



Dream Report Tech Note – December 20, 2016

Event-Generated Reports with Wonderware Historian Triggers

Reports in Dream Report can be generated on an event. Event-generated reports use the value of a data item/tag from a real-time data source, and evaluate that value on a user-specified condition, or on change of the value. The key for this to work is that <u>the tag must be exposed through a real-time data</u> <u>source</u> (communication driver) in Dream Report. If using Wonderware Historian as the only data source in a Dream Report project (and external, historical values source) the Historian tags cannot be used to trigger a report. However, there are two approaches to still use those tags to event-generate a report.

Option 1 - Using the Wonderware Historian "IO Server Service" SuiteLink Data Source

The Wonderware Historian I/O Server (**aahIOSvrSvc.exe**) is Wonderware's interface for clients to access current ("real-time") data in Historian using the SuiteLink protocol. This service is pre-configured with a single topic - "Tagname". As such, you can configure an instance of the Dream Report *SuiteLink Protocol over TCP/IP* communication driver, to connect to the Historian I/O Server service.

1. To select this driver, open the Dream Report Communication Configuration Wizard, expand the "Wonderware" folder, and then select the *SuiteLink Protocol over TCP/IP* driver:

Select Data Source Type	
Image: Construction Image: Construction Image: Construction Driver Logical Name Image: Construction Driver Logical Name Image: Construction WWHist_RealTime	
Rockwell Driver Logical Name Schneider WWHist_RealTime	
Image: Construction Image: Construction	
WWHISt_RealTime	
StreamX for ACC Configure	
E Techno Trade	
Trihedral Driver user description	
The Wizcon	
🛱 💼 Wonderware	
🚽 📶 FS Gateway OPC	
- 📆 WW Historian	
	\sim
WW InTouch ALG Alarms	
WWALM Historical Alarms	
	ol over
WW Historian Alarms	
E TOKOGAWA	
< III >	
OK Cancel Show this Wizard on creating new project	



2. Enter a unique name for this instance of the driver (e.g., "WWHist_RealTime") and then click the "Configure" button. The following "Wonderware SuiteLink Configuration" window will open:

WW SuiteLink Configuration										
Items configuration										
Name	Туре	Description								
<										
Import	Add	Edit Remove								
Advanced option	S	OK Cancel]							

3. Click the "Advanced options" button, enter the following details to communicate with the Historian I/O Server service, and then click "OK":

	SuiteLink Protocol properties
SuiteLink Connec	tion
Node name:	MyWWHistorian
Application:	aahiosvrsvc
Topic:	Tagname
Driver settings: Timeout (ms) :	5000 Attempts : 3 Idle (ms): 1
	OK Cancel





Node Name:	The Computer Name or IP address of the Wonderware Historian
Application:	aahiosvrsvc (entered exactly as shown here)
Topic:	Tagname (entered exactly as shown here)
Driver Settings:	Defaults should be fine, but you may want to increase the retry attempts

4. To specify which Historian tag(s) you want to expose as real-time values to Dream Report, click the "Add" button on the "*Wonderware SuiteLink Configuration*" window. The following "Item Definition" window will open - enter the following:

	•	x						
	Item definition							
Item Name:	BatchStatus							
Itom tunou	Diseasts	1						
Item type:	Discrete							
Description								
Status of runni	ng batch	1						
		1						
	OK Cancel							

Item Name:The Historian tagname (case-sensitive, and exact spelling)Item Type:Tag type, defined as Integer, Real, Discrete or StringDescription:Tag description (this is optional)

5. Repeat the above step for any other Historian tags you may want to expose as real-time values, and then click "OK" to close the *WW SuiteLink Configuration* window



Items configuration		
Name	Туре	Description
BatchStatus	Discrete	Status of running batch
ProcessStep	Integer	Current process step no.
<		III >
Import	Add	Edit Remove
Advanced op		OK Cancel

- 6. Repeat the above step for any other Historian tags you may want to expose as real-time values, and then click "OK" to close the *WW SuiteLink Configuration* window:
- 7. Finally, click "Add" to add this configuration to the Defined Drivers List, and then click "OK" to close the Wizard:

elect Data Source Type	Configure Driver for Selected Source	Defined Drivers List
Open communication protocols		Driver Logical Name
≝⊶ Usisont ∓⊶ Remote	Driver Logical Name	Analytics
	WWHist_RealTime	Add WWHist_Delta
Schneider		
- 🔁 Siemens	Configure	Delete
StreamX for ACC	Comguie	Delete
Techno Trade	Driver user description	
Trihedral		
- Wizcon	^	
- 📆 FS Gateway OPC		
	×	
WW IntelaTrac historical values		
InTouch historical values (LGH files)		
- 2 SuiteLink Protocol over TCP/IP		
- 2 WWALM Historical Alarms		
- 2 WW Application Server (MX)	Data Source Description WW SuiteLink RT Protocol over TCP/IP	
2 WW Historian Alarms	Driver connection string:	





- 8. Finally, to generate a report on an event, based on a Historian "real-time" tag:
 - Open the report settings (double-click on the report name in the *List of Reports*)
 - Select the "Generate Report on Event" tab
 - Check the "Enable Generation on Event" option
 - In the "Select Event Type Based:" section, click the [...] button to select the Wonderware Historian real-time values driver created above, and then select the specific data item for the event trigger
 - Select either "On Condition", with the data condition to be evaluated; or, "On Item Value Change" (which will trigger the report generation on any value change of that item)
 - You can optionally specify a delay (in seconds) to generate the report, after the event condition has been met.

Report Settings								×
Project Reports List Batch Report Sheet Grading Report	General Report Name Format	Report Time Definition	Generate Report On Event	Report File Format	Report Preprocessor	Macros	User Authorization	
	Enable Generation on Enable Instance Gen Report Instances	neration	Apply to All					
	Select Event Type - B On Condition Data Source WWHist_RealTime Item Name BatchStatus	00	n Item Value Change		Generating report of Generate report			×
			Select Data Source		ist_RealTime	_	~	<u>(A</u>
			Item Filter	~	Description Fi	ter	~	
			Item Name Item Name Item Name Regional Status Regional Status Regional Status	N			n running batch rocess step no.	
OK Cancel	Apply							



Option 2 - Using the Dream Report "Analytics" Driver

Dream Report can use a data value from one report for event-based generation of another report. The *Analytics* driver is an internal driver that exposes all values on a report for use elsewhere in Dream Report - for data logging, expression on the same or any other report, and for report generation. One way to use the *Analytics* driver to trigger a report is as follows:

1. Create a "dummy" report that will be auto-generated periodically (e.g. every minute):

Report Settings										×
Project Reports List Bioreactor Batch Report	4	[#]			1			\square	<u> </u>	
Dummy Report	General	Report Name Format	Report Time Definition		ite Report Event	Report File Format	Report Preprocessor	Macros	User Authorization	
	Report In	V								
	O Mont	hly or Yearly Rep	ort Selectday month	of the	Select Tin (HH:MM:S					
	Monthly	/	1	V	00:00:00	× ×				
	O Daily	or Weekly Repor	t		Execute	On				
	Set Tim	e			✓ Mon					
	12:00:	· ·			✓ Tue					
	Set Ti	me	A	dd	✓ Wed					
			Mo	dify	✓ Fri					
			Ren	nove	✓ Sat					
					🖌 Sun					
	© Ever	ute Report Each	-							
	bh:mm:									
	00:01:	00 ^								

2. On this report, place a Single Data Object that will use the *"Last Value"* statistical function of the "trigger" tag from Historian (e.g., a "BatchStatus", "CriticalEvent", etc. tag). That tag will be exposed through the <u>Wonderware Historian historical values driver</u>, just as you would when reporting on any tag in Wonderware Historian. For example:



63		SQL where
Data Definition	Appearance	Advanced SQL Condition
-1		
Object Name:		
HistTrigger		
Object Descripti	on:	
		^
		~
Select Data It	em	
O Dream Rep		 External History Server
Data Source		
WWHist_Del	ta	
Item Name		
Batch_Statu	s	
ADF to be used: <not used=""></not>		use: + - * / (e.g. *1000)
Select Statistic	cal Eunction	
Last Value		
Last Value		
Last Value	riod	
Define time pe	eriod elative period de	
Define time pe	elative period de	
Define time pe Absolute or re	elative period de ort period	efinition
Define time pe Absolute or re Start of repo	elative period de ort period	efinition
Define time pe Absolute or re Start of repo Relative Dat	elative period de ort period e/Time Days hh:mm:ss ba	efinition End of report period Relative Date/Time Days
Define time per Absolute or re Start of repo Relative Dat	elative period de ort period e/Time Days hh:mm:ss ba	efinition v End of report period Relative Date/Time v 0 Days

3. The "real" or actual report should be triggered by the value of the object in the dummy report, exposed through the Analytical driver. On the actual report to be event-triggered:



Dream Report

Report Settings		×
Project Reports List Bioreactor Batch Report Dummy Report Sheet Grading Report	Image: Constraint of the point number of th	
	Enable Generation on Event Enable Instance Generation Report Instances On Condition On Item Value Change Generating report with delay after event Generating report with delay of Data Source Analytics Item Name Item Name	
	Dummy Report:HistTrigger Select Data Item Select Data Source Analytics Item Filter Description Filter Path 'Dummy Report Item Name Description Item Name Description	×
< III >	HistTrigger	

4. In order to avoid creating multiple PDF files of the "dummy" report, set the report file name to be static (remove the timestamp part), so every new file will overwrite the previous one

Report Settings									×
Project Reports List Bioreactor Batch Report	a for	[#]	\mathbf{X}	it,			7	<u></u>	
Dummy Report Sheet Grading Report	General	Report Name Format	Report Time Definition	Generate Report On Event	Report File Format	Report Preprocessor	Macros	User Authorization	
	Report	ile Name filename mask portName]]						

5. Also, you can set the "dummy" report to not appear in the list of available reports at runtime, even though the report is scheduled to run every minute:

Report Settings)
Project Reports List Bioreactor Batch Report	a for	[#]	\mathbf{X}				\sub	<u></u>	
Dummy Report Sheet Grading Report	General	Report Name Format	Report Time Definition	Generate Report On Event	Report File Format	Report Preprocessor	Macros	User Authorization	
	Report Target Web Settings			age Format Page Size Letter	Open report file after generation PDF Excel				
	PDF (Adobe Acrobat) Settings Email			Orientation Portrait Landscape	Runtime settings Show report in the list Cod report in runtime				