Schneider Electric Software Connectors

EcoStruxure Geo SCADA Real-time values

This connector is used to get real time values from the Geo SCADA (formerly ClearSCADA) OPC server.

Prerequisites

Permissions

For any OPC DA client, including **XLReporter**, to browse tags and read data, the **Guest** account must have *Browse* and *Read* permissions to the item(s) in the database you wish to make accessible.

In ViewX, on the **Database** tab at the bottom, right click the root branch of the tree (the **System** Name) and select **Configure, Edit Security**.

Permissions				
Select All Deselect All				
🔽 Read	Remove Alarms	V Promote		
Browse	Manual Redirection	Tune Limits		
Control	Unacknowledge Alarms	Annotate History		
Verride/Release	Assign Alarm Responsibility	Modify History		
Acknowledge Alarms	V Edit Notes	Validate History		
View Alarms	🔽 Retrieve Data	✓ Disable Points		

Make sure that either the **Guest** account or **Everyone** has at least *Read* and *Browse* permissions checked.

Verify Communication

Communication between the OPC server and an OPC client must be verified. **XLReporter** provides an independent OPC client to verify connectivity and data retrieval from any OPC DA server. This client is found on **XLReporter's** product CD under **Tools, OPC_DA**. It can also be downloaded from <u>www.SyTech.com</u>.

To run, double-click SampleClientDA.exe.

To connect to an OPC server, select **Edit**, **New Server Connection** to open the **Server Properties window**.

Server Properties		×
General Registered Servers: 	s Servers Version 1.0 s Servers Version 2.0 OPCDA.GEO localhost	
, Prog ID: Remote Machine Name:	Serck.ScxV6OPCDA.GEO.Jocalhost	el

Expand the **OPC Data Access Servers Version 2.0**, select the Geo SCADA OPC DA server and click **OK**.

From the **Edit** menu select **New Group**.

Group Properties			×
Name:	Test		
Update Rate (ms.):	100		
Time Bias (min.):	0		
Percent Deadband:	0		
Language ID:	1033		
Update Notification:	OPC 2.0	✓ Active State	
		ОК	Cancel

Specify Name and click OK.

Click on the group name created, and select Edit, New Item.

Add Items	×
Item Properties Access Path: Item ID: Data Type: Native Active	OK Cancel
Browsing Branch Filter: * B	Leaf Filter: Type: Access: Native Any ServerState ServerStateDesc ServerStateQuality ServerStateQuality ServerStateQualityDesc ServerStateTime
Browse flat address space on selected branch	Add Leaves
☐ Validate item before adding it to the list	Item Count: 0

This opens the **Add Items** window. In the browsing section drill into the tree and select Leaf items on the right. For each leaf you want to view data for, click the **Add Leaves** button. Click **OK** when you have selected the tags to read.

🏝 OPC Quick C	lient - Untitled *					- 0	×
File Edit View	Tools Help						
D 🚅 🔒 📸	💣 💣 😭 👗 🖻 🖻	X					
⊡:: Serck.ScxV	6OPCDA.GEO.localhost	Item ID	Data Type	Value	Timestamp	Quality	
Test		^GEOSCADA.ServerState ^GEOSCADA.ServerStateDesc ^GEOSCADA.ServerStateQuality ^GEOSCADA.ServerStateQualityDesc ^GEOSCADA.ServerStateTime	Long String DWord String Native	21 Main 192 Good Unknown	10:32:20:365 10:32:20:365 10:32:20:365 10:32:20:365 10:32:20:365 10:32:20:365	Good Good Good Good Good	
		(>
Date	Time	Event					
1 3/30/2022	10:51:12 AM	Connected to serv					
0 3/30/2022	10:51:26 AM	Added group 'Test					
W 3/30/2022	10:52:58 AM	Aadea o Items to					
Ready						Item Cou	nt: 5 /

All of the selected tags appear along with their real time values, type, quality, and timestamp.

If the client does not respond as described, contact Schneider Electric technical support to troubleshoot and correct these issues.

Remote Connectivity

To access data from the Geo SCADA OPC DA server remotely, the Geo SCADA Expert Data Access Components need to be installed on the machine where XLReporter is installed.

To install, run the Geo SCADA Expert installation. Under Choose Setup Type, select Custom.



In Custom Setup, only install Data Access (e.g., select every other option and choose Entire Feature will be unavailable).

After installing the **Data Access Components**, from the **EcoStruxure Geo Scada** program group open **Configure Connections**.

In the Geo SCADA Expert Client, click Add.

System Name		SyTech
Туре		Geo SCADA Expert Server \sim
Use Client Lic	ensing	
✓ Visible In Vie	wX	
Connect To F	ully Synch	ronized Server Only
Enable IPv6		
Security		
Workstation Nam	ne	
Default System F	Priority	10
Node A Node B	Node C	Node D
Node Name	GeoSCA	DASvr1
Node Cost	6	
Compress		
	Advan	ced

Set **System Name** to the same **System Name** configured on the Geo SCADA server machine. Under the **Node A** column, set **Node Name** to the Name or IP address of the Geo SCADA server machine.

This now sets up an OPC DA Server for Geo SCADA on the client machine which in turn accesses data from the Geo SCADA server on the network.

Connector

To configure the connector, from the **Project Explorer** select **Data**, **Connectors**.

- Click Add
- Select Schneider Electric Software, EcoStruxure Geo SCADA Real-time values
- Click **OK**

Connector Name	GeoSCADA_DA_1	
Description		
Primary Server		
Name	Serck.ScxV6OPCDA.GEO.localhost	
Node		
		Test Connection
Secondary Serve	er Serck.ScxV60PCDA.GE0.localhost	Test Connection
Secondary Serve Name Node	er Serck.ScxV60PCDA.GE0.localhost	Test Connection
Secondary Serve Name Node	er Serck.ScxV6OPCDA.GEO.localhost	Test Connection

Primary Server

These settings define the **Name** and **Node** of the OPC DA server. For **Name**, click the browse pushbutton [...] to browse the list of OPC DA servers.

For **Node**, leave **local** checked even for remote connections and click **Refresh**. Select the **Server** that starts with *Serck.ScxV6OPCDA* and contains the **System Name** as defined in the Geo SCADA Expert Client.

Use the **Test Connection** button to verify a connection to the server.

Settings

For information on the specific settings, see the DATA CONNECTIVITY, OPC document.

Verify Data Communication

To verify communication, open the **Project Explorer** and select the **Tools** tab. Launch the **System Check** application.

- Click Add
- Choose the *Geo SCADA Real-time values* connector from the dropdown list
- Click the pushbutton ([...]) next to Items to open the **Tag Browser** window
- Select one or more tags, click **OK**
- Click **Start** to verify the communication

EcoStruxure Geo SCADA Historical values

This connector is used to get historical values from the Geo SCADA (formerly ClearSCADA) Historian via the Geo SCADA OPC HDA Server.

Prerequisites

Permissions

For any OPC HDA client, including **XLReporter**, to browse tags and read data, the **Guest** account must have *Browse* and *Read* permissions to the item(s) in the database you wish to make accessible.

In ViewX, on the **Database** tab, right click the root branch of the tree (the **System Name**) and select **Configure, Edit Security**.



Make sure that either the **Guest** account or **Everyone** has at least *Read* and *Browse* permissions checked.

Verify Communication

Communication between the OPC server and an OPC client must be verified. **XLReporter** provides an independent OPC HDA client to verify connectivity and data retrieval from any OPC HDA server. This client is found on **XLReporter's** product CD under **Tools, OPC, OPC_HDA**. It can also be downloaded from <u>www.SyTech.com</u>.

To run, double-click SampleClientHDA.exe.

HDAClient				—		Х
Server Node Server Name Server Name Selected Server localhost::Serok.ScxV60PCHDA.GE	Connect Attrib Disconnect Aggre	utes Status gates Browse			OK	
Item	Add Remove	Synchronous	Start Time	E B	ounds	-
Values	Clear Selection	Read Raw	End Time / Inter	val		_
	Show Items	Read At Time	MayValues	Besam	ole Int	
	Validate Items	Read Processed		60	pio me	1
	Get Item Handles	Read Modified				·
	decitem nandies	Read Attributes				
	Release Item Handles	Asynchronous	Add Timestam	ηp		
	Copy Timestamps	Read Raw]	
	Remove Timestamps	Read At Time	Timestamps			_
		Read Processed				
		Advise Raw				
		Cancel				
			,			

To connect to the Geo SCADA OPC HDA server select the **Server Name** from the dropdown list and click **Connect**.

Click Browse to open the Browse Dialog window.

×
Browse
OPCHDA_FLAT
OPCHDA_DOWN
Get Item IDs
Add Done

The easiest way to get a list of tags is to set **OPCHDA_BROWSETYPE** to *OPCHDA_FLAT*. Choose each tag to test by selecting it and clicking **Add**. When complete, click **Done** to return to the **HDA Client** window.

Click **Show Items** to display the selected tags in the left pane window. Click **Validate Items** then **Get Item Handles** to register these tags with the server.

Enter the **Start Time** and **End Time**. Note this is in UTC(Universal Time Clock) and click **Read Raw**. The raw values for each selected tag will appear on the left along with a timestamp and quality. To read processed data, click **Aggregates**, select the appropriate aggregate (e.g., maximum, minimum, etc.). and click **Read Processed**. One minute calculations between the start and end time should appear for each selected tag.

If the client does not respond as described contact Schneider Electric technical support to troubleshoot and correct these issues.

Remote Connectivity

To access data from the Geo SCADA OPC HDA server remotely, the Geo SCADA Expert Data Access Components need to be installed on the machine where XLReporter is installed.

To install, run the Geo SCADA Expert installation. Under Choose Setup Type, select Custom.



In Custom Setup, only install Data Access (e.g., select every other option and choose Entire Feature will be unavailable).

After installing the **Data Access Components**, from the **EcoStruxure Geo Scada** program group open **Configure Connections**.

In the Geo SCADA Expert Client, click Add.

System Name		SyTech
Туре		Geo SCADA Expert Server \sim
Use Client Lic	ensing	
Visible In Vie	wX	
Connect To F	ully Synch	ronized Server Only
Enable IPv6		
Security		
Workstation Nam	ne	
Default System F	Priority	10
Node A Node B	Node C	Node D
Node Name	GeoSCA	DASvr1
Node Cost	6	
Compress		
	Advan	ced

Set **System Name** to the same **System Name** configured on the Geo SCADA server machine. Under the **Node A** column, set **Node Name** to the Name or IP address of the Geo SCADA server machine.

This now sets up an OPC HDA Server for Geo SCADA on the client machine which in turn accesses data from the Geo SCADA server on the network.

Connector

To configure the connector, from the **Project Explorer** select **Data, Connectors**.

- Click Add
- Select Schneider Electric Software, EcoStruxure Geo SCADA Historical values
- Click **OK**

Connector Name	GeoSCADA_History_1	
Description		
Primary Server		
Server Name	Serck.ScxV6OPCHDA.GEO.localhost	
Node	✓ local	
	Test Connection	
Secondary Serve		
Server Name	Serck.ScxV6OPCHDA.GEO.localhost	
Node	✓ local	
	Test Connection	
	Settings	

Primary Server

These settings define the **Name** and **Node** of the OPC HDA server. For **Name**, click the browse pushbutton [...] to browse the list of OPC HDA servers.

For Node, leave local checked and click **Refresh**. Select the **Server** that starts with *Serck.ScxV60PCHDA* and contains the **System Name** as defined in the Geo SCADA Expert Client.

Use the **Test Connection** button to verify a connection to the server.

Settings

For information on the specific settings, see the DATA CONNECTIVITY, OPC document.

Data Group

The following describes the historical data group settings specific to the **Geo SCADA Historical** Values connector.

Group Types

The following group types are available:

Summary Values from Server

This group type retrieves summary calculations directly from the historian. The following calculations are available:

- Interpolated
- Average
- Maximum
- Time of Maximum
- Minimum
- Time of Minimum
- Range
- Standard Deviation
- Total
- Count
- Raw Average
- Start Value

- End Value
- Delta
- Variance
- Range
- Duration Good
- Duration Bad
- Percent Good
- Percent Bad

Summary Values from XLReporter

This group type retrieves sampled values from the historian and performs calculations on those samples for reporting.

By default, summary values are calculated time weighted, and values are propagated based on the last known value. However, to change this so that summary values are calculated strictly on the data returned check **use raw values**.

Raw Values

This group retrieves values logged to the historian between the start and end time specified.

Group Settings

Setup Tab (Summary Values for XLReporter)

The **Retrieval** settings define how data is retrieved for the calculations selected for the group. The following settings are available:

Retrieval Mode

This setting defines how data is retrieved from the historian. Both *Sampled Values* and *Raw Values* are available where *Sampled Values* uses the *Interpolated* calculation.

Rate

The interval (in seconds) that sampled values are retrieved from the historian.

• Lead Time The amount of time (in seconds) to retrieve data before the start time.

Verify the Data Connector

From the XLReporter Project Explorer select, Tools, Connector Groups

Select the Geo SCADA Historical Values connector and then select Add.

• Set the **Type** *Raw Values* and click **OK**.

On the **Columns** tab of the group, select the tag **Name**(s).

Select Preview, pick a Start date and click Refresh.

EcoStruxure Geo SCADA Alarms and Events

This connector is used to get alarm and event data from Geo SCADA (formerly ClearSCADA) Historian via the Geo SCADA OLE DB provider.

Remote Connectivity

To access data from the Geo SCADA OLEDB provider remotely, the Geo SCADA Expert Data Access Components need to be installed on the machine where XLReporter is installed.

To install, run the Geo SCADA Expert installation. Under Choose Setup Type, select Custom.



In Custom Setup, only install Data Access (e.g., select every other option and choose Entire Feature will be unavailable).

After installing the **Data Access Components**, from the **EcoStruxure Geo Scada** program group open **Configure Connections**.

In the Geo SCADA Expert Client, click Add.

System Name		SyTech
Туре		Geo SCADA Expert Server \sim
Use Client L	icensing	
✓ Visible In Vi	ewX	
Connect To	Fully Synch	nronized Server Only
Enable IPv6		
Security		
Workstation Na	me	
Default System	Priority	10
Node A Node B	Node C	Node D
Node Name	GeoSCA	DASvr1
Node Cost	6	
Compress		
	Advar	nced

Set **System Name** to the same **System Name** configured on the Geo SCADA server machine. Under the **Node A** column, set **Node Name** to the Name or IP address of the Geo SCADA server machine.

Connector

To configure the connector, from the **Project Explorer** select **Data, Connectors**.

- Click Add
- Select Schneider Electric Software, EcoStruxure Geo SCADA Alarms and Events
- Click **OK**

Connector Name	GeoSCADA_Alams_1
Description	sytech
Primary Database	
Туре	EcoStruxure Geo SCADA Expert
Data Source	sytech
Table/Column	
Table	CDBEventJournal \checkmark
Date Column	Time ~
	☑ Date includes Time
Time Column	~
	Settings

Primary Database

These settings define the connection settings for the Geo SCADA OLEDB provider. For **Type**, click the browse pushbutton [...] to configure.

EcoStruxure Geo SCADA Expert	Connection name	EcoStruxure Geo SCADA Expert
	Data Source	sytech
	Log on to the database	
	User Name	
	Password	
		Test Connection

Set **Date Source** to the *System Name* as defined in the **Geo SCADA Expert Client**. If required, specify the **User Name** and **Password** to a valid user as configured in **Geo SCADA**.

Use the **Test Connection** button to verify a connection to the server.

Table/Column

By default. **Table** is set to *CDBEventJournal* with **Date Column** set to the *Time* column. This table contains alarm and event records where each state is logged as a separate record. For example, for an alarm there is a record when the alarm is activated, a record when it is acknowledged and a record when it becomes inactive.

As an alternative, **Table** can be set to *CDBAlarmSummary* with **Date Column** set to *ActiveTime*. This table records the entire lifecycle of an alarm in a single record. This table is only available if Alarm Summary is enabled in Geo SCADA.

To enable, open Server Configuration. Under Historic Configuration, select Alarm Summary.

SyTech 	Alarm Summary Enabled Choose the time field Changing this index w	on which to inde vill cause existing	x access to Alarm Summary data. data to be removed.
Alarm Summary	Index	Active Time	\checkmark
(압 Archiving (압 Configuration Changes (압 Event Journal	Choose the duration that alarm summaries will be kept online, the duration after which it is made available to be archived and the maximum valid future time. (Subject to Protected Permanent Standby Period.)		
📲 Historic Data	Keep online for	4	weeks
Historic Files	Archive after	4	weeks
🗄 🛅 SQL Query Configuration	Future messages	4	weeks
॒ - ि System Configuration 	Increases in Keep On synchronized from the Permanent Standby s deletion of that data	ine can increase e Main server to ervers already h can occur.	the period of historic data Permanent Standby servers. If the ave data for that extended period the

On the right side, check Enabled and specify the settings according to your system.

Note that the **Table/View** settings specified in the connector are used as the default. When configuring the **Data Group**, a different **Table/View** can be specified for that group.

Settings

The **Settings** button opens the **Settings** dialog that defines characteristics of the database that are used to retrieve data.

Typically, these settings are defaulted correctly based on the Geo SCADA OLEDB provider.

If queries timeout, increase the Client Wait Time.

The delimiter and timestamp settings are typically filled in automatically for the database and can be modified for other databases.

The **Date/Time Storage** settings define how timestamps are stored in the database. Using this setting the timestamps are manipulated when data is retrieved so that local timestamps are submitted in and returned.

Many databases require the Date format to be **YYYY-MM-DD** so that no interpretation needs to occur based on the Region settings of the Windows Operating System. It is recommended to always have this option checked.

Data Group

The following describes the historical data group settings specific to the **Geo SCADA Alarms and Events** connector.

Group Types

📄 Select Group Type 🛛 🗙
O Summary Values from Server
 Summary Values from XLReporter use raw values
Raw Values
◯ Raw Text
◯ Sampled Values
◯ Live Values
O Custom Values
Base on
 delank> ~
OK Cancel

For this connector, the following group types are available:

Raw Values

This group retrieves every alarm logged to the database between the start and end time specified.

Custom Values

This option opens the Database Group builder where a query can be configured to retrieve data from any table in the database.

Group Settings

Setup Tab

Database		
Definition	Specific	\sim
Table/View	✓ Tables ✓ Views	5
	CDBAlarmSummary	\sim
Date Column	ActiveTime	\sim
	✓ Date includes Time	
Time Column		\sim

In the **Database** section, the **Definition** can be set to use the **Table/View** as specified in the *Connector* or to a *Specific* **Table/View** just for this group.

Filters Tab

If the **Perform by Server** option is checked, any filter configured in this tab is put into the *WHERE* clause of the query sent to retrieve data for the group. Otherwise, the configured filtering is performed by the reporting engine after the values are returned. It is recommended to leave this setting checked as the performance is much better.

Verify the Data Connector

From the XLReporter Project Explorer select, Tools, Connector Groups

Select the Geo SCADA Alarms and Events connector and then select Add.

• Set the **Type** *Raw Values* and click **OK**.

On the Columns tab of the group

- Select the first row under the Name column
- Click the browse pushbutton (...)
- In the Tag Browser expand Online, All Event and add Items from the lower left.
- Click **OK** to add these to the group

Sel	ected Columns			
	Name	Scaling	Heading	^
	AckTime		AckTime	
	AggregateName		AggregateName	
	DisabledTime		DisabledTime	
	RecordTime		RecordTime	
	SeverityDesc		SeverityDesc	

Select Preview, pick a Start date and click Refresh.

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