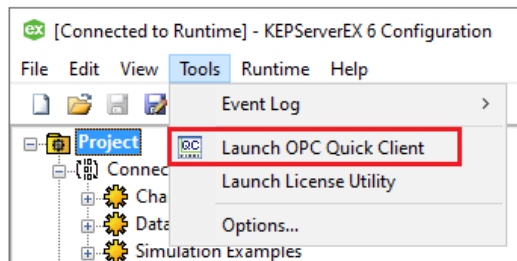# Kepware Connectors

KEPServerEX Real-time values (OPC DA)

This connector is used to get real time values from KEPServerEX via the KEPServerEX OPC DA server.
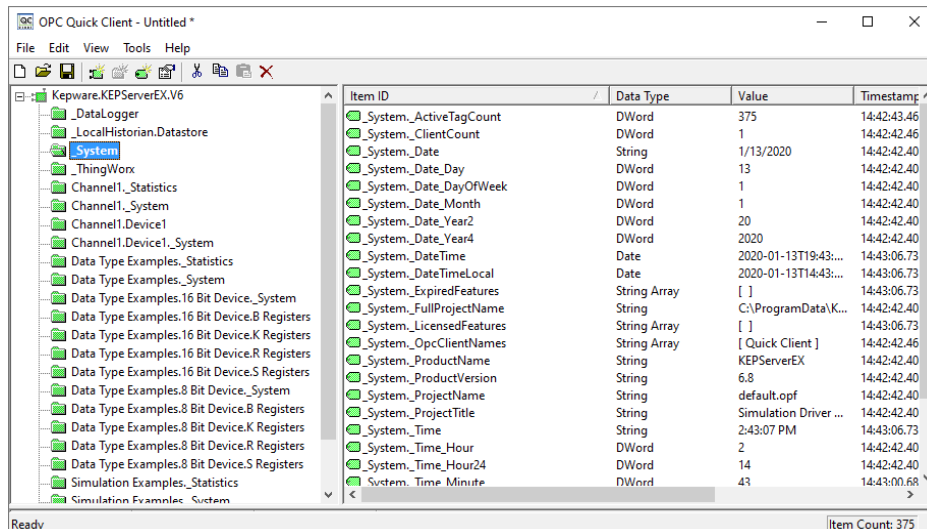
Prerequisites

Verify Communication

From the **Kepware** program group, open the **KEPServerEX Configuration** application then select **Tools, Launch OPC Quick Client**.

Expand **Kepware.KEPServer.EX.V6**, then a folder like **_System**.

- Verify the tags have a good quality data value.

If at any point you experience an issue with this client, contact Kepware technical support to troubleshoot and correct these issues.

Remote Connectivity

If XLReporter is not installed on the same machine as KEPServerEX, the workstation must also have the OPC core components installed. To determine if the core components are installed verify the following file exists:

- C:\Windows\SysWow64\OPCEnum.exe (64-bit OS)
- C:\Windows\system32\OPCEnum.exe (32-bit OS)

If the components are not installed, then they are provided in the XLReporter installation folder under *_repairtools\OPC*. Alternatively, these can be downloaded from www.opcfoundation.org.

Server Settings

To connect to KEPServerEx remotely both the machine where the server is running and the machine where the client is running must have matching Windows user accounts and the client must be logged in with a matching account.

In addition, on the machine with the OPC DA server, certain DCOM settings must be enabled. For details on what DCOM settings to enable, see OPC and DCOM: 5 Things You Need to Know.
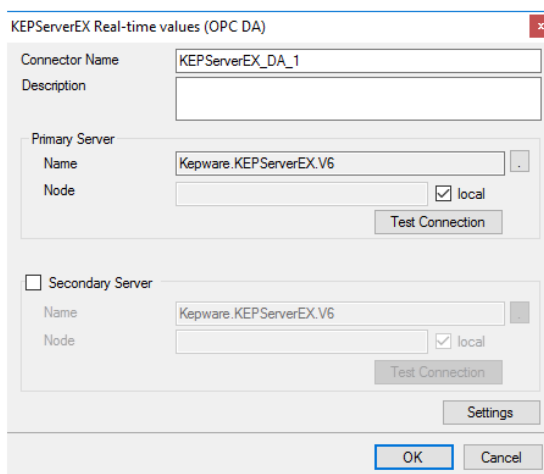
Windows Firewall

If the Windows Firewall is enabled on the machine where KEPServerEx is running **TCP Port** *135* must be opened for remote clients to connect.

Connector

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

- Click **Add**
- Select **Kepware**, **KEPServerEX Real-time values (OPC DA)**
- Click **OK**

Primary Server

These settings define the **Name** and **Node** of the OPC DA server. Typically, the **Name** is defaulted correctly. If the KEPServerEX server is on the local machine, leave **local** checked, otherwise uncheck, and specify either the name or IP address of the machine where KEPServerEX is running.

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

Secondary Server

These settings define the (optional) secondary KEPServerEX to connect to if a connection to the **Primary Server** fails.

Settings

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

Verify Data Communication

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

- Click **Add**
- Choose the *KEPServerEX Connector* from the dropdown list
- Click the pushbutton ([…]) next to Items to open the **Tag Browser** window.
- Select one or more tags and click **OK**
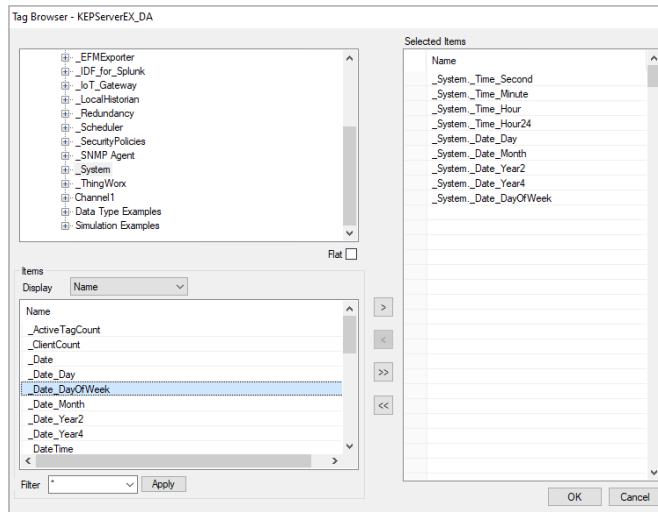
- Click **Start** to verify the communication
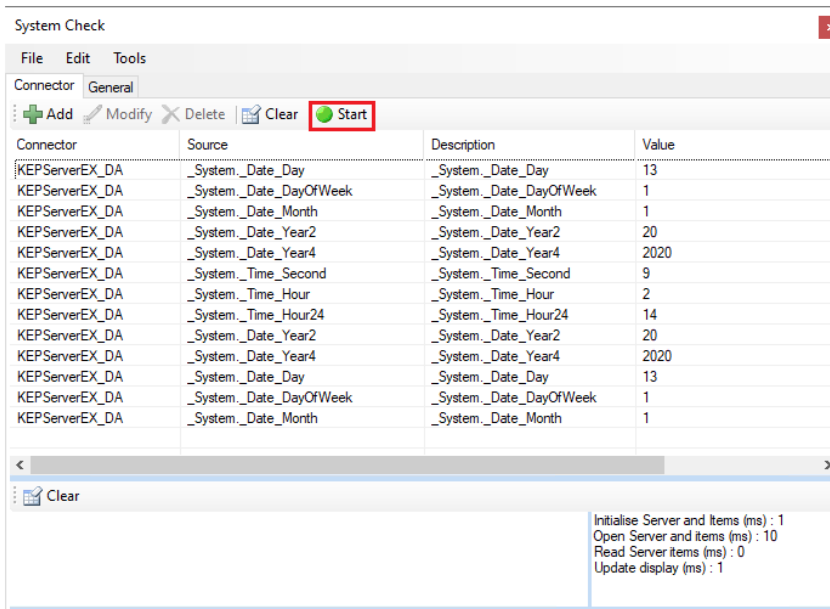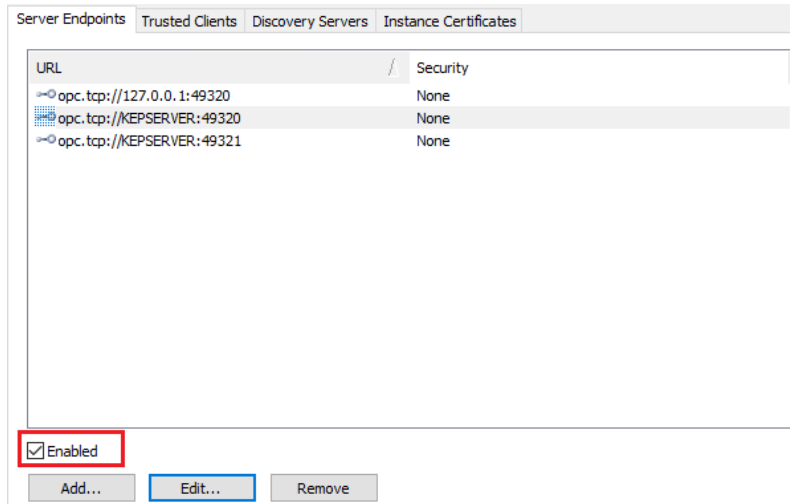

- Click **Start** to verify the communication

KEPServerEX Real-time values (OPC UA)

This connector is used to get real time data from KEPServerEX using the KEPServerEX OPC UA server.

Set up KEPServerEX OPC UA Server

OPC UA Server

To enable the KEPServerEX OPC UA server, from the **Kepware** Program Group, select **OPC UA Configuration**.

Under the **Server Endpoints** tab, check **Enabled**.

Project Properties

From the **Kepware** Program Group, open the **KEPServerEx Configuration**.

To access the project properties, select the **Project** folder and then **Edit**, **Project Properties**.

- Under **Property Groups**, select **OPC UA**.
- Under **Server Interface**, set **Enable** to *Yes*.

Remote Connectivity

If XLReporter is not installed on the same machine as KEPServerEX, the workstation must also have the OPC core components installed. To determine if the core components are installed verify the following file exists:

- C:\Windows\SysWow64\OPCEnum.exe (64-bit OS)
- C:\Windows\system32\OPCEnum.exe (32-bit OS)

If the components are not installed, then they are provided in the XLReporter installation folder under *_repairtools\OPC*. Alternatively, these can be downloaded from www.opcfoundation.org.

Connector

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

- Click **Add**
- Select **Kepware**, **KEPServerEX Real-time values (OPC UA)**
- Click **OK**

Under the **Server** tab, for **Host Name**, select or enter the name or IP address of the machine where the server is running. For **Port** specify the Port as configured in the **KEPSERVER OPC UA Settings** for the **Endpoint** to connect to. This is typically *49340*.

For **Servers at Host** click Find and then choose *KEPServerEX/UA@KEPSERVER*.

For **User Identity** click **Select** to specify.

If the KEPServerEX **OPC UA Project Property** is set to **Allow anonymous login** then **Anonymous** can be selected here. Otherwise select **User Name,** and specify a valid user as configured in the KEPServerEX User Manager.

Security Profile defines the endpoint to connect to for the KEPServerEX OPC UA Server. Select the profile that matches the **Security Policies** set for the endpoint in the **KEPServerEX OPC UA Settings**. To use a specific endpoint, select **Specific** and click the **Select** button.

Click **Get Endpoints** to get the list of available endpoints, select the one that best fits with the server settings and click **OK**.

Click **Connect** to ensure connectivity. This may require an exchange of certificates between the client and the server. If prompted to exchange, click **Yes**. This action requires Windows administrator rights.

If the **Connect** fails, be sure that the client certificate is trusted by the server and then attempt to **Connect** again. For more information, see the Trusted Clients section below.

The **Disable server certificate checks** option can be used to bypass all the checks normally done against the certifcate passed back from the OPC UA server. This is typically used if settings like the *Domain* or *Application URI* do not match what is expected but you would like to proceed with connection. Use this setting with caution as it disables many security features.

Under the **Connection** tab are **Certificate** options and general **Settings**.

The Client Certificate is automatically created on installation. If required, to recreate the certificate select **Create Client Certificate**. For most OPC UA servers, the default settings will be sufficient, but if the server requires more advanced certificate settings you can specify them with the **Advanced** button.

Trusted Clients

In some cases, the client must be accepted by the server to make requests. From within KEPServerEX **OPC UA Configuration**, select the **Trusted Clients** tab.
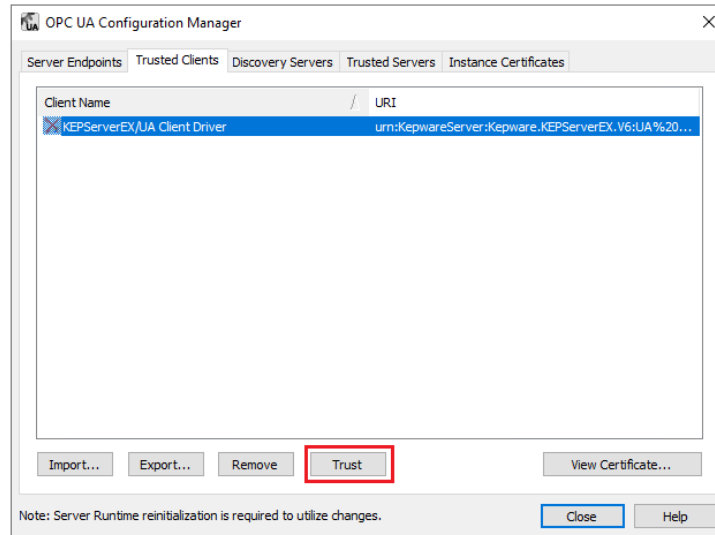

In the list, if the client certificate appears with a red X, select it, and click **Trust** to trust the client certificate.
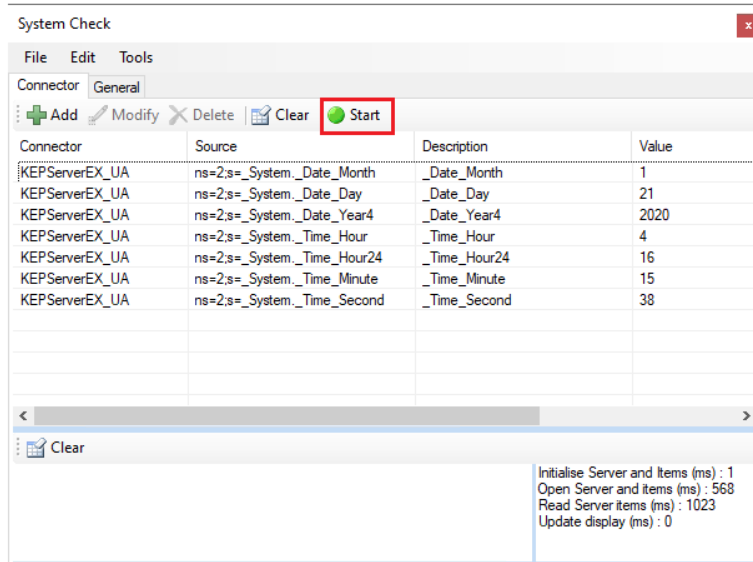
Verify Data Communication

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

- Click Add
- Choose the *KEPServerEX OPC UA Connector* from the dropdown list
- Click the pushbutton ([…]) next to **Items** to open the **Tag Browser** window.
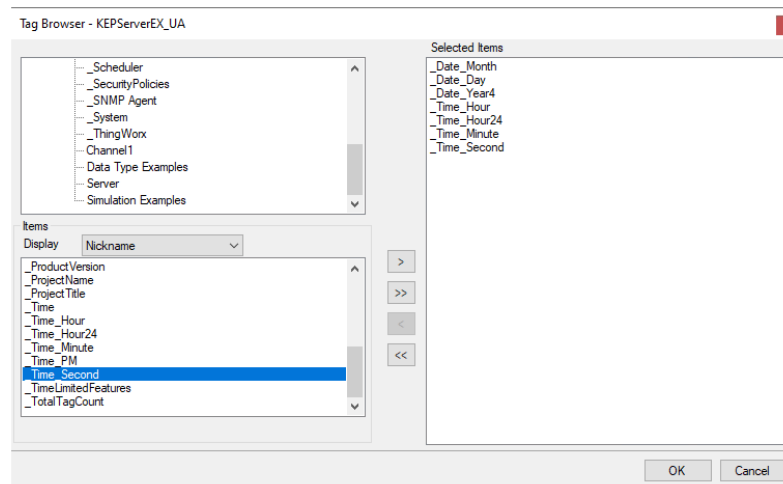
- Select one or more tags, click **OK**
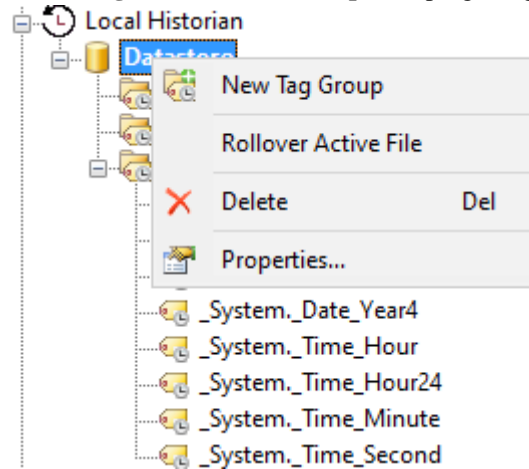
- Click **Start** to verify the communication

KEPServerEX Local Historian

This connector is used to get historical values from KEPServerEX via the KEPServerEX OPC HDA server.

Set up KEPServerEX Local Historian

Add Data Points to Log

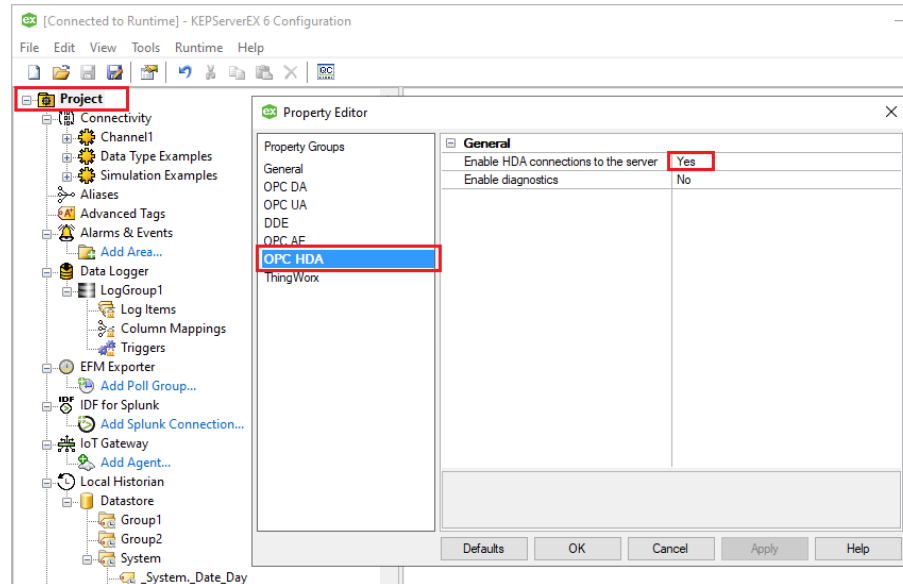Open the **KEPServerEX Configuration** from the **Kepware** program group.

Expand **Local Historian,** right click **Database** and select **New Tag Group**.

- Enter a **Name**
- Select tags to log

Enable OPC HDA Connections

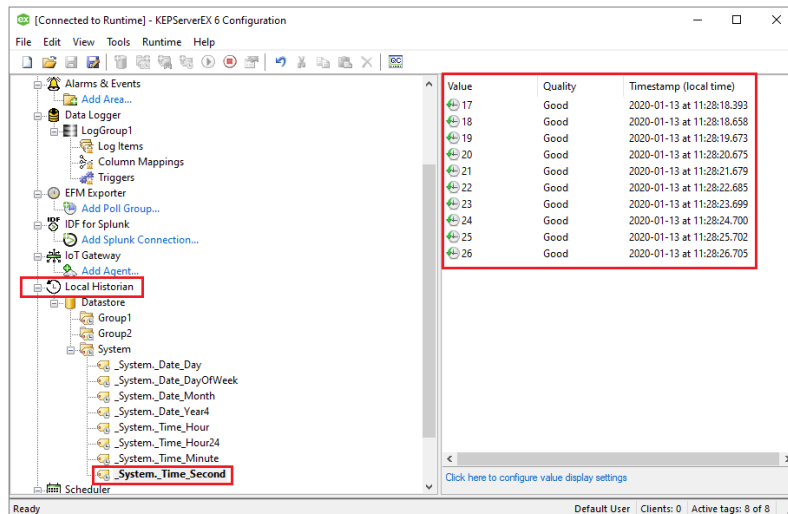In **KEPServerEX Configuration** right click **Project**, select **Properties**.

In the **Property Editor** select **OPC HDA**.

- Set **Enable HDA connections to server** to *Yes*.

Prerequisites

Verify Data Logging

Open the **KEPServerEX Configuration** from the **Kepware** program group.

Expand **Local Historian, Database,** and a specific tag group.

- Select a tag and verify it has data on the right side.

If no data is returned contact Kepware technical support and correct these issues.

Remote Connectivity

If XLReporter is not installed on the same machine as KEPServerEX, the workstation must also have the OPC core components installed. To determine if the core components are installed verify the following file exists:

- C:\Windows\SysWow64\OPCEnum.exe (64-bit OS)
- C:\Windows\system32\OPCEnum.exe (32-bit OS)

If the components are not installed, then they are provided in the XLReporter installation folder under *_repairtools\OPC*. Alternatively, these can be downloaded from www.opcfoundation.org.

Server Settings

To connect to KEPServerEx remotely both the machine where the server is running and the machine where the client is running must have matching Windows user accounts and the client must be logged in with a matching account.

In addition, on the machine with the OPC DA server, certain DCOM settings must be enabled. For details on what DCOM settings to enable, see OPC and DCOM: 5 Things You Need to Know.

Windows Firewall

If the Windows Firewall is enabled on the machine where KEPServerEx is running **TCP Port** *135* must be opened for remote clients to connect.

Connector

Primary Server

These settings define the **Name** and **Node** of the OPC HDA server. Typically, the **Name** is defaulted correctly. If the server is on the local machine, leave **local** checked, otherwise uncheck, and specify either the name or IP address of the machine where server is running.

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

Secondary Server

These settings define the (optional) secondary historian to connect to if a connection to the **Primary Server** fails.

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 **KEPServerEX Local Historian** 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
- Total
- Raw Average

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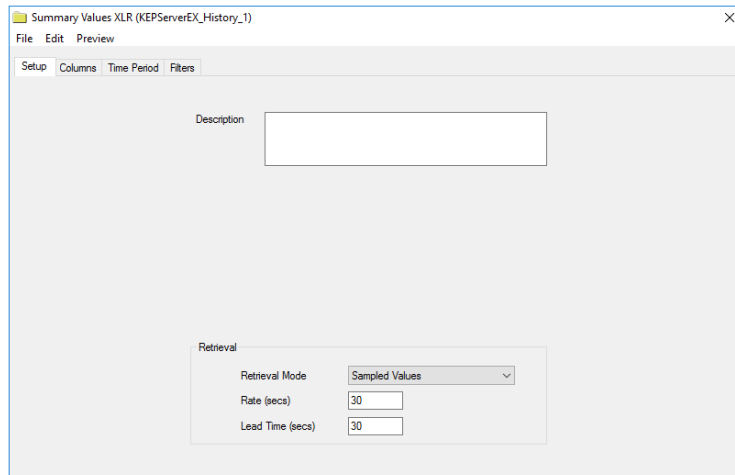
The **Retrieval** settings define how data is retrieved for the calculations selected for the group. The following settings are available:

- **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**
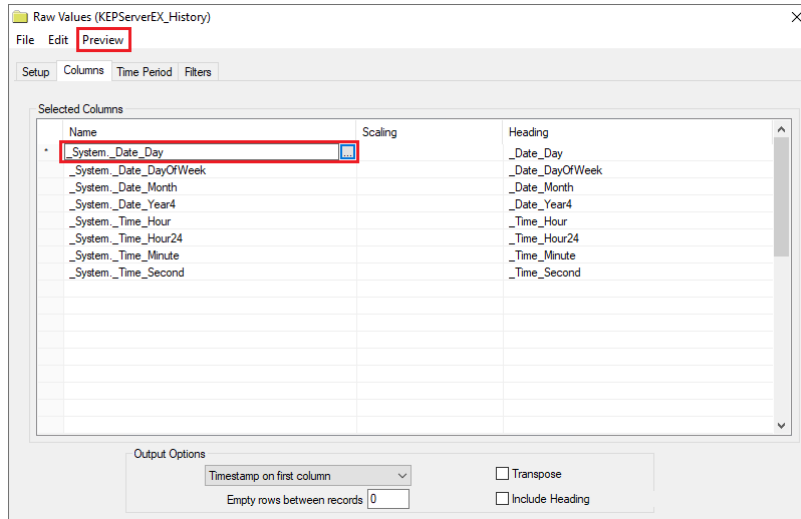 The amount of time (in seconds) to retrieve data before the start time.

Verify the Data Connector

From the **XLReporter Project Explorer** select, **Tools, Connector Groups**

Select the *KEPServerEX Historian* 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.**

Information in this document is subject to change without notice. SmartSights, LLC assumes no responsibility for any errors or omissions that may be in this document. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the prior written permission of SmartSights, LLC.