MergeWorX
Importing Data into Hyper Historian

APPLICATION NOTE

October 2015

Description: Hyper Historian provides a variety of methods to collect data automatically from a wide variety of real-time, historical, and other sources. However in some cases the data will have to be pushed into Hyper Historian by a 3rd party system, in this case using MergeWorX with either the standard CSV plug-in or a custom developed plug-in would be advised route.
General Requirement: GENESIS64 and Hyper Historian. Knowledge of Unified Data Manager register and trigger setup is required.

Introduction

When data needs to be pushed into Hyper Historian rather than being collected by Hyper Historian, MergeWorX and its plug-in architecture is the advised route. MergeWorX provides a standard plugin for processing CSV data, using a number of formats, in addition it also accommodates for the creation of custom data plugins for bespoke data sources.

Example

In this application note, we will show how to configure MergeWorX to import data from a CSV file into tags already configured in the Hyper Historian.

The data that will be merged into the Hyper Historian is generated by an external system, the external system hourly provides one file each for three machines, whereby each file contains the number of widgets produced in a 5 minute cycle, for a total of 12 samples in each file.

Target Tags

The target tags needs to exist before MergeWorX can be used to push data into the Hyper Historian:

1. Open the Workbench
2. Select the Hyper Historian provider
3. Expand and select **localhost → HyperHistorian → Data Collections**

Adding a root folder

4. Select **Add → Folder** from the Home Ribbon
5. Enter **System Performance** as the name of the folder and click on Apply

Adding the machine folders

6. Select the **System Performance** folder
7. Select **Add → Folder** from the Home Ribbon
8. Enter **M001** as the name of the folder and click on Apply
9. Select the **System Performance** folder
10. Select **Add → Folder** from the Home Ribbon
11. Enter **M002** as the name of the folder and click on Apply
12. Select the **System Performance** folder
13. Select **Add → Folder** from the Home Ribbon
14. Enter **M003** as the name of the folder and click on Apply

Adding the tags

15. Select the **M001** folder and select **Add → Tag** from the Home Ribbon
16. Set the name of the Tag to **Produced**
17. Ensure Is Collected is **Unchecked**
18. Set the In Group to **Logging Group**
19. Set the Data Type to **Int32** and click on Apply
20. Select the **M002** folder
21. Select **Add → Tag** from the Home Ribbon
22. Set the name of the Tag to **Produced**
23. Ensure Is Collected is **Unchecked**
24. Set the In Group to **Logging Group**
25. Set the Data Type to **Int32** and click on Apply
26. Select the **M003** folder
27. Select **Add → Tag** from the Home Ribbon
28. Set the name of the Tag to **Produced**
29. Ensure Is Collected is **Unchecked**
30. Set the In Group to **Logging Group**
31. Set the Data Type to **Int32** and click on Apply

MergeWorX Configuration

1. Open the Workbench
2. Select the MergeWorX provider
3. Expand and select **localhost → MergeWorX → Plugins**
4. Select **Add → Plugin** from the Home Ribbon
5. Enter **System Performance** as the name of the plugin
6. Set the Plugin Type to CSV
7. Select one of the existing UDM triggers, e.g. /Time Triggers.10s or create a new data or time trigger with appropriate settings. Figure 1 illustrates how the trigger point will appear after browsing.

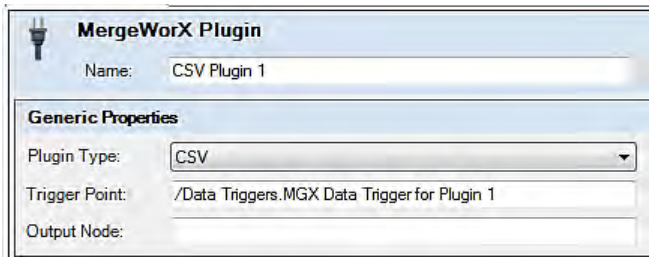

Figure 1 - Trigger Point

The output node is primarily for specifying a remote Hyper Historian installation, which won't be covered in this document.

NOTE: Creating a new UDM trigger is outside the scope of this application note, refer to the UDM help documentation for more details on how to configure a new time or data trigger in the UDM

8. Select the General Tab.

After the trigger point has been selected, the user will need to configure the locations of the file(s) to be imported along with the action to be applied against processed files, as illustrated below in Figure 2.

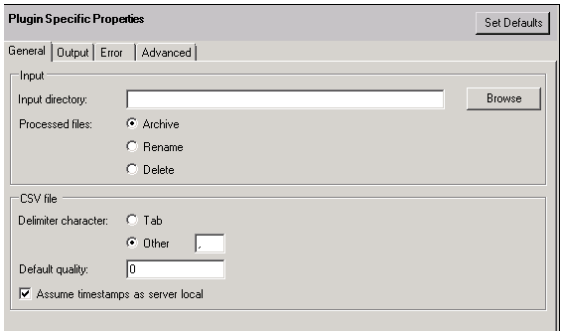

Figure 2 - Plugin Configuration

9. Set the Input Directory to **C:\ProgramData\ICONICS\MergeWorX\Plugins\CSV\Source**
   If these folders aren't present please create them
10. Set the Processed Files to **Archive**
11. Set the Delimiter character to **Other**, and**,** (comma)
12. Set the Default Quality to 0 (for good quality)

NOTE: Use 0x0800000 (or 134217728) to default to bad quality

13. Select the Output Tab
14. Set the Archive (Move To) Directory to **C:\ProgramData\ICONICS\MergeWorX\Plugins\CSV\Processed**
    If these folders aren't present please create them
15. Ensure Overwrite Existing is **Checked**
16. Select the Error Tab
17. Ensure Save is **Checked**
18. Ensure Retry Merge is **Checked**
19. Set the Failed Data Directory to **C:\ProgramData\ICONICS\MergeWorX\Plugins\CSV\Failed**
    If these folders aren't present please create them
20. Select the AdvancedTab
21. Ensure DataPoint key is set to **DataPoint**
22. Ensure Value key is set to **Value**
23. Ensure TimeStamp key is set to **Timestamp** and click apply

File Formats

The standard CSV file MergeWorX plugin will support two file formats, the first is typically used for files that only contain data for one variable, the second is typically used for file that contain data for multiple variables. The first specifies the data point into which the data will be imported once on the first line using the special @DataPoint syntax, the second specifies the data point into which the data will be imported on each line as an additional column (DataPoint). Both use the Timestamp and Value columns.

To avoid any unexpected (albeit correct) importing of data the timestamp should always be specified in ISO format yyyy-mm-dd hh:mm:ss or yyyy/mm/dd hh:mm:ss

As the example import lines shown in the next section are too long to fit on a single line, a new line should only be inserted where the pilcrow (¶) is used.

NOTE: In earlier versions v10.85 the DataPoint does not need ua: in the syntax

Import file format for a single tag

@DataPoint,ua:HyperHistorian\\Configuration/SystemPerformance/M001/Produced¶
Timestamp,Value¶
2014-07-11 08:00:00,100¶
2014-07-11 08:05:00,90¶
2014-07-11 08:10:00,97¶
…
2014-07-11 08:50:00,88¶
2014-07-11 08:55:00,84¶

Import file format for a multiple tags

DataPoint,Timestamp,Value¶
ua:HyperHistorian\\Configuration/SystemPerformance/M001/Produced,2014-07-11 08:00:00,100¶
ua:HyperHistorian\\Configuration/SystemPerformance/M001/Produced,2014-07-11 08:05:00,90¶
…
HyperHistorian\\Configuration/SystemPerformance/M001/Produced,2014-07-11 08:50:00,88¶
HyperHistorian\\Configuration/SystemPerformance/M001/Produced,2014-07-11 08:55:00,84¶

Optional Columns

ValueType to specify the type of the value that will be imported
Quality to specify the quality of the value that will be imported