



## Dream Report Communication Drivers integration session with SCADA by Automiq Software

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## Introduction:

This document aims to show integration between Dream Report reporting tool and Alpha Platform system by studying and getting various connectivity options between both products.

Dream Report is a reporting software that allows end customer to retrieve data and alarms from their data sources and convert it into valuable information. Data can be presented in few different ways: graphical, tabular and single KPI's objects. It can be populated as part of generous number of the reports. Reports can be stored in PDF, Excel, CSV, XML formats. Additional information about the product customers can obtain from the Ocean Data Systems corporate web site: [www.dreamreport.net](http://www.dreamreport.net)

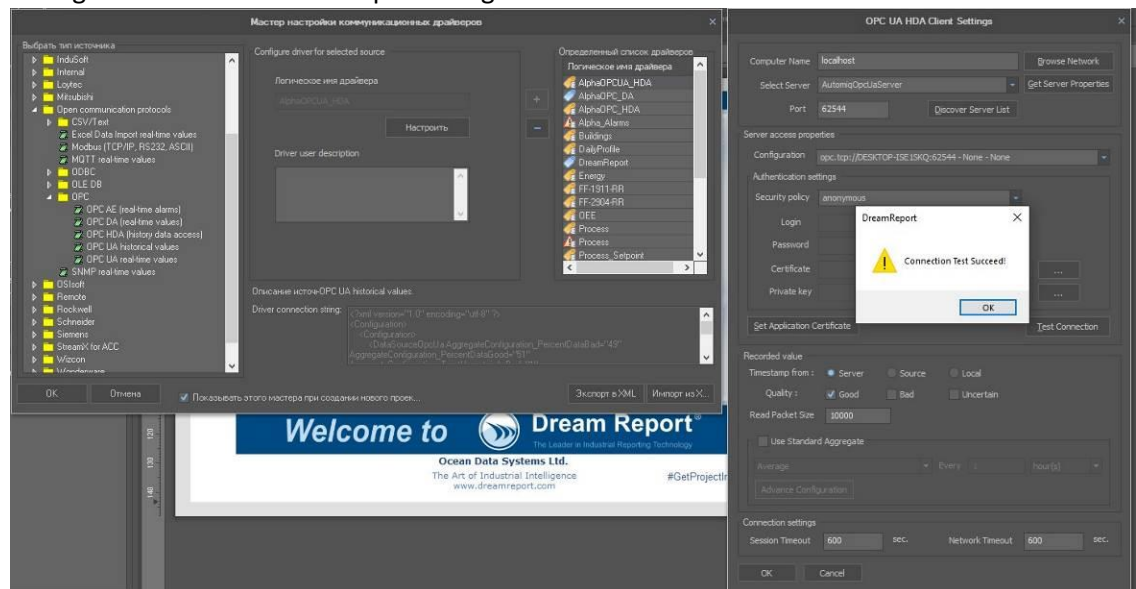
## Validation Session:

Communication between both products can be done over several available communication protocols:

1. OPC UA (Realtime) and HDA
2. OPC DA (Realtime) and HDA
3. Direct SQL queries

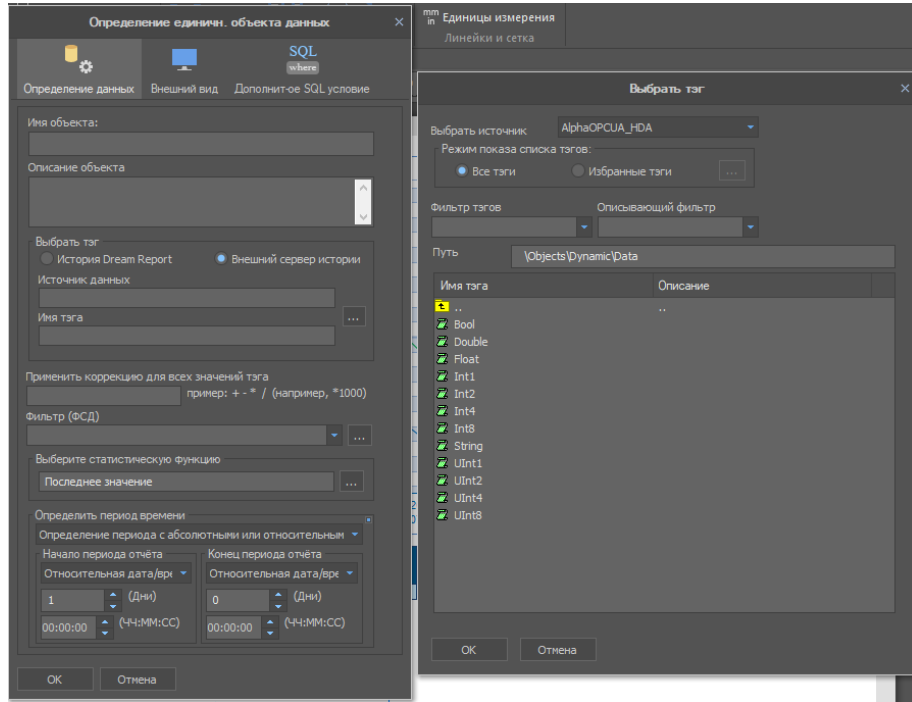
### 1. OPC UA

#### a. Configuration in the Dream Report Designer studio:

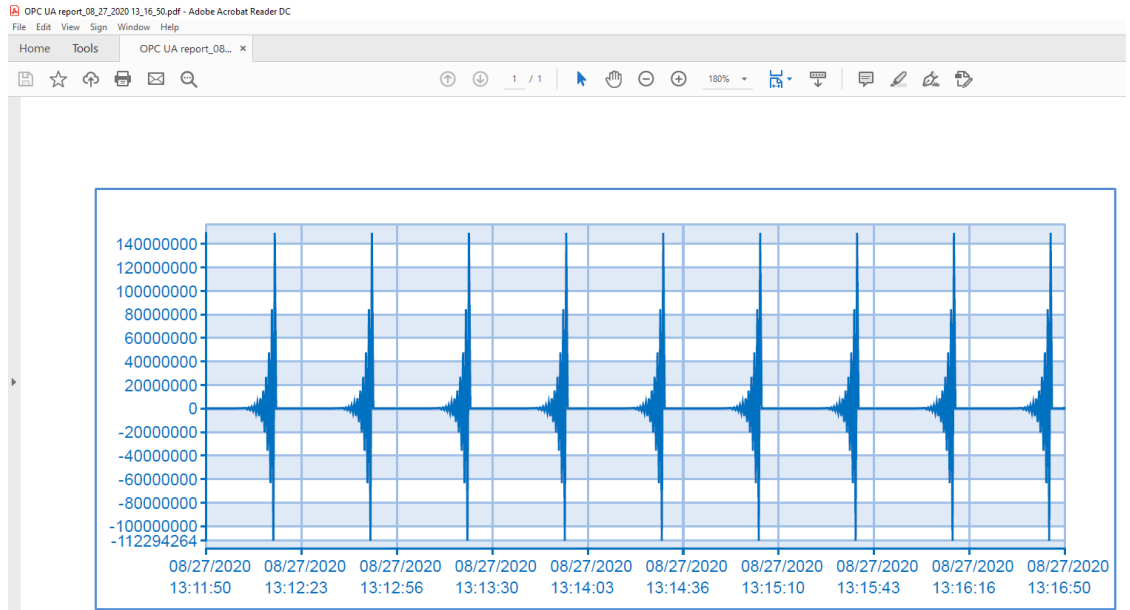




b. Browse of tags from the SCADA:



c. Getting data into reports:





d. OPC UA HDA Supports all the aggregates provided by AutomiqOpcUaServer:

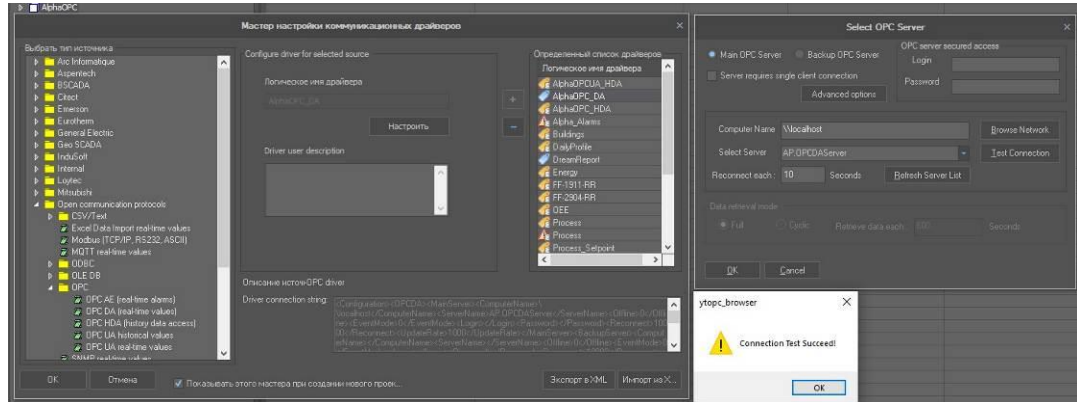
The screenshot displays the configuration interface for OPC UA HDA. It includes the following elements:

- Recorded value** section:
  - Timestamp from:  Server,  Source,  Local
  - Quality:  Good,  Bad,  Uncertain
  - Read Packet Size:
- Use Standard Aggregate
- Aggregate selection dropdown menu (open):
  - Average (highlighted)
  - AnnotationCount
  - Count
  - Delta
  - DurationBad
  - DurationGood
  - End
  - Maximum
  - MaximumActualTime
  - Minimum
  - MinimumActualTime
  - NumberOfTransitions
  - PercentBad
  - PercentGood
  - Range
  - Start
  - TimeAverage
  - Total
  - WorstQuality
- Frequency: Every
- Network Timeout:  sec.

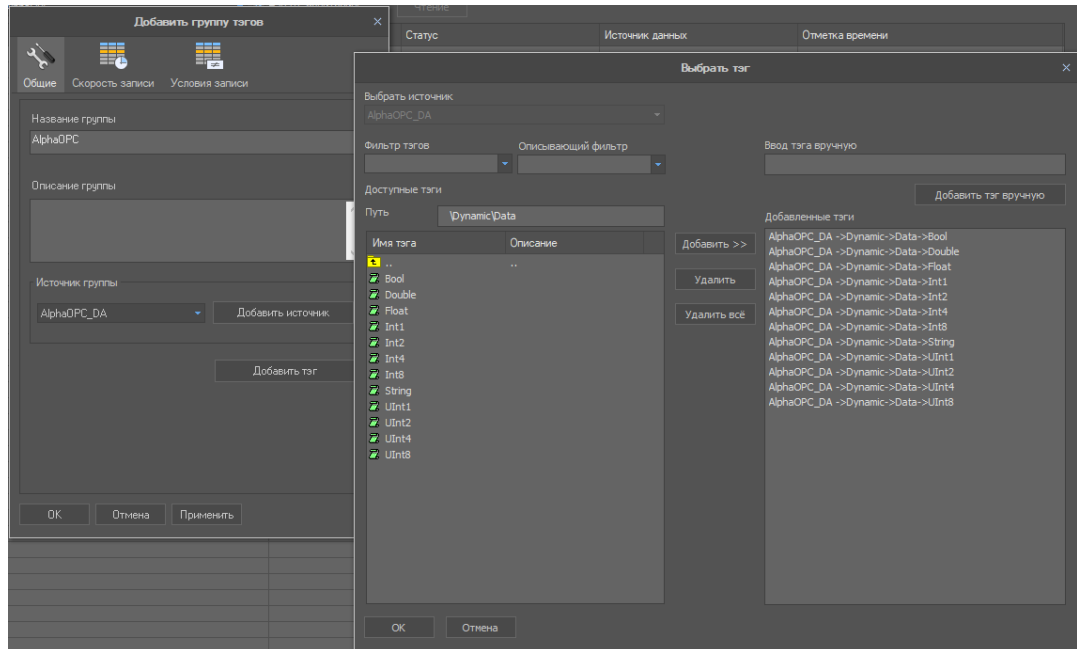


## 2. OPC DA

### a. Configuration in the Dream Report Designer studio:



### b. Browse of tags from the SCADA:



### c. Sampling data inside DR Logger Studio:

Имя тэга	Описание	Текущее значение	Статус	Источник данных	Отметка времени
>>Dynamic->Data->Int08				AlphaOPC_DA	
>>Dynamic->Data->Int04				AlphaOPC_DA	
>>Dynamic->Data->Int01				AlphaOPC_DA	
>>Dynamic->Data->String		Abc123@#	GOOD	AlphaOPC_DA	27/08/20 13:24:25
>>Dynamic->Data->Int08				AlphaOPC_DA	
>>Dynamic->Data->Int04				AlphaOPC_DA	
>>Dynamic->Data->Int01		128	GOOD	AlphaOPC_DA	27/08/20 13:23:57
>>Dynamic->Data->Float		1.000000	GOOD	AlphaOPC_DA	27/08/20 13:24:23
>>Dynamic->Data->Double				AlphaOPC_DA	
>>Dynamic->Data->Bool		1	GOOD	AlphaOPC_DA	27/08/20 13:24:25



d. Getting data into reports:

Временная метка	->Dynamic->Data->Bool	->Dynamic->Data->Double	->Dynamic->Data->Int1	->Dynamic->Data->String
...	...	...	...	...
08/27/2020 13:17:45	0	-	-	Abc
08/27/2020 13:17:50	0	-	-	Abc
08/27/2020 13:17:55	0	-	-	Abc
08/27/2020 13:18:00	0	-	-	Abc
08/27/2020 13:18:05	0	-	-	Abc
08/27/2020 13:18:10	0	-	-	Abc
08/27/2020 13:18:15	0	-	-	Abc
08/27/2020 13:18:20	0	-	-	Abc
08/27/2020 13:18:25	0	-	-	Abc
08/27/2020 13:18:30	0	-	-	Abc
08/27/2020 13:18:35	0	-	-	Abc
08/27/2020 13:18:40	0	-	-	Abc
08/27/2020 13:18:45	0	-	-	Abc
08/27/2020 13:18:50	0	-	-	Abc
08/27/2020 13:18:55	0	-	-	Abc
08/27/2020 13:19:00	1	-	-	Abc123@#SA6a321%?*
08/27/2020 13:19:05	1	-	-	Abc123@#SA6a321%?*
08/27/2020 13:19:10	1	-	-	Abc123@#SA6a321%?*
08/27/2020 13:19:15	1	-	-	Abc123@#SA6a321%?*
08/27/2020 13:19:20	1	-	-	Abc123@#SA6a321%?*
08/27/2020 13:19:25	1	-	-	Abc123@#SA6a321%?*
08/27/2020 13:19:30	1	-	-	Abc123@#SA6a321%?*
08/27/2020 13:19:35	1	-	-	Abc123@#SA6a321%?*
08/27/2020 13:19:40	1	-	-128	Abc123@#SA6a321%?*
08/27/2020 13:19:45	1	-	-	Abc123@#SA6a321%?*

e. OPC HDA supports all the retrieval mode supplied by AP.HDAServer:

The screenshot shows the 'Select OPC Server' configuration window. The 'Data retrieval mode' dropdown is expanded, listing various modes such as 'Full', 'AVERAGE', 'Count', 'Delta', 'END', 'END\_EXANY', 'END\_EXGOOD', 'EXMAXIMUM', 'EXMINIMUM', 'Full', 'MAXIMUM', 'Maximum Actual Time', 'MINIMUM', 'Minimum Actual Time', 'Start', 'TIMEAVERAGE', and 'Total'. The 'Retrieve data each' field is set to 600 seconds. The 'Server List' on the right includes AlphaOPCUA\_HDA, AlphaOPC\_DA, AlphaOPC\_HDA, Alpha\_Alarms, Buildings, DailyProfile, DreamReport, Energy, FF-1911-RR, FF-2904-RR, OEE, Process, and Process\_Setpoint.



3. Direct SQL results:

- a. Connecting over DSN directly to event history table ODS testing team were able to retrieve the data out of PostgreSQL database:

“SELECT T.Severity, T.Message, T.Time, T.NewState, T.Category, T.EventType FROM event\_history T WHERE Time >= '2020-06-22 10:30:09.000' AND Time < '2020-06-22 10:42:09.000' AND (( Category LIKE '%') )”

severity	message	time	new state	category	eventtype
...	...	...	...	...	...
700.00	-- достигнут низкий допустимый уровень.	06/22/2020 10:31:02	3.00	Level	Condition
700.00	-- достигнут низкий допустимый уровень.	06/22/2020 10:39:57	3.00	Level	Condition



Conclusions:

- Dream Report team has ran several integration test and proved several possible ways of getting various types of the data out of Alpha Platform:
  - a. Online (realtime)
  - b. Historical data
  - c. Alarms