



Datashield

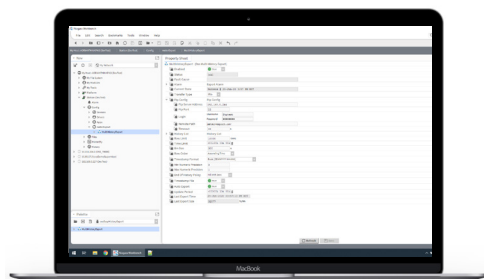


OSSEasyHistoryExport Module

Do you ever find yourself needing to export meter data from a Niagara 4 system, perhaps for consumption by a third party Energy Management system or external energy supplier?

If the answer to the above is yes, then keep on reading to find out how ossEasyHistoryExport is going to make your life a whole lot easier!

Niagara 4 makes for a great data integration & aggregation platform, it can collect data from a huge variety of sources including (but not limited to) electricity, gas, steam, and water meters, over various protocols such as Modbus, BACnet, SNMP etc...



It can be configured to log such data on an interval of your choosing, this can be stored locally on a controller such as the JACE 8000 for a period of time and can then be uploaded to a Niagara 4 Supervisor for long term storage as well as to serve as an aggregation point for data coming in from many 100's or thousands of devices out in the field.

The challenge arises when you have been asked to provide said meter data for consumption by an energy management system such as eSight, or need to ship it off externally to a utility company for their own processing. So what options have been available up until now?

Can't I just use Obix?

You could use oBIX which is supported natively by Niagara 4 and at least one of the major Energy Management packages on the market. However this is a dated protocol, utilizing XML with HTTPBasic authentication. This mechanism also requires that your Niagara 4 system be able to receive an INBOUND connection to its web server through whatever firewalls may be in place to protect the building network. This makes it less than favorable in a modern setting due to many wanting to take advantages of energy data processing via the cloud but the IT security compromises that must be made in order to make an oBIX connection possible are often simply not feasible.

It should also be noted that although oBIX is an OASIS managed standard, its uptake in the Smart Building industry since its initial inception in 2003 has been very, very limited.

Wait, what about CSV files?

Ahh the humble and long lived CSV file, a universal favorite amongst many for importing/exporting data in just about every walk of life you can think of. However, CSV files are not without complications of their own. The first and greatest of these complications is that there are numerous different methods for generating a CSV and just as many ways of formatting the data contained within.

For example, the simplest form of CSV known as a 'single column' might contain data for a single meter, along with associated timestamps for each reading. It might include the meter name as a top row, or it might not since the identifier could just as well be the filename of the CSV. Let's not forget the format of the reading timestamps as well, of which there are many options.

Now let's apply the above to a 1000 meter system. Yes, that's 1000 individual CSV files you need to generate, store and send. Be it every 15 mins, 30 mins or 24 hours. Things get messy, very quickly and this model does not scale well at all, especially when you also need to make provisions to prevent overwriting of those files in case the destination system is not ingesting them in real time. Reality is that you'll end up with several thousand files all over the place, all the time.

In Niagara 4, creating such a simple CSV file is easily achieved with standard tooling (report source + BQL + file recipient), however you need to multiply the logic required for a single CSV x the number of meter histories you have. That's a whole lot of wire sheet logic right there, not to mention the wear on the SD card if this is being done on a JACE 8000, since all files are committed to disk.

Enter the Multicolumn CSV

The answer to scalability and efficiency when handling meter data in CSV files is the multicolumn format. This is self-explanatory in that a single CSV is produced with multiple columns, each containing the readings for an individual meter.

However producing such a file from Niagara 4 is complex and time consuming, it requires a great deal of wiresheet logic using transform blocks to collect together all the required histories. On top of that, how do you then deal with meters that are logging at differing intervals? Additional logic must be created to 'gap fill' or duplicate longer interval readings so that there is a uniform timestamp for each reading, no matter if the meter is 15 or 30 mins.

Now you have CSV's, how do you get them to the destination system?

The final piece of the puzzle involves getting the resulting file to the system for which it is intended. There's more than one way to do this, typical options are: Email, FTP/SFTP or another file sharing protocol, which options are available to you depend on the platform in question. On a supervisor you could access the CSV files directly and use an external FTP/SFTP client on a schedule to upload somewhere. You could use an email service to attach the file and send it to a destination address where additional software will need to strip the attachment from the email and save it in the required location.

If using a Niagara controller such as a JACE, you could take advantage of third party modules such as our own ossFTP in order to send your files out via FTP/SFTP. Or maybe take a look at what other offerings are available in the marketplace.

You get the picture.... Whichever way you look at the above options, its lengthy, doesn't scale up and prone to failure due to the sheer number of 'moving parts'.

Introducing the OSSEasyHistoryExport!

Our awesome new module ossEasyHistoryExport has been designed to overcome all of the above headaches when tasked with exporting meter data from Niagara 4! Now you can pull as much meter data as you want from your Niagara 4 system, be it a JACE, Third Party Niagara Controller or a Supervisor, in under 10 minutes.

Simply load the module, enter your destination FTP/SFTP server details, select the histories you want, set the time range/record count, choose your scheduler interval and that's it! Marvel at how quickly you not only generated a tidy multicolumn CSV containing the data for 1000's of meters with a universally compatible timestamp, but also sent it on to its destination. No linking numerous components, no complex wiresheet logic, no transformGraphs, no timestamp formatting, no gap filling/record de-dup. It just works!

Property Sheet	
MultiHistoryExport (Oss Multi History Export)	
Enabled	<input checked="" type="checkbox"/> true
Status	{ok}
Fault Cause	
Alarm	Export Alarm
Current State	Success @ 25-Jun-20 3:29 PM BST
Transfer Type	Sftp
Ftp Config	Ftp Config
Ftp Server Address	192.168.0.200
Ftp Port	22
Login	Username: meterexport Password: *****
Remote Path	meter-export.csv
Timeout	30 s
History List	History List
Row Limit	10000 rows
Time Limit	+00168h 00m 00s
Bin Size	300 s
Row Order	AscendingTime
Timestamp Format	Basic[DDMMYYYY HH:MM]
Min Numeric Precision	0
Max Numeric Precision	1
End Of History Policy	Fill With Zero
Timestamp File	<input checked="" type="checkbox"/> true
Auto Export	<input checked="" type="checkbox"/> true
Update Period	+00000h 10m 00s
Last Export Time	25-Jun-2020 03:29:02 PM BST
Last Export Size	166878 bytes

ossEasyHistoryExport works by combining all of the elements required to produce a compatible multicolumn CSV file based upon Niagara 4 numeric histories. It handles meters with different logging intervals, provides record count/time range controls, supports FTP/SFTP destinations (with filename -times-tamp appending to stop accidental overwrites) as well as including a scheduler to automate uploads on a schedule of your choosing.

- **Single Niagara component handles the whole process**
- **Produces a universally compatible multicolumn CSV**
- **Select your histories using standard discovery UI**
- **Chose from an FTP or SFTP server destination**
- **CSV file generated in RAM, no prematurely wearing out SD cards!**
- **Combine meters with different logging intervals into the same file**
- **Selectable timestamp format presets**
- **Runs on a schedule or manually triggered**
- **Use multiple instances to separate groups of histories into different destinations**

	A	B	C	D	E	F	G	H	I	J
1	Timestamp	Site1-Bldg40_01_Gas	Site1-Bldg40_Main_Water	Site1-Bldg	Site1-LVS	Site1-LVS	Site1-LVS	Site1-LVS	Site2-LVS	
2	2017-10-06T22:00:02.15	12349	451	124429	1446	48176	2863	3149	2625	660
3	2017-10-06T23:30:02.34	12404	453	124669	1448	48214	2866	3151	2628	660
4	2017-10-06T23:00:02.19	12459	454	124902	1449	48251	2868	3154	2631	661
5	2017-10-07T00:30:02.13	12514	455	125054	1450	48276	2870	3156	2634	662
6	2017-10-07T00:00:02.57	12569	455	125205	1451	48300	2872	3158	2637	662
7	2017-10-07T01:30:02.72	12624	457	125356	1452	48324	2874	3161	2640	663
8	2017-10-07T01:00:00.25	12674	457	125509	1453	48350	2876	3163	2643	664
9	2017-10-07T02:30:02.20	12720	459	125659	1454	48374	2878	3166	2646	664
10	2017-10-07T02:00:02.09	12765	459	125809	1455	48398	2879	3168	2649	665
11	2017-10-07T03:30:02.02	12809	460	125959	1456	48422	2881	3170	2652	665
12	2017-10-07T03:00:02.49	12851	461	126109	1457	48447	2883	3172	2655	666
13	2017-10-07T04:30:03.80	12883	462	126244	1458	48471	2885	3175	2657	667
14	2017-10-07T04:00:02.31	12892	462	126340	1459	48500	2887	3177	2660	667
15	2017-10-07T05:30:02.61	12892	462	126419	1460	48537	2889	3179	2663	668
16	2017-10-07T05:00:02.45	12892	462	126498	1461	48575	2891	3181	2666	668
17	2017-10-07T06:30:02.56	12892	462	126591	1462	48616	2893	3184	2669	669
18	2017-10-07T06:00:02.38	12892	462	126687	1463	48658	2895	3186	2671	670

NEW VERSION FEATURES

- Support for more history types, including Boolean and string as well as numeric
- support for non-Tridium history types such as Trend
- A new summary option that adds totals for numeric histories that indicate the difference between the start and end values, useful for summarising metering histories
- A new email transfer type so the resulting csv file can be emailed as well as ftpd or stored in a file.



Web: onesight.solutions

Email: info@onesight.solutions

Tel: 01252 872738

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