



FactoryTalk® Historian SE Reporting

XLReporter generates Excel based reports from Rockwell Software® FactoryTalk Historian SE from data that has been collected and stored.

The purpose of this document is to describe how to interface **XLReporter** to the FactoryTalk Historian

Historical Data

Creating reports from FactoryTalk Historian is performed by simply selecting the tags, a time frame and interval of interest. e.g., hourly averages of the previous day. In this manner, reports containing raw values, informative metrics such as run times and statistics can be easily produced, automatically.

FactoryTalk Historian provides an OPC-HDA Server interface that clients, such as **XLReporter**, can use to retrieve historical information.

Before you Begin

In order for **XLReporter** to communicate with FactoryTalk Historian, the machine where **XLReporter** is installed must also have the OPC core components installed. The OPC core components 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 FactoryTalk Historian then a number of settings need to be configured on both the server and client machines. This includes having matching Windows user accounts on both machines and enabling DCOM on the machine where FactoryTalk Historian is installed.

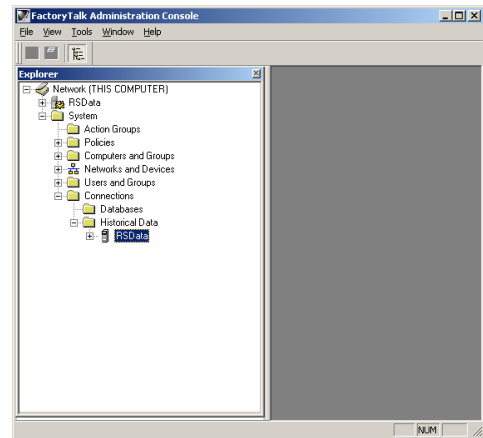
For a detailed explanation of what is needed, please read the OPC Training Institute document *OPC_and_DCOM_5_things_you_need_to_know* that is provided in the Tools folder of the **XLReporter** install CD or from www.TheReportCompany.com.

Pre-requisites to Data Logging

Before data logging can be performed by the FactoryTalk Historian, the **FactoryTalk Network Directory** must be configured with a valid user. This is done by opening the **FactoryTalk Network Directory Configuration Wizard** available from the **FactoryTalk Tools** program group in the Start menu.

Setting up Data Logging

To setup data logging, open the **FactoryTalk Administration Console** and open the **Network Directory** you configured previously.



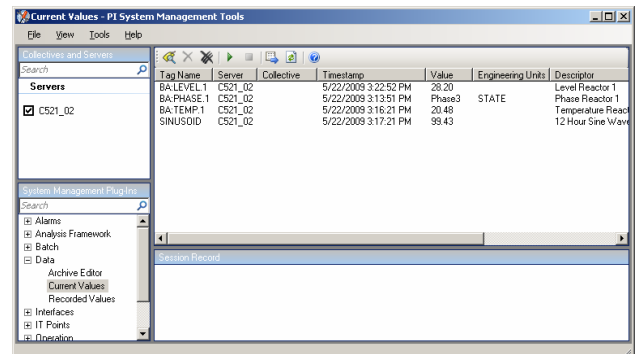
FactoryTalk Administration Console

Configure the historian to log data from one or more interfaces including FactoryTalk View SE, RSLinx® or any available OPC Server. Discovery tools are provided to assist in browsing for available interfaces.

With the FactoryTalk Historian running, any new point added to the Historical Data collection will begin archiving.

To start or stop the Factory Talk Historian, select **Start FT Historian System** or **Stop FT Historian System** from the **FactoryTalk Historian** program group in the Start menu.

The **PI System Management Tools** can be used to modify collection settings and validate that information is being collected. In the **System Management Plug-in window**, expand **Data** to view both **Current Values** and **Archived Values** logged to the FactoryTalk Historian.

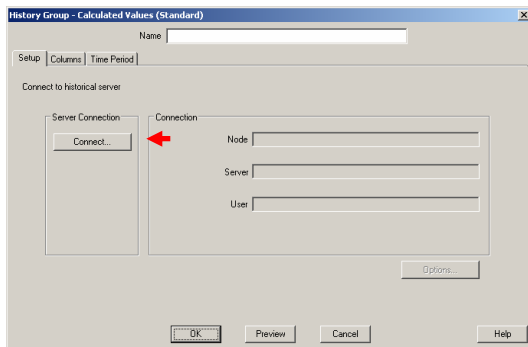


PI System Management Console

Retrieving Historical Data

XLReporter accesses values from the FactoryTalk Historian using a history group.

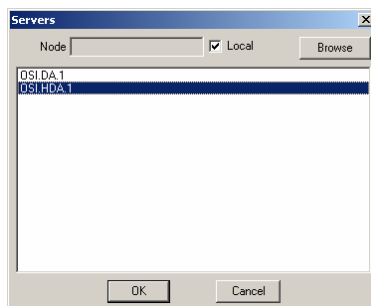
To create a history group, open **XLReporter's Project Explorer**, double click on **History Group** to list the groups that are already configured in the active project. Select **New...** and then the type of group. Calculated values are calculations like average, minimum and maximum, samples values are interpolated values and raw values are the actual samples recorded.



History Group Builder

After selecting the group type, the history group must be connected to the Historian. From the **Setup** tab, click **Connect...** to open the **OPC-HDA Servers** window.

In the **Servers** window, specify the **Node** where the FactoryTalk Historian is installed, or if **XLReporter** is installed on the same machine as the Historian, check the **local** checkbox. From the list of **Servers**, select **OSI.HDA.1** and click OK. This is the OPC-HDA server interface provided by the FactoryTalk Historian.



OPC-HDA Server Browser

From the History Group window select the **Columns** tab, and choose the **Name** and **Calculation** for each tag required in the group. In the group is a calculation group, the following calculations are provided:

- Count
- Start and End value
- Total
- Interpolated sample
- Minimum and Time of Minimum
- Maximum and Time of Maximum
- Standard Deviation
- Average (Time weighted and raw)
- Range
- Delta
- Percentage Good and Bad

From the History Group window, select the **Time Period** tab and 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** pushbutton at the bottom of the history group display can be pressed to preview the result of the current configuration.

Setting	Value	Report Date	Date	MIKER_ZONE1_TEMP	MIKER_ZONE2_TEMP	MIKER_SPEED	MIKER_RAMPRESSURE
MIKER_ZONE1_TEMP	71.3938171386719	3/30/2012	3/30/2012	71.3938171386719	77.1789534250895	33.1370187441508	64.6287203648885
MIKER_ZONE2_TEMP	78.1625205097389	3/30/2012 1:00:00 AM	3/30/2012 1:00:00 AM	63.688605264242	49.0242124239604	36.6801065444346	73.1387713114421
MIKER_SPEED	53.4560168584188	3/30/2012 2:00:00 AM	3/30/2012 2:00:00 AM	74.5661202748617	76.096498363444	50.6953378041585	88.9127839406331
MIKER_RAMPRESSURE	55.929971377055	3/30/2012 3:00:00 AM	3/30/2012 3:00:00 AM	78.5054092407227	65.929971377055	54.0780683517456	90.644298553467
MIKER_ZONE1_TEMP	63.6706168432635	3/30/2012 4:00:00 AM	3/30/2012 4:00:00 AM	72.0215874989828	63.6706168432635	53.4231768295985	86.9440397898356
MIKER_ZONE2_TEMP	53.5336532274882	3/30/2012 5:00:00 AM	3/30/2012 5:00:00 AM	65.3895225524902	53.5336532274882	59.6284706751506	79.0512536366781
MIKER_SPEED	74.3869140625	3/30/2012 6:00:00 AM	3/30/2012 6:00:00 AM	71.5103735605876	74.3869140625	59.4726551055908	69.7432478586833
MIKER_RAMPRESSURE	60.0900380508423	3/30/2012 7:00:00 AM	3/30/2012 7:00:00 AM	78.2382620493571	60.0900380508423	60.3853614171346	62.2715770085653
MIKER_ZONE1_TEMP	61.3104316393534	3/30/2012 8:00:00 AM	3/30/2012 8:00:00 AM	71.5103735605876	61.3104316393534	71.1325841721598	59.246310043335
MIKER_ZONE2_TEMP	77.1162390391032	3/30/2012 9:00:00 AM	3/30/2012 9:00:00 AM	61.3350624084473	77.1162390391032	61.7242600123088	77.1162390391032
MIKER_SPEED	77.6274737040202	3/30/2012 10:00:00 AM	3/30/2012 10:00:00 AM	70.8315608978271	56.1890864372253	77.1162390391032	61.7242600123088
MIKER_RAMPRESSURE	68.838073832194	3/30/2012 11:00:00 AM	3/30/2012 11:00:00 AM	77.7188284556071	56.4964746157328	77.6274737040202	68.838073832194
MIKER_ZONE1_TEMP	73.2186347961426	3/30/2012 12:00:00 PM	3/30/2012 12:00:00 PM	72.8585931142171	62.9040375709534	73.2186347961426	78.107879576563
MIKER_ZONE2_TEMP	60.267654800415	3/30/2012 1:00:00 PM	3/30/2012 1:00:00 PM	60.1481925964356	60.267654800415	69.4468827565511	86.2893030802409
MIKER_SPEED	76.4182764689128	3/30/2012 2:00:00 PM	3/30/2012 2:00:00 PM	71.179417292277	76.4200969843278	70.5296145121256	90.5276397705078
MIKER_RAMPRESSURE	68.1329851786296	3/30/2012 3:00:00 PM	3/30/2012 3:00:00 PM	77.8320638020833	76.4182764689128	68.1329851786296	89.3417254130046
MIKER_ZONE1_TEMP	68.3305636723836	3/30/2012 4:00:00 PM	3/30/2012 4:00:00 PM	67.2665041605631	68.3305636723836	65.6417427698771	83.145834477425

Preview

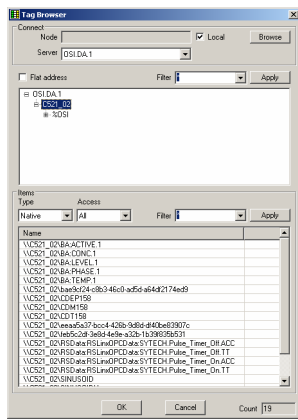
Preview displays the data exactly the same way it will be written into the report.

Retrieving Live Data

The FactoryTalk Historian also provides access to live data. In this case “live” refers to the last value stored by Historian.

XLReporter can retrieve this data via a Real Time connection to the FactoryTalk Historian OPC Server.

To verify the connection to the FactoryTalk Historian OPC Server, open **XLReporter's Project Explorer** and start the **System Check** application. If **XLReporter** is installed on the same node as FactoryTalk Historian, browse for the **local** server otherwise browse for the remote server on the **Node** specified.



Real Time System Check

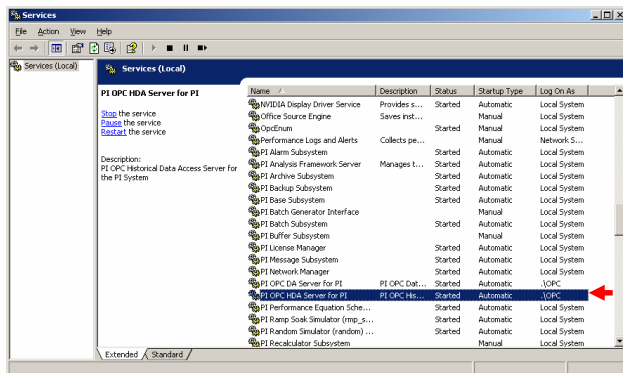
To connect to live values for FactoryTalk Historian the **Server** should be set to *OSI.DA.1*.

Tuning for Automation

The first time **XLReporter** accesses data from the FactoryTalk Historian, a popup window appears to the user. The reason this window appears is that an instance of the OPC-HDA server is started for each user that attempts to access it.

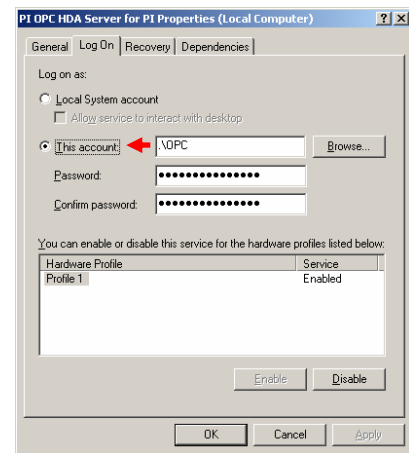
To prevent the popup window from appearing the Windows Service installed for the OPC-HDA server and the server itself must be launched with the same Windows user account.

To configure the Windows Service to run under a specific user account, open the Windows Control Panel then select **Administrative Tools, Services**.



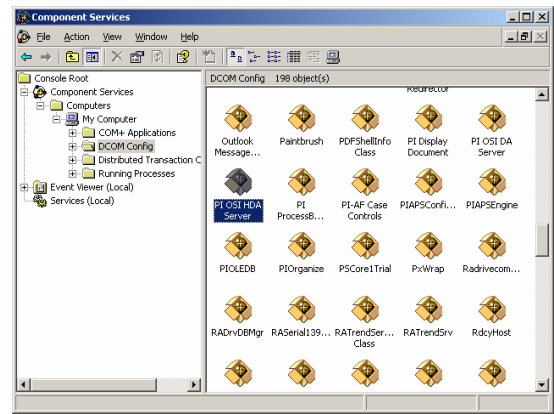
Services Window

Locate the **PI OPC HDA Server for PI** service, right-click and select **Properties**. Go to the **Log on** tab, select **This Account** and specify the account to run the service under.



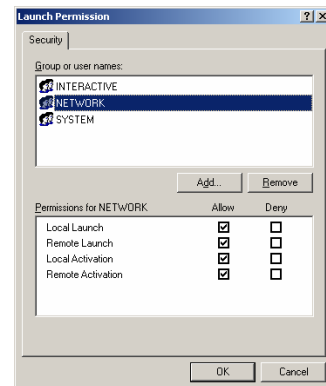
Service Properties

To configure the server itself to launch with the same account, you must configure the DCOM settings. To do this, select **Start, Run** and enter *dcomcnfg*. Browse to **Component Services, Computers, My Computer, DCOM Config**. Locate **PI OSI HDA Server** right-click and select **Properties**.



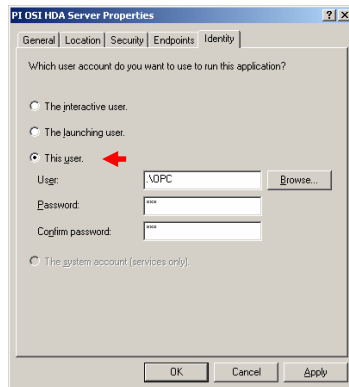
DCOM Config

Under the **Security** tab, set **Launch and Activation Permissions to Customize** and click the **Edit** button. **SYSTEM, INTERACTIVE** and **NETWORK** should always be listed. If **XLReporter's** Scheduler is set to run as a Windows Service, you must also add the Windows user the Scheduler Service is running. All other Groups or Users should be removed.



DCOM Properties Launch Permissions

Under the **Identity** tab, set the account to **This user** and specify the same user account that you configured for the Windows Service to run under.



DCOM Properties Identity Tab

For more information, please refer to **Running the OPC Server as a Service** section of the PI_OSIOPC document provided with the FactoryTalk Historian installation.

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