BA Asset Health Extension Installation and Configuration Guide

Digital Buildings

Contents

1. Support

Schneider Electric provides branch and channel partners with planning and implementation assistance on SmartConnector from Product Support. To request help, send an email to Product Support specifying the solution name and the type of assistance you require. Product Support will relay your request to the appropriate support team. For extension specific requests, please reach out to Integrations & Solutions Center.

Integrations & Solutions Center
BA Asset Health Extension: isc.uk@schneider-electric.com

North America (NAM) Product Support
Building Management Systems (BMS): productsupport.NAM-BMS@schneider-electric.com

Global Product Support
Building Management Systems (BMS): productsupport.BMS@schneider-electric.com

2. Revision History

Date	Author	Revision	Changes made
01/12/2022	KH	A	First draft
07/31/2023	NL	B	Link updates
04/24/2024	CI	C	Solution update

3. Introduction

This document outlines the installation and configuration of the EcoStruxure Building Advisor Asset Health SmartConnector Extension required to integrate BA Asset Health with EcoStruxure Building Operation to gain high level insights to how your building is performing. The primary purpose of the SmartConnector Extension is to drive exposure of the Building Advisor Asset Health portal and to serve as a constant reminder to end-user how powerful the BA Asset Health data is.

This document assumes that EcoStruxure Building Operation have already been installed and are functional, and that there is an existing subscription to Building Advisor Asset Health.

3.1 Architecture

SmartConnector Framework is responsible for creating an EcoStruxure Web Services (EWS) Server that can be connected to the EcoStruxure Building Operation system.

BA Asset Health Extension is responsible for communication to the Asset Health API using RESTful WebServices over a secure connection (SSL). Each datapoint received from the Asset Health API will be represented as an EWS object. Buildings and Equipment will be represented as folders, and key KPI’s will be represented as Analog Values.

4. Versions & Prerequisites

4.1 SmartConnector Framework Version

The processors have been configured to operate with the SmartConnector version 2.5, use with any other version of the SmartConnector framework is not supported.

4.2 EcoStruxure Building Operation Version

The processors have been configured to operate with the EcoStruxure Building Operation 3.2 or later, use with any other version of the EcoStruxure Building Operation system is not supported.

4.3 Prerequisites

In order to install the BA Asset Health SmartConnector Extension, we must first install and license the SmartConnector Framework. There are multiple configuration options as to where the SmartConnector Framework can be installed – for use in this document; the SmartConnector Framework and Extension will be installed on the same machine as the EcoStruxure Enterprise Server and SQL Express. For additional options using SQL or remote servers not containing the Enterprise Server refer to the SmartConnector Installation and Configuration Guide found in the SmartConnector Server Portal.

The following prerequisites must be performed before you start the installation and configuration of the SmartConnector Framework and BA Asset Health SmartConnector Extension.

- EcoStruxure Building Operation
  - Installed
  - Configured
  - Functional
  - Version 3.2 or later
  - Valid license
- Microsoft .NET Framework v4.5 or later on the machine where SmartConnector is located
- SQL Express installed on same machine or another with network access to the SmartConnector server

  Note: If SQL Express is installed on a remote machine follow the detailed instructions in the *SmartConnector Installation and Configuration Guide*

- The specified user must have at least the public and dbcreator user roles in the SQL server

  Note: Additional Installation options for installing the SmartConnector Framework can be located in the *SmartConnector Installation and Configuration Guide*.

4.4 Licensing

The BA Asset Health SmartConnector extension does not have a license cost, but you need to request an FOC license by emailing isc.uk@schneider-electric.com with request for a claim token to **ISC.EcoStruxureBuildingAdvisorDiagnostics**. To deploy the SmartConnector solution, a SmartConnector deployment license is also required.

Use this part number to place orders for the SmartConnector Deployment license:

Part Number	Product Name	Description
SXWSWSCDL100001	SW-SMART-CONNECT	SmartConnector Deployment License

4.5 Networking Prerequisites

Ensure the communication channels are working using the following rules:

Source		Destination		Protocol	Action
IP	Port	IP	Port		
SmartConnector Server	80/443	EcoStruxure Building Operation Server	80/443	TCP	Accept
SmartConnector Server	443	https://rest.buildingsapi.net	443	TCP	Accept

4.6 Quick Start Installation Sequence

The following overview provides the steps necessary to install and configure the system. The subsequent chapters will provide detailed information for each step in the process.

1. Install, configure & license SmartConnector Framework
2. Request API credentials
3. Install and configure BA Asset Health SmartConnector Extension
4. Configure and run SetupProcessor
5. Configure and schedule DiagnosticsProcessor
6. Host objects in EcoStruxure Building Operation
7. Deploy graphics package

5. SmartConnector Framework Installation

The first step in the process is to download SmartConnector Framework software from SmartConnector Server, once downloaded you will install the SmartConnector Framework software, obtain the machine thumbprint, license the Framework to the machine thumbprint and finally configure the Framework system. Once the SmartConnector Framework has been installed, configured, and licensed we can extend the Framework by adding the BA Asset Health SmartConnector Extension.

5.1 Download the SmartConnector Framework

The following steps will assist in downloading the SmartConnector Server Framework

1. Go to SmartConnector Server
2. Request credentials to logon to the web site
3. Log on to the website
4. From the menu, select Download Center

5. Select SmartConnector icon

6. Select the folder v2.5

7. Select the latest version of SmartConnector (at time of writing it is v2.5.5.93)

   Note: Make sure Popups are not blocked by your browser

8. Save the *SmartConnector v2.5.5.93exe* download file
9. Select the *SmartConnector Installation and Configuration Guide.pdf*
10. Save the *SmartConnector Installation and Configuration Guide.pdf* download file

5.2 Install the SmartConnector Framework

To install the SmartConnector Framework, execute the setup file that was just downloaded. Run SmartConnector-v2.5.5.93.exe – You must run this as an Administrator.

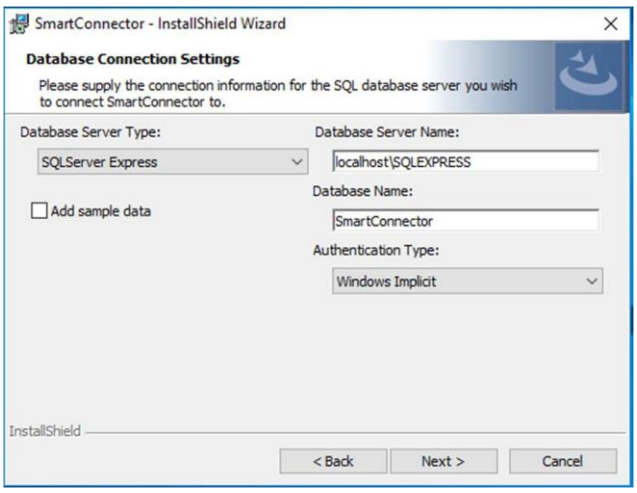
5.2.1 Install SmartConnector Framework

1. Locate the downloaded file SmartConnector-v2.5.5.93.exe
2. Right click on the file SmartConnector-v2.5.5.93.exe
3. Select Run as Administrator

4. Click **Next**.
5. Review and accept the terms to the End User License Agreement

6. Click **Next**.
7. Choose the Setup Type you wish to perform. If this is a new installation, **you must choose Complete**.
8. Click **Next**.

9. Enter the required information for the database server where you will install the database to:



   a. You can **uncheck** - Add sample data
   For this manual example we are using SQL express and a local Windows user

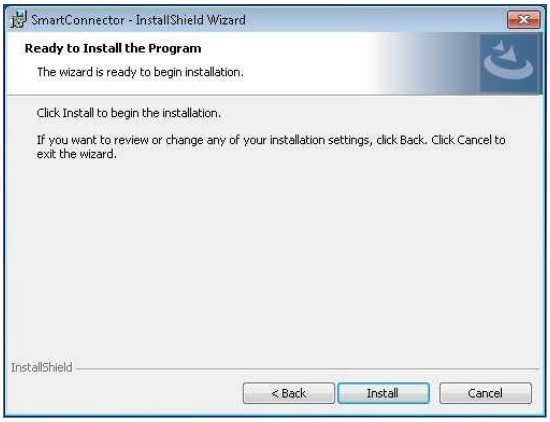
   b. Select the Database Server Type: **SQLServer Express**

   c. Select the Authentication Type: **Windows Implicit**

   Note**: The logged in user must have at least the public and dbcreator user roles in the local SQL server. In this configuration SmartConnector runs under the NT Authority\System account.* ***See ***Appendix A***

   For additional SQL installation options, refer to the *SmartConnector Installation and Configuration Guide* previously downloaded

   d. Click **Next** to display the final confirmation dialog shown below.

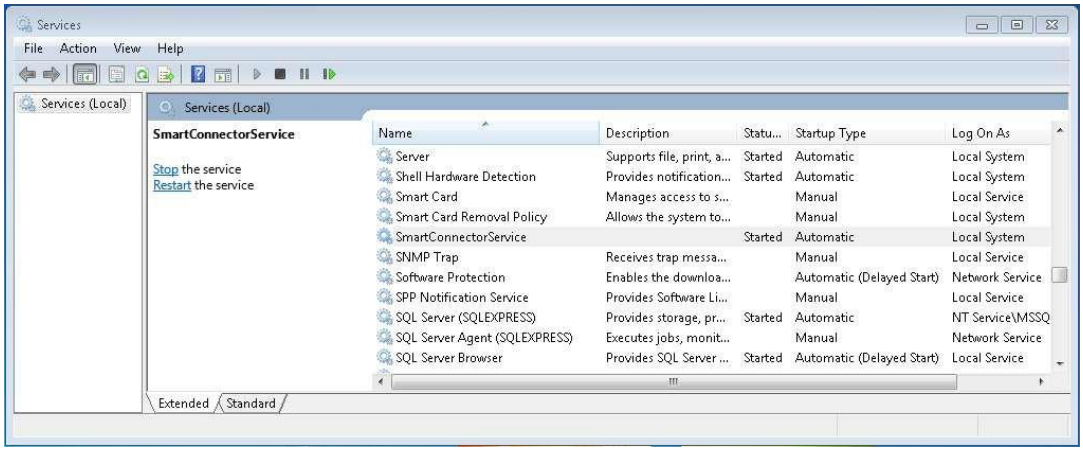


10. Click **Install** to complete the installation and create the default database.
11. Click **Finish**.

5.2.2 Validate SmartConnector Framework

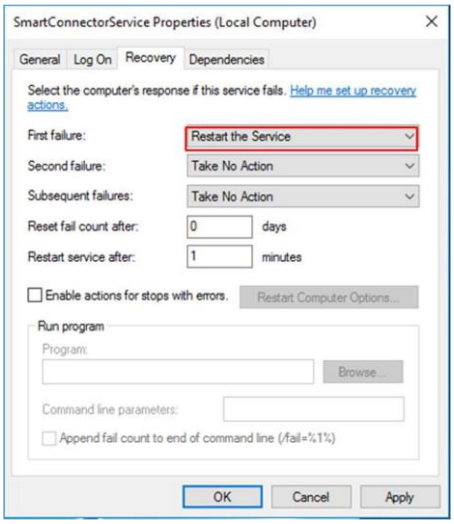
To review the service installation, you should perform the following:

1. Open the Windows Services dialog.
2. Find the entry for “SmartConnectorService”. It should have a Status of “Started” or “Running” and a Startup Type of “Automatic” as shown below.



Note: If SmartConnector and the connected database server are located on the same physical server, we recommend changing that the Startup Type to “Automatic (Delayed Start)”.

3. Right click the “SmartConnectorService” entry and choose Properties.
4. Click the **General Tab**.
5. Confirm the Startup Type is **Automatic**.
6. Click the **Log On** tab.
7. Confirm that the “Local System account” is selected. This may be different depending on the database authentication type you chose earlier.
8. Click the Recovery tab.
9. Set First failure to: **Restart the Service**
   We recommended that you choose at least one recovery action in the event that the SmartConnector Service experiences a failure. At a minimum, “Restart the Service” should be selected.



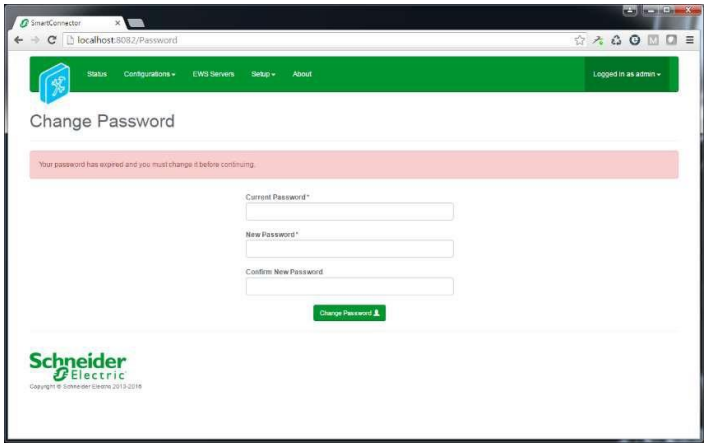
10. Select **OK** to save all changes

5.2.3 Change Default Credentials

By default, SmartConnector will enable SmartConnector Portal on the local machine. SmartConnector Portal, you must change the default password to a new password.

1. Open a web browser
2. Navigate to http://localhost:8082
3. At the Login Page, enter the default user credentials of:
   Username: **admin**
   Password: **Admin!23**

   At this point you will be presented with the Change Password Page as show below.



4. Enter the default password as the Current Password.
5. Enter a new password. Portal passwords are required to be at least 6 characters in length and contain a mix of upper case, lower case, numeric, and at least one non- alphanumeric character.
6. Confirm the password you entered in step 5.
7. Click **Change Password**.
8. Re-authenticate (Login) with your Username and new password.

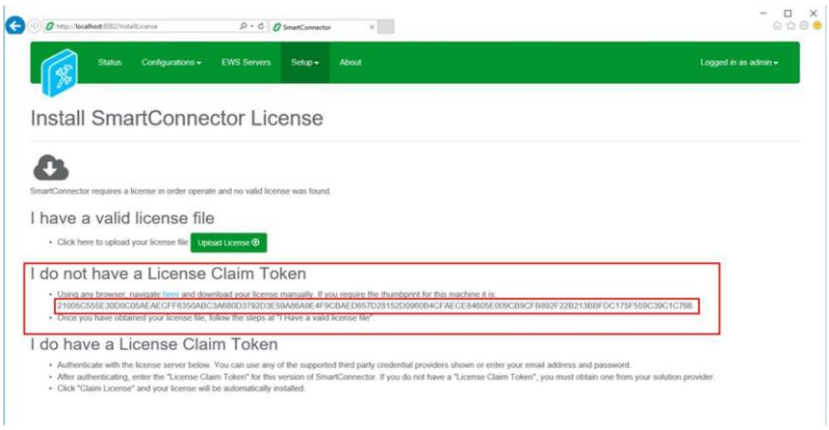
5.2.4 Install SmartConnector Framework Runtime License

SmartConnector Framework requires a license in order to run. After changing the default password, navigating to any page of SmartConnector Portal will return the user to the Install License page where a runtime license must be installed.

I. **SmartConnector Connected to the Web**

If the Windows machine with SmartConnector Framework detects an active internet connection, the Install SmartConnector License page will automatically be displayed. Once authenticated with the License Manager, you only need to enter a License Claim Token to “claim” the runtime license and it will be automatically installed.

Alternatively, the user may click “Upload License” to manually upload an already obtained license file. License Claim tokens and license files can be obtained from www.smartconnectorserver.com.



II. **SmartConnector Not Connected to the Web**

If SmartConnector fails to detect an active internet connection, the Install License page shown below will be displayed.

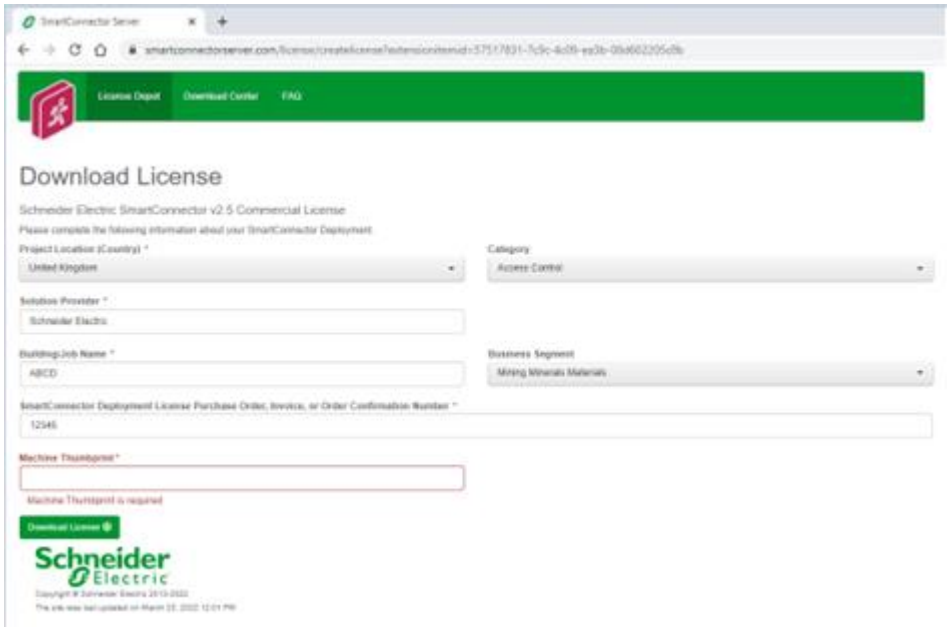
Directions are provided on how to download a license file from www.smartconnectorserver.com.

III. **Obtain a license when you do not have a Claim Token**

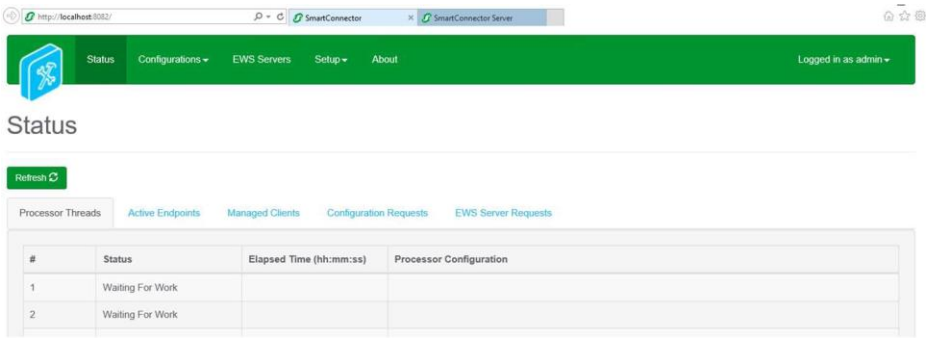
If you do not have a claim token then you can download a License for SmartConnector Framework via a file and the Thumbprint of the machine SmartConnector Framework has been installed on.

1. From the “I do not have a License Claim Token section of the SmartConnector License page”
2. Copy the Machine Thumbprint into the Windows clipboard for use later
3. Click on the navigate here button in this section, this will connect you to the License Depot web page
4. Log on to the License depot web page with your smartconnectorserver.com credentials
5. Scroll down until you see the *Runtime v2.5 Commercial License*
6. Select the download button to obtain the License file

7. Complete the Download License form



8. Paste in the machine thumbprint from the Windows clipboard (copied earlier)
9. Save the downloaded License file
10. Return to the Install SmartConnector License page
11. Select Upload License
12. SmartConnector Framework is now successfully licensed



13. The SmartConnector Framework status page will appear

IV. Confirm Settings

SmartConnector installs the service with some default settings. After changing the password, you should confirm the system settings meet the criteria for how SmartConnector Framework will be used.

1. Open any web browser
2. Navigate to http://localhost:8082
3. Authenticate with the credentials you used in the prior section.
4. From the menu, click **Setup -> Service Settings**.
   To edit any field, you can either click the edit icon or click the Edit All button.

i. *The default settings will be acceptable for the initial installation of SmartConnector Framework.*
ii. *Users should use good security practices to define the expiration time for user Passwords.*
iii. *The EWS Portal address can also be modified here from the default port used 8082.*

5. Review and/or change values as desired. Unless otherwise noted, changes made here will take effect without a service restart.

Instance Name	– Appears in the browser tab and can be useful to distinguish which SmartConnector instance you are looking at if you are connecting to multiple deployed instances from a single browser.
Logging Level	– Maximum level SmartConnector will log. Possible values are None, Error, Status, Info, Debug, Trace, All. This setting is used in conjunction with Logging Filters to control how much information is captured in the log files.
Password Age Limit	– The maximum number of days before a Portal user's password will expire.
Portal Address	– Address of SmartConnector Portal. For security concerns, the default value will be 127.0.0.1 which means the portal can only be accessed from the local machine. If broader access is required, this value can be modified by using the "+ syntax" e.g. http://+:8082. This will allow access to any IP or DNS which resolves to the local machine. If you plan to secure the endpoint with a certificate, then the protocol shown here should be changed to https to match. Entering an empty value will disable the portal. Use caution! Consult the Security Considerations for suggestions on how best to configure this.
Processor Runtime Limit	– The maximum amount of time a Processor Configuration is given to complete before it is deemed to be unresponsive and is terminated. Unless otherwise instructed this value should not need to be modified.
Worker Manager Sleep	– The amount of time that the Worker Manager will idle before determining if there are Processors that need to be invoked. Unless otherwise instructed this value should not need to be modified.
Worker Thread	**Count** – The number of concurrent Processors that can be executed. This number may be increased but is largely dependent on the host machine's number of logical processors. To determine the number of logical processors, open a command prompt and enter the command: WMIC CPU Get DeviceID,NumberOfCores,NumberOfLogicalProcessors. While you can set this value greater than the number of logical processors, it represents the number of concurrent workers that can run without potential operating system queuing. You will need to restart the SmartConnector Service for this change to take effect.

6. After you have made the necessary changes, click Save to save them to the database.

6. BA Asset Health SmartConnector Extension Installation

6.1 Request API credentials

Please request for API credentials by filling out this form:
https://forms.office.com/e/jiDUJrQZ8d

It might take some time to process the request, we appreciate your patience with us.

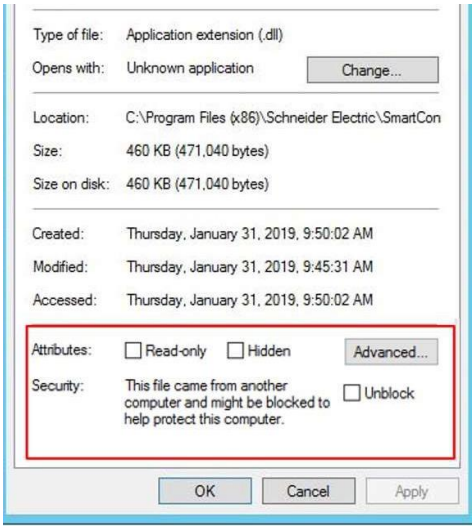
6.2 Downloading the BA Asset Health Extension

Please send a request to isc.uk@schneider-electric.com to request the latest version of BA Asset Health Extension with the following template:

> **Subject**: Request for ISC.EcoStruxureBuildingAdvisorDiagnostics extension
> **Body**: Hi, we would like to request the latest version of the ISC.EcoStruxureBuildingAdvisorDiagnostics Extension and would also like to request for a Claim Token for the extension.

6.3 Installing the BA Asset Health Extension

1. Extract the files from the zip file to a temporary directory
2. Right click on each file and select Properties
3. Verify the file is not blocked – see screen shot below; if the file is blocked, select **Unblock**



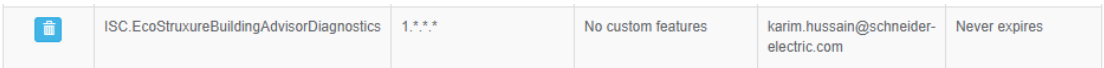
4. Copy the files to the installed directory for SmartConnector Framework (e.g., *C:\Program Files (x86)\Schneider Electric\SmartConnector*)

6.4 Licensing the BA Asset Health Extension

1. Ensure you have received the Claim Token from previous step
2. Log in to www.smartconnectorserver.com
3. Click on **License Depot**
4. Click on the **Claim** button
5. Fill out the **License Claim Token**
6. Fill out the **Thumbprint**

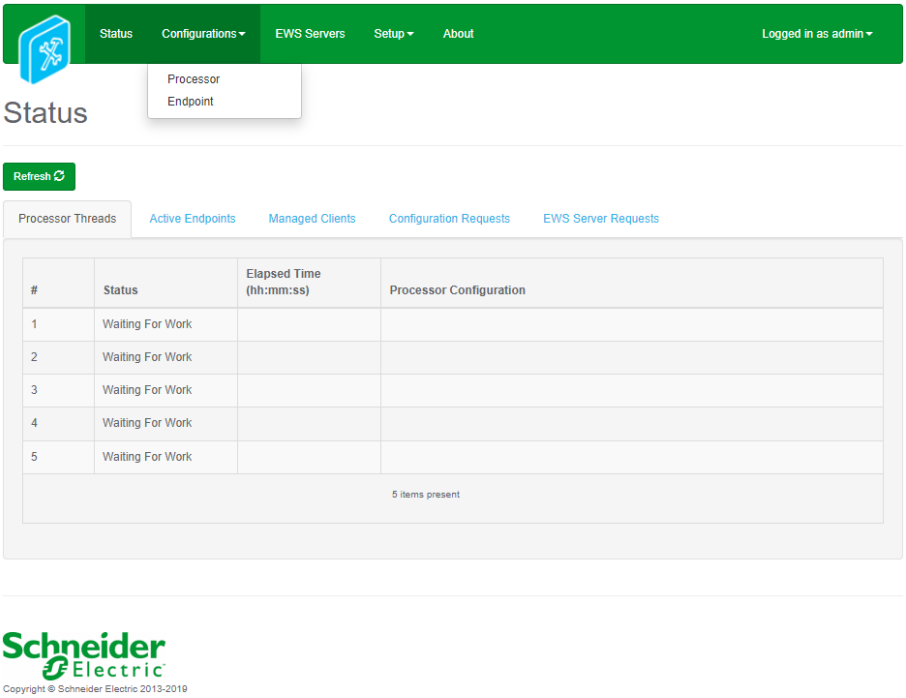
> **NOTE**: You can get the thumbprint from the SmartConnector admin portal typically located on https://localhost:8082
>
> Click on **Setup** -> **Licenses** and then on the **Thumbprint** button

7. Once License Claim Token and Thumbprint have been entered, please fill out the rest of the form and then click on **Claim License**
8. Go to the SmartConnector admin portal typically located on https://localhost:8082
9. Click on **Setup** -> **Licenses** and then click on the **Add** button
10. Locate the license "**Building Analytics Diagnostics.lic**" you recently downloaded
11. Ensure the license with Assembly Name "**ISC.EcoStruxureBuildingAdvisorDiagnostics**" is present and not expired

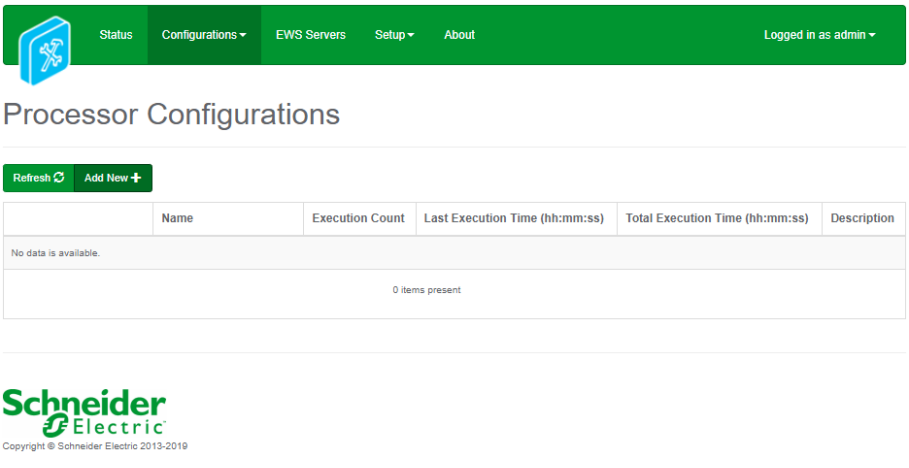


6.5 Configure BA Asset Health SmartConnector SetupProcessor

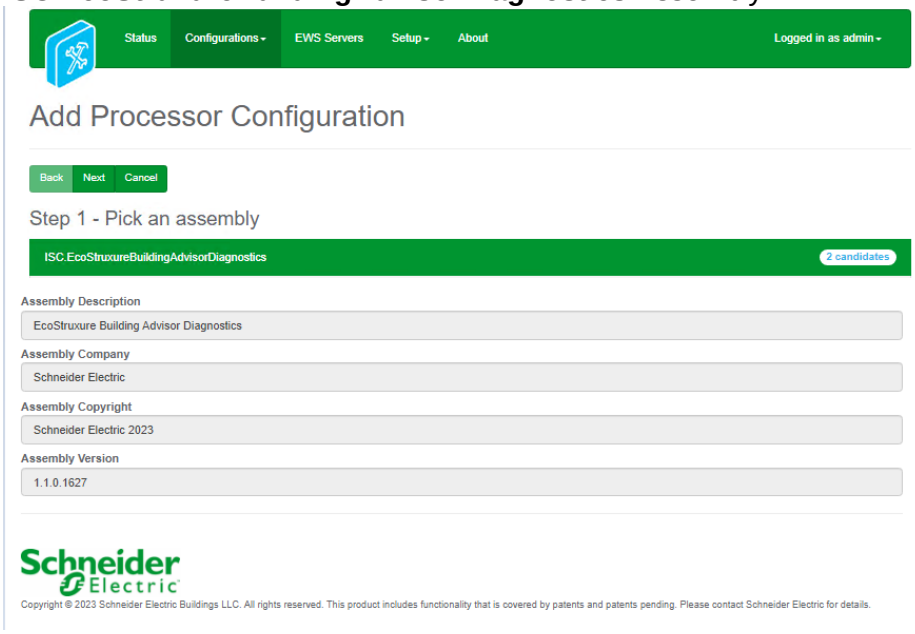
1. Log into the **SmartConnector Portal**. If it the SmartConnector is installed on the same machine use https://localhost:8082
2. Select **Configurations -> Processor**



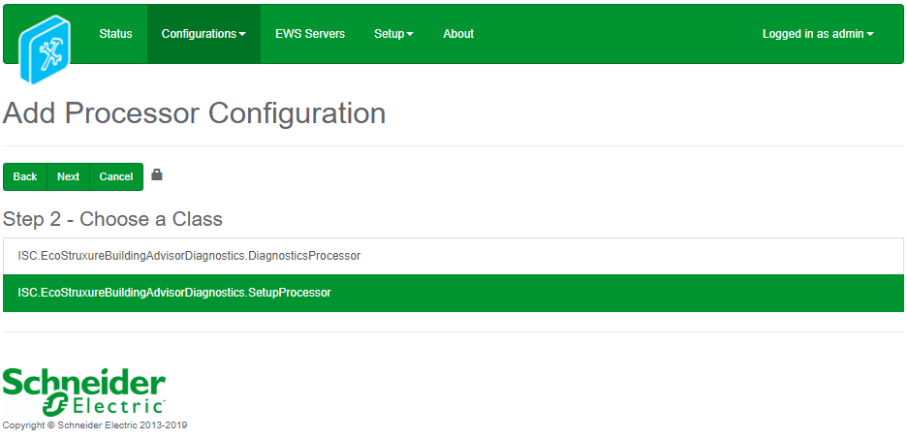
3. From the Processor Configurations Page, press the **Add New +** button.



4. From the Add Processor Configuration Page, Select the **ISC.EcoStruxureBuildingAdvisorDiagnostics** Assembly

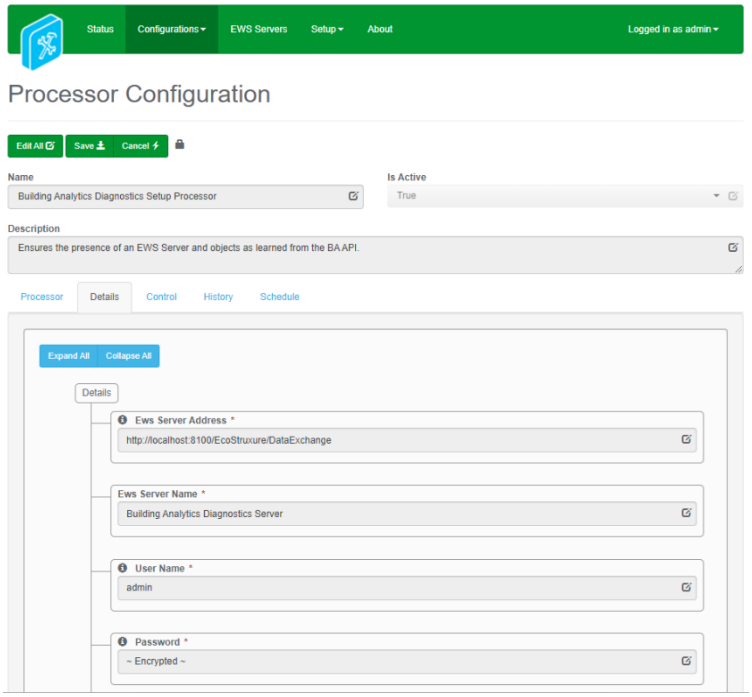


5. Click **Next**.
6. Choose **the ISC.EcoStruxureBuildingAdvisorDiagnostics.SetupProcessor** class and press the **Next** button.



7. Use existing or modify Name and Description for this configuration and press the **Finish** button.

8. On the Process Configuration Page, Click on the **Details** Tab.



9. Set the "**Password**" to something you can remember.
10. Fill out the following properties:
    - **Building Advisor Endpoint Address**. https://rest.buildingsapi.net
    - **Subscriber Key**: Enter the Subscriber Key you received earlier
    - **Client Id**: Enter the id for the client you wish to connect
        i. In order to get the Client Id you need to issue an API request and filter the response. See below cURL command example:

```
curl -v -X GET "https://rest.buildingsapi.net/core-base/clients/" -H "Cache-Control: no-cache" -H "Ocp-Apim-Subscription-Key: your-subscriber-key-here"
```

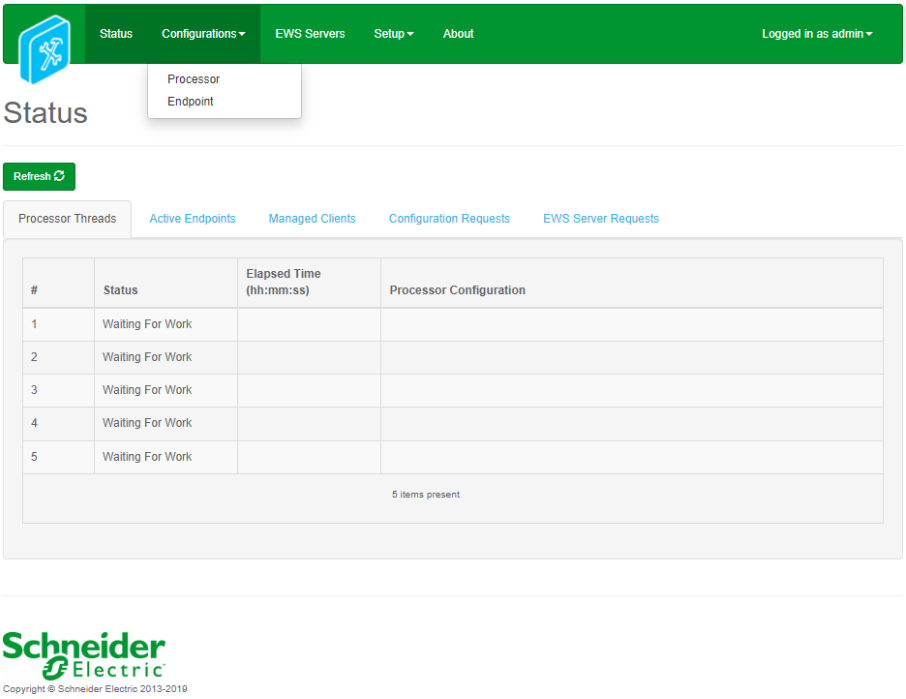
    - **Open Task Days**: 120
    - **In Process Task Days**: 120
    - **(OPTIONAL) Buildings**: Leave empty for all buildings in this client. For select buildings, add a new row with Building Id for each building you want to connect.

11. Click **Save**.
12. Then click the **Validate** button and fix any errors which are displayed
13. Click the **Start** button to run the SetupProcessor and wait until completion.

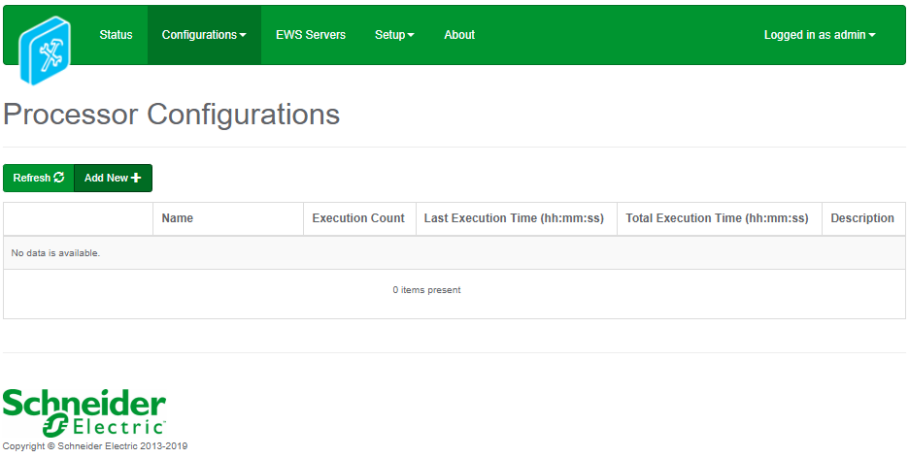
Note: The SetupProcessor only needs to be run once unless you want to onboard additional clients to the same EWS Server. If you want that, just change the Client Id, run again, and wait until completion.

6.6 Configure and run BA Asset Health SmartConnector DiagnosticsProcessor

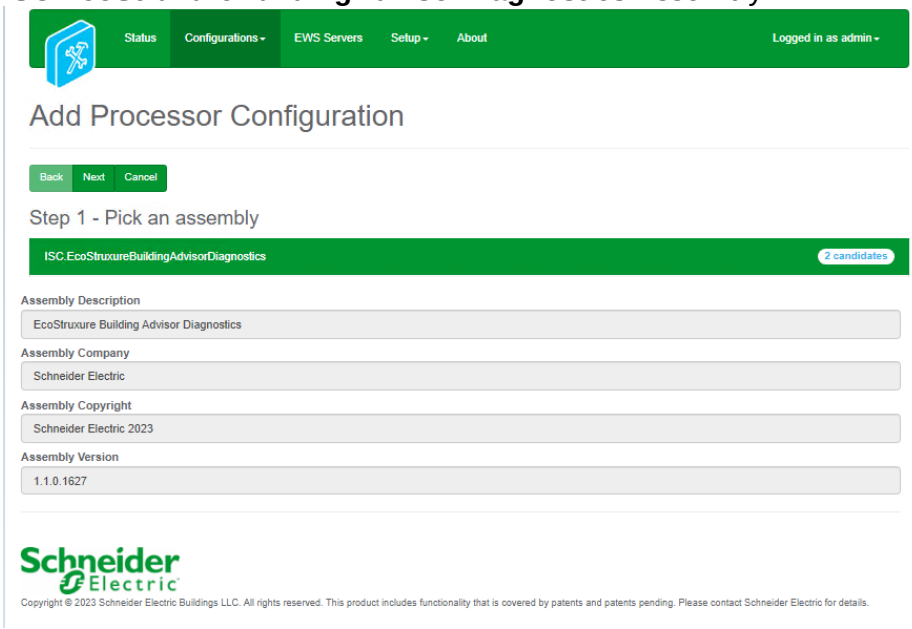
1. Log into the **SmartConnector Portal**. If it the SmartConnector is installed on the same machine use https://localhost:8082
2. Select **Configurations -> Processor**



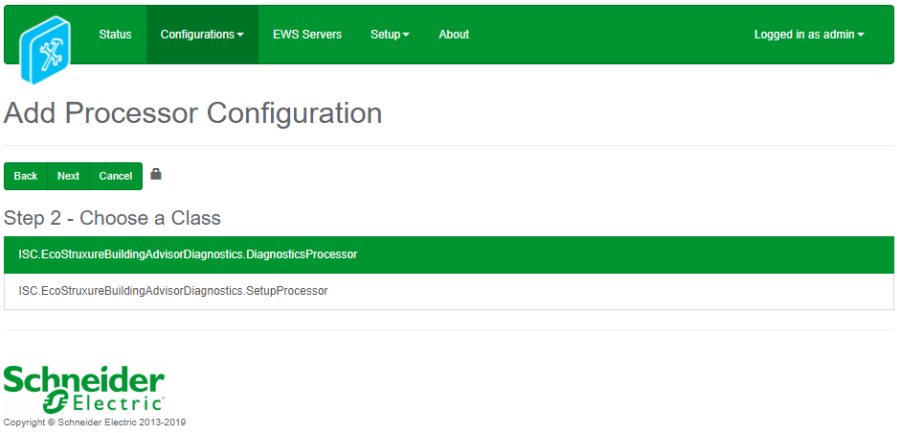
3. From the Processor Configurations Page, press the **Add New +** button.



4. From the Add Processor Configuration Page, Select the **ISC.EcoStruxureBuildingAdvisorDiagnostics** Assembly

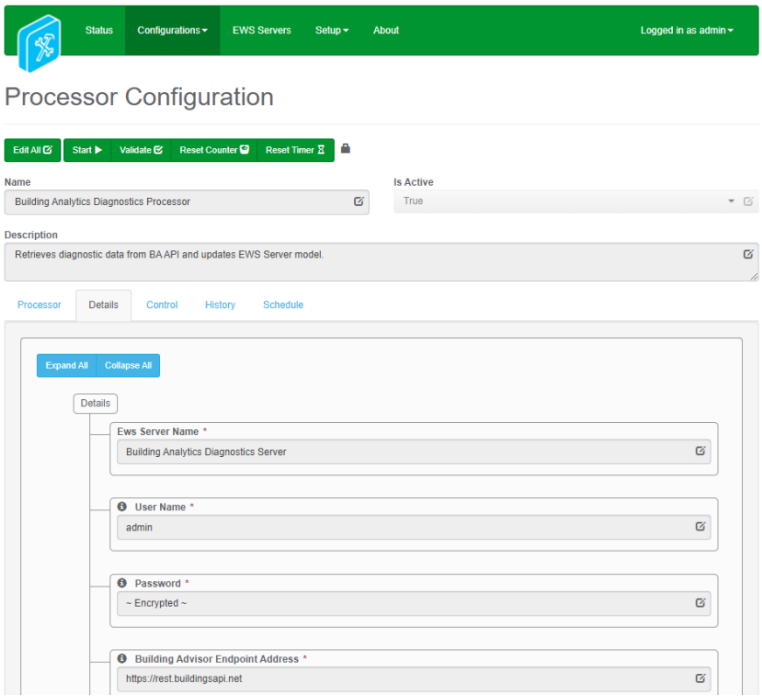


5. Click **Next**.
6. Choose **the ISC.BuildingAdvisorDiagnostics.DiagnosticsProcessor** class and press the **Next** button.



7. Use existing or modify Name and Description for this configuration and press the **Finish** button.

8. On the Process Configuration Page, Click on the **Details** Tab.



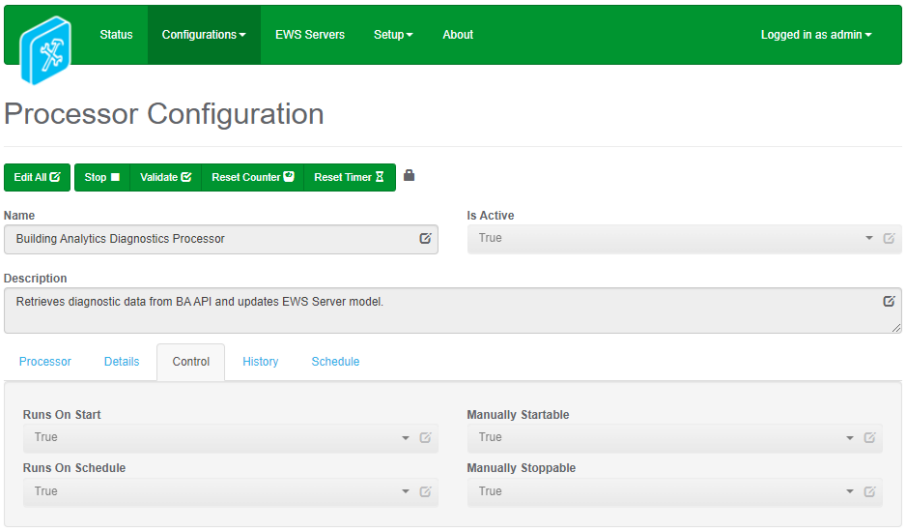
9. Set the "**Password**" to the password you chose in the earlier step.
10. Fill out the following properties:
    - **Building Advisor Endpoint Address**. https://rest.buildingsapi.net
    - **Subscriber Key**: Enter the Subscriber Key you received earlier
    - **Client Id**: Enter the id for the client you wish to connect. Use the Client Id from earlier step, or use the following procedure:
        i. In order to get the Client Id you need to issue an API request and filter the response. See below cURL command example:

```
curl -v -X GET "https://rest.buildingsapi.net/core-base/clients/" -H "Cache-Control: no-cache" -H "Ocp-Apim-Subscription-Key: your-subscriber-key-here"
```

    - **Open Task Days**: 120
    - **In Process Task Days**: 120

11. Click **Save**.

12. Click on the **Schedule** tab
13. Select the Schedule called “Every 15 minutes”
14. Click **Save**.
15. Click on the **Control** tab
16. Use the following configuration:
    - **Runs On Start**: True
    - **Runs On Schedule**: True
    - **Manually Startable**: True
    - **Manually Stoppable**: True



17. Then click the **Validate** button and fix any errors which are displayed
18. Click the **Start** button to run the DiagnosticsProcessor and wait for completion.

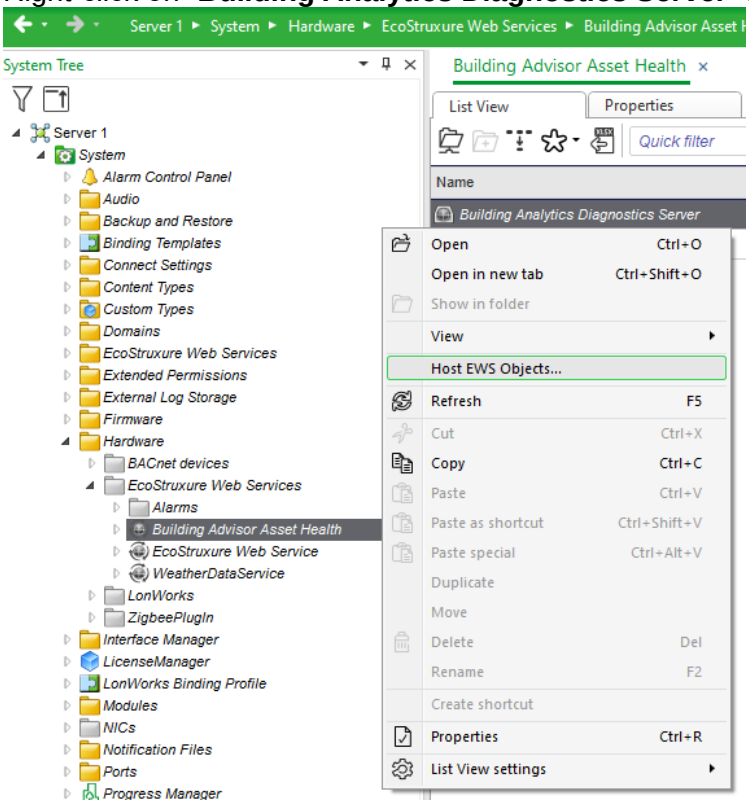
7 BA Asset Health Extension with EcoStruxure Building Operation

7.1 Connect EWS Server with EcoStruxure Building Operation

1. Log in to the EcoStruxure Building Operation system
2. Right-click in the top of the system tree and select **New -> Interface**
3. Select **WebService -> EcoStruxure WebService** and rename the object, then click Create
4. Edit properties of your new EcoStruxure WebService and enter the following properties:
    a. **User name**: Enter the User name configured in earlier steps
    b. **Password**: Enter the Password configured in earlier steps
    c. **Confirm password**: Repeat the password entered above
    d. **Service URL**: Enter the Ews Server Address as configured in SetupProcessor
    e. **Enable communication**: Enable
5. Click Save

7.2 Host EWS objects in EcoStruxure Building Operation

1. Make sure the EcoStruxure WebService interface is online
2. Navigate in the System Tree and go to **System -> Hardware -> EcoStruxure Web Services** and find the object with the same name as your EcoStruxure Web Service
3. Click on the EcoStruxure Web Service with the name you previously entered
4. Right-click on "**Building Analytics Diagnostics Server**" and select "**Host EWS Objects…**"



5. Select the EWS Interface you created earlier and click "**Select**"
6. After completion, all objects will be found in the EWS Interface from where you can use for multiple use cases within EBO such as in graphics or programs

7.3 Display data in graphics

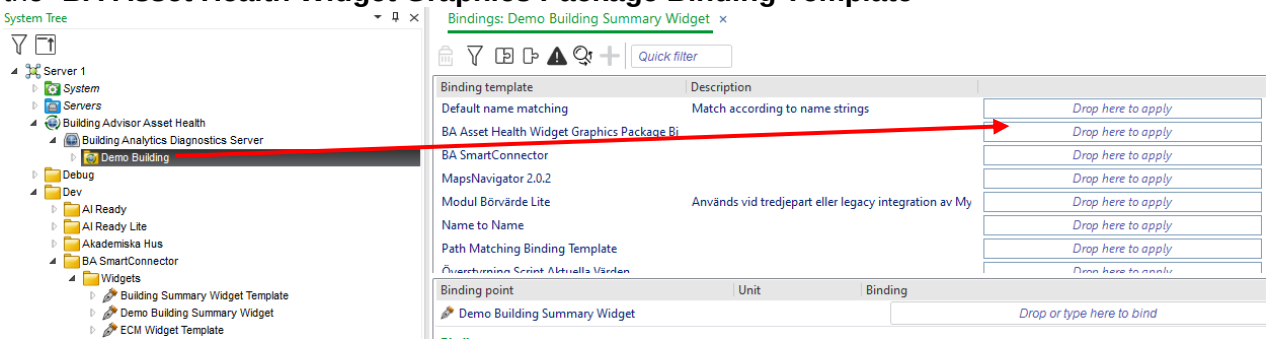
The datapoints provided by the BA Asset Health Extension can be used to be displayed in graphics. EcoStruxure Building Operation 3.2 has built in Widgets that can be used for display. We also provide a Graphics Pack that you can use to extend the existing library.

7.3.1 BA Asset Health Widget Graphics Pack

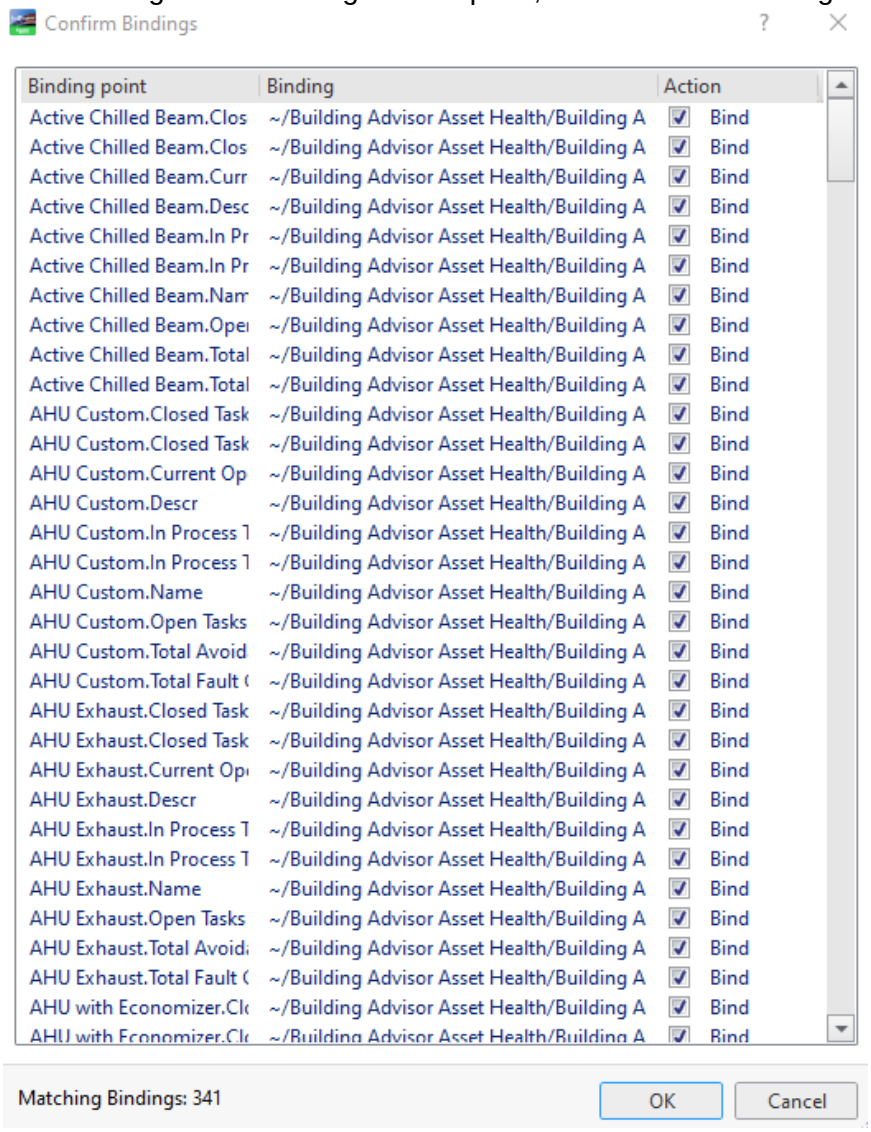
1. Download the latest BA Asset Health Widget Graphics Pack using this link: BA Asset Health Widget Graphics Pack.zip
2. Import the graphics templates wherever you wish in the EBO system
3. Import the Binding Template by navigating to **System -> Binding Templates** then right-click and select "**Import…**" and select the "**BA Asset Health Widget Graphics Package Binding Template**"

7.3.2 Building Summary Widget

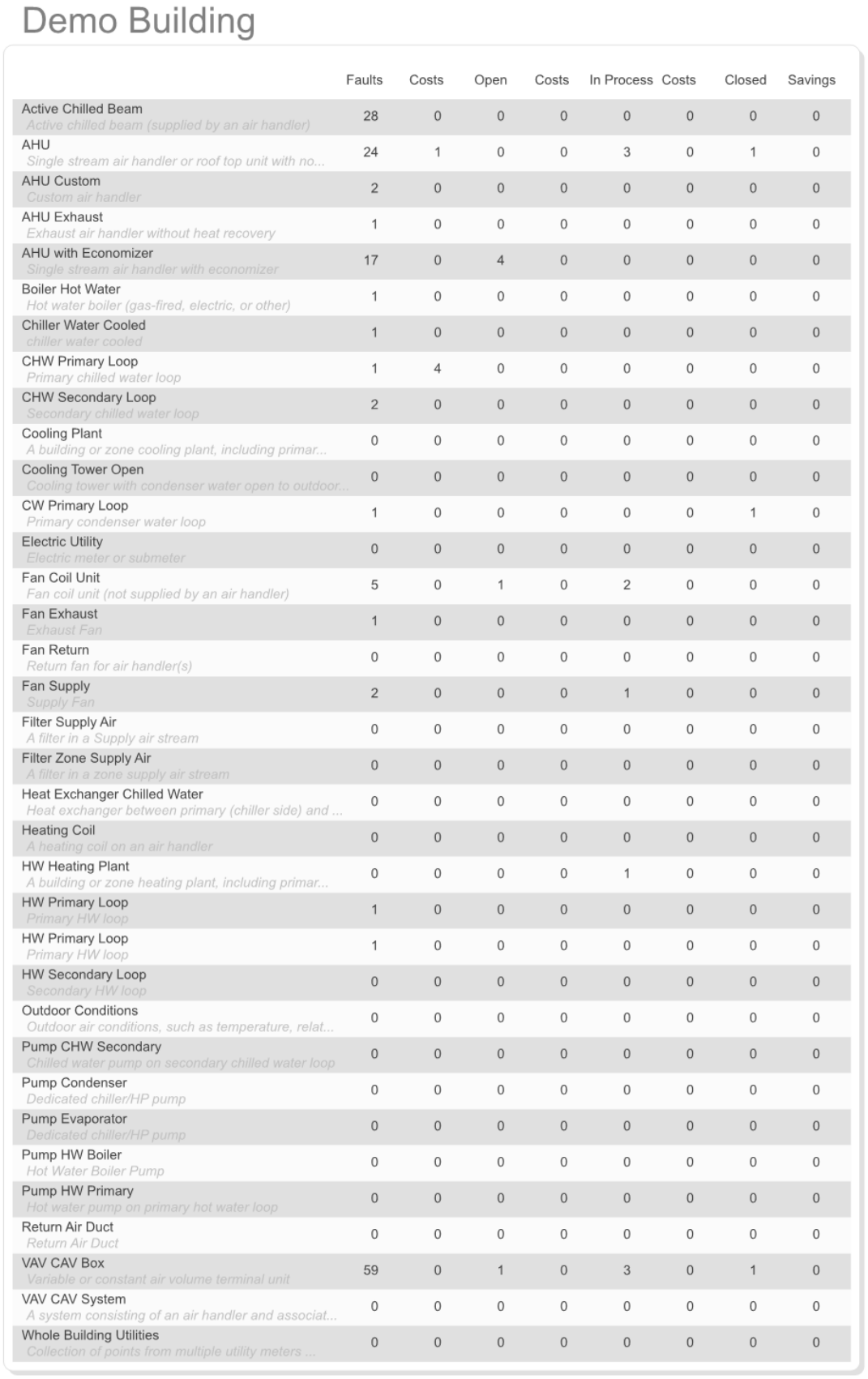
1. Duplicate the "**Building Summary Widget Template**" for each building
2. Edit the duplicated "**Building Summary Widget**" and edit the public property for "**Building Name**" so it matches a building name in the EcoStruxure Web Services Interface
3. Right click and select **Edit Bindings** on the "**Building Summary Widget**"
4. Drag and drop the folder for the building located in the EcoStruxure Web Services Interface into the "**BA Asset Health Widget Graphics Package Binding Template**"



5. After waiting for the bindings to complete, click OK on the dialogue



6. **Save** the changes to the graphics, then open the graphic and verify all bindings seems accurate. Fix any missing bindings manually

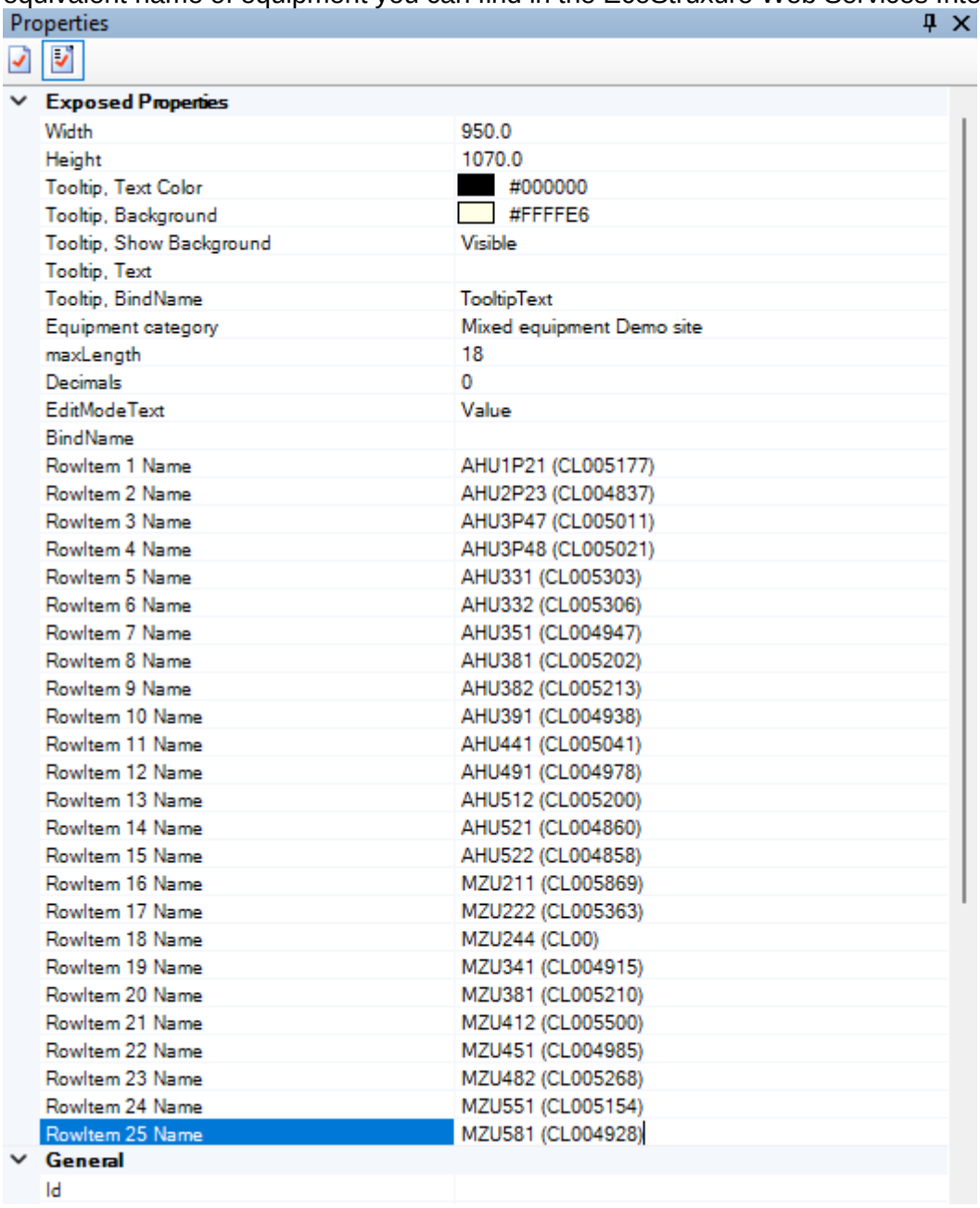


Demo Building

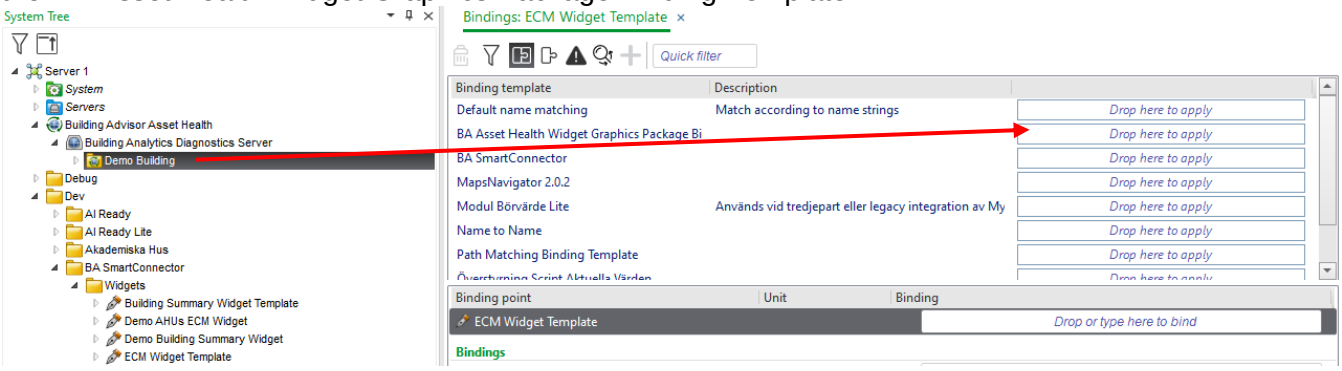
	Faults	Costs	Open	Costs	In Process	Costs	Closed	Savings
Active Chilled Beam *Active chilled beam (supplied by an air handler)*	28	0	0	0	0	0	0	0
AHU *Single stream air handler or roof top unit with no...*	24	1	0	0	3	0	1	0
AHU Custom *Custom air handler*	2	0	0	0	0	0	0	0
AHU Exhaust *Exhaust air handler without heat recovery*	1	0	0	0	0	0	0	0
AHU with Economizer *Single stream air handler with economizer*	17	0	4	0	0	0	0	0
Boiler Hot Water *Hot water boiler (gas-fired, electric, or other)*	1	0	0	0	0	0	0	0
Chiller Water Cooled *chiller water cooled*	1	0	0	0	0	0	0	0
CHW Primary Loop *Primary chilled water loop*	1	4	0	0	0	0	0	0
CHW Secondary Loop *Secondary chilled water loop*	2	0	0	0	0	0	0	0
Cooling Plant *A building or zone cooling plant, including primar...*	0	0	0	0	0	0	0	0
Cooling Tower Open *Cooling tower with condenser water open to outdoor...*	0	0	0	0	0	0	0	0
CW Primary Loop *Primary condenser water loop*	1	0	0	0	0	0	1	0
Electric Utility *Electric meter or submeter*	0	0	0	0	0	0	0	0
Fan Coil Unit *Fan coil unit (not supplied by an air handler)*	5	0	1	0	2	0	0	0
Fan Exhaust *Exhaust Fan*	1	0	0	0	0	0	0	0
Fan Return *Return fan for air handler(s)*	0	0	0	0	0	0	0	0
Fan Supply *Supply Fan*	2	0	0	0	1	0	0	0
Filter Supply Air *A filter in a Supply air stream*	0	0	0	0	0	0	0	0
Filter Zone Supply Air *A filter in a zone supply air stream*	0	0	0	0	0	0	0	0
Heat Exchanger Chilled Water *Heat exchanger between primary (chiller side) and ...*	0	0	0	0	0	0	0	0
Heating Coil *A heating coil on an air handler*	0	0	0	0	0	0	0	0
HW Heating Plant *A building or zone heating plant, including primar...*	0	0	0	0	1	0	0	0
HW Primary Loop *Primary HW loop*	1	0	0	0	0	0	0	0
HW Primary Loop *Primary HW loop*	1	0	0	0	0	0	0	0
HW Secondary Loop *Secondary HW loop*	0	0	0	0	0	0	0	0
Outdoor Conditions *Outdoor air conditions, such as temperature, relat...*	0	0	0	0	0	0	0	0
Pump CHW Secondary *Chilled water pump on secondary chilled water loop*	0	0	0	0	0	0	0	0
Pump Condenser *Dedicated chiller/HP pump*	0	0	0	0	0	0	0	0
Pump Evaporator *Dedicated chiller/HP pump*	0	0	0	0	0	0	0	0
Pump HW Boiler *Hot Water Boiler Pump*	0	0	0	0	0	0	0	0
Pump HW Primary *Hot water pump on primary hot water loop*	0	0	0	0	0	0	0	0
Return Air Duct *Return Air Duct*	0	0	0	0	0	0	0	0
VAV CAV Box *Variable or constant air volume terminal unit*	59	0	1	0	3	0	1	0
VAV CAV System *A system consisting of an air handler and associat...*	0	0	0	0	0	0	0	0
Whole Building Utilities *Collection of points from multiple utility meters ...*	0	0	0	0	0	0	0	0

7.3.3 ECM Widget

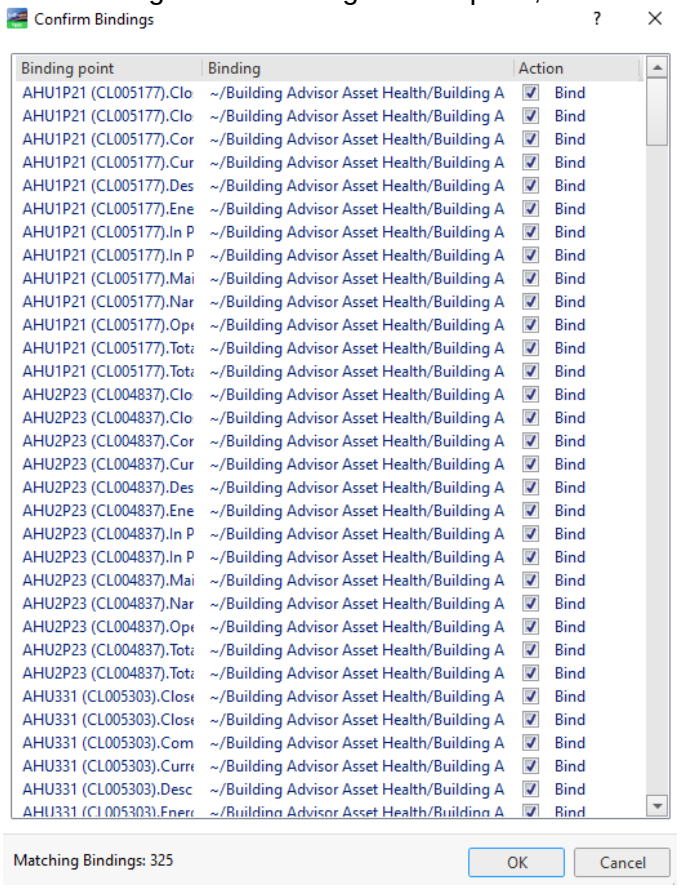
1. Duplicate the "**ECM Widget Template**" for each building
2. Edit the duplicated "**ECM Widget**" and edit the Exposed Property for "**Equipment category**" to your liking
3. Continue editing the Exposed Properties "**RowItem n Name**" and name each of these to an equivalent name of equipment you can find in the EcoStruxure Web Services Interface



4. Right click and select **Edit Bindings** on the "**ECM Widget**"
5. Drag and drop the folder for the building located in the EcoStruxure Web Services Interface into the BA Asset Health Widget Graphics Package Binding Template



6. After waiting for the bindings to complete, click OK on the dialogue



7. **Save** the changes to the graphics, then open the graphic and verify all bindings seems accurate and correct if some bindings are missing

Equipment category

Equipment	E	C	M	Yesterdays Faults	Daily Costs	Open Tasks	Annual Costs	In Process Tasks	Annual Costs	Closed 30 Days	Annual Savings
AHU1P21 (CL005177)	0	0	0	0	0	0	0	0	0	0	0
AHU2P23 (CL004837)	2	0	0	1	0	0	0	0	0	0	0
AHU3P47 (CL005011)	0	0	0	0	0	0	0	0	0	0	0
AHU3P48 (CL005021)	0	0	0	0	0	0	0	0	0	0	0
AHU331 (CL005303)	0	0	4	1	0	0	0	0	0	0	0
AHU332 (CL005306)	0	0	4	1	0	0	0	0	0	0	0
AHU351 (CL004947)	0	0	0	0	0	0	0	0	0	0	0
AHU381 (CL005202)	0	0	0	0	0	0	0	0	0	0	0
AHU382 (CL005213)	0	5	8	2	0	0	0	1	0	0	0
AHU391 (CL004938)	0	0	0	0	0	0	0	0	0	0	0
AHU441 (CL005041)	0	3	4	2	0	0	0	0	0	0	0
AHU491 (CL004978)	0	0	0	0	0	0	0	0	0	0	0
AHU512 (CL005200)	0	0	0	0	0	0	0	0	0	0	0
AHU521 (CL004860)	0	1	4	2	0	0	0	0	0	0	0
AHU522 (CL004858)	0	2	4	2	0	0	0	0	0	0	0
MZU211 (CL005869)	0	0	0	0	0	0	0	0	0	0	0
MZU222 (CL005363)	0	0	0	0	0	0	0	0	0	0	0
MZU244 (CL00)	0	0	0	0	0	0	0	0	0	0	0
MZU341 (CL004915)	0	0	0	0	0	0	0	0	0	0	0
MZU381 (CL005210)	0	0	0	0	0	0	0	0	0	0	0
MZU412 (CL005500)	0	0	4	1	0	0	0	0	0	0	0
MZU451 (CL004985)	0	0	0	0	0	0	0	0	0	0	0
MZU482 (CL005268)	0	0	0	0	0	0	0	0	0	0	0
MZU551 (CL005154)	0	0	0	0	0	0	0	0	0	0	0
MZU581 (CL004928)	0	0	0	0	0	0	0	0	0	0	0

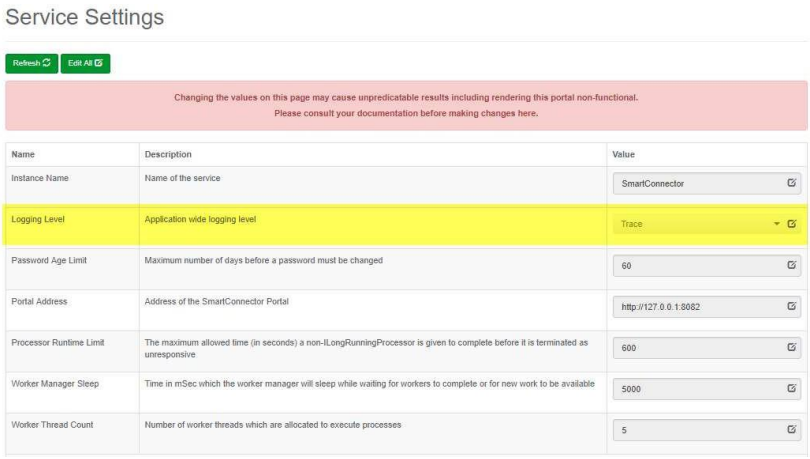
8. Troubleshooting

8.1 SmartConnector Log File

SmartConnector includes integrated logging into log files where both SmartConnector extensions and the SmartConnector framework can log any messages that may be useful. These log files can be found generally in the directory ***C:\ProgramData\SmartConector\Logs*** on the machine where SmartConnector is installed.

In general, if you are having problems with SmartConnector or the extension, it may be necessary to increase the logging level, or enable additional logging filters.

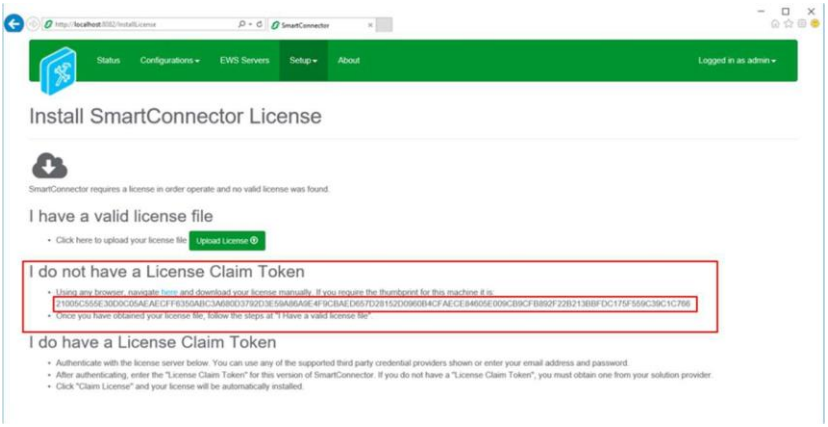
1. To adjust the logging level, visit the **Service Settings** page and edit the Logging Level setting.



2. To adjust the logging filters, visit the **Logging Filters** page. The logging filter most likely to pertain to this solution is ***Processor***.

8.2 Framework Licensing Error

If you navigate to the SmartConnector portal and see a page similar to the below screenshot. This means that either you have not yet got a license for your SmartConnector framework, or your current license is no longer valid.



If you have not yet got a license for your SmartConnector framework:
Follow the instructions in the section Install SmartConnector Framework Runtime License

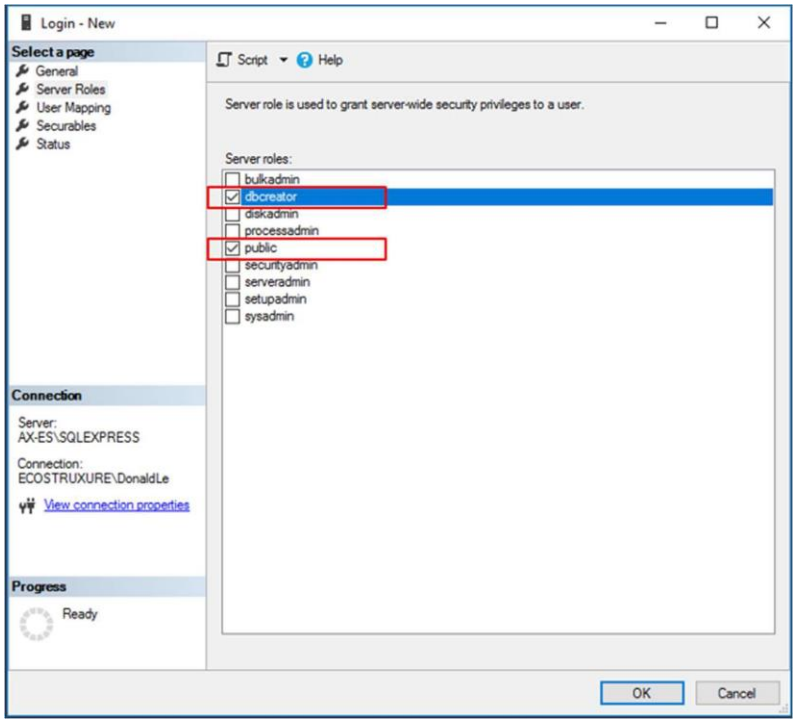
If you have already got a license for your SmartConnector framework:
The SmartConnector framework license is bound to a machine thumbprint. This machine thumbprint is a key generated from multiple hardware components of your machine, including the current network adapter that was being used when the license was generated. If you have switched to a different network adapter (e.g. going from a hard-wired connect to a WIFI connection), then it is very likely this machine thumbprint has changed. Please follow the section Install SmartConnector Framework Runtime License using your new thumbprint.

8.3 SQL Authentication Error

If SmartConnector cannot connect to its database, then the framework will fail to start. If you notice that the SmartConnector Server is not starting, or starting and instantly stopping, please review the SmartConnector logs for messages pertaining to SQL Authentication. If this is the case, you may need to make sure that your SQL Credentials are valid before starting the SmartConnector service.

9. Appendix A – SQL User Roles

The Windows user installing the SmartConnector Framework software must have ‘dbcreator’ and ‘public’ roles within SQL in order for SmartConnector Framework to install correctly.
During the installation process of SmartConnector Framework the database tables’ necessary for configuring the system will be created.



Note: If the logged in Windows User did not have the proper SQL user roles during the installation process, the DB tables will not be created. You will need to uninstall then reinstall SmartConnector Framework to create the tables, once the Windows User has proper SQL roles defined. An attempt to perform an installation selecting “Modify” or “Repair” will not create the default DB for SmartConnector Framework.