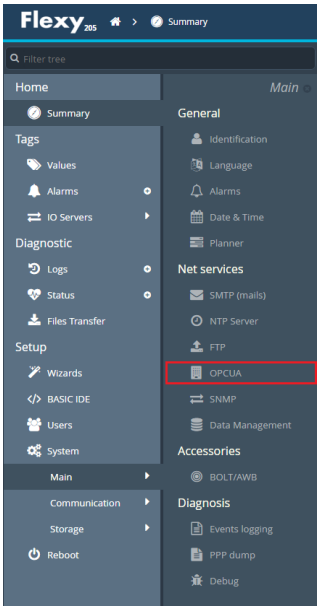
HMS Connectors

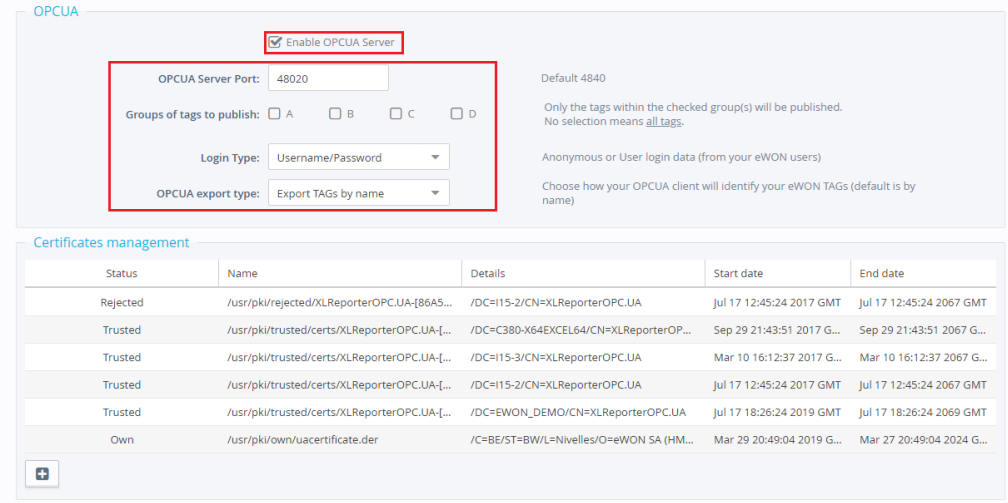
Ewon Real-time values

This connector is used to get real time data from Ewon Flexy devices using the OPC UA server. This requires the OPC-UA feature to be enabled in the device.

Set up Ewon



For real-time data access, enable **OPCUA** from **Setup, System, Main** in the web interface of the Ewon device.

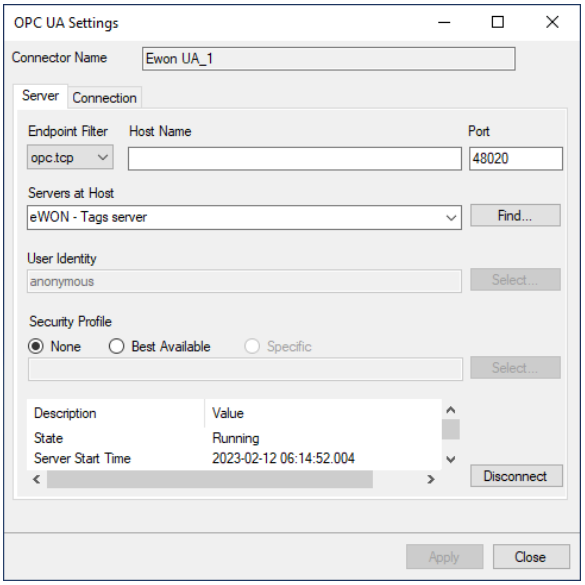


- Check *Enable OPC UA Server*.
- Configure **Port** and **Authentication** settings

Connector

To configure the connector to **Ewon Real-time values**, from the **Project Explorer** select **Data**, **Connectors**.

- Click **Add**
- Select **HMS, Ewon Real-time values**
- Click **OK**



The **Host Name** is the IP address of the Ewon Flexy.

The **Port** number for the Ewon server can be found in the UA configuration settings.

For the **Server** name, select the one that matches the security settings of the Ewon Flexy.

Set **Security Profile** based on the configuration of the UA Server.

Trusted Clients

In some cases, the client has to be accepted by the server to make requests. Open the **OPCUA** page in the Ewon web configuration and set the client certificate to *Trusted* **Status**.

Certificates management

Status	Name	Details	Start date	End date
Rejected	/usr/pki/rejected/XLReporterOPC.UA-[86A5...	/DC=I15-2/CN=XLReporterOPC.UA	Jul 17 12:45:24 2017 GMT	Jul 17 12:45:24 2067 GMT
Trusted	/usr/pki/trusted/certs/XLReporterOPC.UA-[...	/DC=C380-X64EXCEL64/CN=XLReporterOP...	Sep 29 21:43:51 2017 G...	Sep 29 21:43:51 2067 G...
Trusted	/usr/pki/trusted/certs/XLReporterOPC.UA-[...	/DC=I15-3/CN=XLReporterOPC.UA	Mar 10 16:12:37 2017 G...	Mar 10 16:12:37 2067 G...
Trusted	/usr/pki/trusted/certs/XLReporterOPC.UA-[...	/DC=I15-2/CN=XLReporterOPC.UA	Jul 17 12:45:24 2017 GMT	Jul 17 12:45:24 2067 GMT
Trusted	/usr/pki/trusted/certs/XLReporterOPC.UA-[...	/DC=EWON_DEMO/CN=XLReporterOPC.UA	Jul 17 18:26:24 2019 GMT	Jul 17 18:26:24 2069 GMT
Own	/usr/pki/own/uacertificate.der	/C=BE/ST=BW/L=Nivelles/O=eWON SA (HM...	Mar 29 20:49:04 2019 G...	Mar 27 20:49:04 2024 G...

Remote Communication to Ewon Flexy

The workstation with **XLReporter** must also have the OPC core components installed. To determine if the core components are installed verify the following file exists:

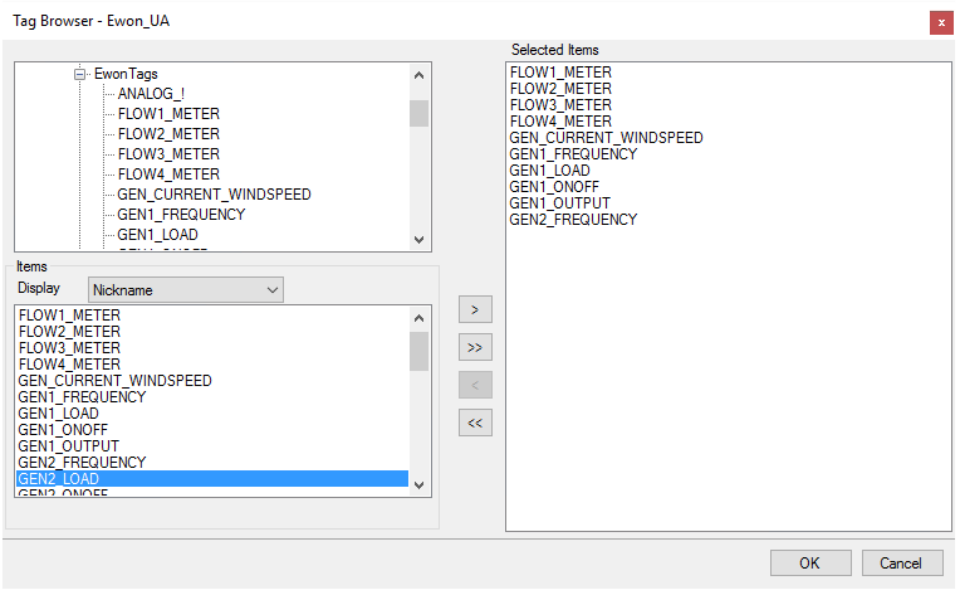
- C:\Windows\SysWow64\OPCEnum.exe (64-bit OS)
- C:\Windows\system32\OPCEnum.exe (32-bit OS)

If the components are not installed then they are provided in the tools folder of the installation or from www.opcfoundation.org.

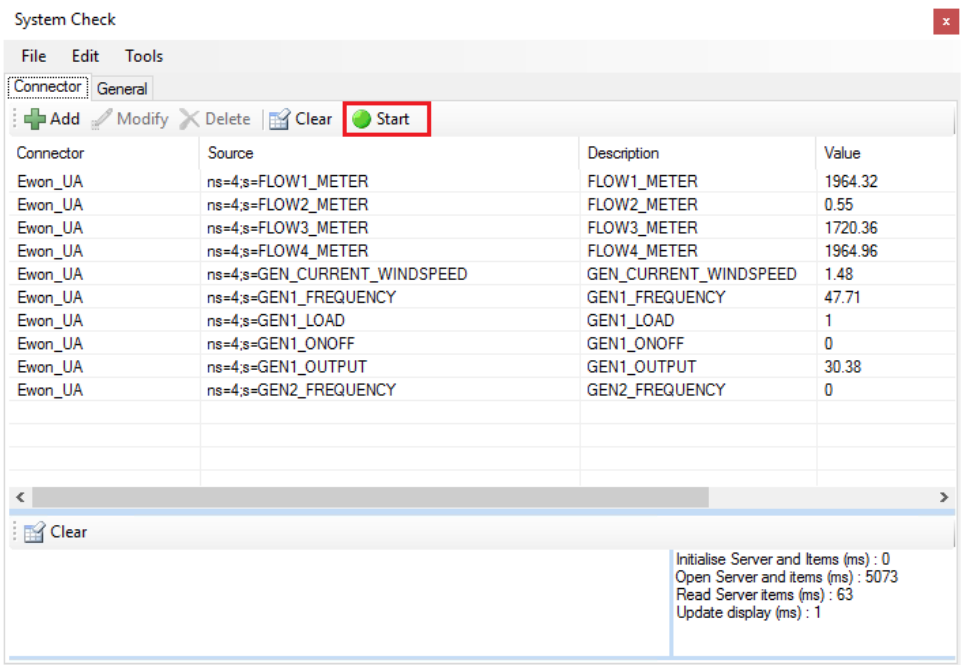
Verify Data Communication

To verify communication to the Ewon, open the **Project Explorer** and select the **Tools** tab. Launch the **System Check** application.

- Click **Add**
- Choose the *Ewon Real-time values* connector from the dropdown list.
- Click the pushbutton ([…]) next to **Items** to open the Tag Browser window.



- Select one or more tags, click **OK.**



Click **Start** to verify the communication.

Ewon DataMailbox

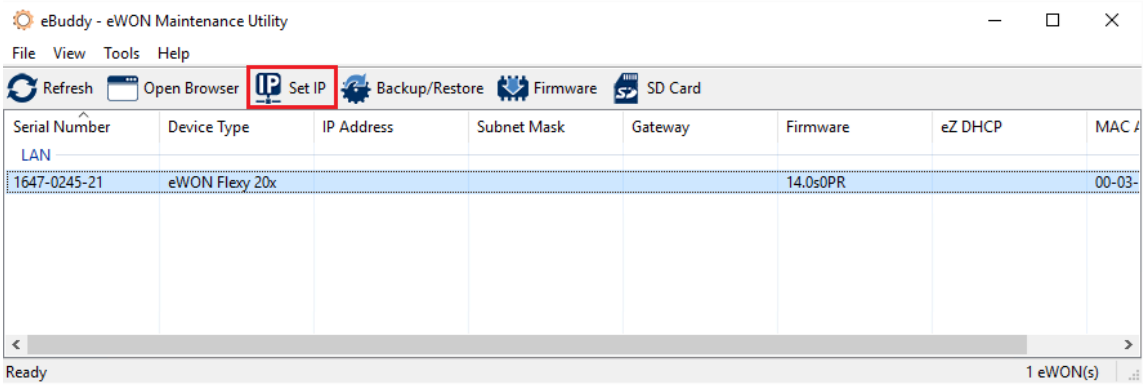
This connector is used to download data from an Ewon DataMailbox to a local database from which data can be retrieved for reporting. Both historical and alarm data can be downloaded from the Mailbox and reported on.

Set up Ewon

Initial Setup

For a new Ewon Flexy there is some basic configuration that has to be performed using **eBuddy**. This is available from the HMS Networks web site.

Connect the LAN Ethernet port to your PC by either using a switch (HMS does not recommend connecting directly via Ethernet cable) or a networked connection and start **eBuddy**.



- In the list, select the connected Flexy device and click **Set IP.**
- Follow the prompts and enter an **IP/Subnet** in the range of the process equipment to which the Flexy is intended for.

The Flexy will reboot to change the IP. When it comes back online, select it again in **eBuddy** and click **Open Browser**.

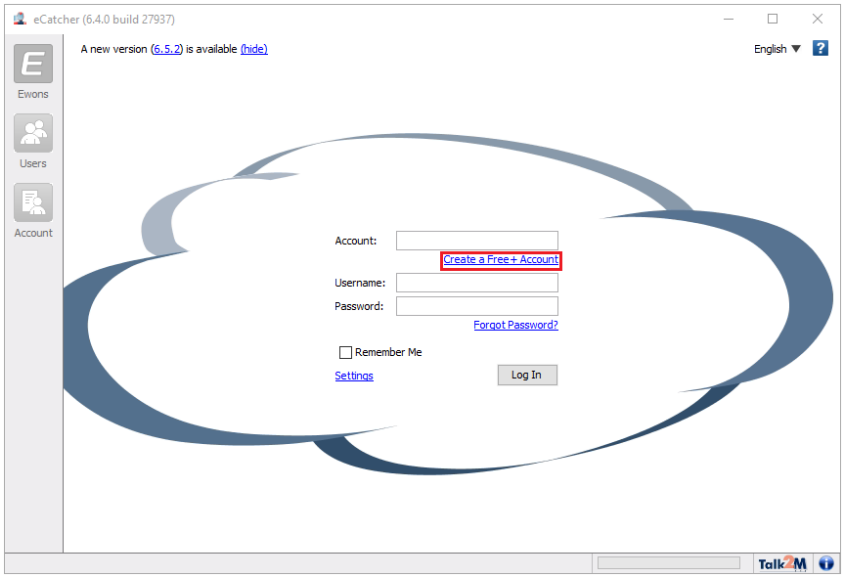
When moving onto the next step, leave **eBuddy** open (it can be minimized). Its **ezDHCP** function is required to remain connected if the Ewon's IP address is outside the range of your network adapter.

The **eBuddy** application is usually used for direct connections to the Flexy. Once a Talk2M account has been associated with the Flexy, a secure internet connection can also be used.

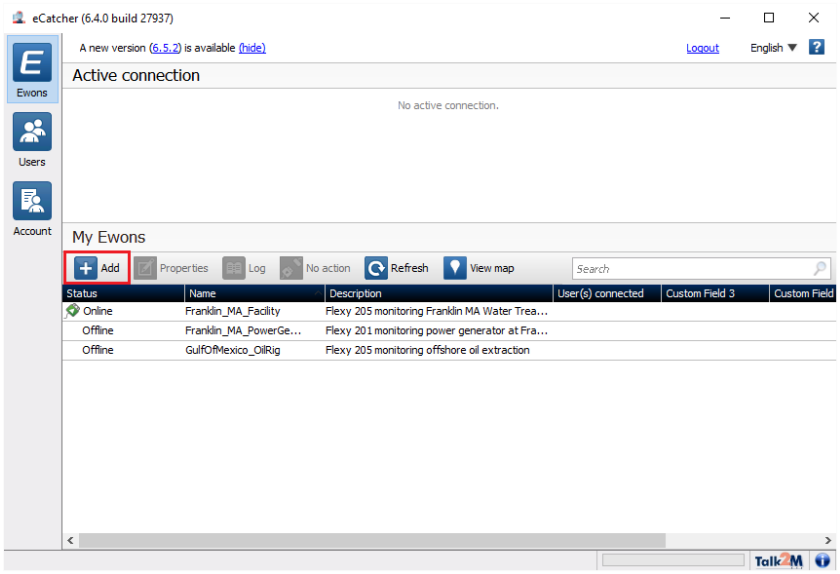
Configure a Talk2M Account

For remote access, a Talk2M account needs to be created and associated with the Flexy. The account supports multiple flexy devices. When a Talk2M account is created, a DataMailbox is created automatically with it. This is done by **eCatcher**, a software application which is available from the HMS Networks web site.

Start **eCatcher** and select *Create a Free Account*.



After the account is created, log into **eCatcher**.



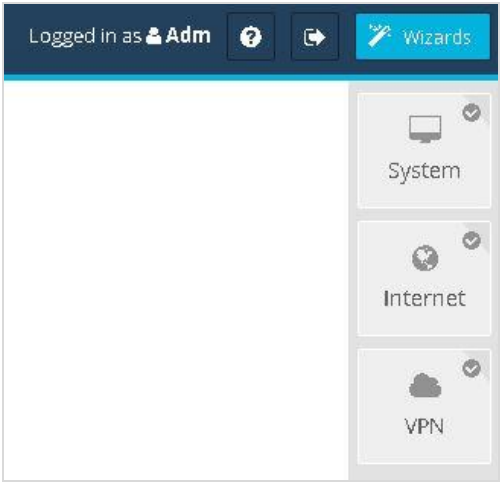
- Click **Add eWON**. Give the Ewon a **name** that will provide context to the data it will collect.
- Highlight the Ewon and select **Properties**. Then, select **Talk2M Connectivity**.
- Note the **Activation Key**, and the **name.**

User Authentication

eCatcher allows two-factor authentication for configured users – however, this will make the account inaccessible to Talk2M data client applications, including **XLReporter**. Authentication should be set to single-factor authentication.

Talk2M Connection

From the web Interface of the Flexy, log in using the default credentials *adm/adm*.

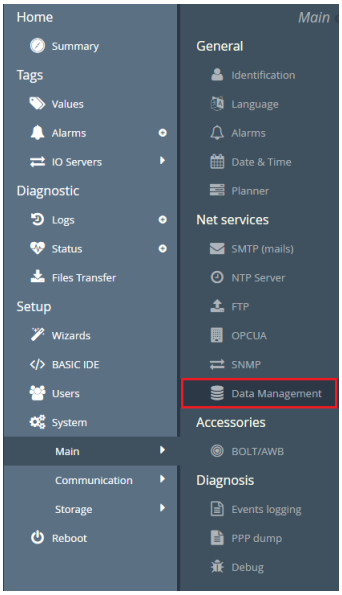


Open the **Wizards** page from the top-right of the window. Follow each wizard in order, starting with **System**.

Once the VPN connection is established, its status is displayed on the home page, as well as in the lower-right corner across configuration web site:

Configure a DataMailbox Upload

For data to be stored in the mailbox, it must be uploaded from the Ewon device.

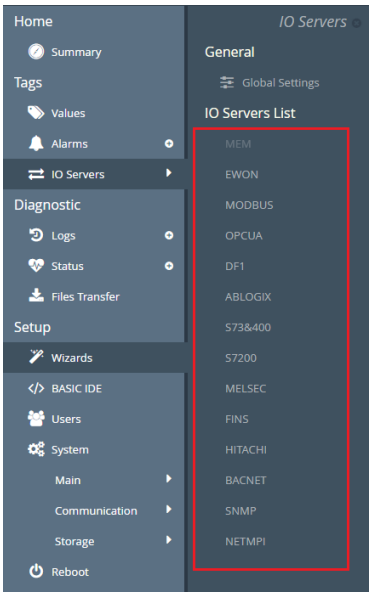


This is configured from the Ewon configuration web page by selecting **Setup, System, Main, Net Services, Data Management**.

Enable **Historical Data** and set an **Upload Interval**.

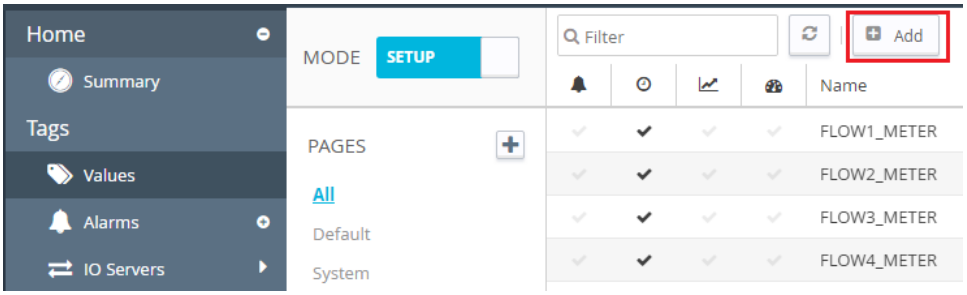
Configure Process Data Connection

Data collection requires an **I/O Server** connection.

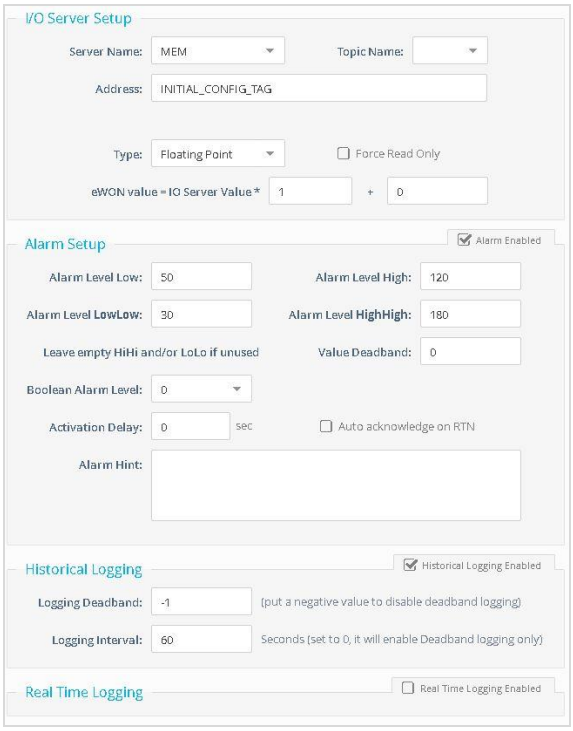


- Open **Tags, IO Servers** from the Flexy configuration web page.
- Enter **IP** and **poll rate** for the hardware being connected.

After an IO Server is defined, **Tags** can be defined, which map the value of an external data point in the server to an internal tag in the Flexy.



- Open the **Tags, Values** page.
- Set **Mode** to *Setup* and click **Add.**

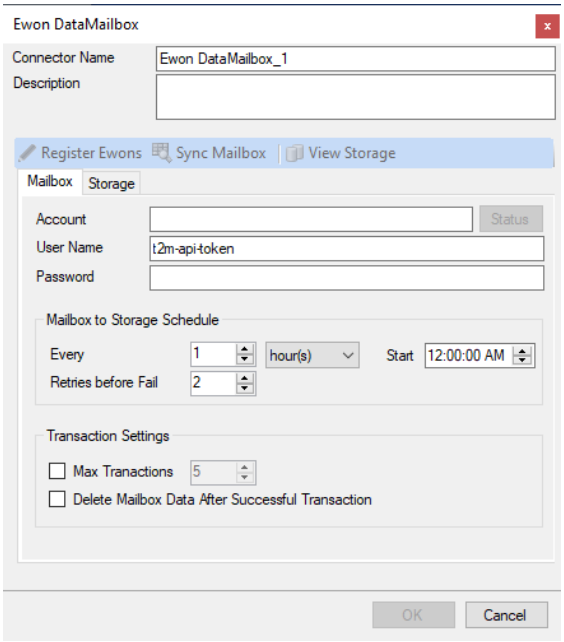


- Enter a **Tag Name**
- Set the **Server Name**, **Address**, and data **Type**
- Enable **Historical Logging**.
- A tag can be logged on a timed **Logging Interval** and/or a value **Deadband**.
- Optionally, enable **Alarm Setup** on the tag.
- Repeat this process for all tags required for reporting.

Connector

To configure the connector to **Ewon DataMailbox**, from the **Project Explorer** select **Data**, **Connectors**.

- Click **Add**
- Select **HMS, Ewon DataMailbox**
- Click **OK**



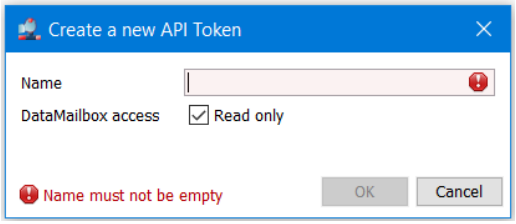
The **Mailbox** tab defines the credentials used to connect to the Mailbox as well as how often to download data from the Mailbox. The **Status** button can be used to verify the specified credentials.

Account is the Talk2M account associated with the Ewon unit(s) to be connected for reporting.

User Name is defaulted to *t2m-api-token* as is required by the Talk2M DMWEB API. This setting should not be changed.

Password is an API Token that has been defined in eCatcher. To define an API token in eCatcher, log into the application and open **Account, Show Advanced Settings, API Tokens, Manage**.

Here, click **New Token**.



Enter a name for the new token and click **OK**. Click **Copy to clipboard** and paste this toke in a secure location. This is the only time it will be available. Click **Close**.

Once the credentials are specified, click **Register Ewons** to select the Ewon unit(s) from which to retrieve data.
**Note that the number of Ewons that can be registered is determined by the number of OEM devices included in the XLReporter license.*

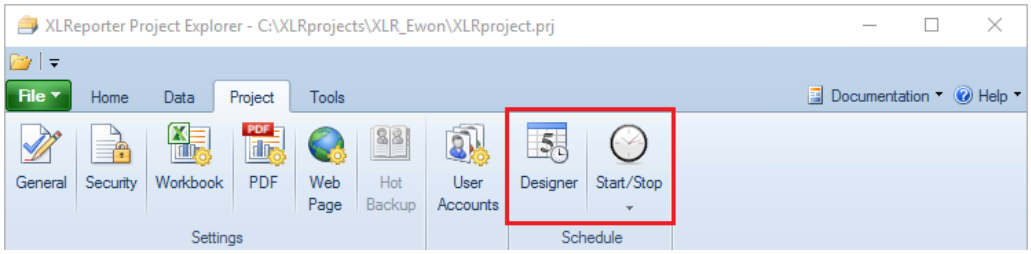
The **Storage** tab defines the database where the Data Mailbox data is permanently archived for reporting.

The **Sync Mailbox** button can be used to initiate a download from the Mailbox to the storage database as well as troubleshoot any issues with any data transfer.

The **View Storage** button can be used to view data stored to the database.

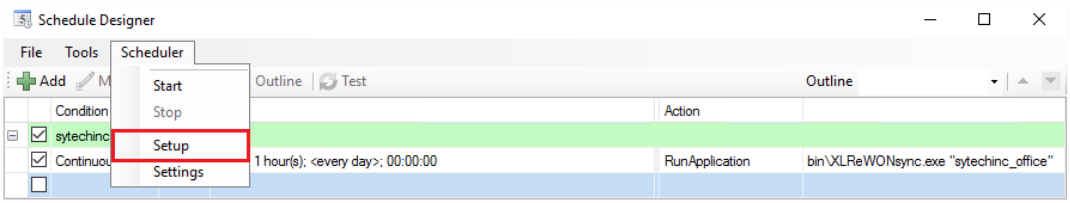
Automated Data Sync

The Talk2M DataMailbox is designed to store data temporarily. Therefore, **XLReporter** needs to sync new data automatically so it is not lost. This is done by the **XLReporter Scheduler**, which can be started from the **Project** tab of **Project Explorer.**



Automatic Scheduler Startup

It is recommended to configure the Scheduler to run as a Windows Service. This is configured from the **Schedule Designer** opened from the **Project** tab of **Project Explorer**.



In the **Schedule Designer**, open **Scheduler, Setup** and select **Run as a Service.** Enter the credentials of an administrator Windows User.

Historical Data Retrieval

From the local database raw values can be retrieved for any tag from any registered device that has uploaded data to the Mailbox. In addition, calculations can be performed on the historical data and the results of those calculations added to a report.

Tag Browsing

The Ewon DataMailbox may collect data from multiple devices. Using **XLReporter**, data from multiple devices can be retrieved with a single connection.

When browsing for tags, you are presented with each device. Select a specific device to see all the tags available for it.

The syntax of each selected tag is *Device:Tag Name*.

Alarms

When configuring a data group for the Ewon DataMailbox connector, **Alarm Values** is one of the options. This launches the **Database Data Group** builder where you can configure a query to retrieve alarm data. By default, the group is populated with all the settings to query alarm history from the month.

There are 2 views provided to retrieve alarm data, **vw_AlarmHistory** and **vw_AlarmCurrent**.

Alarm History

The **vw_AlarmHistory** view is used to retrieve all the alarms that have occurred. The following columns are available:

- AlarmDate – the date of the alarm record
- eWONName – the name of the Ewon device the tag name comes from
- TagName – the name of the tag in alarm
- Status – the status of the alarm as text (e.g., ALM, ACK, RTN)
- Type – the type of alarm (e.g., High, Low, HiHi)

Current Alarms

The **vw_AlarmCurrent** view is used to retrieve a record for each alarm that is currently occurring. The following columns are available:

- StartDate – the date the alarm started
- StatusDate – the date when the current status of the alarm occurred
- eWONName – the name of the Ewon device the tag name comes from
- TagName – the name of the tag in alarm
- Status – the status of the alarm as text (e.g., ALM, ACK, RTN)
- Type – the type of alarm (e.g., High, Low, HiHi)

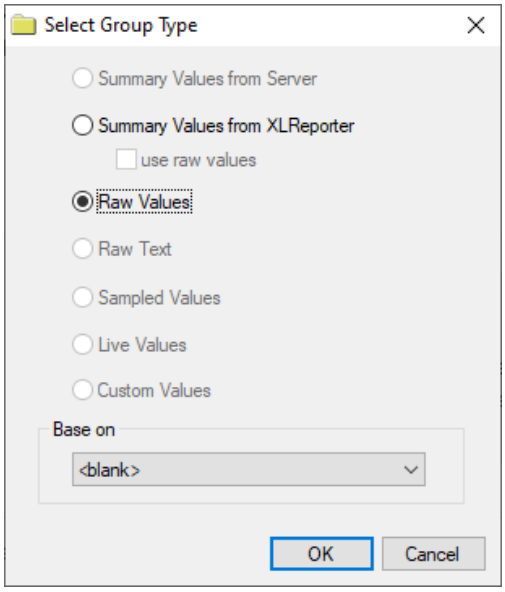
Custom Data

When configuring a data group for the Ewon DataMailbox connector, **Custom Values** is one of the options. This launches the **Database Data Group** builder where you can configure a query to retrieve data from any table(s) and/or view(s) in the database.

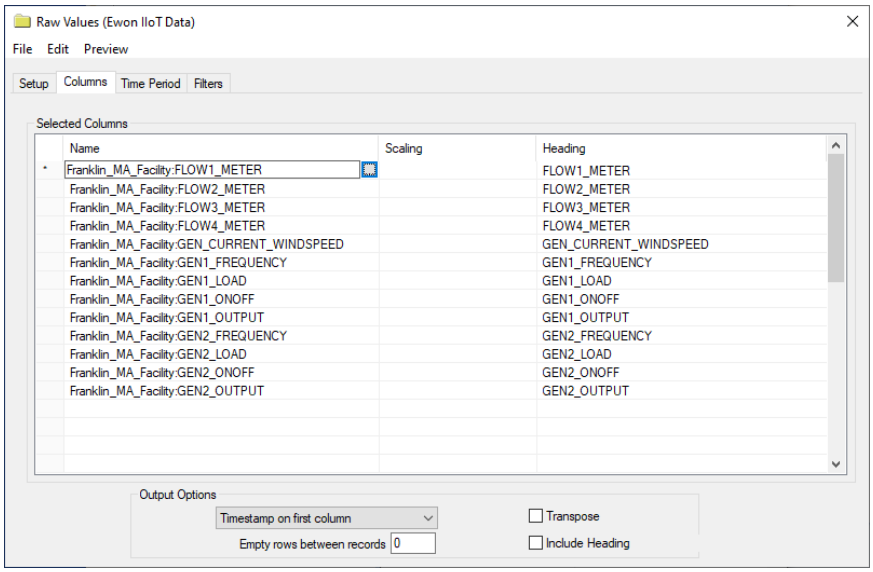
This can be useful for building groups to retrieve things like Ewon device names or tag names in a device that can be used as part of an On Demand report to retrieve alarm information.

Verify Data Communication

Open the **Project Explorer** and select the **Tools** tab**.** Open **Connector Groups.** Select the Ewon DataMailbox history connector and then select **Add**.



Set the **Group Type** to *Raw Values* and click **OK**.



On the **Columns** tab:

- Select the first row under the Name column
- Click the browse pushbutton (…)
- In the Tag Browser expand **Catalog, General** and add **Items** from the lower left.
- Click **OK** to add these to the group.

To retrieve data, select **Preview.** In the **Preview** window, use the data picker to select a date and time with for which you have data in a csv file on the local system. Click **Refresh** to view data. The first 60 records starting at the date and time specified should be displayed.

Ewon M2Web Real-time values

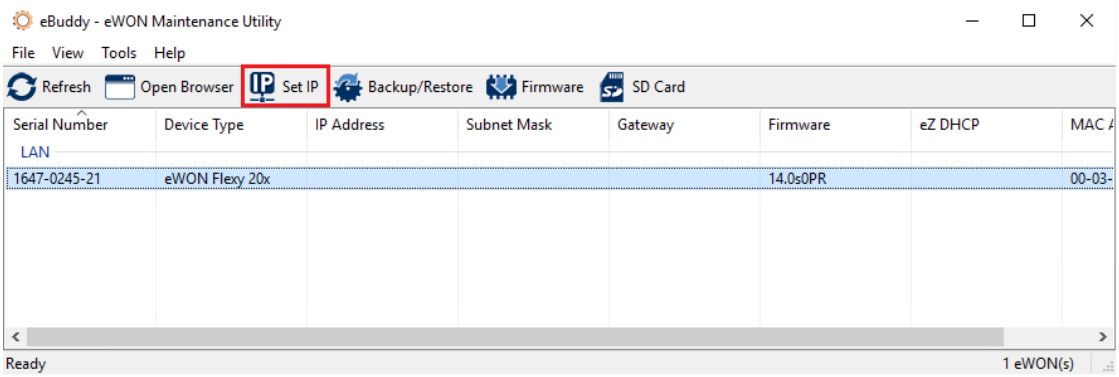
This connector is used to collect most-recent values from Ewon Flexy family devices via the Talk2M M2Web API.

Set up Ewon

Initial Setup

For a new Ewon Flexy there is some basic configuration that has to be performed using **eBuddy**. This is available from the HMS Networks web site.

Connect the LAN Ethernet port to your PC by either using a switch (HMS does not recommend connecting directly via Ethernet cable) or a networked connection and start **eBuddy**.



- In the list, select the connected Flexy device and click **Set IP.**
- Follow the prompts and enter an **IP/Subnet** in the range of the process equipment to which the Flexy is intended for.

The Flexy will reboot to change the IP. When it comes back online, select it again in **eBuddy** and click **Open Browser**.

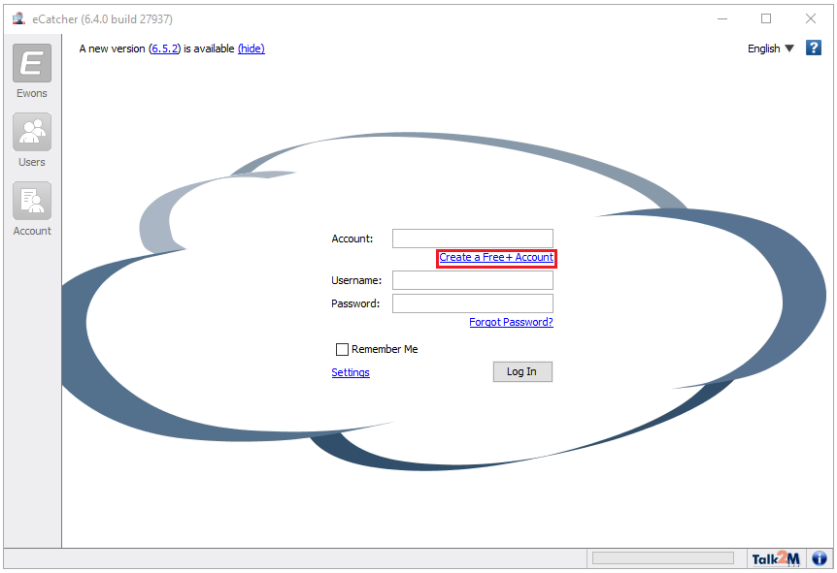
When moving onto the next step, leave **eBuddy** open (it can be minimized). Its **ezDHCP** function is required to remain connected if the Ewon's IP address is outside the range of your network adapter.

The **eBuddy** application is usually used for direct connections to the Flexy. Once a Talk2M account has been associated with the Flexy, a secure internet connection can also be used.

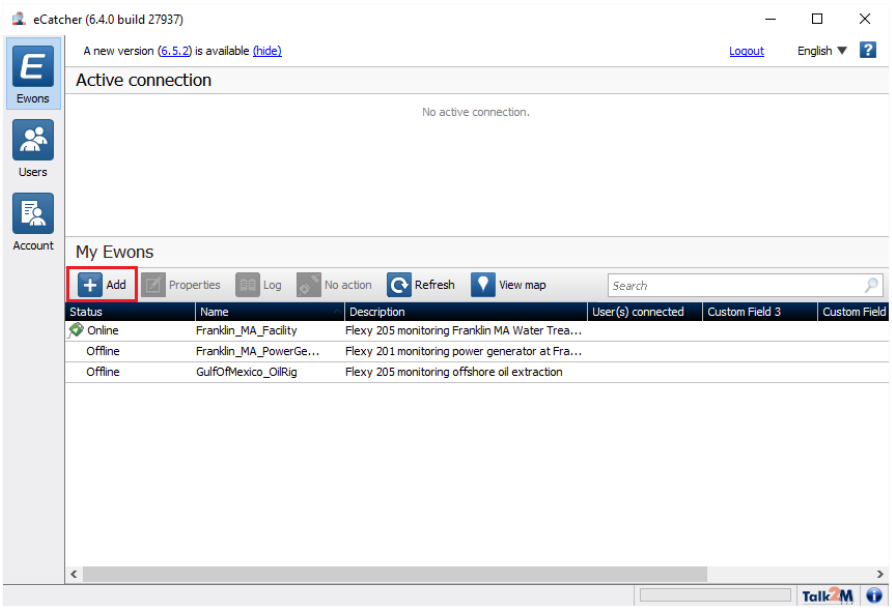
Configure a Talk2M Account

For remote access, a Talk2M account needs to be created and associated with the Flexy. The account supports multiple flexy devices. When a Talk2M account is created, a DataMailbox is created automatically with it. This is done by **eCatcher**, a software application which is available from the HMS Networks web site.

Start **eCatcher** and select *Create a Free Account*.



After the account is created, log into **eCatcher**.



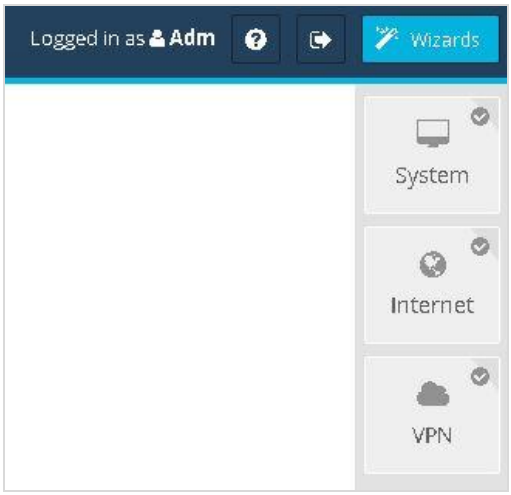
- Click **Add eWON**. Give the Ewon a **name** that will provide context to the data it will collect.
- Highlight the Ewon and select **Properties**. Then, select **Talk2M Connectivity**.
  Note the **Activation Key**, and the **name.**

User Authentication

eCatcher allows two-factor authentication for configured users – however, this will make the account inaccessible to Talk2M data client applications, including **XLReporter**. Authentication should be set to single-factor authentication.

Talk2M Connection

From the web Interface of the Flexy, log in using the default credentials *adm/adm*.

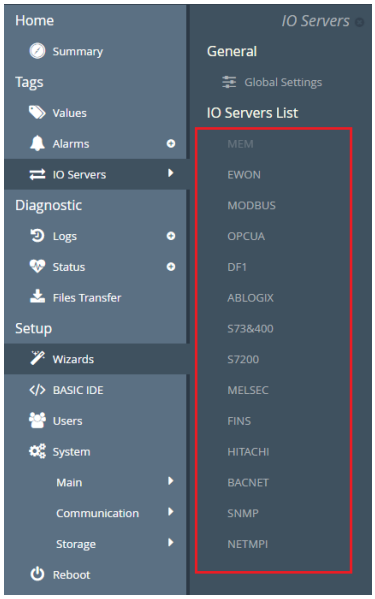


Open the **Wizards** page from the top-right of the window. Follow each wizard in order, starting with **System**.

Once the VPN connection is established, its status is displayed on the home page, as well as in the lower-right corner across configuration web site:

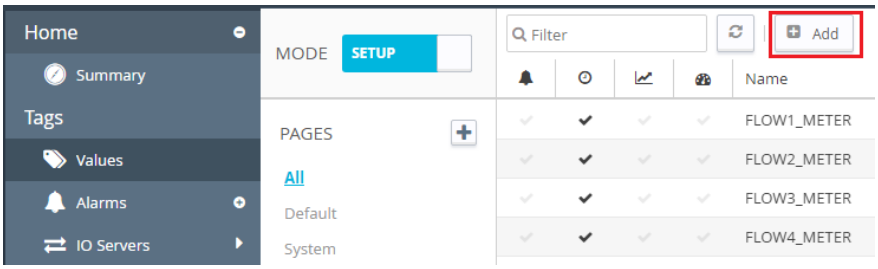
Configure Process Data Connection

Data collection requires an **I/O Server** connection.

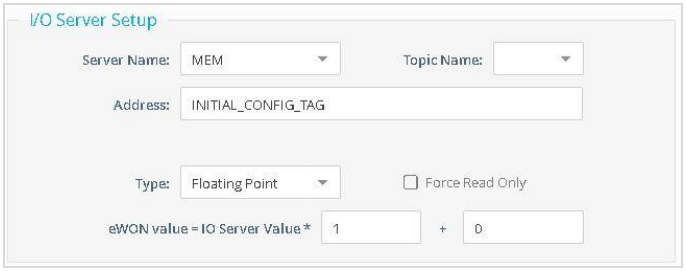


- Open **Tags, IO Servers** from the Flexy configuration web page.
- Enter **IP** and **poll rate** for the hardware being connected.

After an IO Server is defined, **Tags** can be defined, which map the value of an external data point in the server to an internal tag in the Flexy.



- Open the **Tags, Values** page.
- Set **Mode** to *Setup* and click **Add.**

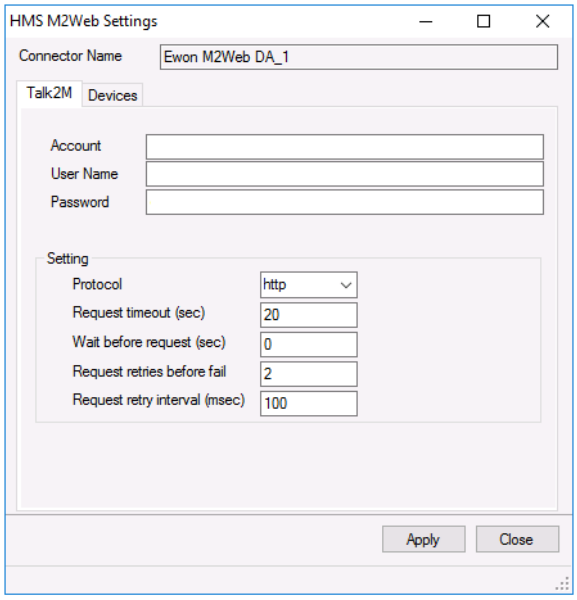


- Enter a **Tag Name**
- Set the **Server Name**, **Address,** and data **Type**
- Repeat this process for all tags required for reporting.

Connector

To configure the connector to **Ewon M2Web Real-time values**, from the **Project Explorer** select **Data**, **Connectors**.

- Click **Add**
- Select **HMS, Ewon M2Web Real-time values**
- Click **OK**



Talk2M Tab

These settings define the account information used to connect to the Talk2M VPN. The credentials entered here are the same used to log into the eCatcher application or the M2WEB browser portal.

Settings

Protocol can be either *http* or *https*. If a secure connection is required, use *https*, otherwise use *http*.

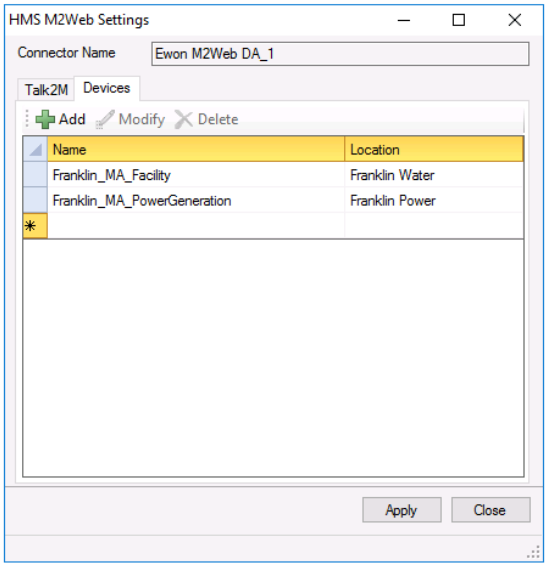
Request timeout is the number of seconds to wait for a request to complete before a timeout error occurs. The default is *20* seconds.

Wait before request is the number of milliseconds to wait between connecting to Talk2M and requesting data. The default is *0* milliseconds.

Request retries before fail is the number of times the request is retried before it is considered an error when the request fails. The default is *2*.

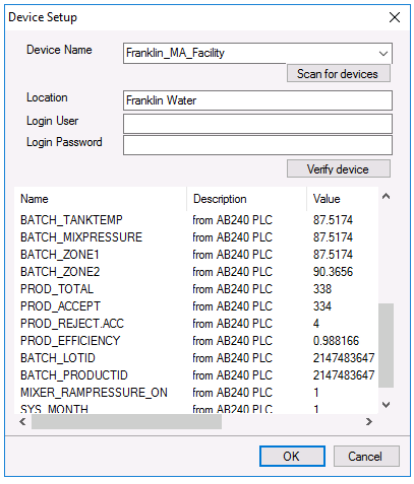
Request retry interval is the number of milliseconds to wait between each retry if a request fails. The default is *100*.

Devices Tab



This tab is used to associate one or more Ewon Flexy devices with the Data Connector. Click **Add** to open **Device Setup**.

Device Setup



To set up a device, click **Scan for devices**. This returns a list of the Flexy devices associated with the Talk2M account specified in the **Talk2M** tab.

Location is used to help document the device. It is an optional setting.

The **Login User** and **Login Password** must be accepted by the specific device.

Once the settings are specified, click **Verify device** to connect and retrieve the most recent values for all available tags.

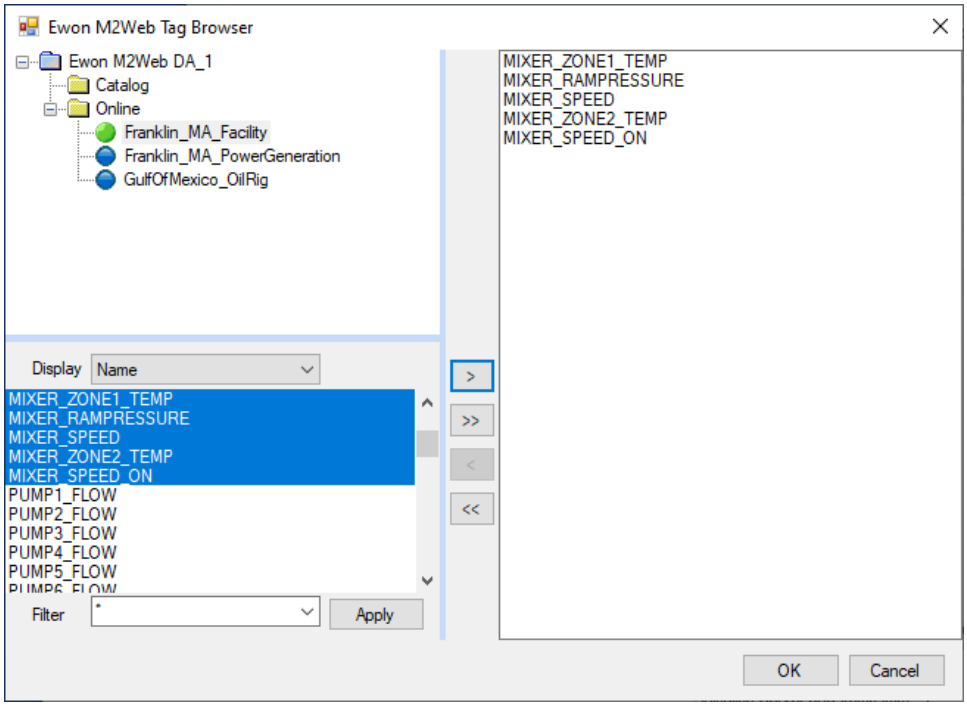
Data Limits

Note that the frequency at which the M2WEB interface can be queried by applications like **XLReporter** is limited by the terms and conditions of the Talk2M platform.

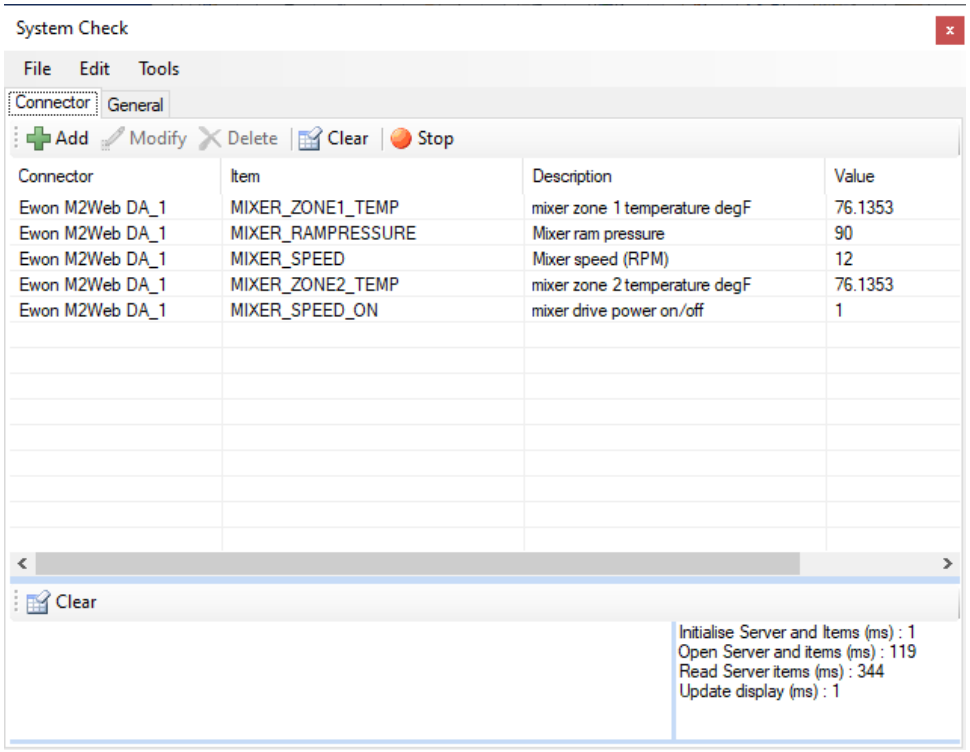
Verify Data Communication

To verify communication to the Ewon, open the **Project Explorer** and select the **Tools** tab. Launch the **System Check** application.

- Click **Add**
- Choose the *Ewon M2Web Real-time values* connector from the dropdown list.
- Click the pushbutton ([…]) next to **Items** to open the Tag Browser window.



- Select one or more tags, click **OK.**



Click **Start** to verify the communication.

Ewon On-Premise Tag History

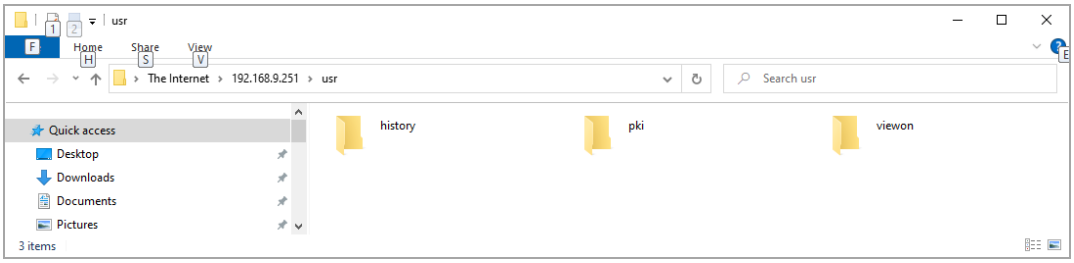
Prerequisites

- Ewon Flexy device with historical logging configured
- LAN connection from XLReporter computer to the Flexy device

Setup: Ewon Flexy

File Directory

It is recommended to create a directory on the flexy's file system to store historical data files.



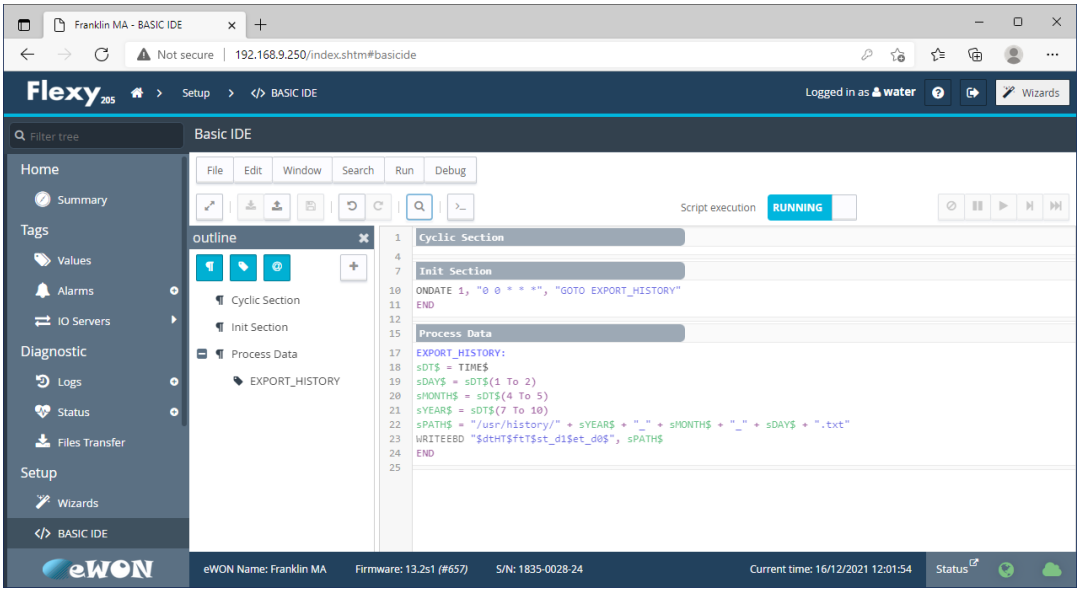
Open Windows File Explorer and navigate to *ftp://[ewon ip]/usr*.

Right-click and select **New Folder.**

Create the folder *history*.

BASIC Script

The general approach is to schedule the export automatically on a timed basis to a set of files using the date/time to name the files. In this example, the export is performed daily, at midnight, and exports the previous 1 day of history to a file named after the date, e.g., *2021_12_16.txt* representing the date December 16th, 2021. This architecture allows the data to be accessed using the **Text Historian** connector in XLReporter. To enable the above configuration in the Ewon Flexy device, copy the below script into the **BASIC IDE** accessed from the Flexy's web page. The script must be **RUNNING** to export data automatically.



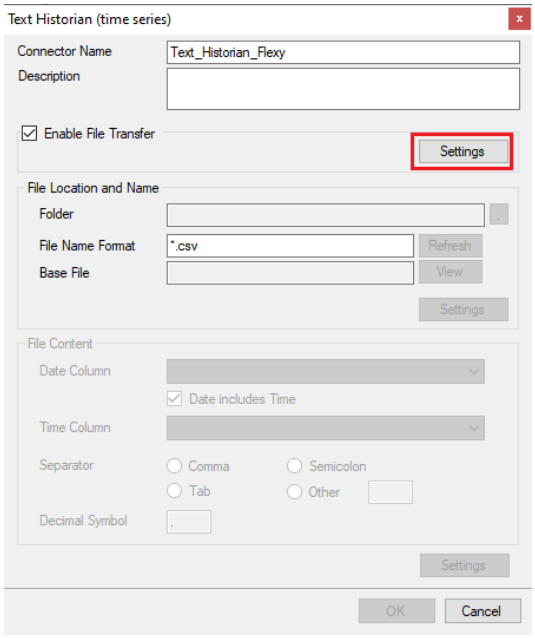
INIT Section:
*ONDATE 1, "0 0 * * *", "GOTO EXPORT_HISTORY"*

User-Defined Section:
EXPORT_HISTORY:
sDT$ = TIME$
sDAY$ = sDT$(1 To 2)
sMONTH$ = sDT$(4 To 5)
sYEAR$ = sDT$(7 To 10)
sPATH$ = "/usr/history/" + sYEAR$ + "_" + sMONTH$ + "_" + sDAY$ + ".txt"
WRITEEBD "$dtHT$ftTst_d1et_d0$", sPATH$
END

Connector

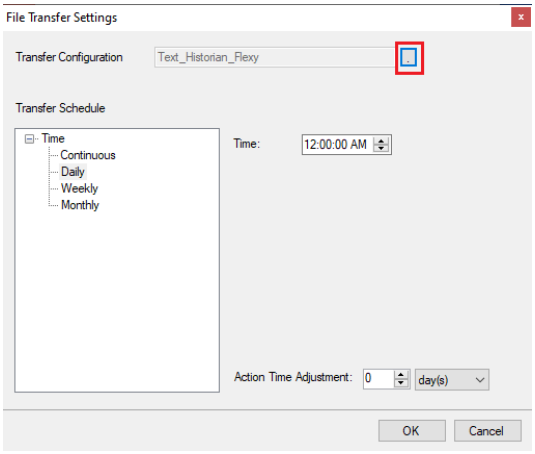
To configure the connector to **Ewon On-Premise Tag History**, from the **Project Explorer** select **Data**, **Connectors**.

- Click **Add**
- Select **Text File, Text Historian**
- Click **OK**



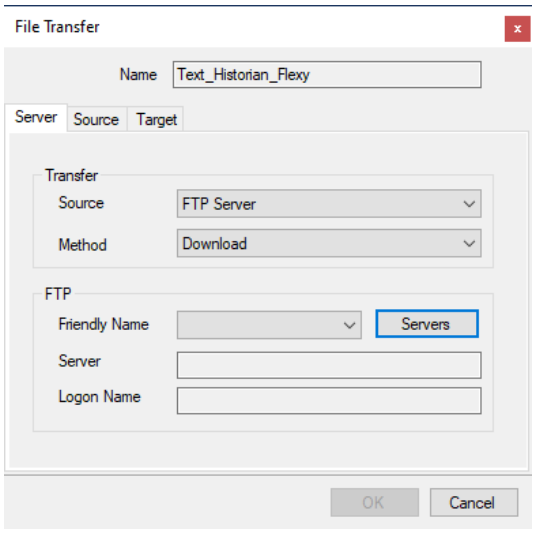
File Transfer Settings

To transfer the log files automatically from the Flexy, check **Enable File Transfer**. Click **Settings** to configure.

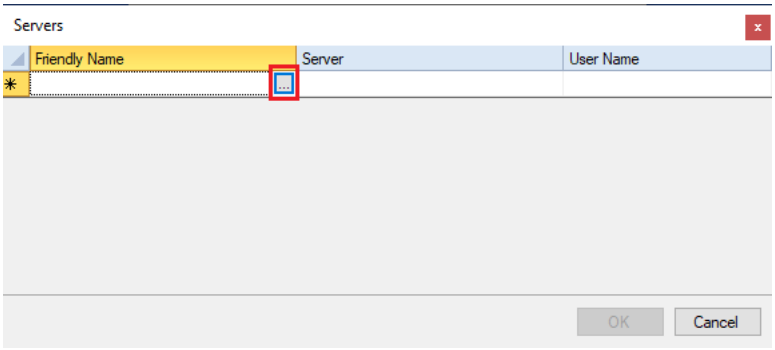


For **Transfer Configuration**, click the browse pushbutton (…).

Under the **Server** tab,

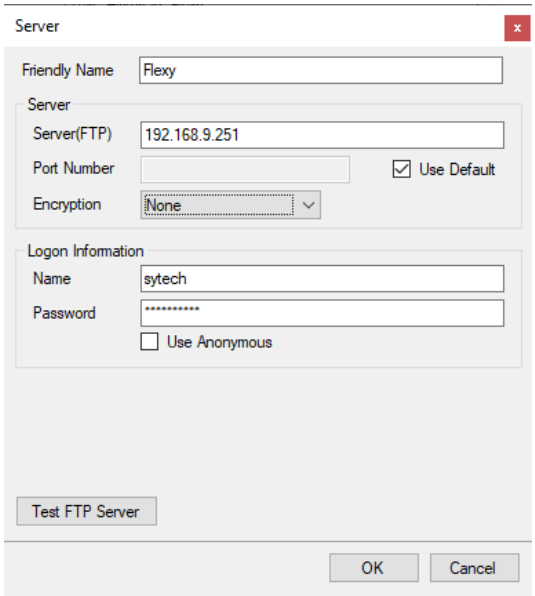


In **Transfer**, set **Source** based on the previous network configuration.
Set **Method** to *Download*.
Click **Servers** to define an FTP Server connection.



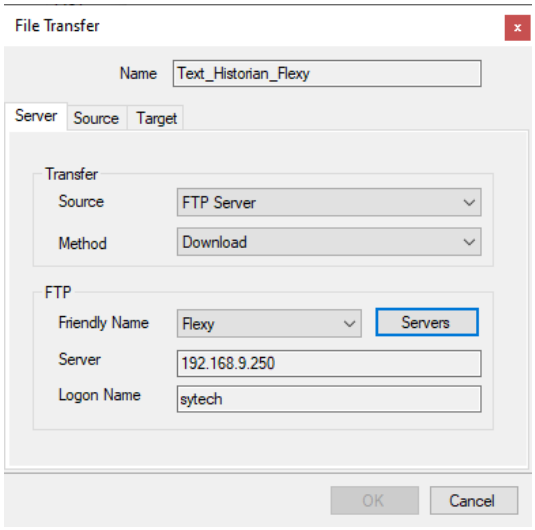
To define a new FTP Server, select the **Friendly Name** column of the next available row in the list and click the browse pushbutton (…).

For the **FTP Server**,

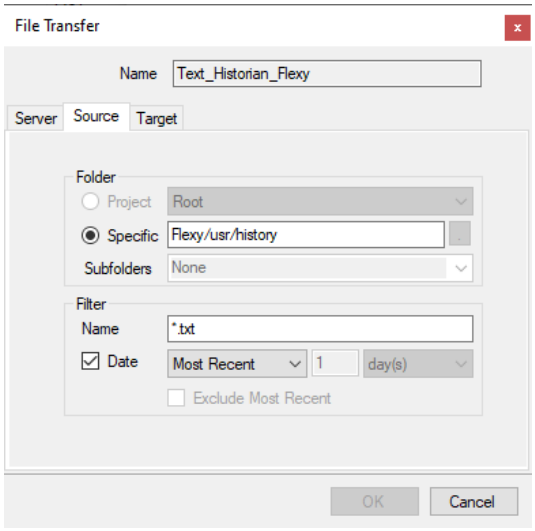


Set **Friendly Name** to a name that reflects the Flexy.
For **Server**, set **Server(FTP)** to the IP Address of the Flexy.
For **Logon Information** enter a user **Name** and **Password** to log in to the Flexy.
Click **Test FTP Server** to verify the configured settings for the server.

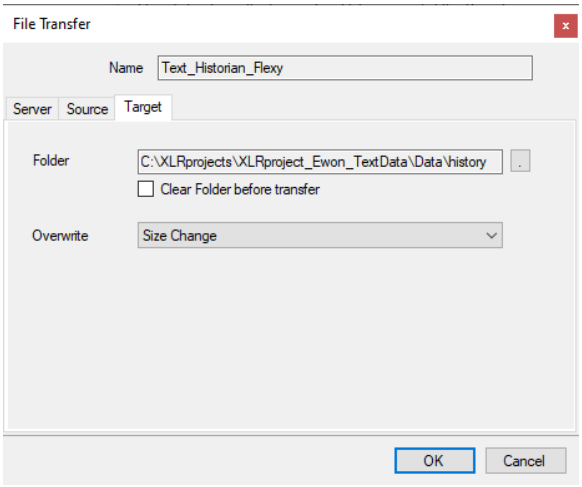
Click **OK** to return to the list of FTP Servers.
With the server row selected, click **OK** again to return to File Transfer.



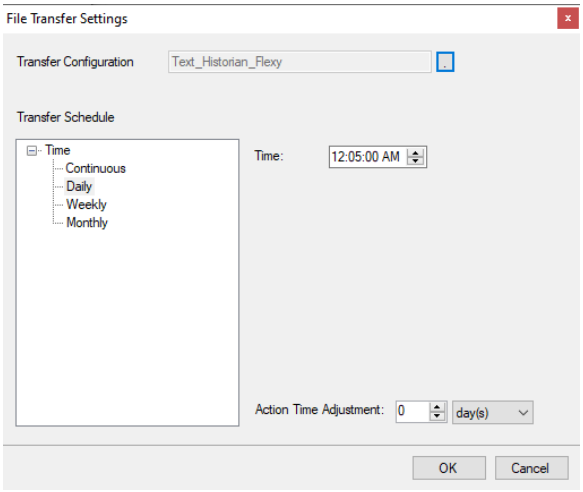
The FTP settings should now be filled out.
Select the **Source** tab to specify the **Folder** containing the log files.



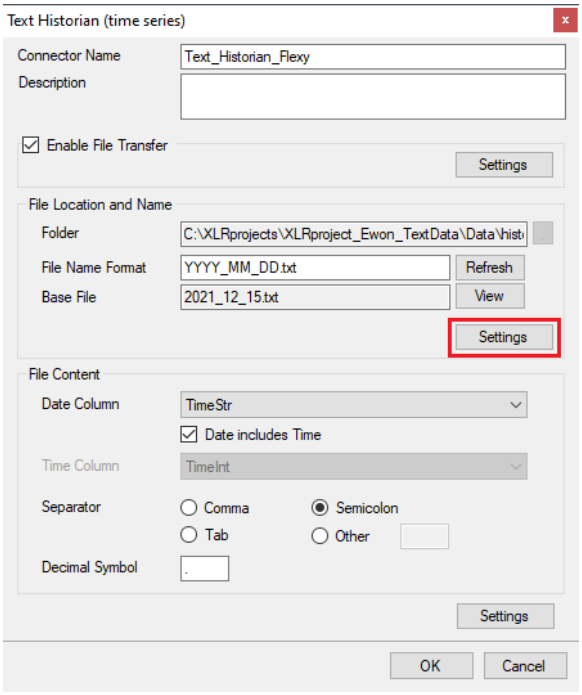
The **Folder** section defines the source file path. Set this to the */usr/history* directory on the Flexy.
The **Filter** section determines which files are transferred. At a minimum the **Name** should be set to **.txt* (the file extension created by the WRITEEBD function in the Flexy BASIC script) to ensure that files with the .txt extension are transferred.
The **Target** tab defines the local archive path and overwrite behavior.



Overwrite defines behavior when a source file already exists in the target path. Set this to *Size Change* to overwrite only when the source file contains different content than the target.
Click **OK** to save this configuration. An initial download runs automatically.



Set the **Transfer Schedule** based on the configuration of the BASIC script.
Click **OK** to return to the connector settings.



File Location and Name

The values are defaulted based on the latest file transferred from the Flexy. In File Name Format, characters like YYYY, MM and DD, etc. indicate date and time expressions in the file names. In the example BASIC script described in this document, the file name should be YYYY_MM_DD.txt.

Click **View Latest** to test the connection to the historical files.

When the file is generated, the column names contain quotation marks which is not supported by the driver used by XLReporter. In addition, the timestamp format is not compatible.

Open **File Settings** to specify the following information:

[xlreporter]
; the row containing the headers (=0 custom)
HeaderRow=1

; the row containing the first set of data
DataRow=2

[consolidated.csv]
Format=Delimited(;)
DecimalSymbol=.
ColNameHeader=True
DateTimeFormat=dd/MM/yyyy hh:nn:ss

; Custom Headings
Col1=TimeInt Long
Col2=TimeStr DateTime
Col3=[first tag name in file] [first tag data type]
...
ColN=[last tag name in file] [last tag data type]

Where *Tag1* through *TagN* are the tag names from the flexy. Note the required definition of the timestamp.

Click **OK** to return to **Text Historian (time series)**.

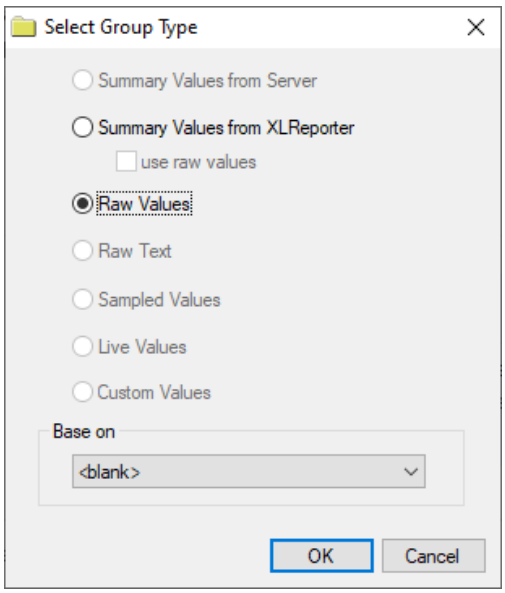
File Content

These settings define date/time indexing in the files as well as the value separator which are determined from the files themselves. For Ewon **Date Column** is the *TimeStr* column, and **Date Includes Time** is enabled. **Separator** is *Semicolon*.

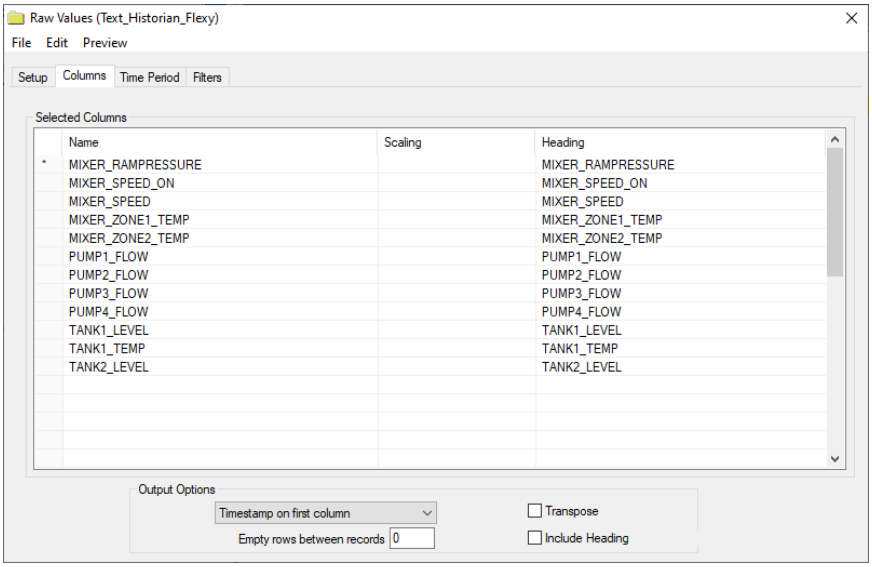
Click **OK** to return to **New Project**. Click **Finish** to deploy the project.

Verify Data Communication

Open the **Project Explorer** and select the **Tools** tab**.** Open **Connector Groups.** Select the Flexy history connector and then select **Add**.



Set the **Group Type** to *Raw Values* and click **OK**.



On the **Columns** tab:

- Select the first row under the Name column
- Click the browse pushbutton (…)
- In the Tag Browser expand **Catalog, General** and add **Items** from the lower left.
- Click **OK** to add these to the group.

To retrieve data, select **Preview.** In the **Preview** window, use the data picker to select a date and time with for which you have data in a csv file on the local system. Click **Refresh** to view data. The first 60 records starting at the date and time specified should be displayed.