



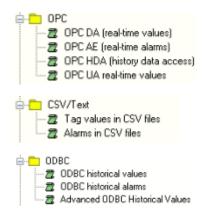
Dream Report[®] Tech Note – March 10, 2017 Using Dream Report with KEPServerEX

Dream Report is the leading 'Industrial" solution for compliance and performance, reports and dashboards. With over 70 drivers, Dream Report offers a way to connect to virtually any industrial and business data source.

As is typical with most connectivity, there are a variety of ways that Dream Report can communicate with specific products such as KEPServerEX, by Kepware.

KEPServerEX offers a variety of features and functions that can be interfaced with Dream Report in the following ways:

- Drivers OPC DA Server to Dream Report's OPC DA Client
- Drivers OPC UA Server to Dream Report's OPC UA Client
- Historian OPC HDA to Dream Report's OPC HDA Client
- Alarms OPC AE Server to Dream Report's OPC AE Client
- EFM CSV Outputs to Dream Report's automatic CSV file processing
- EFM SQL Outputs to Database and Dream Report's ODBC Driver to Database
- Data Logger SQL Outputs to Database and Dream Report's ODBC Driver to Database



Kepware KEPServerEX Compatible Drivers

OPC to KEPServerEX (Real-time Data)

OPC Real-time Connectivity

The industry standards supported by KEPServerEX for real-time connectivity include OPC DA and OPC UA. Dream Report offers an OPC DA and an OPC UA Client connection that can be used to retrieve and set KEPServerEX real-time Tag data. For a local (on node) connection, OPC DA is the best choice as configuration is completely automatic. In Dream Report, you would enable the OPC DA Client interface, browse to the KEPServerEX instance and select it. Once complete, Dream Report will browse tags as you



are configuring Report Objects. Note – Dream Report delivers a Data logger that can also log tags to the database of your choice for future reporting.

Select OPC Server			×
_	O Backup OPC Server ngle client connection Advanced options	OPC server secured Login Password	access
Computer Name	\\localhost		Browse Network
Select Server	Kepware.KEPServerEX.V6	~	Iest Connection
		<u>R</u> efresh Server List	
Data retrieval mode			
Full	Cyclic Retrieve data ea	ach : 600	Seconds
<u>D</u> K	Cancel		

Dream Report OPC DA Configuration

In cases where Dream Report is operating on another computer, there are several choices for connectivity.

- OPC DA Connectivity through DCOM
- OPC DA Connectivity using the Dream Report Remote Driver
- OPC UA Connectivity

OPC DA connectivity through DCOM is typically avoided due to the complexity of setup and long term maintenance.

OPC DA and Remote Driver - Dream Report offers a special Remote Driver that will handle high performance (compression enabled) and secure connectivity. The Remote Driver enables Dream Report drivers (OPC DA) to be installed on a remote computer and that computer will support a web service communications interface with user configured ports and authentication. That service is used by Dream Report as a bridge to its remote drivers. Note that Dream Report, using the Remote Driver, can run as a Service or as an Application, regardless of the status of the remote computer.

OPC UA Connectivity – Dream Report offers an OPC UA Client Driver. The benefit of OPC UA is that it is natively Internet Ready and will communicate through properly configured firewalls. It offers remote connectivity through a defined Port with user specified levels of security. Once complete, Dream Report



will browse tags as you are configuring Report Objects. Note – Dream Report delivers a Data logger that can also log tags to the database of your choice for future reporting.

Computer Name	localhost	Browse Network	
Select Server	KEPServerEX/UA@Aware-PC ~	Test Connection	
Port	49321 Refresh Server List		
erver access prop	erties		
Configuration	opc.tcp://127.0.0.1:49320 - None - None ~		
Athentification se	ettings		
Security policy	UserName ~		
Login			
Password			
Certificate			
Private key			

Dream Report OPC UA Configuration



OPC HDA to KEPServerEX (Historian Data)

OPC HDA connectivity is easy to set up with Dream Report. Connectivity is typically local (on node). In that case, the user simply selects the OPC HDA interface in Dream Report and browses to the KEPServerEX instance running on the computer.

lect OPC Server	
Main OPC Server OBackup OPC Server	OPC server secured access Login Password
Computer Name Wocalhost Select Server Kepware.KEPServerEX_HDA	.V6 V Lest Connection
[<u>R</u> efresh Server List
Data retrieval mode	
Full V Retriev	ve data each : 600 Seconds

Dream Report OPC HDA Configuration

It is important to note that Dream Report supports the variety of aggregations (data retrieval modes) that the Kepware Historian supports. These enable the user to create a connection to historian for raw data, Interpolated, Maximum, Minimum, Average, Total, etc. By using Sample Modes, the user can improve the performance of working with large data sets, by avoiding the transfer of large amounts of data from one computer to another, or between applications. For smaller data sets, Dream Report can be just as effective at generating these metrics.

Remote Historian Connectivity

Dream Report offers a special Remote Driver that will handle high performance (compression enabled) and secure connectivity to a Remote KEPServerEX Historian. The Remote Driver enables Dream Report drivers to be installed on a remote computer and that computer will support a web service communications interface with user configured ports and authentication. That service is used by Dream Report as a bridge to its remote drivers. Note that Dream Report, using the Remote Driver, can run as a Service or as an Application, regardless of the status of the remote computer.



OPC AE to KEPServerEX (Real-time Alarms)

OPC AE enables the real-time collection of alarm and event messages. Dream Report offers an OPC AE driver that will connect to the KEPServerEX OPC AE Server. Dream Report can then be configured to log that data for future reporting. The OPC AE connection should be local (on node). The Dream Report OPC AE client connection is very simple and the user needs only select the KEPServerEX server from the list to enable communications.

Select OPC Server		×		
Main OPC Server Backup OPC Server Server requires single client connection Event mode	OPC server secured a Login Password			
Computer Name Wocalhost Select Server Kepware.KEPServerEX_AE.VE	Wocalhost Kepware KEPServerEX_AE.V6			
	<u>R</u> efresh Server List			
Data retrieval mode				
Full Cyclic Retrieve data ex	ach : 600	Seconds		
<u>Q</u> K <u>C</u> ancel				

Dream Report OPC AE Configuration

Automatic CSV Processing of KEPServerEX EFM Data

Dream Report offers some very powerful automated CSV file processing. There are two CSV Drivers under Open Communication Protocols in Driver Configuration. They are the Tag Values in CSV Files and Alarms in CSV files. The Tag Values in CSV Files will be the driver to use for EFM Data. The CSV Driver lets you select the directory where files will be placed. As they are placed or updated in that location, Dream Report will automatically process any new data. The Driver configuration let you specify date/time formats used, separator, check-up rate, and which columns in the EFM data file hold Date/Time information. The rest is automatic. Dream Report will read the additional column headings and use them to define Tags for report generation.



The user will also configure the Data Logger function in Dream Report to process data into a database of user choice. The data logger will be set to record selected values "On Update."

Data File(s) Location Select Folder to Locate Files		
C:\Users\Aware\Documents		
Static data files (names separated	hu : for avample: (1:(2:(2))	File Extensio
<u>5</u> tatic uata nes (names separateu	by , for example. 11,12,13,)	
		CSV
Delete File After Processing		
File Access Configuration	Connection to Data File(s)	
File Structure:	Connection Status	
Simple Database	CONNECTED	Connect
Coloumn-Item		3600
🔾 Use File name as Item name	Update Checkup Rate	3600
Data Access Configuration	Data Delimiter	, v
Item Name		
×	Text Qualifiers	
Item Value	Timestamp Format	
×	Select Timestamp Type: dd/	mm/yyyy H:M:S 🔍
Date	Select Custom	
when ~	Timestamp Format	
Time	LITC Time format	
when \checkmark		
Milliseconds:		
~		

Configuring the Dream Report CSV Driver for KEPServerEX EFM Exporter CSV Files

Accessing Remote CSV Files

Dream Report offers a built in "FTP Transfer Engine" that can be configured to automatically collect files from remote sources, and place those files in designated directories. Then, Dream Report will automatically process those files for future report generation.



Enable FTP downloads		Configuration Name	Descript	ion	Copy files to folder	
Definitions list	+	Data Files	se are t	he remote CSV data files	C:\FTP	***
Deta Files		Import files from FTP Address		User Name		Import file extentions
		192.168.1.24		user		
				Password		
		FTP Port 2	21	•••••		C Harmer
		Connect in Passive Checkup rate 10 Induding subfolde	minute(s;	Connection timeout	Delete	Test Connection msec msec
		FTP Address		Description		
		192.168.1.24		These are the	remote CSV data files	

FTP Transfer Engine Configuration

ODBC Connectivity to KEPServerEX EFM Data in a Database

Dream Report offers some very powerful mapping to data stored in a relational database. A variety of schema formats are supported. The driver enables the user to select a database and table with-in it, and then map to the Date/Time column. Once mapped (typically only done once at the beginning of a project), Dream Report objects can browse the tags from the database and query data based on date/time queries as it would any other historian source.



Dream Report

				×	
– Database [Definition				
DSN File	Process		\sim	Select database type	
User Name				Column-Item structure 🗸 🗸	
Password					
Connected	to the database successfully!			Connect	
Alarm Histo	xy Data	7.0	tem History	Data	
Table Na	ame For Alarm History		Tables Fo	or Item History	
Batch_D			Batch_Da		
Batch_ID)		Batch_ID		
Energy Energy	D		Energy		
MES Da			Energy_Profile MES_Data		
_	essor_Tbl		PreProcessor_Tbl		
Setpoint	-		Setpoint		
Table Fiel	d For Alarm ID		Table Field	For Item Names	
Table Fiel	d For Alarm Text		Table Field	For Item Values	
Table Fiel	d For Alarm Priority		Table Fiel	d For Date	
	~		Timestamp	~	
Table Fiel	d For Start Time		Table Fiel	d For Time	
	~		No special	field ~	
Table Fiel	d For Ack Time				
	~	T	imestamp pr	roperties	
Table Fiel	d For End Time	D	ate format		
	~			✓ Date only	
Done	Cancel] Database	uses UTC time format	

Dream Report ODBC Mapping to an EFM Exporter ODBC Database

ODBC Driver Connectivity to KEPServerEX Data Logger Data

The previous example of mapping the Dream Report ODBC Driver to History data also applies to data stored to a relational database by the KEPServerEX Datalogger Function. Connectivity is simple. Be sure the database is accessible through the Window 32 bit ODBC Manager. Open the Dream Report ODBC History Values driver. Select the Relational Database and the table. Select the Database Format. Map the appropriate fields and select date/time format and configuration is complete. Dream Report will now be able to browse tags and report on Datalogger data as any other historian.