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## 1 Introduction

This document provides instructions on how to install and use the One Sight Solutions Niagara ossEasyHistoryExport software.

## 2 Requirements

It is assumed that the user is trained in the use of Niagara 4.

The ossEasyHistoryExport software is only compatible with Niagara versions 4.10 or later.

You must read the [End User License Agreement](#) at the end of this document before using this software.

## 3 Installing The Software

### 3.1 Niagara Software Module Installation

Before the ossEasyHistoryExport software can be used, the Niagara software modules must be installed on the user's PC and the target host.

The following files supplied by One Sight Solutions must be installed on the host using the Niagara platform software manager:

- ossEasyHistoryExport-rt.jar
- ossEasyHistoryExport-wb.jar

These software files must also be installed in the appropriate Niagara modules directory of any PC on which you intend to access the ossEasyHistoryExport software.

### 3.2 Niagara Software Licensing

The host running the ossEasyHistoryExport software must be licensed by One Sight Solutions before it will operate correctly.

The following information is required to generate the ossEasyHistoryExport license:

- Niagara host identifier (e.g. Qnx-TITAN-0000-XXXX-XXXX).
- Niagara host serial number (if the host is not a supervisor).

Please send this information to One Sight Solutions: [sales@onesight.solutions](mailto:sales@onesight.solutions)

It is recommended that the license is installed on the Niagara host using the platform license manager import capability to download the license directly from the Niagara license server over the internet.

If it is not possible for the host to download the license from the internet then One Sight Solutions can supply the license files necessary which can be installed manually.

Ensure that the One Sight Solutions certificate is also installed, so the Niagara platform license manager should show both of the following files:

- OneSightSolutions.license
- OneSightSolutions.certificate

The host should reboot during the license installation process.

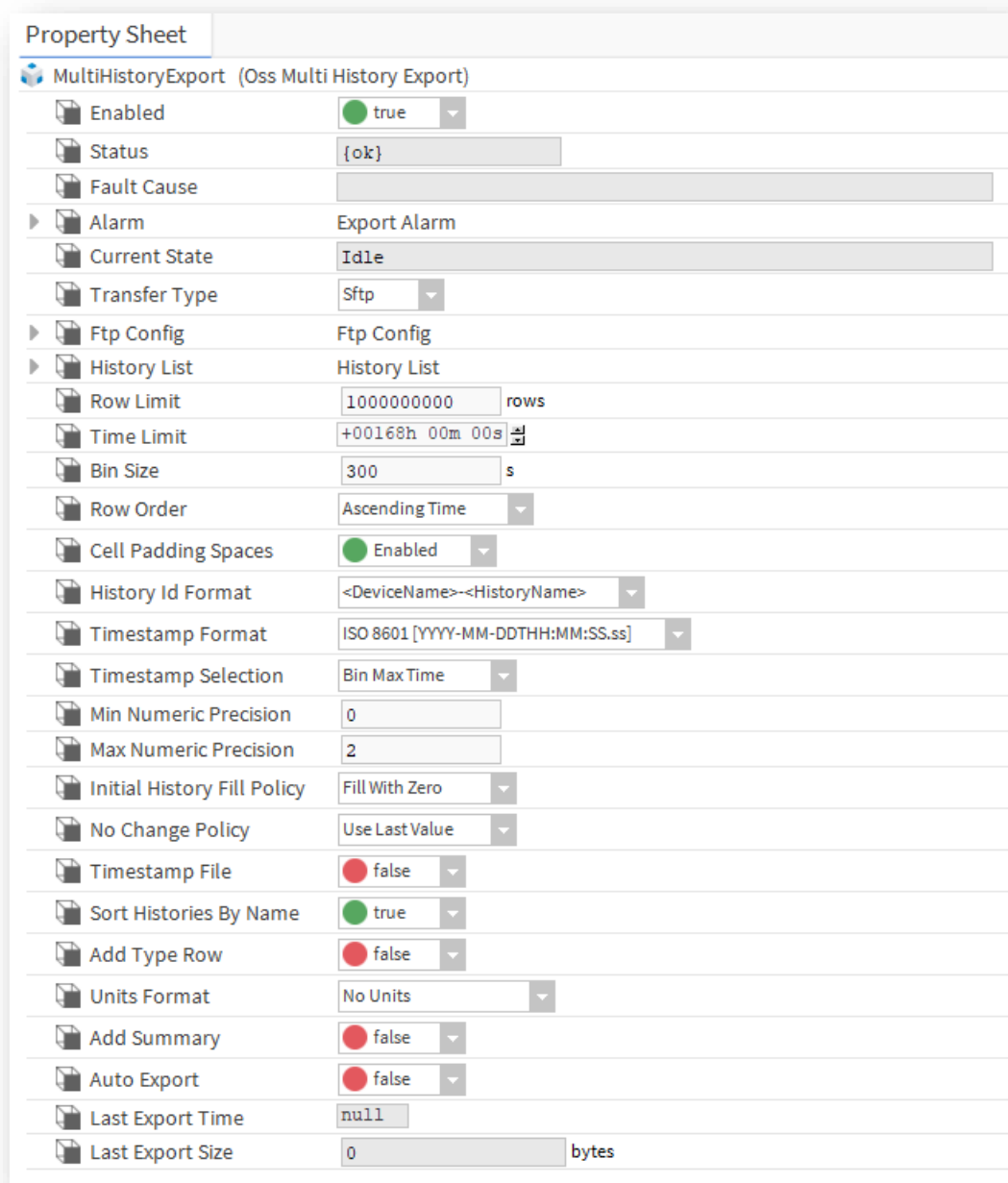
## 4 Getting Started With OSS Easy History Export

This section provides a basic introduction to using the ossEasyHistoryExport software.

Once you have installed the software and restarted the station, open the ossEasyHistoryExport palette which contains the '**MultiHistoryExport**' component.

Login to the station and drag the 'MultiHistoryExport' component from the palette to anywhere in the Config section of the station (or sub-folders).

Go to the new component's property sheet view, which should look like **Figure 1**.



The image shows a 'Property Sheet' window for the 'MultiHistoryExport' component. The window has a title bar 'Property Sheet' and a subtitle 'MultiHistoryExport (Oss Multi History Export)'. The properties are organized into sections with expandable icons (plus signs). The properties and their values are as follows:

Property	Value
Enabled	true
Status	{ok}
Fault Cause	
Alarm	Export Alarm
Current State	Idle
Transfer Type	Sftp
Ftp Config	Ftp Config
History List	History List
Row Limit	1000000000 rows
Time Limit	+00168h 00m 00s
Bin Size	300 s
Row Order	Ascending Time
Cell Padding Spaces	Enabled
History Id Format	<DeviceName>-<HistoryName>
Timestamp Format	ISO 8601 [YYYY-MM-DDTHH:MM:SS.ss]
Timestamp Selection	Bin Max Time
Min Numeric Precision	0
Max Numeric Precision	2
Initial History Fill Policy	Fill With Zero
No Change Policy	Use Last Value
Timestamp File	false
Sort Histories By Name	true
Add Type Row	false
Units Format	No Units
Add Summary	false
Auto Export	false
Last Export Time	null
Last Export Size	0 bytes

**Figure 1: MultiHistoryExport Property Sheet**

The first property to set up is the '**Transfer Type**', which controls where the exported file is sent.

To get started it is easiest to set this to '**Local**', as this will save the resulting csv file to the stations local file storage. Once you have the export working the way you want it you can then consider sending the file to a remote system by reviewing the transfer options described in section 6.1.

Then navigate to the history list by double clicking on the '**History List**' property, which will take you to the History Selection Manger view.

In this view you can click on the 'Find Histories' button to obtain a list of all histories available on the station.

Select the histories you want to include in the export and add them to the history list in the lower part of the view by clicking the add button.

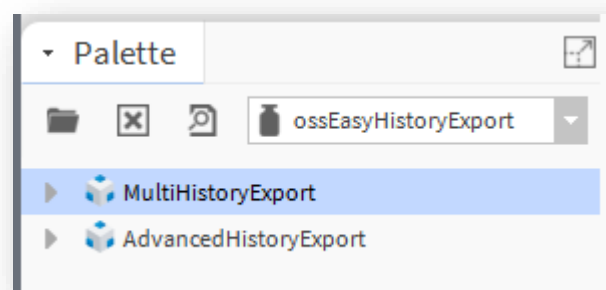
If you have a large number of histories on the station you can use the '**Set Filter**' button to define a filter that can be used to restrict what histories are shown during the discovery.

Most of the other properties you can leave at the default values. These can be adjusted later to your exact requirements.

Once the export properties are configured and the histories selected you use the '**Export**' action to generate the csv file, which should appear in the stations Files folder with the default file name of 'history-export.csv'. You may need to refresh the tree node of the Files folder for the file to appear.

## 5 Export Tool Types

In the ossEasyHistoryExport palette there are two components, as shown in **Figure 2**:



**Figure 2: OSS Easy History Export Palette**

The two tools have similar functions, the main difference is the way the exports are scheduled.

The '**MultiHistoryExport**' tool has simpler scheduling control and is more suitable for short schedule periods (for example every hour), or if you want to trigger the export from an external source using the Export action (for example, from a Niagara schedule). This tool is described further in section 7.

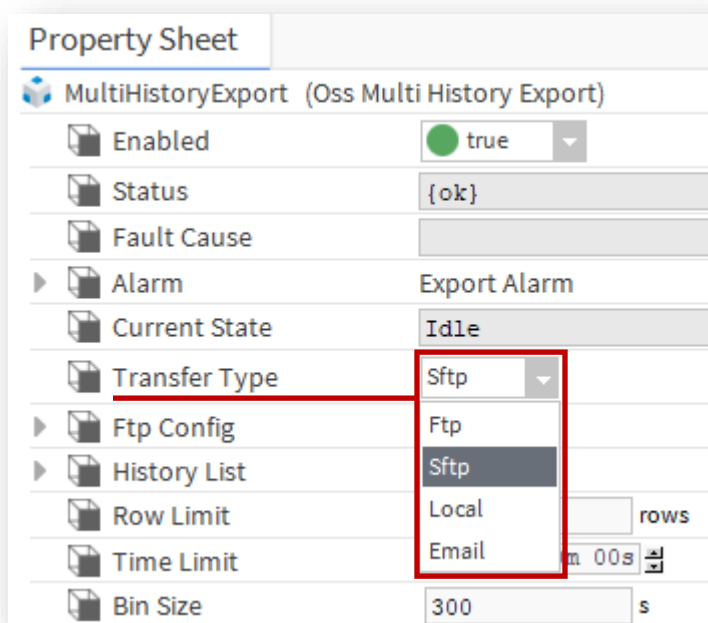
The '**AdvancedHistoryExport**' tool has more sophisticated scheduling control allowing the user to choose exports based around anchored time points, for example week, month or quarter. This tool is described further in section 8.

Most non-schedule properties are the same between the two tools. These common properties are described in section 6.

## 6 Common Property Reference

### 6.1 Transfer Type

The software provides a number of different methods for transferring the history export data, as listed in the Transfer Type property drop-down list shown in **Figure 3**.



**Figure 3: Export Transfer Type**

These options are described in the following sections:

Also, note that when the transfer type option is changed you will need to refresh the property sheet to see the new properties sub-section that applies to that option.

#### 6.1.1 FTP

If the Ftp option is used then export file is sent to a remote FTP server.

In the FTP Config sub-section an Ftp Server Address must be specified which may be an IP address or domain address.

For the Login a valid username and password must be provided for an account on the remote server.

The Ftp Port property should already be set to the default value for the transfer type, but the server you are connecting to may be configured with a different value. Contact the administrator of the server if you are unsure if this value is correct or if you get a connection refused error.

Enter the name of the file that will be created on the destination server into the Remote Path property. This file will be overwritten if it already exists. The path may contain folders using the forward slash ('/') separator, but the folders must already exist (they will not be created). No extension will be added, so any required extension should be included in the name.

The Timeout property can be left as the default, but may need to be increased if you are using very slow connections (e.g. 3G mobile).

Note that FTP transfers are insecure and all data is sent over the interconnecting network unencrypted.

#### 6.1.2 SFTP

If the Sftp option is used then export file is sent to a remote SFTP server.

The SFTP server options are the same as for the FTP option above (except these now apply to a SFTP server).

Note that a **SFTP** server is completely different from an **FTP** server. Contact the administrator of the server if you are unsure which type to use.

Also, note that **SFTP** servers are different from **FTPS** servers and do not interoperate. It is currently not possible to send exports to an FTPS server with OSS Easy History Export.

#### 6.1.3 Local

If the Local option is used then the export file will be saved to the stations local file system.

The default file name is 'history-export.csv' which can be changed by updating the 'Local File Path' property in the Local Config sub-section.

Note that the Local File Path property is a 'BFormat' string, which allows property values from the export tool to be included in the text. Please refer to the Niagara documentation for a further explanation of this feature.

#### 6.1.4 Email

If the email option is used then the export file will be sent as an attachment to an email.

An email account must have already been set up in the Niagara email service and properties are available to allow the email subject, recipients, body and attachment name to be customised.

### 6.2 History List

The History List specifies the histories that will be included in the export.

Click on the 'History List' property to view the History Selection Manager.

Click on the 'Find Histories' button at the bottom of the window to discover the histories available in the station.

The required histories can be added to the station database using the usual methods of dragging, double-click or select and add button.

The histories will appear in the export in the order that they are in the history list unless the Sort Histories By Name option is set to true.

You can also use the 'Set Filter' button to define a filter to limit which histories are shown during the discovery.

### 6.3 Bin Size

The Bin Size property controls how different histories are combined into a single row in the CSV file.

This property defines a time period. All the histories that change within the same time period will be included in the same row. All the histories that have not changed in that period will have their cell filled according to the No Change Policy property (see section 6.12)

If all histories change at approximately the same time then the bin size just needs to account for any small variations in the time so all histories can be combined into the same row.

If many of the histories change at different times then a larger bin size period will mean more histories will be combined into the same row, but the exact value change timestamp will be less accurate for some histories. A smaller bin size period will mean more rows, but more accurate timestamps.

#### 6.4 Row Order

The Row Order property defines if the rows are listed in the exported CSV in ascending time order or descending time order.

#### 6.5 Cell Padding Spaces

If the Cell Padding Spaces options is true then extra non-essential spaces will be added after cell values to aid human readability. Set this to false to remove these spaces to reduce the size of the export file.

#### 6.6 History Id Format

This History Id Format property controls the format of the export CSV column names.

There are options of include the device name (usually station name) followed by the history name, or just use the history name by itself, or to use the history display name which is usually easier to customise.

#### 6.7 Timestamp Format

The Timestamp Format property defines how the time column of the CSV is formatted. The Epoch Milliseconds format will use a single number indicating the number of milliseconds since January 1, 1970 midnight GMT. The Niagara platform format uses whatever the default time format is defined for the Niagara platform (which is locale specific). Other formats show how the time will be formatted as part of the selection list.

#### 6.8 Timestamp Selection

Each CSV row contains history values that occur within a short time period: the sample 'bin' (as defined in the 'Bin Size' property).

The Timestamp Selection property defines how the timestamp value for each CSV row is chosen from this sample bin time period.

The options allow for setting the row timestamp time to the maximum time of any history value included in the row, the minimum time of any history or the 'mode' time of all histories.

Using the 'mode' selection will mean that the most common time of all history values included in the row will be used. This is useful if a few of the history entries have times that are slightly offset from the usual history record time, which otherwise may mean that the row time will deviate slightly from the expected aligned time.

## 6.9 Min Numeric Precision

The Min Numeric Precision property defines the minimum number of numeric digits that will be placed after the decimal point for numeric history values.

## 6.10 Max Numeric Precision

The Max Numeric Precision property defines the maximum number of numeric digits that will be placed after the decimal point for history values, (values will be rounded if they exceed this).

## 6.11 Initial History Fill Policy

The Initial History Fill Policy property defines what is placed in CSV cells when one or more histories start later than others and therefore do not have values for the first rows of the export. Various fill values are provided (zero, NaN, null or empty). Or if the 'Truncate' option is selected then the CSV will only start when all histories have valid values (or one of the limit properties is exceeded).

## 6.12 No Change Policy

The No Change Policy determines the contents of export cells when there is no new history record for the CSV row time period for a particular history.

The options are to fill the cells with the last history value, with a 'null' text value or to leave the cell empty.

## 6.13 Timestamp File

If the Timestamp File property is set to true then a timestamp will be added to the destination CSV file name.

This time-stamp text will take the format: YYYY-MM-DD-HH-MM-SS.

If the export file name contains an extension then the timestamp text will be placed before this extension, (i.e. before the last '.' character in the text).

If the Timestamp File property is set to false then the CSV file name will be exactly the value specified in the transfer configuration property and each export will overwrite the previous file.

## 6.14 Sort Histories By Name

If the Sort Histories By Name property is set to true then the export CSV histories columns will be ordered so the history names are alphabetically sorted.

If this property is false then the column order will be the same as found in the history list.

## 6.15 Add Type Row

If the Add Type Row property is set to true then the export CSV will include a row after the column name row that will indicate the type of the data in the column.

If this property is false then no type row will be added.



## 6.16 Units Format

The Units Format property defines what information about the history units is included in the export and where it is placed.

The options are described in **Table 1**.

<u>Option Name</u>	<u>Description</u>
No Units	No history units will be included in the export.
Units Row Symbol	A separate row will be added including the units symbol.
Units Row Text	A separate row will be added including the units as text.
Units Name Symbol	The units symbol will be added in brackets after the history name.
Units Name Text	The units will be added in brackets after the history name as text.

**Table 1: Units Format Options**

## 6.17 Add Summary

If the Add Summary property is set to true then a summary section is added to the end of the export CSV that contains the start value, end value and difference for each numeric history.

## 7 MultiHistoryExport Tool

The **MultiHistoryExport** tool has basic scheduling capabilities suitable for hourly or externally triggered exports.

The tool has an '**Export**' action that allows external components such as Niagara schedules to trigger an export.

There is also an auto-export capability.

If the '**Auto Export**' property is set to true (and the property sheet is refreshed) then you will see an '**Update Period**' property which will dictate how often an automatic export is run.

The size of the export CSV file can be controlled using the '**Row Limit**' property or the '**Time Limit**' property.

Whichever limit is reached first will stop any more rows being added to the CSV file (working from the latest values backwards in time).

The Time Limit is measured from the time the export is executed.

All other properties are as described in section 6.

## 8 AdvancedHistoryExport Tool

The **AdvancedHistoryExport** tool has more advanced scheduling capabilities allowing exports to be generated on a daily, weekly, monthly or quarterly basis, as well as custom or externally triggered options.

The '**Export Schedule**' property controls how often the export is generated. This can be Daily, Weekly, Monthly Quarterly, Manual or Custom.

If the Manual option is selected then an export will only be generated when the '**Export**' action is run.

If the Weekly option is selected (and the property sheet is refreshed) then you will see a '**Start Of Week**' property which dictates which day of the week the export will be run.

If the Monthly option is selected (and the property sheet is refreshed) then you will see a '**Export Day Of Month**' property which dictates which day of the month the export will be run.

If the Custom option is selected (and the property sheet is refreshed) then you will see a '**Custom Time Period**' property which dictates how often an export is generated.

All exports times are anchored around midnight (00:00), but the '**Export Schedule Delay**' property allow you to delay the export until some time after midnight (for example 5 AM). This delay applies regardless of the Export Schedule selection.

The '**Export Range**' property controls how much data is included in the export. There are options for Day, Week, Month, Quarter, Year and Custom.

If the Custom option is selected (and the property sheet is refreshed) then you will see a '**Custom Time Range**' property that allows you to define a specific, fixed time range.

The '**End Time Offset**' property allows you to exclude some of the most recent history data from the export. This may be because there could be delays to some history values being recorded, so including all latest data would generate inconsistent results compared to the next export when the final records have been included. If you are not sure if this offset is required then it is best to use the default zero offset.

The '**Max Export Size**' property is used to limit the size of the final export file.

This can ensure that the export is not too large for system limitations. For example email servers may have limits on the maximum size of attachments.

All other properties are as described in section 6.

## 9 Appendix

### 9.1 End User License Agreement

#### 9.1.1 License

By receiving, opening the file package, and/or using ossEasyHistoryExport ("Software") containing this software, you agree that this End User License Agreement (EULA) is a legally binding and valid contract and agree to be bound by it. You agree to abide by the intellectual property laws and all of the terms and conditions of this Agreement.

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provision shall be deemed severable from this License and not affect the validity and enforceability of any other provisions.

#### *9.1.3.7 Termination*

Any failure to comply with the terms and conditions of this Agreement will result in automatic and immediate termination of this license. Upon termination of this license granted herein for any reason, you agree to immediately cease use of ossEasyHistoryExport and destroy all copies of ossEasyHistoryExport supplied under this Agreement. The financial obligations incurred by you shall survive the expiration or termination of this license.

#### *9.1.4 Disclaimer Of Warranty*

**This software and the accompanying files are sold "as is" and without warranties as to performance or merchantability or any other warranties whether expressed or implied. this disclaimer concerns all files generated and edited by ossEasyHistoryExport as well.**

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End of license agreement