

EcoStruxure Building Operation

SNMP Listener

SmartConnector

Installation & User Guide

04-20018-02-en
May 2023



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1

Functional Overview

The solution consists of a SmartConnector and an EcoStruxure Web Services (EWS) endpoint. The SmartConnector creates a SNMP trap service listener to receive alarms and creates an EWS endpoint to turn these traps into EWS alarms for EBO to read.

The EWS endpoint is created based on CSV configuration files for both get/set values and SNMP traps that become EWS alarms.

This version supports both v2 & v3 SNMP and can talk to multiple SNMP endpoints. When the EWS values are polled or the SNMP is gotten or set.

The processor leverages the SmartConnector Service framework and details of the application (release history, installation notes etc.) are available separately and are not covered in this manual.

The SmartConnector application is licensed on a single server basis but may also be configured to connect to both Automation Server (AS-P) devices as well as Enterprise Servers (ES).

Major steps are as follows:

SmartConnector Framework should be installed and running before these steps.

1. Install the SmartConnector extension and the required files (ISC.SnmpToEws.dll, SnmpSharpNet.dll and System.Web.Http.WebHost.dll).
2. Add and configure the SmartConnector extension.
3. Create the SNMPAlarmText, SNMPObjectList, SNMPTrapSource csv files. The SmartConnector on first run will look for these 3 csv files located in C:\ProgramData\SmartConnector\SNMP. These files define Traps sources and Value sources along with security credentials if needed. With these files, the SmartConnector creates a SNMP trap service listener to receive alarms and creates an EWS endpoint. The EWS endpoint turns these traps into EWS alarms for EBO to read. The files also allow for devices and the SNMP points to be specified. These points are added to the EWS endpoint that can then be consumed by an EBO Enterprise Server or SmartX Server. When the ES or SmartX Server polls the point, the value is retrieved from the remote SNMP device. If the value is changed, the value will be set on the device.
4. Run the processor.ss
5. Create and configure EcoStruxure Web Services Interface in EBO.

2 Restrictions & Limitations

2.1 SmartConnector Service Version

The processor has been configured to operate with the Smart Connector version 2.4.10 onward. The use with any other versions of the SmartConnector Framework is not supported.

2.2 Supported Systems

Supported Servers are:

- Microsoft SQL Server 2012 Express
- Microsoft SQL Server 2012

Supported EcoStruxure Building Operation versions are v1.9.4, v2.0.3, v3.0.4, 3.1.2 and 3.2.2.

2.3 Supported SNMP versions

Supports SNMP versions 2 and 3.

3 Installation

Please refer to the SmartConnector Installation and Configuration Guide.pdf for information on SmartConnector installation.

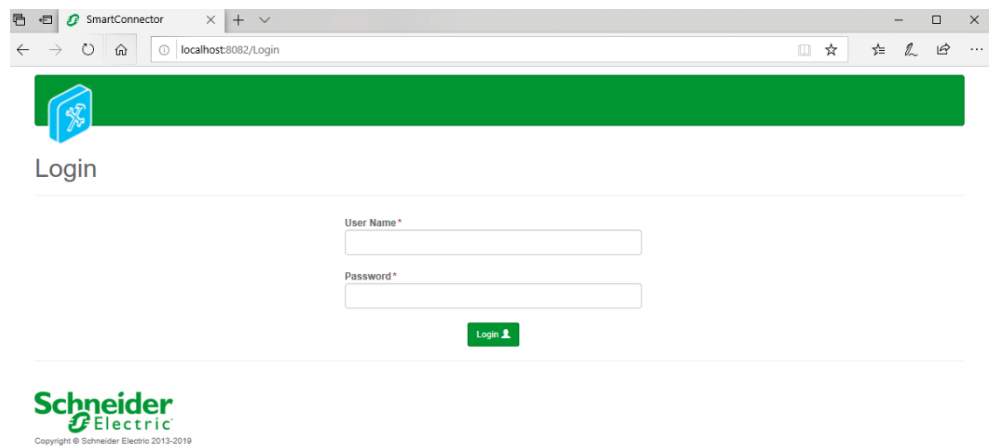
To install the SNMP Listener SmartConnector extension:

1. Stop the SmartConnector service.
2. Copy the files 'ISC.SnmpToEws.dll', 'SnmpSharpNet.dll' and 'System.Web.Http.WebHost.dll' into the service installation directory. The default directory is 'C:\Program Files (x86)\Schneider Electric\SmartConnector'.
3. Start the SmartConnector service.

4 Configuration & Settings

4.1 Processor Configuration

With a default SmartConnector Framework installation, the SmartConnector configuration pages can be accessed from <http://localhost:8082/>.

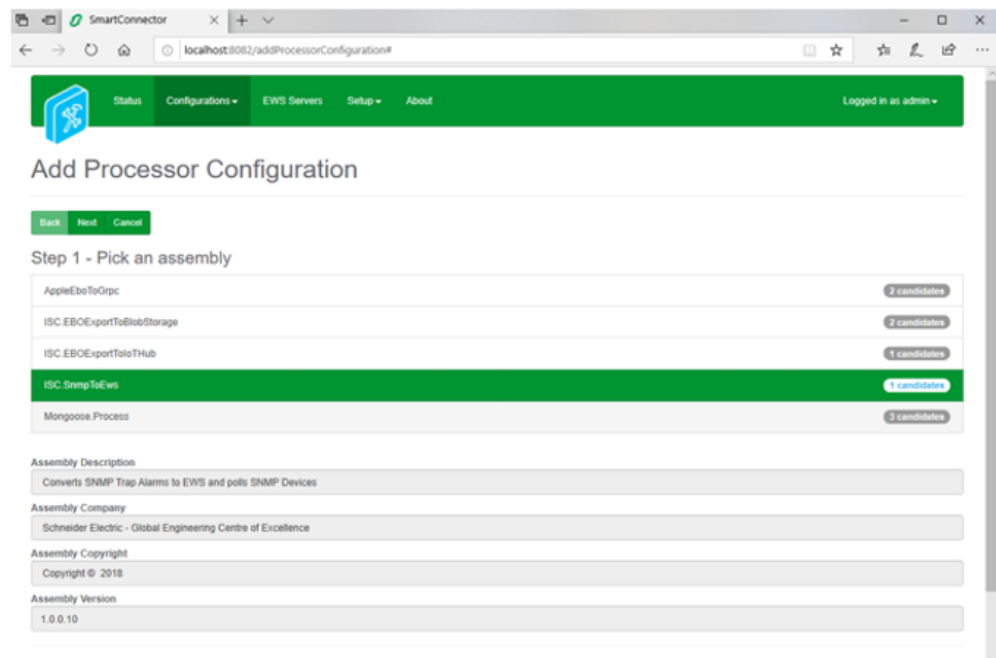


4.2 Adding the Custom Assembly to the Service

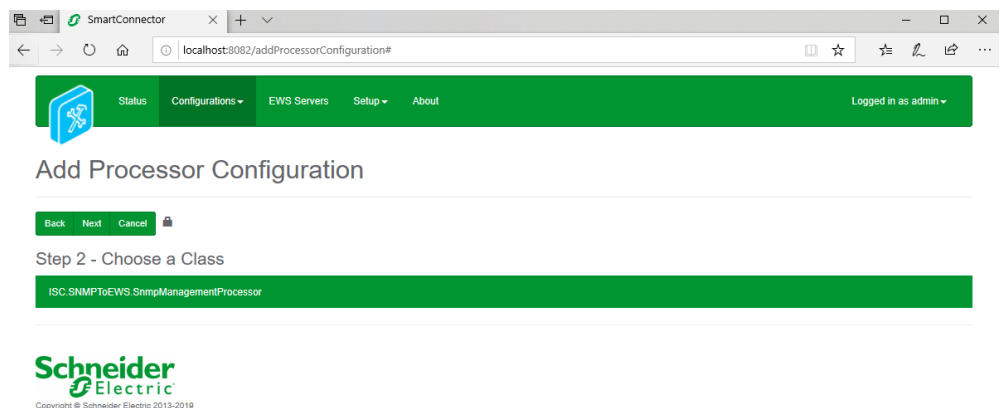
Switch to the Configurations tab and select Add New +



At the Add Configuration window, Step 1 – Pick an assembly, select the reference to ISC.SnmpToEws (this will be highlighted green when selected).

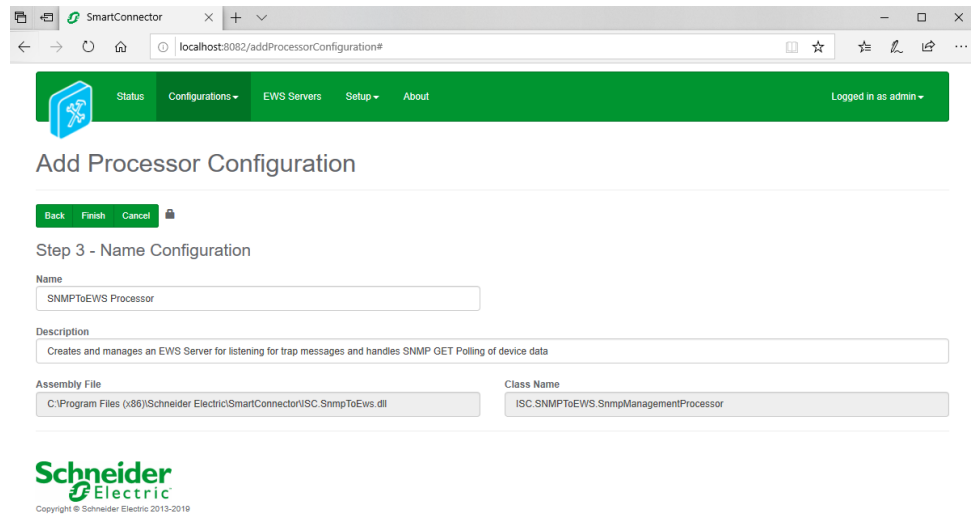


Select Next and proceed to Step 2 Choose a Class. Select the class ISC.SNMPtoEWS.SnmpManagerProcessor.

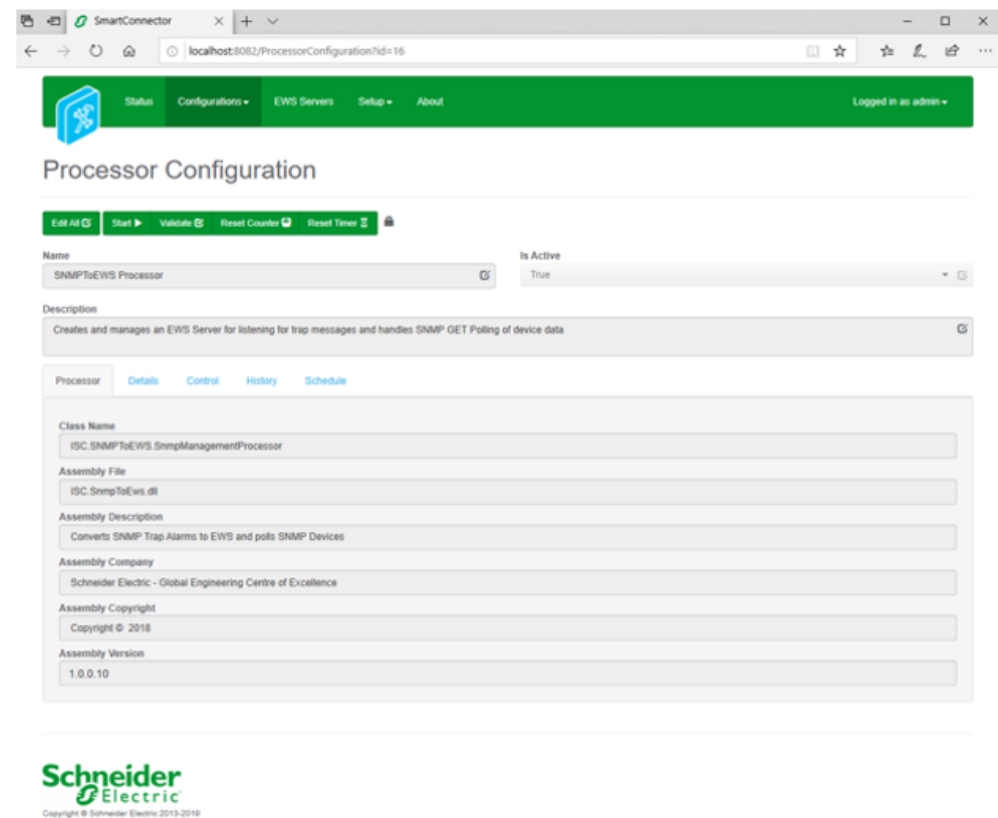


Select Next and proceed to Step 3 Name Configuration

Leave the name at default or enter a meaningful name and description for the Processor which will enable you to identify this process in the configuration window later.



Select Finish and proceed to the Configuration screen.



In the configuration window, select the Details tab. You be presented with the screen to enter the configuration information. Many of the configuration settings have default options. However, they should be checked and validated for the installation. Edit the applicable fields as follows.

The screenshot shows the SmartConnector web interface for Processor Configuration. The browser address bar shows localhost:8082/ProcessorConfiguration?id=16. The interface has a green header with navigation tabs: Status, Configurations, EWS Servers, Setup, and About. The user is logged in as admin. The main title is "Processor Configuration". Below the title are buttons for Edit, Start, Validate, Reset Counter, and Reset Timer. The configuration details are as follows:

- Name: SNMPToEWS Processor
- Is Active: True
- Description: Creates and manages an EWS Server for listening for trap messages and handles SNMP GET Polling of device data

The "Details" tab is selected, showing the following configuration fields:

- Ews Server Name *: SNMPToEWS
- Ews Server End Point *: http://localhost:57788/EcoStructure/DataExchange
- Ews Server User Name *: admin
- Ews Server Password *: ~ Encrypted ~
- Object List File Path *: C:\ProgramData\SmartConnector\SNMP\SNMPObjectList.csv
- C S V File Path *: C:\ProgramData\SmartConnector\SNMP\SNMPTrapSource.csv
- Alarm Text Path *: C:\ProgramData\SmartConnector\SNMP\SNMPAlarmText.csv
- Delete Configuration After Initialization *: False
- Store Alarm History Time Limit *: 360
- Replace Source IP With Octet IP *: True
- Ignore Alarm Without IP Address *: True
- SNMP Trap Port *: 162
- Connection String *: ~ Encrypted ~

The image shows a configuration window with two input fields. The first field is labeled "Database Name *" and contains the text "SNMPAlarmDB". The second field is labeled "Number Of Oids Per Request *" and contains the number "10". Both fields have a small icon in the top right corner.

Ews Server Name

This is the name to be given to the EWS endpoint created by the process for SNMP Values. This can be left as the default name.

Ews Server End Point

Default value: <http://localhost:57788/EcoStruxure/DataExchange>

This is the address the EWS server binds to it, it is recommended that 'localhost' be used. However, the IP address of the machine should be used instead for external connections to the server. Port number can be changed from the default if required.

Ews Server User Name

This is the username used to connect to the created EWS server, it is recommended this is left as the default of admin. When the processor is run, the EWS server will be created with this username.

Ews Server Password

This should be changed to a secure password. It is recommended that the password be at least 8 characters with upper/lower case alphabets and numbers.

Object List File Path

This is the location of the 'SNMPObjectList.csv' configuration file created. This is recommended to be located within a folder called SNMP within C:\ProgramData\SmartConnector. The folder will need to be created manually.

CSV File Path

This is the location of the 'SNMPTrapSource' device configuration file created. This is recommended to be located within a folder called SNMP within C:\ProgramData\SmartConnector. The folder will need to be created manually.

Alarm Text Path

This is the location of the 'SNMPAlarmText' configuration file created. This is recommended to be located within a folder called SNMP within C:\ProgramData\SmartConnector. The folder will need to be created manually.

Delete Configuration After Initialization

Setting this value to True will cause the configuration files to be deleted after the processor runs. This ensures that the data within the configuration files remains secure. Leave this at False until you are happy with the system.

Store Alarm History Time Limit

The number of days to store the alarm history. The default value is 360 days.

Replace Source IP with Octet IP

This will replace IP addresses with friendly names created.

Ignore Alarm Without IP Address

When this is set to True, the Trap Server will ignore traps that come from devices that have not been defined within the configuration.

SNMP Trap Port

The port to bind the trap listening service to. The default port which SNMP uses to listen is port 162.

Connection String

This is the connection string to connect to the SQL database to store SNMP trap history to. This SQL data can be then used for reporting. Note that no reporting package is included within the SmartConnector.

The default Connection String is:

```
Data Source=localhost\SQLEXPRESS;Initial Catalog=master;User Id=sa;Password=Pyramid97
```

Where 'localhost' is the computer name, 'SQLEXPRESS' is the SmartConnector SQL instance name and 'Password' is the password of the SQL Server sa account. As an example, the Connection String for a SmartConnector with an SQL instance name of 'SmartConnector' and sa account password of 'p@ssw0rd' is as follows.

```
Data Source=WTHKLVSE164808L\SMARTCONNECTOR;Initial Catalog=master;User Id=sa; Password=p@ssw0rd
```

Note: The SQL Server sa account is disabled by default. It has to be enabled and the password set.

Database Name

Database Name to create and store the SNMP trap history in the SQL Database.

Number Of Oids Per Request

Specify the number of OIDS that we need to send per request. The range is from 1 to 50. Default value is 10.

The Save Button allows the process configuration to be saved to the database.



This Processor is a long running process and should only need to be started once. It should also be configured to run on startup and recommended that a schedule is attached to re-run the process in case of an error.

5 Revision History

Version	Assembly File Details	Date
1.0.0.16	ISC.SnmpToEws.dll	19 th May 2023

Assembly files required:

ISC.SNMPToEWS.dll
SnmpSharpNet.dll

6 References

SmartConnector Installation and Configuration Guide.pdf
(TDS-M-INSTALLCONFIG-US.BU.N.EN.12.2017.2.30.CC)

SmartConnector Version 2.4 Release Notes.pdf
(TDS-M-RELEASENOTES-US.BU.N.EN.12.2017.2.30.CC)

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