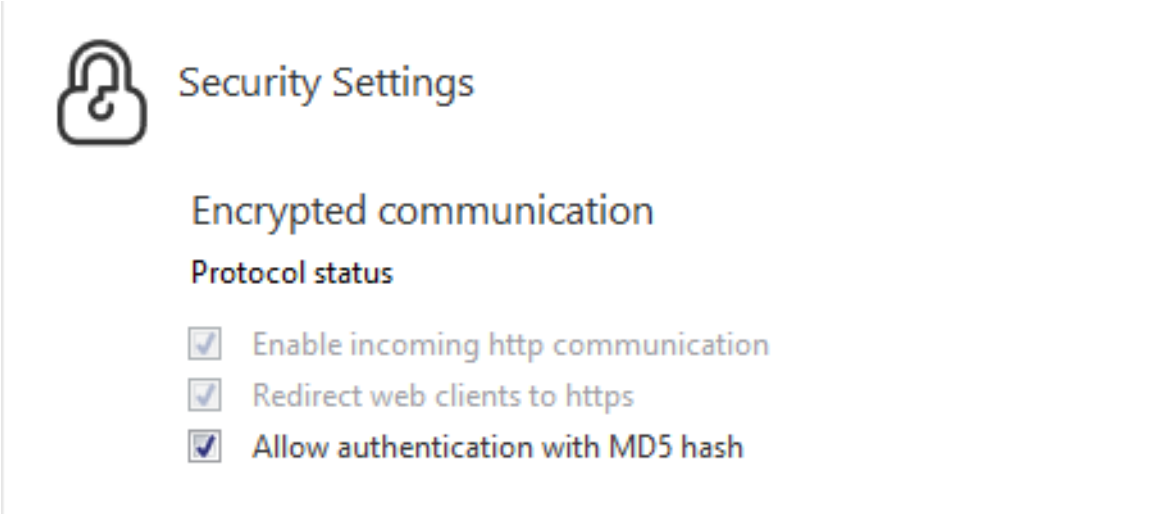
3 EWS Server Configuration

In **Building Operation Workstation** navigate to **EcoStruxure Web Services** and from there to **EWS Server Configuration**. Set the settings as shown on the screenshot below.



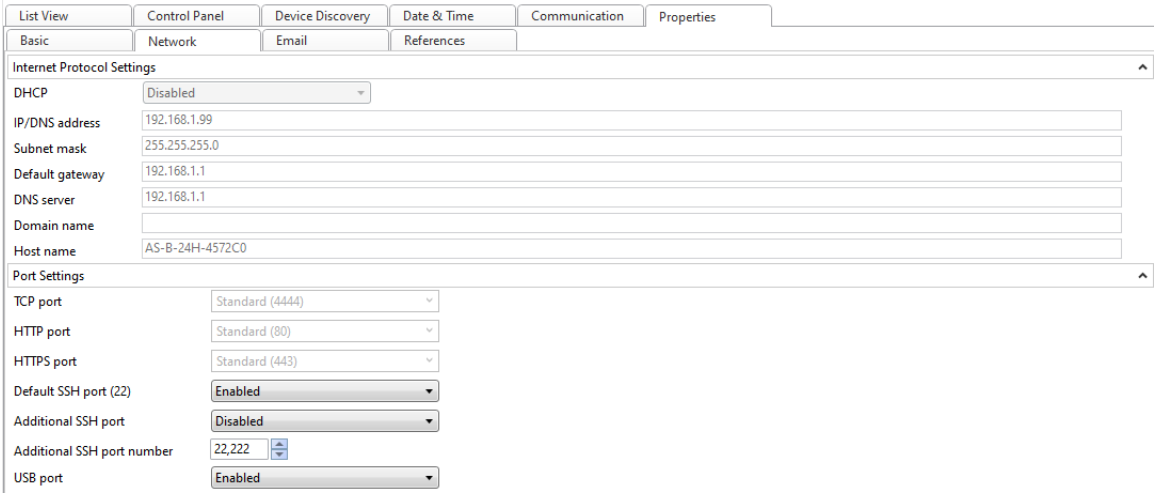
4 Security Manager

In **Building Operation Workstation** control panel navigate to **Security Manager**. Please make sure that **Allow authentication with MD5 hash** has been ticked.



5 Port Check

Port of the Automation Server could be found in **Building Operation Workstation** under **Properties**, **Network** menu. You will need to use the **HTTP Port** for the connection via Niagara.



6 EWS Server Debug

In order to check that EWS server on the Automation Server is operation you have to navigate to the following page in your web browser:

http://ipAddress:port/EcoStruxure/DataExchange?wsdl

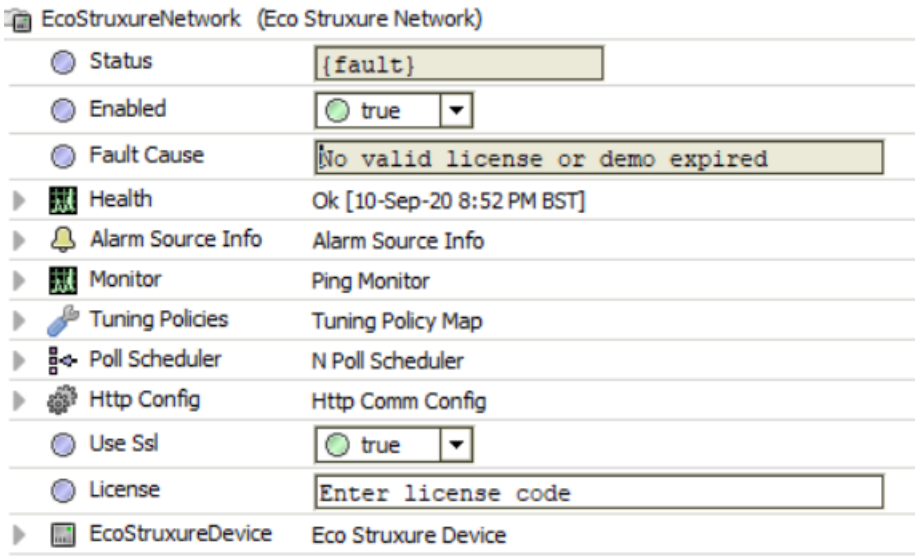
(e.g. http://192.168.1.99:80/EcoStruxure/DataExchange?wsdl).

Once the correct login and password have been entered you will be able to see Web Services version (e.g. EcoStruxure Web Services V1.2). If you are able to see that it means that Automation Server is configured correctly.

7 Network

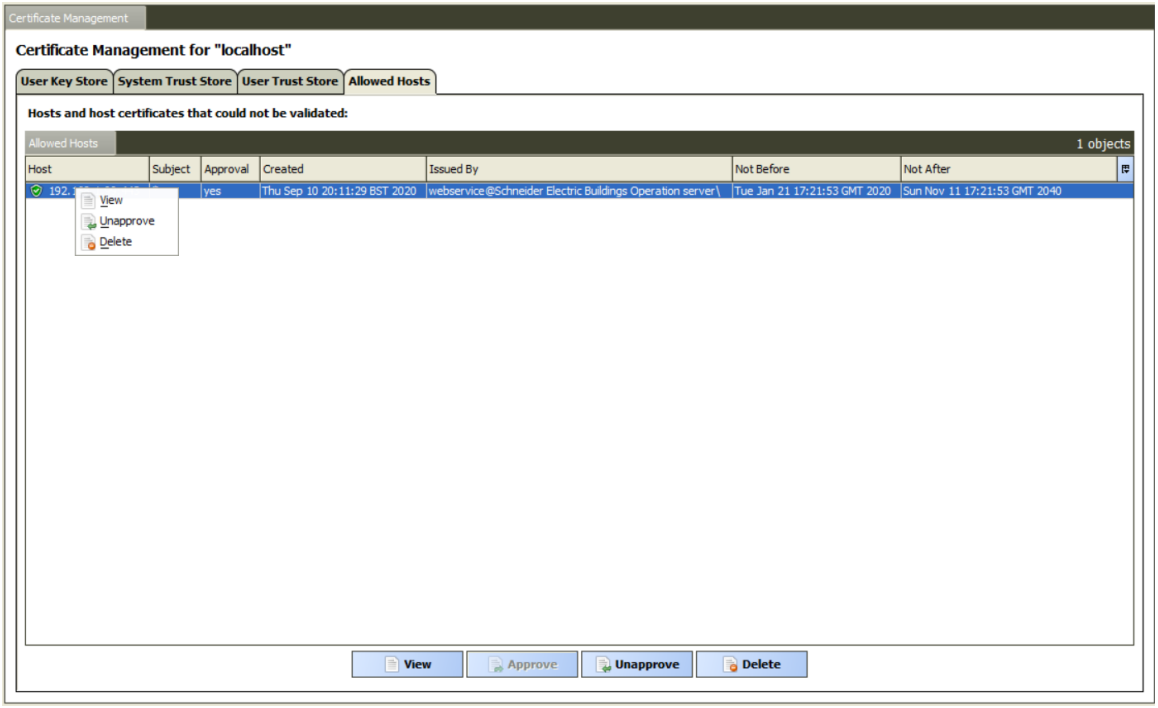
To start communication between Tridium Niagara and EcoStruxure devices, make sure Tridium Niagara and EcoStruxure are in the same ethernet network.

1. Install **ecoStruxure.jar** or **ecoStruxure-rt.jar** and all dependent modules via Software Manager
2. Start the station and add a new **EcoStruxure Network**
3. In the network **Properties** enter the license number and press **Save**



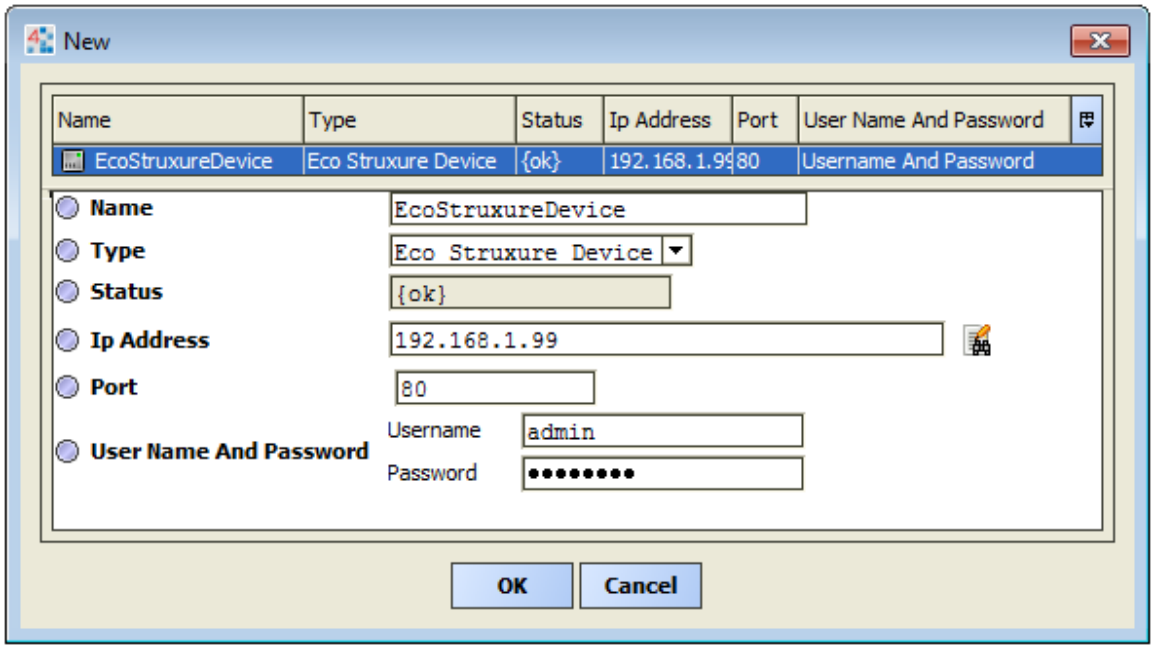
By default the SSL communication is disabled. In order to enable it:

1. Set **Use Ssl** flag under network to **true**
2. Try to ping the device, it will fail due to Niagara security features
3. Go to the **Certificate Manager** and you will see your communication entity under the **Allowed Hosts** section, right click to approve it



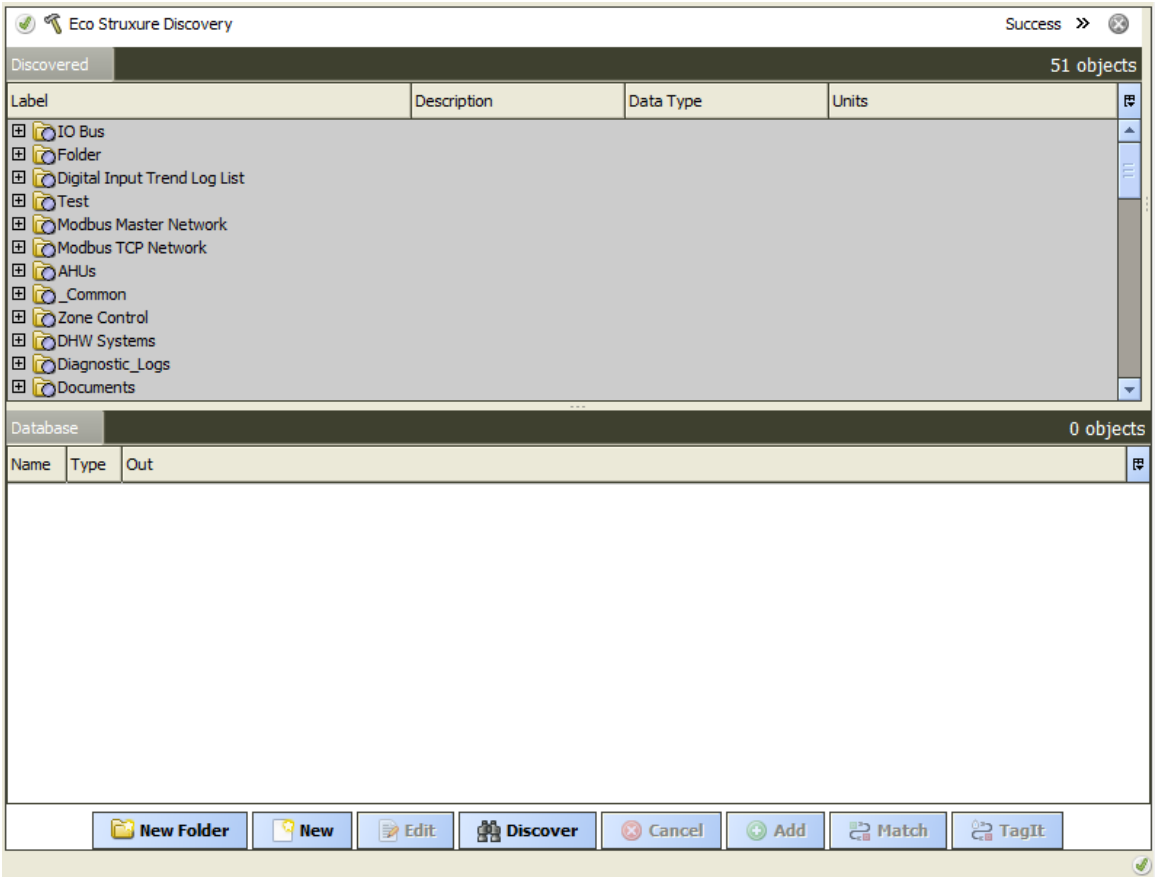
8 Devices

Open the **Device Manager** and press **New** to add the **EcoStruxure Device**. Enter relevant IP address, port (443 for SSL and 80 for non-SSL), login and password. If the device is shown offline please right click on the device and ping it. If the device is still offline please check the EcoStruxure configuration as described in EcoStruxure Specifics section. press **Discover** button.



9 Point Discovery

Open device **EcoStruxure Point Manager** and click **Discover** to start point discovery.



The discovered points will mimic the **Building Operation Workstation** data tree structure. Niagara will find all available folders, points, their types, units and attributes. Every folder can be expanded, by pressing the + Niagara will discover a next layer of the EcoStruxure folder. Please note that even if the folders are empty the + will still be shown. If during the discovery there were changes to the EcoStruxure data tree you can press **Discover** button again to restart the discovery from the root level.

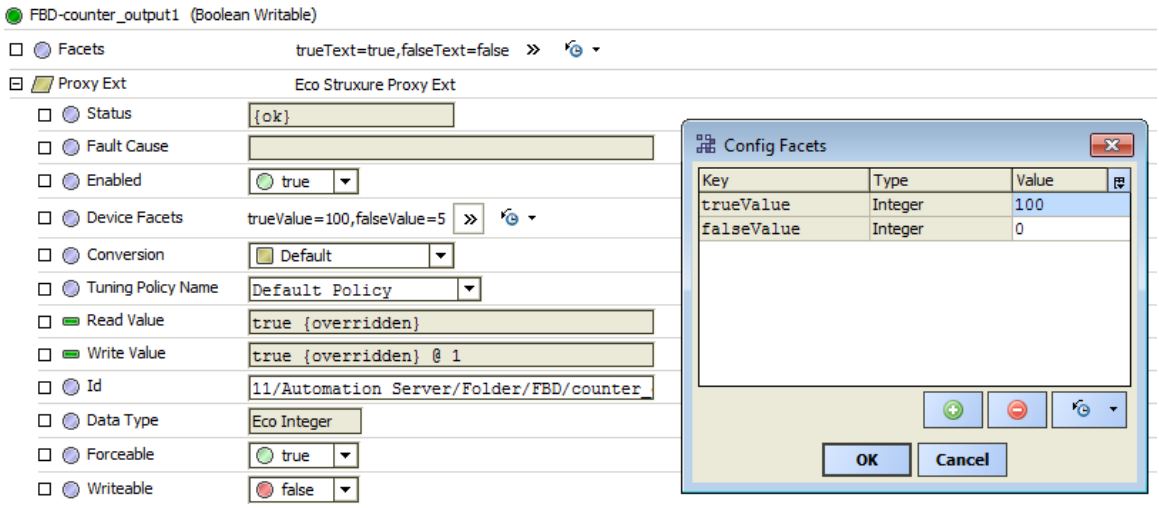
10 Points

Every EcoStruxure point extension contains the following properties:

- ID – specify the unique ID of the EcoStruxure point.
- Data Type – EcoStruxure point data type
- Writable – point can be forced when the Writable parameter is “true”.
- Forceable – point can be forced when the Forceable parameter is “true”. If Forceable is “true” it is possible to write to the point even if Writable is “false”.

All the above parameters are set automatically for the points created via the point discovery.

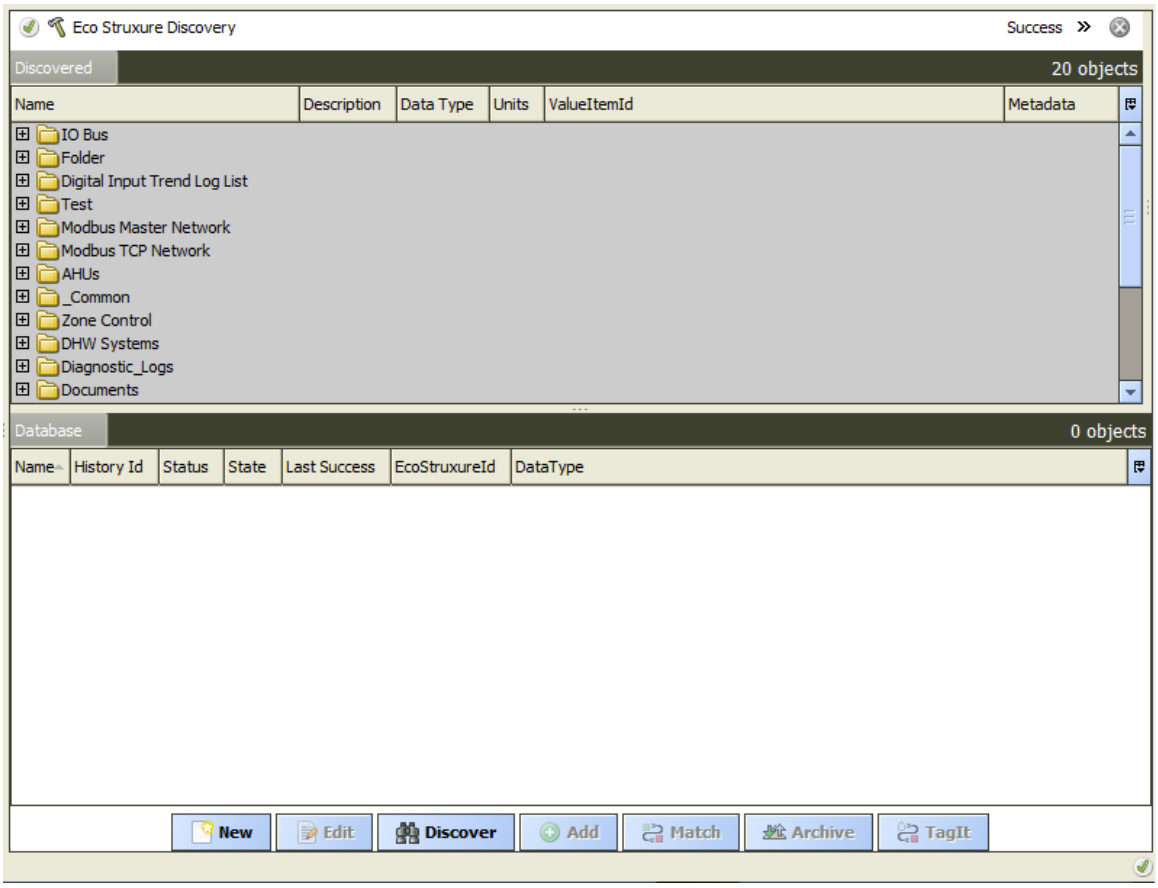
Please note that some of the EcoStruxure points could be discovered as Integer type while in EcoStruxure environment the are represented as Boolean (e.g. Sigma controller values). In this case, when the points are added it is possible to change a point type to boolean and set the correct **trueValue** and **falseValue** device facets under the point extension. In order to understand correct **trueValue** and **falseValue** it is possible to import point as Numeric Point and monitor the values changing them from the EcoStruxure environment, example values could be 0 and 1 or 0 and 100.



11 History Discovery

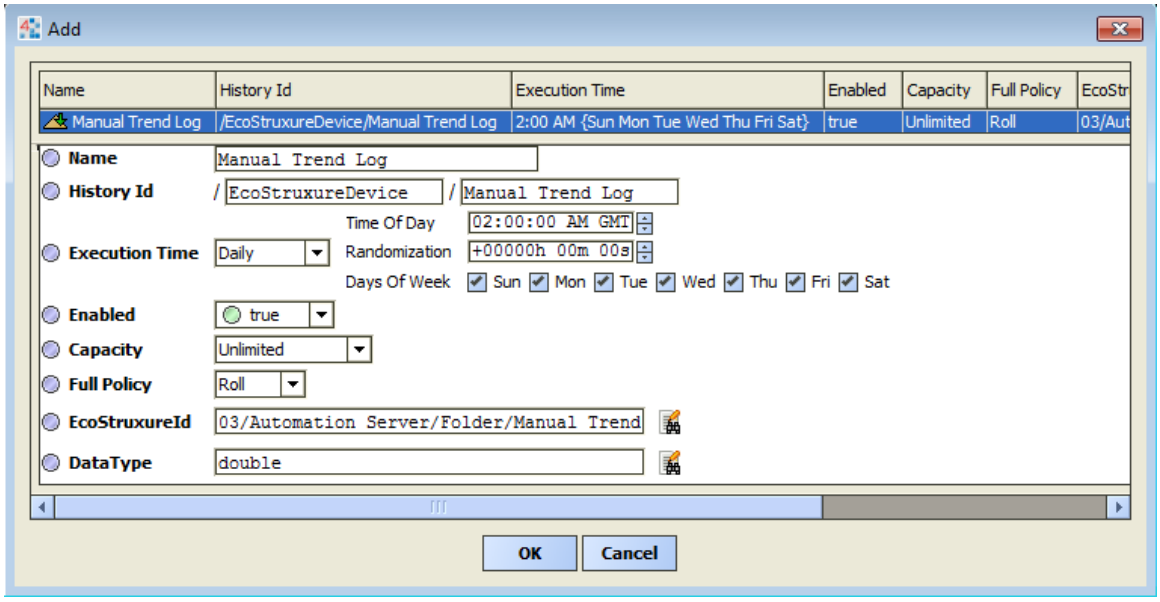
Every EcoStruxure device in Niagara has History extension, which contains History Imports – components, which connect generic EcoStruxure histories with Niagara histories.

Open device **EcoStruxure History Manager** and click **Discover** to start point discovery.



The Niagara will discover histories similar way as described in the point discovery.

In order to import the history press **Add**. You can modify **Name** and **History ID**. Please do not modify **EcoStruxureId** and **dataType**.



After the history has been added press **Archive** and the history data will be imported into Niagara.

12 Alarm Import

Every EcoStruxure device in Niagara has Alarm extension. In order to enable periodic history import please configure the Import Interval. In order to collect alarms in Niagara with the same alarm priorities as in EcoStruxure please add the EcoStruxureAlarmClass to the AlarmService as per screenshot.