Reporting from VTScada

XLReporter generates Excel based reports from Trihedral's VTScada from current process data, historical data and alarm archives.

The purpose of this document is to describe how to interface **XLReporter** to a VTScada application.

Process Data

When a historian is not used, **XLReporter** can take snapshots of the process data and add it to a new or an existing report, periodically or on event. To prevent excessive build-up of information in a single worksheet, new workbooks and worksheets can be scheduled to be created automatically.

XLReporter retrieves process data from VTScada using the OPC Server provided.

Before you Begin

XLReporter requires the OPC core components installed in order to communicate with VTScada. These components are usually installed as part of the VTScada installation. If the OPC components need to be installed manually, they are provided in the tools folder of the **XLReporter** install CD or from www.OPCFoundation.org.

If **XLReporter** is installed on a PC that is remote to VTScada then a number of settings need to be configured on both the server and client machines. This includes having matching Windows user accounts (with matching passwords) on both machines and enabling DCOM on the machine where VTScada is installed.

For a detailed explanation of the requirements for remote access, please read the OPC Training Institute document *OPC_and_DCOM_5_things_you_need_to_know* that is provided in the Tools folder of the **XLReporter** install CD or from www.SyTech.com.

Configuring the OPC Server

The VTScada OPC server must be configured in the VTScada application in order to connect and retrieve values from the application.

In VTScada, open the **Tag Browser**. Click **New** and set the **Type** to *OPC Server Setup* and click **OK**. On the **ID** tab, enter *XLR* for the **Name**, and on the **Settings** tab enter *XLR* for the **Server Namespace**.

Click **OK**, and then restart the application to complete the setup.

Creating a Real Time Data Connector

To connect **XLReporter** to VTScada for real time data, you will need to create a **Connector**. To do this, open **XLReporter's Project Explorer,** and open **Connectors** from the **Data** tab. In **Connectors**, select **Add**. Under **Trihedral** select **VTScada Real-time values**.
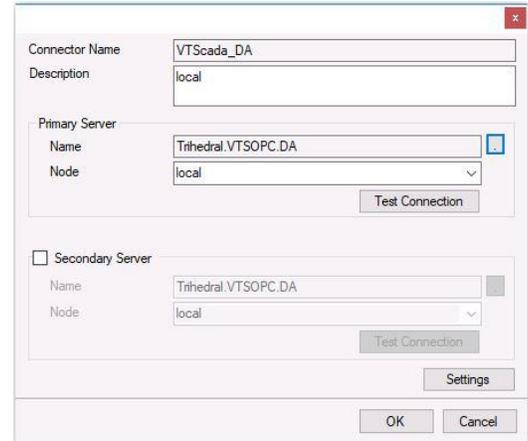

VTScada Real Time Connector

Under **Primary Server**, if the server is on a remote machine, set **Node** to the name of that machine, otherwise leave it set to *local*.

Verifying the Data Connector

To verify the VTScada real time interface, open **XLReporter's Project Explorer**, from the **Tools** tab. Start the **System Check** application and select the **Connector** tab. Select **Add,** choose your VTScada Connector from the dropdown list, and click the browse pushbutton […] to open the **Tag Browser** window.
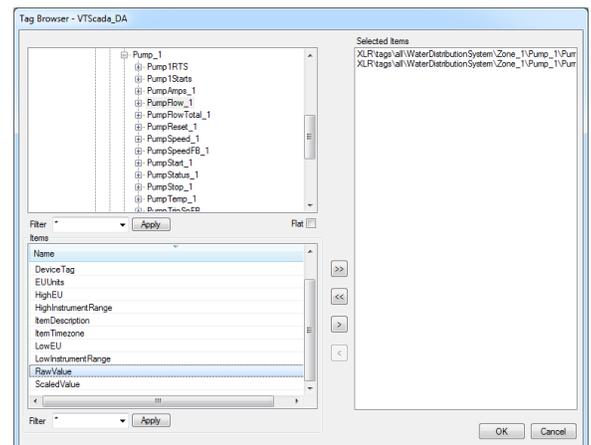
Tag Browser

Select one or more tags and verify that they update with the current value using **Start** in the **System Check** window.

In most cases, the values of interest will be either the **raw value** or the **scaled value**. The difference between these values is that the scaled value is derived from the raw using the *HighEU*, *LowEU*, *HighInstrumentRange* and *LowInstrumentRange*.

Historical Data
Historical data is accessed through VTScada's ODBC driver. Raw data as well as summary calculations based on a user specified time period are supported. e.g., hourly averages of a day.

XLReporter can create reports from the historical data from a local or remote VTScada application.

Configuring the ODBC Server
In order to retrieve historical data, the VTScada application must be configured as an ODBC server.

In the **VTS Application Manager** (VAM), select the **Internet Setup** button (the globe in the footer) to open the **VTS Internet Client/Server Setup** dialog.
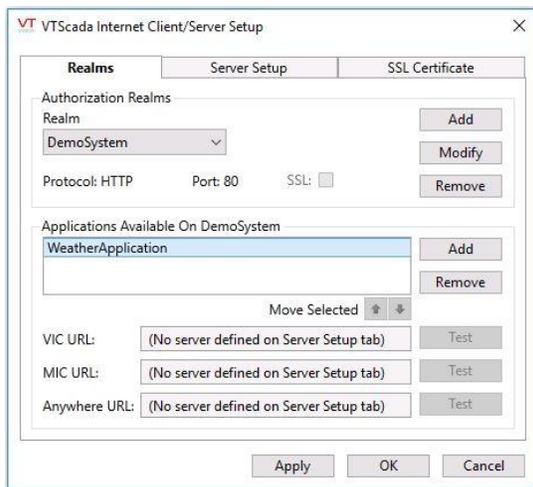

Internet Client/Server Setup

Click **Add** to open the **Add Realm** dialog and specify a name and connection protocol for your server. For the purposes of the ODBC Interface you *must* enable the HTTP protocol. The **Port Number** is normally *80*, the standard HTTP port, unless your network administrator directs otherwise.

Under the **Applications Available On ODBCRealm** section click **Add** to add the application to the **ODBC Realm**. Click **OK**.
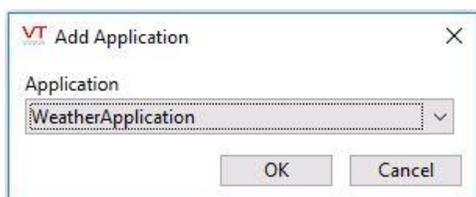
Add Application

In the application, open the **Application Configuration**. Click **Edit Properties**. Click **Advanced Mode.** To add a property, click **Insert**. Set the **Property Name** to *SOAPServicesRealmName* and set **Value** to the name specified for your **ODBC Realm**.
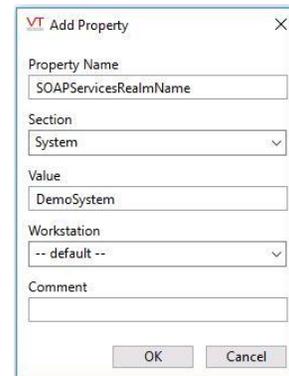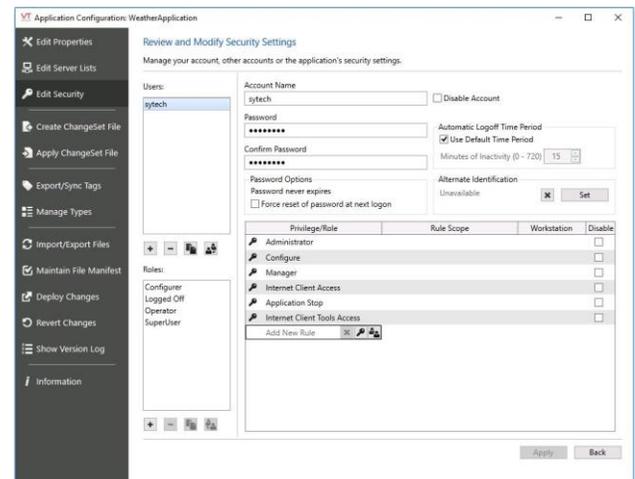

Add Property

Note: You will need to re-start the application after adding this property in order for the changes to take effect.

Configuring a User Account
The VTScada application must be secured with a user name that has internet client access privileges.

From the application, click Logon and you will be prompted to secure the application. Select the user to edit, highlight **Add New Rule** and click the key to choose the privilege to add. Under **Account Control**, choose *Internet Client Access* and click **OK**. Click **Apply** to save the changes.

Connecting to your Application
You can create and view reports from **XLReporter** on any workstation on the network, including those that do not have VTS installed.

On each computer where access is required, run **VTSODBCDriverInstall.exe** (distributed with VTS).

This installs the ODBC driver needed to connect to the VTS database.

After installing the driver, an ODBC data source (DSN) can be created. From **XLReporter's Project Explorer**, under the **Tools** tab, select **Database, Data Sources (ODBC)** to open the **Microsoft ODBC Administrator** utility and add a **System DSN**.
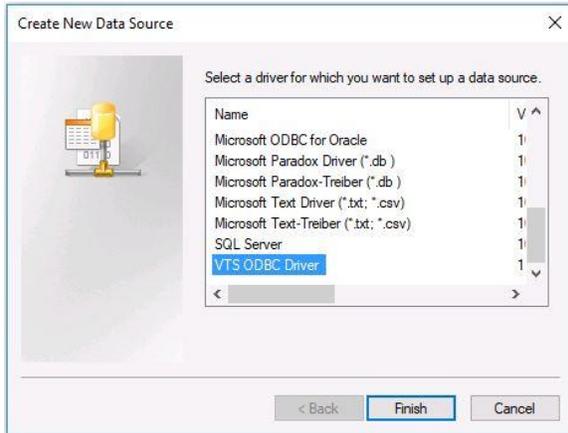
ODBC Data Source Administrator

Under **Name**, select **VTS ODBC Driver** and click **Finish.** This opens the **VTS ODBC Setup** dialog.
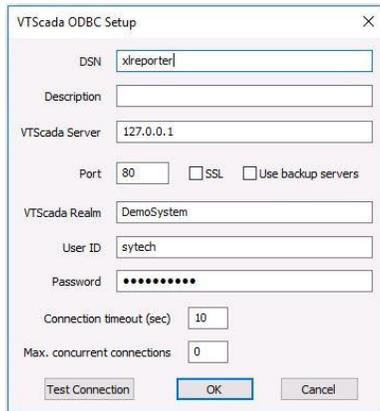
VTS ODBC Setup

For **DSN** enter a name that does NOT match the name of the VTS application. For **VTS Server**, enter the fully qualified domain name of the machine running the VTS application or the IP address. The **Port** and **SSL** settings should match what was entered when configuring the ODBC Realm described in a previous section.

Enter that **User ID** and **Password** of a user having internet client access privileges.

Click **Test Connection** to test the validity of the setup. The application must be running for this to succeed.

If user groups are enabled, the **User ID** specified must be a member of the user group that matches the **VTS Realm** specified in order to connect.

Creating a Historical Data Connector

To connect **XLReporter** to VTScada historical data you will first need to create a **Connector**. To do this, open **XLReporter's Project Explorer,** and open **Connectors** from the **Data** tab. In **Connectors**, select **Add**, and select **Trihedral, VTScada Historical values.**
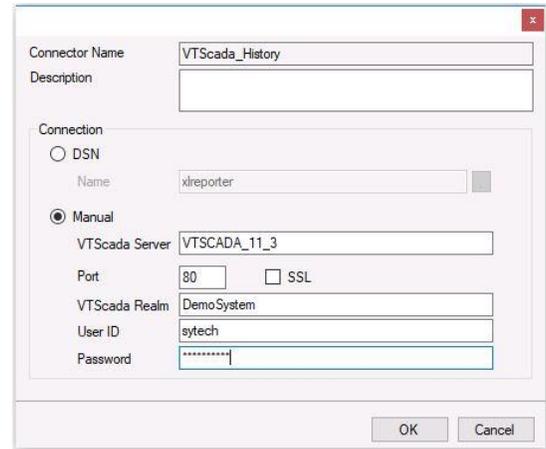
Under **Connection**, specify the connection to the VTScada historian. If you configured a **DSN** in the previous section, specify it as the **Name**. Otherwise configure the **Manual** settings as described in the previous section.

Verify the Historical Data Connector

XLReporter accesses process values stored in the historian using a connector group.

From **XLReporter's Project Explorer**, under the **Tools** tab, select **Diagnostics, Connector Groups**. Select the VTScada history connector and click **Add**.

Select the **Type** of group and click **OK**.

On the **Columns** tab, select the tag **Name** and **Calculation** for each tag in the group.

On the **Time Period** tab, select the **Start Time**, **End Time** and **Interval** for the group. By default this is set to one hour intervals over the current day.

The **Preview** menu can be selected to preview the result of the current configuration.

Alarm Data

VTScada can be configured to record alarm and event data for tags in the system. **XLReporter** can use this alarm data for reporting purposes.

Creating an Alarms Connector

To connect **XLReporter** to VTScada alarm data you will first need to create a **Connector**. To do this, open **XLReporter's Project Explorer,** and open **Connectors** from the **Data** tab. In **Connectors**, select **Add**, and select **Trihedral, VTScada Alarms.**
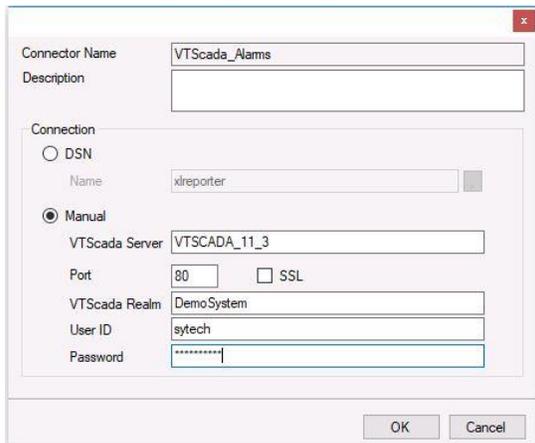
Under **Connection**, specify the connection to the VTScada alarms. If you configured a **DSN** in the history section, specify it as the **Name**. Otherwise configure the **Manual** settings as described in the previous history section.

Verify the Alarm Data Connector

XLReporter accesses process values stored in the historian using a connector group.

From **XLReporter's Project Explorer**, under the **Tools** tab, select **Diagnostics, Connector Groups**. Select the VTScada alarm connector and click **Add**.

Select the **Type** of group and click **OK**.

On the **Columns** tab, select the **Columns** for the alarm data you wish to retrieve.

On the **Time Period** tab, select the **Start Time**, **End Time** and **Interval** for the group. By default this is set to the first 60 values over the current day.

On the **Filters** tab, specify filtering to limit the type or amount of alarms returned. You can filter based on any available column in the alarm table. This includes filtering on alarm type, tag name, etc.

The **Preview** menu can be selected to preview the result of the current configuration.

Historical and Alarm Data Limitations

The number of rows returned from VTScada is limited to *10,000* by default. If necessary, the *SQLQueryMaxResultRows* property can be changed to return more rows. In the **Application Configuration,** click **Edit Properties**. If the property does not exist, it can be added by clicking **Insert**.

Set the **Property Name** to *SQLQueryMaxResultRows* and set **Value** to the desired maximum.
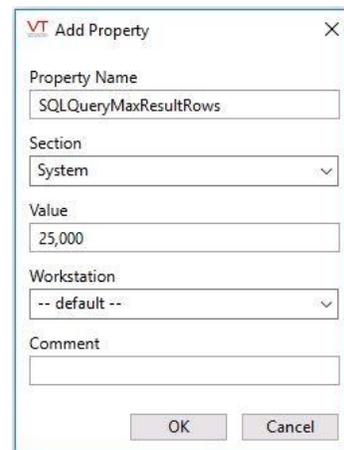

Add Property

Troubleshooting

If you are experiencing issues connecting to or retrieving data from VTScada with **XLReporter**, a generic OPC test client is provided to test the VTS OPC Server.

This client is available from the Tools folder of the **XLReporter** installation disk and can be downloaded from **www.SyTech.com**.

To open, double-click **SampleClientDA.exe**. This opens the **OPC Quick Client** window.
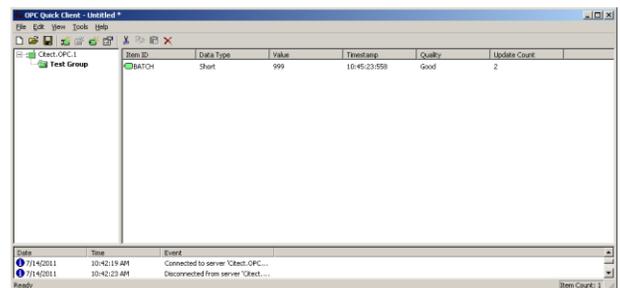
OPC Quick Client

To connect to an OPC server, select **Edit, New Server Connection** to open the **Server Properties window.** Select *Trihedral.VTSOPC.DA* and click **OK**.

Once the connection is made, select **Edit, New Group**. Specify **Name** and click **OK**.

Click on the group name created, and select **Edit, New Item**. This opens the **Add Items** window. Browse for tags and double click any to select. Once tag selection is complete, click **OK** to return to the **OPC Quick Client** window.

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

If at any point you experience an issue with this client, it is an indication that there is something wrong with the VTS OPC server, since now two OPC clients have demonstrated issues.

At this point, contact VTScada technical support to troubleshoot and correct these issues.