

# OSIsoft Connectors

---

## PI Historian

This connector is used to get historical data from the PI Historian via the PI OLEDB provider or ODBC driver.

### Prerequisites

#### Installation

##### OLEDB

The PI OLEDB provider is a separate installation. It needs to be installed on the machine where **XLReporter** is installed.

The installation can be found on the installation media under *Advanced Server Options\PIDASSetup\OLEDB Provider*.

##### ODBC

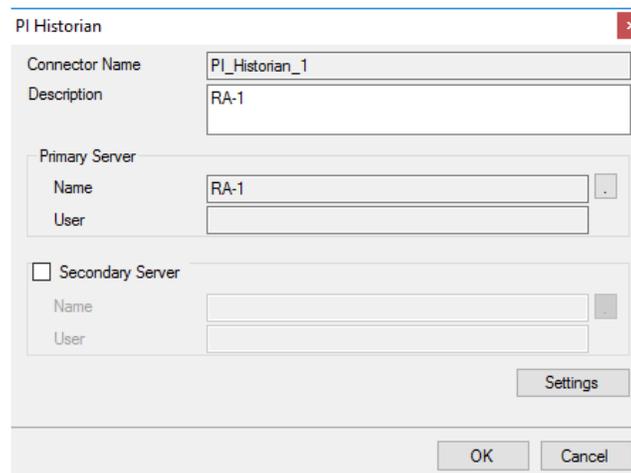
The PI ODBC driver is provided as a separate installation. It needs to be installed on the machine where **XLReporter** is installed.

The installation must be downloaded from the OSIsoft website. On the PI ODBC Driver webpage, click the **All Versions** tab and download and install **PI ODBC Client Install Kit** version **1.3.1.0**.

### Connector

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

- Click **Add**
- Select **OSIsoft, PI Historian**
- Click **OK**



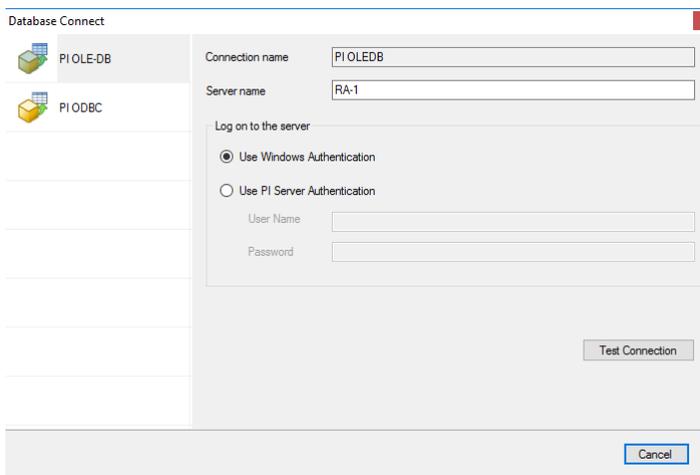
The screenshot shows the 'PI Historian' configuration dialog box. It has a title bar with a close button. The dialog contains the following fields and controls:

- Connector Name:** PI\_Historian\_1
- Description:** RA-1
- Primary Server:**
  - Name:** RA-1 (with a browse button)
  - User:** (empty)
- Secondary Server:** (unchecked checkbox)
  - Name:** (empty) (with a browse button)
  - User:** (empty)
- Settings:** (button)
- OK** and **Cancel** (buttons)

#### Primary Server

This defines the connection to the PI OLE-DB or PI ODBC server for the historian. Click the browse button (...) to define.

## OLEDB



For the PI OLEDB provider set the **Server name** to the name of the machine where the historian is installed and running.

To **Log on to the server** you can use the current windows user or specify a user configured in the Historian as part of the PI System Management Tools.

## ODBC

For the PI ODBC driver, set **PI Data Source Name** to a Data Source Name (DSN) configured on the system. The DSN can either be set up for **All Users** (System DSN) or the **Current User** (User DSN). If you have not already configured a DSN to the PI server, click **New** to create one. Note, for **All Users** you must have Administrator credentials.

When configuring the PI ODBC Data Source, under the **PI Server** settings, set **Name** to the name of the machine where the PI server is installed and running. If **Perform explicit login using PI username and password** is checked, back in the Connector dialog you will have to **Use PI Server Authentication** and specify a **User Name** and **Password** set up in the PI System Management Tools.

If you are retrieving integer values from the historian, set **Interval Values as** to *VALUE*, otherwise you get the *STATUS* (i.e., quality) returned rather than the value for each integer tag.

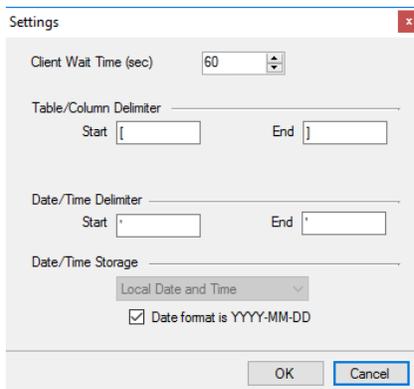
Under **Aggregate Timestamp**, be sure to select **Start of Interval** as **XLReporter** timestamps all historical data with the start of the interval.

## Secondary Server

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

## 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 **Primary Server**.

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.

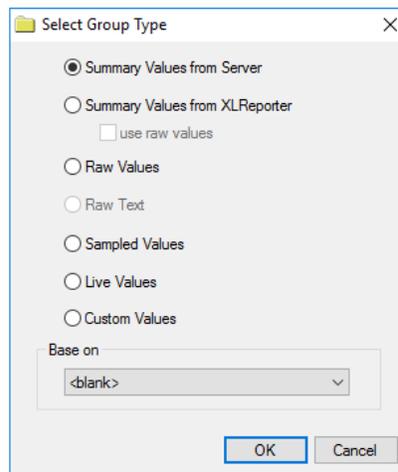
The **Date/Time Storage** settings define how timestamps are stored in the database. Using this setting the timestamps are manipulated when data is retrieved so that local timestamps are submitted in and returned.

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 **PI 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:

- Average
- Maximum
- Time of Maximum
- Minimum
- Time of Minimum
- Count
- Total
- Standard Deviation
- Range
- Mean
- Population Standard Deviation

### 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.

### Sampled Values

This groups retrieves sampled values from the historian between the start and end time specified at the interval specified.

### Live Values

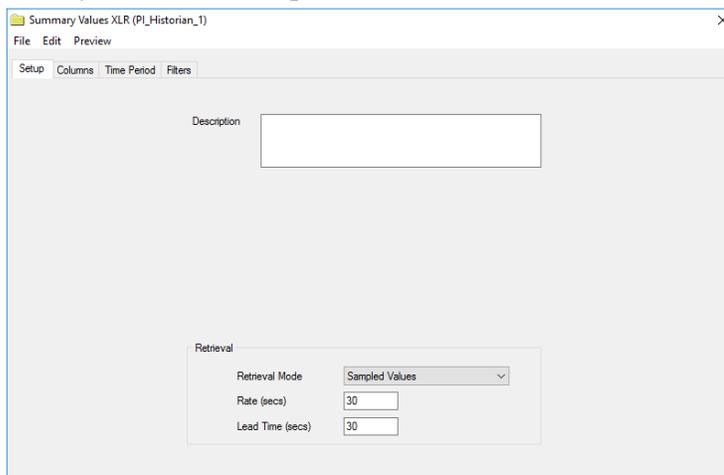
This group retrieves the last recorded values in the historian for every selected tag.

### Custom Values

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

## 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:

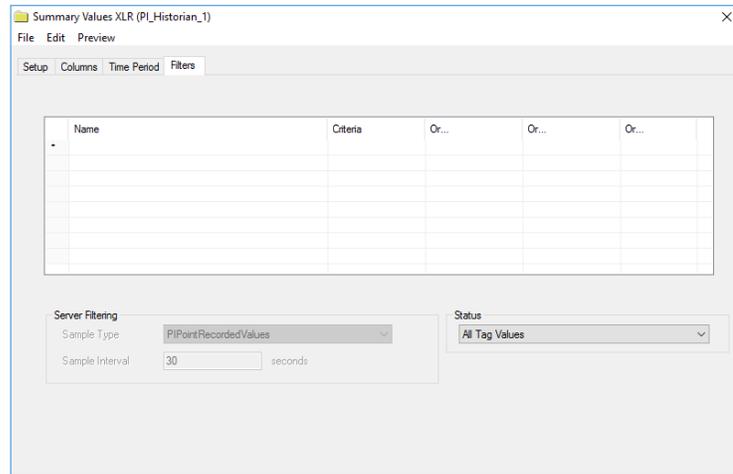
- **Retrieval Mode**  
This setting defines how data is retrieved from the historian. Both *Sampled Values* and *Raw Values* are available.
- **Rate**  
The interval (in seconds) that sampled values are retrieved from the historian.
- **Lead Time**  
The amount of time (in seconds) to retrieve data before the start time.

### Filters Tab (Summary values from Server)

#### Calculation Basis

This setting determines how the server calculations are performed. See PI documentation for details on what each one means.

## Filters Tab (Summary values from XLReporter, Raw Values, Sampled Values)



### Status

This setting can be used to filter the status (or quality) of the values returned. *All Tag Values* means that every value is returned regardless of status where *Only Good Quality* means that values where status is good will be returned by the group.

## Verify the Data Connector

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

Select the *PI 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.

Copyright 2000 - 2023, SmartSights, LLC. All rights reserved.

XLReporter® is a registered trademark of SmartSights, LLC.

Microsoft® and Microsoft Excel® are registered trademarks of Microsoft, Inc.  
All registered names are the property of their respective owners.