Rockwell Automation Connectors

RSLinx Classic

This connector is used to get real time values from RSLinx classic via the RSLinx OPC DA Server.

The versions of RSLinx supported include:

- RSLinx Classic Single Node
- RSLinx Classic OEM
- RSLinx Classic Professional
- RSLinx Classic Gateway

Note RSLinx Classic Lite and RSLinx Enterprise Editions do not provide the OPC DA Server and therefore are not supported.

To access the RSLinx Classic OPC server remotely, RSLinx Classic Gateway must be installed and licensed.

Set up RSLinx

Define a DDE/OPC Topic

Open the **RSLinx Classic** control panel from the **Rockwell Software** program group and select **DDE/OPC**, **Topic Configuration**.



- Select New
- Enter a *name* for the topic
- *Browse* to the target device for the topic
- Click Apply

On the Data Collection tab

• Specify the *Processor Type*

On the Advanced Communication tab select the settings.

DE/OPC Topic Configuration	? ×
Project: Default	
Topic List	Data Source Data Collection Advanced Communication
SyTech SyTech2	Changing information on this tab may cause the information to no longer be connected to the correct object on the Data Source tab.
	Communications Driver: A8_ETHIP-1 A-8 Ethernet RUNNING
	Station (decimal): 0
	Local or Remote Addressing C Local Image: Configure [AB] ETHIP-1\0[[192168.8.240]]
	Number of errors before returning error to client:
New Clone	Delete Apply Done Help

Prerequisites

Verify RSLinx License

Open the **RSLinx Classic** control panel from the **Rockwell Software** program group. In the title bar verify that the installed version is **NOT** Lite or Enterprise.

🎨 RSLinx Class	ic Lite - [RSWho - 1]							
🚠 File View	Communications	Station	DDE/OPC	Security				
쁆 💲 👜								
Autobrowse	Refresh 🗈	D	Not Browsing					
🖃 🖳 Workstati	⊡							
≞器 Linx (Gateways, Ethernet							

Verify Communication

Communication between RSLinx and the PLC can be verified using the OPC Test Client provided by Rockwell Software.

From the **Rockwell Software** program group, **RSLinx, Tools** and select the **OPC Test Client**. This client will validate the communication and verify that RSLinx is capable of exchanging data with XLReporter.

Select Server, Connect to open the Select an OPC Server window.

• Choose *RSLinx OPC Server* and click **OK**.

a) International Status Connect. Status OPC Server Prog ID: Get Group by Name Get Brory String Group Enum MMI Emulation Mode MMI Emulation Mode HSLIPS Rever Node Name (Optional): Node Name (Optional):	RSI - OPC Test Client - [~RSLinx OPC	Server]	- 0	X
Disconnect Select an OPC Server X Status OPC Server Prog ID: OK Get Group by Name Get Error String Cancel Cancel Group Enum Located Server: Cancel MMI Emulation Mode ISLick OPC Server Biowre Node Name (Optional): Node Name (Optional): Cancel	Connect	view window Help	-	2. 3
<	Connect	Select an OPC Server X OPC Server Prog ID: FSLinx PEC Server RSDPC Gateway Node Name (Optional):	Sub Updates Update Rate	
	< .			

Select Group, Add Group.

• Enter a Group Name and click OK.

 ☆: RSI - OPC Test Client ✓ File Server Grou □ ☞ ■ ■ 	it - [~RSLinx OPC Se p Item Log V Add Group Remove Group	rver] iew Window Help	sub Quality	Sub Undates	- C X
	Get State Advise Clone Group Enumerate Items Counter Reset Configure Events	Add New Group Group Nam Update Rate (mSe Time Bio % Deadbar Advis		Active Update Rate Allow Timeout ev 20)	X
	٢				>

Select Item, Add Item to open the Add New OPC Item window.

• Select a tag by navigating in the lower left list, selecting a tag on the lower right list, and clicking Add.

Test Connect (Actual Ra	Remove Item(s)	Del	Sub Quality	Sub L	Updates	Update Rate	Run. Av	rg 🛛	
	Active State	Add New OPC Iten	1						~
	Change Handle(s)	Items to be Added			- åttributes -				
	Set Datatype	[SyTech]Local1:0	.ProgValue					OK	
	Read From Cache				Access P	ath:		Cano	;el
	Suma Pand				Item Iva Act	ime: SylechiLoc	ar I:U.Proç	Add Is	iem.
	Sync Read				Datah	ne: VT EMPTY			ionn
	sync write				6 6 10 1		-	Valida	ate
	AsynclO				Access Big	hts: Read / Write		Item Pror	netties
	AsynclO2	1							00000
	Import Items	Datatura: Misi		E árra	Elter	× A	anna All	tem:	•
		B Onlin B Lc B Lc B Pr B Pr B SyTech2	cal:1:C cal:1:C cal:1:I cal:1:O ogram:MainProg	ram		ocal: 1:C.FaultMoc ocal: 1:C.FaultValu ocal: 1:C.ProgMod ocal: 1:C.ProgMod ocal: 1:C.Pt00Filter ocal: 1:C.Pt00Filter ocal: 1:C.Pt01Filter ocal: 1:C.Pt01Filter ocal: 1:C.Pt01Filter	e e OffOn OnOff OffOn OnOff OffOn		>
		before adding them	. Results will be di	splayed fr	om this action	יישט misri to check נ	you kens a	gans, the st	cive?

• Click **OK** to return to the **OPC Test Client** window.

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

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

Remote Communication

If XLReporter is not installed on the same machine as RSLinx, 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 <u>www.opcfoundation.org</u>.

Server Settings

To connect to RSLinx 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 <u>OPC and DCOM: 5 Things You Need to Know</u>.

Windows Firewall

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

Connector

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

- Click Add
- Select Rockwell Automation, RSLinx Classic
- Click OK

Connector Name	RSLinx_DA_1	
Description		
Primary Server		
Name	RSLinx OPC Server	
Node		🗹 local
		Test Come ation
		Test Connection
Secondary Serve	er RSLinx OPC Server	Test Connection
Secondary Serve Name Node	er RSLinx OPC Server	
Secondary Serve Name Node	er RSLinx OPC Server	lest Connection

Primary Server

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

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

Secondary Server

These settings define the (optional) secondary RSLinx 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 RSLinx, open the **Project Explorer** and select the **Tools** tab. Launch the **System Check** application.

- Click Add
- Choose the *RSLinx 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**

		S	elected Items	
RSLinx_DA			Name	
E Catalog			[SyTech]] ocal:1:C CO SOffOnEn	
Online			[SyTech]Local:1:C.COSOpOffEn	
⊟-SyTech			[SyTech] ocal:1:C FaultMode	
El-Omine			[SvTech] ocal:1:C FaultValue	
E- Unine			[SvTech] ocal:1:C.PmgMode	
Euclariti			[SvTech]Local:1:C.PmgValue	
E-local:10			[SvTech]Local: 1:C.Pt00FiterOffOn	
Program:MainProgram			[SvTech]Local:1:C.Pt00FilterOnOff	
- SvTech2			[SvTech]Local:1:C.Pt01FilterOffOn	
ems Nisplay Name ~	A .	>		
ems Visplay Name V Name	· · · · ·	>		
ems Isplay Name ✓ Vame ✓ Local:1.C.COSOn:0ffEn Local:1.C.ExtMinde	A	>		
ens Name Local:1:C.COSOnO#En Local:1:C.FautMode Local:1:C.FautMode	^	>		
ens lisplay Name Vame Local:1.C.COSOn:OffEn Local:1.C.Fault/Node Local:1.C.Fault/Node Local:1.C.Fault/Node Local:1.C.Fault/Node Local:1.C.Fault/Node	^	> <		
ens Name Local:1C COSOnOffEn Local:1C FaultMode Local:1C FaultMode Local:1C PopUkde Local:1C PopUkde	^	> <		
ens Name Local: 1.C. COSOnOffEn Local: 1.C. FaultMode Local: 1.C. FaultMode Local: 1.C. PoglValue Local: 1.C. PoglValue Local: 1.C. PoglValue Local: 1.C. PoglValue	^	> < >>		
ens lisplay Name Local:1.C COSOnOffEn Local:1.C Fault/Node Local:1.C Fault/Node Local:1.C FougNode Local:1.C PogNode Local:1.C PogNode Local:1.C POGNERCOTOR		> <		
ens Ispigy Name Vame Local:1C.COSOnOffEn Local:1C.FautMode Local:1C.FautMode Local:1C.FautMode Local:1C.PongMode Local:1C.PongMode Local:1C.PongMode Local:1C.PongMode Local:1C.PONTHEOMOn Local:1C.PONTHEOMOn		>		
ens lisplay Name Local:1C:00S0n0/fEn Local:1C:FaultMode Local:1C:FaultMode Local:1C:FaultMode Local:1C:PopUNate Local:1C:PopUNate Local:1C:PopUNate Local:1C:POINterOnOff Local:		> < >		

• Click **Start** to verify the communication

Add	neral Modify 🔀 Delete 🔛 Clear 🛛 🎯) Start		
Connector	Source	Description	Value	^
RSLinx_DA	[SyTech]Local:1:C.COSOffOnEn	[SyTech]Local:1:C.COSOffOnEn	0	
RSLinx_DA	[SyTech]Local:1:C.COSOnOffEn	[SyTech]Local:1:C.COSOnOffEn	0	
RSLinx_DA	[SyTech]Local:1:C.FaultMode	[SyTech]Local:1:C.FaultMode	0	
RSLinx_DA	[SyTech]Local:1:C.FaultValue	[SyTech]Local:1:C.FaultValue	0	
RSLinx_DA	[SyTech]Local:1:C.ProgMode	[SyTech]Local:1:C.ProgMode	0	
RSLinx_DA	[SyTech]Local:1:C.ProgValue	[SyTech]Local:1:C.ProgValue	0	
RSLinx_DA	[SyTech]Local:1:C.Pt00FilterOffOn	[SyTech]Local:1:C.Pt00FilterOff	1000	
RSLinx_DA	[SyTech]Local:1:C.Pt00FilterOnOff	[SyTech]Local:1:C.Pt00FilterOn	1000	
RSLinx_DA	[SyTech]Local:1:C.Pt01FilterOffOn	[SyTech]Local:1:C.Pt01FilterOff	1000	
RSLinx_DA	[SyTech]Local:1:C.Pt01FilterOnOff	[SyTech]Local:1:C.Pt01FilterOn	1000	
RSLinx_DA	[SyTech]Local:1:C.Pt02FilterOffOn	[SyTech]Local:1:C.Pt02FilterOff	1000	
RSLinx_DA	[SyTech]Local:1:C.Pt02FilterOnOff	[SyTech]Local:1:C.Pt02FilterOn	1000	
RSLinx_DA	[SyTech]Local:1:C.Pt03FilterOffOn	[SyTech]Local:1:C.Pt03FilterOff	1000	~
<				>
Clear				
_		Initialise Serve Open Server a Read Server it Update display	erand Items (and items (ms ems (ms) : 6 y (ms) : 2	ms):):32

Scheduling

Windows Service

If XLReporter's Scheduler is set to *Run as a Service*, RSLinx must also be configured to start as a service.

RSLinx Classic Launch	– 🗆 X					
Tools						
RSLinx Classic Service is	running.					
Start	Stop					
Always Run As Service						
Select Language: Syst	em Default 🔍					

From the **RSLinx** program group, open the **RSLinx Launch Control Panel**. Verify **Always Run As Service** option is checked. If it is not, click **Stop**, enable the option, and click **Start**.

FactoryTalk Linx Gateway Real-time values

This connector is used to get real time values via the FactoryTalk Linx Gateway OPC DA Server. The versions of FactoryTalk Linx Gateway that support OPC DA include:

- FactoryTalk Linx Gateway Basic Local FactoryTalk Directory up to 1000 tags
- FactoryTalk Linx Gateway Standard Local FactoryTalk Directory up to 5000 tags
- FactoryTalk Linx Gateway Distributed Local or Network FactoryTalk Directory up to 32,000 tags
- FactoryTalk Linx Gateway Professional Local or Network FactoryTalk Directory No limit on tags

Set up FactoryTalk Linx

Open the **FactoryTalk Administration Console** from the **Rockwell Software** program group and select the directory type (*Local* or *Network*).

Create a New Application

If no application is currently set up, right click the top level of the left panel tree and select **New Application...**

New Applica	ation X
Name:	XLRtoPLC
Description:	FactoryTalk Linx setup
	OK Cancel Help

- Enter a Name and Description
- Click **OK**

In the left panel tree right click the new application.

I Network (THIS COMPUTER)	
	Demo	
🗄 🔯 Instantf	izz	
🕀 🔤 Test Ap	p	
🖃 🔯 TestAp	51	
🕂 🗽 Facto	oryTalk Linx	
	Delete	
	New Area	
	Add New Server	Rockwell Automation Device Server (FactoryTalk Linx)
	Discover Historian Points	OPC DA Server
	Add Individual Historian Points	Tag Alarm and Event Server
	Logical Name	OPC UA Server
	Backup	
	Resource Editor	
	Security	

- Select Add New Server, Rockwell Automaton Device Server (FactoryTalk Linx)...
- Click **OK**.
- **Expand** FactoryTalk Linx.
- Double click onto **Communication Setup**.

FactoryTalk Administration Console - [Comm	unication Setup - RNA:	//\$Global/XLRtoPLC/FactoryTalk Linx]			-	□ × □
File View Tools Window Help						- 8 ×
OPC						
8						
Explorer	Device Shortcuts		Primary			
Image: Imag	Add Remove	Apply	B FactoryT	alk Linx - Desktop, RA-1		
🗄 🗟 FTViewDemo	2 4 PLC1	4	i 🖅 🗐 1789-	A17, Backplane		
			⊕ 🚠 Ether	Net, AB_ETH-1		
E E Test App			Ether	Net, AB_ETHIP-1		
E Factor/Talk Linx				22.169.9.51 Eactor/Talk Linx - Deckton REGISTRATION		
e a XLRtoPLC			- 1	2.168.8.52 FactoryTalk Linx - Desktop, RE05 Horrow		
E FactoryTalk Linx			2 19	92.168.8.76, PLX51-DLplus-232		
Communication Setup 1				92.168.8.240, 1769-L16ER-BB1B, SyTech 1		
🔅 🛑 System			i i e	PCviaUSB, 17-Node USB CIP Port 2		
			• #	PointBus, PointIO Chassis 8 Slot 2		
			E			
					Т	
			LL OF			
			Mode: Unline	Browsing: Sylech		
	Offline Tag File					Browse
	Shortcut Type	Processor				•
	Logix Extended	Tag Properties				
		✓ Upload all extended tag properties		✓ Provide pass-through descriptions for tags		
	This path is currently a	ssigned to the selected shortcut.			6	5
Application Communications	<u> </u>	-		4	OK Cancel	Veritu Help
,	1			4	Canobr	Top Top
					N	IUM:

In the **Device Shortcuts** panel click **Add**.

- Enter a *name* for the shortcut.
- *Browse* to the device.
- Click **Apply**.
- Select Verify.
- Click OK.

Set up FactoryTalk Linx Gateway Configuration In the FactoryTalk Administration Console select OPC.

7	actory	Talk Adn	ninistration	Console	
File	View	Tools	Window	Help	
	e :				
Expl	orer				×

Server Configuration

In the FactoryTalk Linx Gateway Configuration select Server Configuration.



Under Server Configuration, for FactoryTalk Directory Scope,

 Click Select 	•	Click	Select
----------------------------------	---	-------	--------

🤗 Fa	toryTalk Linx Gateway Config	uration - Network\XLRtoPL0	2		_		\times
File	Help						
File	Help Server Configuration Configure server general settings UA Server Endpoints Configure OPCUA Server Endpoints Certificate Management Manage incoming and outgoing certificates FactoryTalk Diagnostic Log View historical diagnostics	Server Configurat FactoryTalk Directory RNA://\$Global/XLRtc UA Server Service Name: FactoryTalkLinxGatew UA Server Inhibit Discovery service URL opc.tcp://localhostt48 Register with Disc DA Server DA Server	ion Scope PLC Select FactoryTalk Dir Select the directory you Network Select the application arr Gateway to access. The r Network P FTViewDemo P InstantFizz Test App TestApp1 Network	Select rectory want to use ea, or sub-area that yo oot location is not a v	– ou want FactoryTa ralid selection.	alk Linx	×
			Scope Selected: Network/XLRtoPLC		ОК	Cano	cel

- Select the **Directory** from the drop-down list at the top.
- Expand the Directory and select the application or sub-area to access
- Click OK.
- Back in the FactoryTalk Linx Gateway Configuration click Apply.

Prerequisites

Verify License

To verify a license for the FactoryTalk Linx Gateway server, open the **FactoryTalk Activation Manager**.

Under Manage Activations, ensure one of the FactoryTalk Linx Gateway versions mentioned above is listed and a license if available.

Verify Communication

Communication between FactoryTalk Linx Gateway and the PLC can be verified using the OPC test client provided by Rockwell Software.

From the **Rockwell Software** program group and select the **FactoryTalk Live Data Test Client**. This client validates the communication and verifies that FactoryTalk Linx is capable of exchanging data with **XLReporter**.

FactoryTalk Live Data	a Test Client - RSOPC Ga	teway			_		×
Add Group		Active Rate (mSe	c): 250	Remove Group	Item Properties		
Item ID	Current Value	Current Quality	Updates (/Sec)	Run Avg.			
	Initial Connectio OPC DA Server Factory Talk Gateway Matrikon.OPC AllenB Matrikon.OPC Simula Matrikon.OPC Simula OSI:HDA.1 RSLinx OPC Server RSLinx Remote OPC RSOPC Gateway OPC DA Server Mac C Local C 1 OPC DA Server Loc	n C Factory Talk C adleyPLCs adleyPLCs.1 ion ion.1 Server Plane Remote RA-1 ale ID: 1033	Load Config File	OK Cancel Browse			
Ready				Items: 0	Pid: 196432	Elapsed	Tim //

• Choose RSOPC Gateway or FactoryTalk Gateway and click OK.

Add Group	-	🔽 Active 🛛 Rate (mSec): 250	<u>R</u> emove Group	Item Properties	-
Item ID	Current Value	Current Quality	Updates (/Sec)	Run Avg.		
		-		~		
	Create	Group		×		
	1	Name: Group1		OK		
	11-1-1-	D-1 050		Creat		
	Opdate	nale. 200		Cancer		
	F	ctive: 🔽		Help		
	Loca	ale ID: 1033				

• Enter a Group Name and click OK.

am ID	Current Value Current Quality Undater (/Sec) Run Avg		
	Current value Current Quality Opdates (Sec) Kurr Avg.		
	Add Item	×	
	Items to Add: 1		
	::[PLC1]Program:MainProgram.test_c ::[PLC1]Program:MainProgram.test_counter.ACC	OK	
	Datatype	Cancel	
	Native		
	Active	Advanced	
	Add Branch Item Properties	Help	
	□		
	€) SYTECH_MES lest_counter test_counter_2 E) test_stimg time_1000 ✓		
	E-SYTECH_MES -test_counter test_counter_2 E-test_sting -timer_1000 ~		

- Select a tag by navigating in the lower left list, selecting a tag on the lower right list
- Click **OK** to return to the window.

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

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

Remote Communication

If XLReporter is not installed on the same machine as FactoryTalk Linx Gateway, 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 <u>www.opcfoundation.org</u>.

Server Settings

To connect to the FactoryTalk Linx OPC DA server 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.

Windows Firewall

If the Windows Firewall is enabled on the machine where the FactoryTalk Linx OPC DA server is running **TCP Port** *135* must be opened for remote clients to connect.

Connector

OPC DA

To configure the connector to the FactoryTalk Linx OPC DA server, from the **Project Explorer** select **Data, Connectors**.

- Click Add
- Select Rockwell Automation, FactoryTalk Linx Gateway Real-time values (OPC DA)
- Click **OK**

ictory lalk Linx Gate	way Real-time values	
Connector Name	FactoryTalk_DA_1	
Description		
Primary Server		
Name	FactoryTalk Gateway	
Node		🗹 local
		Test Connection
Secondary Serve	r FactoryTalk Gateway	
Node		🗹 local
		Test Connection
		Settings

Primary Server

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

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

Secondary Server

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

Settings

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

OPC UA

To configure the connector to the FactoryTalk Linx OPC UA server, from the **Project Explorer** select **Data, Connectors**.

- Click Add
- Select Rockwell Automation, FactoryTalk Linx Gateway Real-time values (OPC UA)
- Click **OK**

nnector Name	Easter/Tally 11A 1	
nnector Name	Factory Talk_UA_1	
Server Conne	ction	
Endpoint Filter	Host Name	Port
opc.tcp ~	localhost	4990
Servers at Hos	t	
		V Find
User Identity		0-1
anonymous		Select
Security Profile		
None	O Best Available O Specific	
		Select
Disable se	rver certificate checks	
Description	Value	
		Connect

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 **FactoryTalk Administration Console**, **OPC**, **UA Server Endpoints** settings.

For **Servers at Host** click **Find** and then choose *FactoryTalkLinxGateway*.

For User Identity click Select to specify

Connection Settin	Connection Settings					
Server URL	FactoryTalkLinx	Gateway				
Authentication Set	ttings					
Anonymous						
O User Name	User Name Password					
O X509 (Dir)	Certificate					
O X509 (Store)	Store Path Certificate					

If in the FactoryTalk Administration Console, the UA Server Endpoints configuration has Anonymous checked under the Authentication Settings, Anonymous can be selected here. If FactoryTalk Security User is checked (and Anonymous is not), User Name must be selected here and specified as a valid FactoryTalk user. Security Profile defines the endpoint to connect to for the FactoryTalk Linx OPC UA Server. Select the profile that matches the Security set in the UA Server Endpoints in the FactoryTalk Administration Console. 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 certificate 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**.

erver	Connection
	Certificates Create Client Certificate
	Trust Server Certificate
	Setting
	Request timeout (sec) 20
	What hefers request (see)
	wait before request (sec)
	Request retries before fail 2

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. Click **Create** to creating the client certificate.

Trusted Clients

In some cases, the client must be accepted by the server to make requests. From within the **FactoryTalk Administration Console, OPC** select Certificate Management.

Under the **Incoming Certificate** tab, if the client certificate is listed under **Rejected Certificates**, select it, and click **Trust**.

FactoryTalk Optix Real-time Values

This connector is used to get real time values via the FactoryTalk Optix OPC UA Server.

Prerequisites

Follow the FactoryTalk Optix documentation for creating and configuring the OPCUA Server. The documentation can be found in the **Help** menu in the studio or online here: <u>FactoryTalk Optix Help Center (rockwellautomation.com)</u>

Connector

OPC UA

To configure the connector to the FactoryTalk Optix OPC UA server, from the **Project Explorer** select **Data, Connectors**.

- Click Add
- Select Rockwell Automation, FactoryTalk Optix Real-time values
- Click OK

the second se	ETOptic LIA 1	
milector Name	Proptix_UA_1	
Server Conne	ction	
Endpoint Filter	Host Name	Port
opc.tcp ~	localhost	59100
Servers at Hos		
	•	Find
User Identity		
anonymous		Select
0 7 0 0		
Security Profile		
None	Best Available O Specific	Select
None Disable set	Best Available Specific ver certificate checks	Select
None Disable set	Best Available Specific ver certificate checks	Select
None Disable set Description	Best Available Specific ver certificate checks Value	Select
None Disable set Description	Best Available Specific ver certificate checks Value	Select
None Disable set Description	Best Available Specific ver certificate checks Value	Select Connect

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 **FactoryTalk Optix Studio**, **OPC**, **UA Server Endpoint URL** setting of the **OPCUA Server Properties**.

Prop	erties		⊸ A‡	+	Ô
	Name OPCUAServer1				
ŬĂ	Type OPC UA server				
- :	Server				
En	idpoint URL	opc.tcp://localhost:59100	Brow	se	

For **Servers at Host** click **Find** and then choose *FTOptixApplication@MACHINE NAME* where *MACHINE NAME* is the name of the host machine where FT Optix is running.

For User Identity click Select to specify

Authenticate Se	rver		\times
-Connection Settin Server URL	gs FTOptixApplica	tion@FT-Optix	
Authentication Set	tings		
Anonymous			
🔿 User Name	User Name Password		
(Dir) X509 (Dir)	Certificate		
O X509 (Store)	Store Path Certificate		
Apply	Close		

If in the **FactoryTalk Optix Studio**, the **OPCUA Server Properties** configuration has **None** specified under the **Minimum message security mode** and **Minimum security policy** settings, **Anonymous** can be selected here.

Prop	erties		٦	ĄŻ	+	1
	Name OPCUAServer1					
ŬĂ	Type OPC UA server					
+ :	Server					
- :	Security					
М	inimum message security mode	None				
М	inimum security policy	None				

Security Profile defines the endpoint to connect to for the FactoryTalk Optix OPC UA Server. Select the profile that matches the Security settings in the FactoryTalk Optix Studio under the OPCUA Server Properties. 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 certificate 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.

OPC UA Settings		-		\times
Connector Name FTOptix_UA_1 Server Connection				
Certificates	Create Client Certificate			
	Trust Server Certificate			
Setting				
Request timeout (sec)	20			
Wait before request (sec)	0			
Request retries before fail	2			
Request retry interval (msec	100			
		Apply	CI	ose

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. Click **Create** to creating the client certificate.

Trusted Clients

Client certificate files can be imported at design time from within the FTOptix Studio.

- Open the required project in the FTOptix Studio
- Select the **b** button at the top

(F) Optix	C:\Use	ers\Admi	n\Docume	nts\Ro	ckwell Aut	omation\Fac	ctoryTalk	Optix	\Proje	ects\	Example
81 🗎 🖌 🖓	ቀ ቀ	ତ ୧	с р		₽ 🔥 ∨	Emulator	~ 🔳				
 Select Project 	a certific t Files	cate and	select	buttor	n to add it	to the proje	ct				×
ProjectFiles							=	F	Đ	ь	
Name						↑ Si	ze	Date			
Click (Close at	the botto	om to save	this cl	nange.						

FactoryTalk Optix Historical values

This connector is used to get historical values from the database table configured in the **FactoryTalk Optix Studio**.

Set up FactoryTalk Optix

Launch the FactoryTalk Optix Studio and open your project.

(F) Optix	C:\Users\Admin\Do	cuments\Rockwell Automation\FactoryTalk	Optix\Projects\Example	🔹 🗸 🕜 🗸 😝 Sign in 🛛 🗖 🗙
8 🖬 🗸 🖓	90000	🖿 🛤 🚥 🔥 🖌 Emulator 🗸 🕨		
Project view <	→ ·- + ê		Properties	a 🖈 + 8
Type to search	Q			
- Example		Let's begin building you	r user interface	
🕨 🖿 UI				
Model		2		
E Converte	ers	210		
Alarms		0		
Translati	ons			
Recipes		I want to configure		
🕨 🖿 Loggers		connected devices		
DataStor	res			
Reports				
OPC-UA	•	\bigcirc		
CommDi	rivers			
Type view	2		Events	+
All		1		
		I want to configure a data logger		
1. A A A A A A A A A A A A A A A A A A A	ing			
User M interface	Model Security			
FactoryTalk Optix	Studio Output			 No remote repository available for this project.

In the tree on the left:

- Expand *Your Project* (seen as *Example* in the image above)
- Expand *DataStores*

C:\Users\Admin\Do	cuments\Rockwell Automation\FactoryTalk Optix\Projects\Example	;*	🗱 🖌 🕐 🖌 😝 Sign in	_ 0 X
ଆ ≌୍ ନନ୍ଦ୍ର ମ୍	🗅 🎫 🗳 Y Emulator Y 🕨			
Project view < > - + @		Properties	3	42 + ₫
Type to search Q		Name SQL45		
✓ ■ Example	Let's begin building your user interface	Type ODBC database		
🕨 🖿 UI		- Configuration		
Model		DBMS type	SQL Server	
Converters	210	DSN		
Alarms	8	Server	111.111.1.11\SQLSERVER16	
Translations		TCP Port	0	
E Recipes	I want to configure	Database	OptixDatalog	
Loggers	connected devices	Username	sa	
- DataStores		Password	••••	
SQL45		- Structure		
Reports				+
DPC-UA		 OptixDatalog 		Û
CommDrivers		Record limit	n	
Type view		Events		+
All	I want to configure a data			
in in in	logger			
User Model Security interface				
FactoryTalk Optix Studio Output			 No remote repository available 	of or this project.

- Select the data store you are using (seen as *SQL45* in the image above)
- It will populate with its configuration **Properties** on the right.
- Make note of these settings as they will be used when building the connector in XLReporter.

In the tree on the left:

- Expand *Your Project* (seen as *Example* in the image above)
- Expand *Loggers*



- Select the logger you are using (seen as *Optix_Datalog* in the image above)
- Verify that the Store Property shows the correct DataStore (note, the above shows SQL45)

Prerequisites

Verify Database

Open **Microsoft SQL Server Management Studio** and connect to the SQL Server or SQL Server Express installation set up for the FT Optix.

Object Explorer	~ ₽ ×
Connect - 🛃 🛃 🔳 🝸 🖒 🔏	
🖃 间 OptixDatalog	*
🗉 🚞 Database Diagrams	
🖃 🧰 Tables	
🕀 🧰 System Tables	
🕀 🧰 FileTables	
🕀 🧰 External Tables	
🕀 🛄 dbo.AlarmsEventLo	gger1
🗊 🛅 dbo.OptixDatalog	New Table
🕀 🛄 dbo.Table1	Decian
🕀 🛄 dbo.Table2	
🕀 🛄 dbo.Table3	Select Top 1000 Rows
dbo.Table4	Edit Top 200 Rows
🕀 🛄 dbo.Table5	Script Table as
🕀 🛄 dbo.Table6	View Dependencies
🕀 🦲 Views	Memory Ontimization Advisor
External Resources	
🗄 🦲 Synonyms	Encrypt Columns
Programmability	Full-Text index
E Service Broker	
🗈 🦲 Security	Storage +
Readstone Gooig	Stretch
Bochwell - FTSE - FL Dora	
Rockwell FTAE SampleD	Policies +
Rockwell-Alarms	Facets
Rockwell-FTSE- Syngenta	Start DowerShall
Rockwell-FTSE-C&C	June - Ower Sheri
Rockwell-FTVAEInfoPlatf	Reports +
Giemens-PCS7-BakerHug	Pename
🗉 📋 SIP_Seal	Dela
⊕ 🧻 SQL_AIIData	Delete
	Refresh
🗉 📋 SyData	Properties
🕀 间 TCG XLR	riopentes

Expand the Database configured for the FT Optix and expand **Tables**. Right-click the table and choose **Select Top 1000 Rows**.

If no data is returned or there is anything described missing, contact Rockwell Automation technical support and correct these issues.

SQL Server Considerations

When using SQL Server there are some things to take into consideration including remote connectivity, instance browsing and user authentication. For information on what to consider, see the technical note: <u>How to Configure Microsoft SQL Server</u>.

Connector

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

- Click Add
- Select Rockwell Automation, FactoryTalk Optix Historical values
- Click **OK**

FactoryTalk Optix Histo	orical values	×
Connector Name	FTOptix_HDA_1	
Description		
Primary Database		
Туре	Microsoft SQL Server	
Data Source	111.111.11.111\SQLSERVER	
Table/Column		
Table	OptixDatalog	\sim
Date Column	Timestamp	~
	Date includes Time	
Time Column		\sim
		Settings
		OK Cancel

Primary Database

This defines a connection to the database where the FactoryTalk Alarm and Events server is logging data. A browse button [...] is provided to define. This is always a SQL Server database.

If there are issues connecting to the database, please refer to the section in the Database Connectors document on Microsoft SQL Server.

Table/Column

Once the connection is established, specify the **Table** where the alarms are stored and the **Date** and **Time Column**(s). **Table** should be set to your table name and **Date Column** set to *TimeStamp* with **Date includes Time** checked.

Settings

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

Settings					x
Client Wait Time	(sec)	60	-		
Table/Column D Start [lelimiter]	End]		-
Date/Time Delim Start [niter]	End '		
Date/Time Stora	ige				-
1	UTC Date and	Time	\sim		
	Date for	nat is YYY	Υ-MM-DD		
		[OK	Cancel	

Typically, these settings are defaulted correctly based on SQL 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.

FactoryTalk View ME Historical values

This connector is used to get historical values from a set of text files recorded by a DataStore Plus control.

For information on the setup of the DataStore Plus control as well as details on the set up of the connector, see the **PanelView Plus Historical values** section further down in this document.

FactoryTalk View ME Alarms

Connector

This connector is used to get historical alarm values from a set of alarm files exported from a FactoryTalk View ME application.

For information on the setup of this connector, see the **Text File Historian** connector section of the **Text File** document in the **CONNECTIVITY** section of the **Document Library**.

Note that by default the **File Settings** are configured with custom headings that match what the exported alarm files contain. Also note that the connector settings are defaulted to indicate the date and time elements of the file name of the alarm files is the *End* of the period and that the **Date Column** in the files is stored in *UTC Date and Time*.

Data Group

The following describes the historical data group settings specific to this connector. **Group Types**

📄 Select Group Type 🛛 🗙	,
O Summary Values from Server	
Summary Values from XLReporter	
Raw Values	
◯ Raw Text	
O Sampled Values	
◯ Live Values	
◯ Custom Values	
Base on	
 dlank> 	
OK Cancel	

For FactoryTalk View Alarms the following group types are available:

Raw Values

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

Group Settings

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.

FactoryTalk View ME Audit Logs

Connector

This connector is used to get historical records from a set of audit log text files exported from a FactoryTalk View ME application.

For information on the setup of this connector, see the **Text File Historian** connector section of the **Text File** document in the **CONNECTIVITY** section of the **Document Library**.

Note that by default the **File Settings** are configured with custom headings that match what the exported alarm files contain. Also note that the connector settings are defaulted to indicate the date and time elements of the file name of the alarm files is the *End* of the period and that the **Date Column** in the files is stored in *UTC Date and Time*.

Data Group

The following describes the historical data group settings specific to this connector. **Group Types**

📄 Select Group Type	×
O Summary Values from Server	
 Summary Values from XLReporter use raw values 	
Raw Values	
◯ Raw Text	
O Sampled Values	
◯ Live Values	
O Custom Values	
Base on	
 dlank>	
OK Can	cel

For FactoryTalk View Alarms the following group types are available:

Raw Values

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

Group Settings

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.

FactoryTalk View SE Historical values

This connector is used to get historical values from FactoryTalk View SE via the **Data Log Model** feature. Note that with this connector only **Data Log Models** with the **Storage Format** set to *ODBC* are supported. To get values from the **File Set**, see the **FactoryTalk View SE Data Agent Data File(s)** section.

Set up Data Log Models

Open the **FactoryTalk View SE Studio** from the **Rockwell Software** or **FactoryTalk View** program group then open the current application.

Under the Data Log folder in the Explorer, select the Data Log Models icon.

Under the Setup tab,

<u>Setup</u>	aths File <u>M</u> anagemen	t Log <u>T</u> riggers	Tags in Model
Model Name:	Untitled		OF
Description:	Power Station ODBC		UK
Log File	PowerStationODBC		Cancel
identiner string:			Help
Storage Format	ODBC database	_	
ODBC Data Source:		🗌 Login Req	uired
Tag Table:	TagTable	User Id:	
Float Table:	FloatTable	Password:	
String Table:	StringTable	Confirm Password:	
	Create Tables		

- Add a **Description** and *Log File Identifier String*.
- Set the **Storage Format** to *ODBC database*.
- For **ODBC Data Source** click the browse pushbutton [...]

Select the **System Data Source** tab. Use an existing DSN or select **New** to create a new one. For a new DSN,



- Select System Data Source.
- Click Next.



• Select the driver to make the connection the data source.

SQL Server/SQL Express Configuration

It is highly recommended to use SQL Server or SQL Server Express as the data source for the Data Log Model. SQL Server Express is a free and downloadable from Microsoft's website. For SQL Server or SQL Server Express,

Create a New Data Sour	rce to SQL Server	×
	This wizard will help you create an ODBC data source that you can us connect to SQL Server.	e to
	What name do you want to use to refer to the data source? Name: FTSE_DL_ODBC	
	How do you want to describe the data source? Description: Data Log Model Database	_
	Which SQL Server do you want to connect to? Server: RA-1\SQLEXPRESS	•

- Enter a Name, Description and select Server. If the Server is not listed, enter it manually.
- Click Next.

Create a New Data Sour	ce to SQL Server	×
	How should SQL Server verify the authenticity of the login ID?	
	$\textcircled{\begin{subarray}{c}{\bullet}\end{subarray}}$ With Windows NT authentication using the network login ID.	
	With SQL Server authentication using a login ID and password entered by the user.	
	To change the network library used to communicate with SQL Server, click Client Configuration.	

- Select the authentication type
- Click Next

Create a New Data Sou	rce to SQL Server	×
	 ✓ Change the default database to: FTDL_ODBC_DOC ✓ Attach database filename:]

- Select the default database.
- Click Finish.

The DSN configured should now be set as the **ODBC Data Source**.

Model Name:	Untitled		
Description:	Power Station ODBC		UK
Log File	PowerStationODBC		Cancel
Identifier String:			Help
Tag Table:	TagTable	User Id:	
Float Table:	FloatTable	Password:	
String Table:	StringTable	Confirm Password:	
	Create Tables		

• Click Create Tables.

Under the **Paths** tab the **ODBC Backup Path** can be enabled so that if the database is unavailable, data is not lost.

🔓 Untitled - /InstantFizz_SE/ (Data Log Models)	×
Setup Paths File Management Log Triggers	Tags in Model
	ОК
	Cancel
ODBC Backup Path	Help
Enable ODBC Backup Path	
C:\Users\Public\Documents\RSView Enterprise\SE\HMI Projec	
Logging Path: O Relative to Project Location	
Advanced	
The DDBC Backup Path is where data will be logged to in the event that your DDBC database fails. Any data that accumulates in the backup path can be merged into the ODBC database at any time by issuing the DatalogMergeToPrimary command.	

The total number of characters and spaces allowed for the path and name is 255.

Under the **File Management** tab, the **Purge Oldest Records in ODBC Database** option is available to periodically remove old historical data from the database.

Untitled - /InstantFizz_SE/ (Data Log Models)	—
Setup Paths File Management Log Triggers	Tags in Model
Setup Baths File Management Log Iriggers Purge Oldest Records in ODBC Database After Maximum Time 12 Days Weeks Months Records older than the maximum time are purged in the ODBC database at midnight. 12 Days Weeks •	Tggs in Model OK Cancel Help

Under the Log Triggers tab,

🔓 Untitled - /	InstantFizz_SE	/ (Data Log Models)		×
Setup	Paths	File <u>M</u> anagement	Log <u>T</u> riggers	Tags in Model
Periodic	On	Change 🔿 On Dei	mand	ОК
-Log Period	dically			Cancel
Interval:		1 Minutes	~	Help

• Specify how the logging of tag values will be triggered i.e., periodically, on change or on demand.

The **On Demand** option will log data when the **DataLogSnapshot** command is issued. This command can be issued from anywhere that commands and macros are supported. For example, it could be typed in the command line or specified as the action for an event. If **Periodic** or **On Change** is selected, on demand logging can still be used whenever it is appropriate.

Under the **Tags in Model** tab,

🔓 Untitled - /InstantFiz	rz_SE/ (Data Log Models)	×
Setup Paths	File <u>M</u> anagement Log <u>T</u> riggers	Tags in Model
Enter tag names, sepa ''Tag(s) to Add'' box, t to the list of tags in the	arated by a space if more than one, in the hen choose the "Add" button to add them a model.	ОК
Tag(s) to Add:	{Dashboard_Trending\Current_OEE_F	Cancel
Tags in Model: Add Remove Remove All	system\BlinkFast system\BlinkSlow system\DateAndTimeInteger system\DateAndTimeInteger system\DateAndTimeString system\DayDfWeek system\DayDfWeek system\Hour system\Hour system\Mouth system\MonthString system\MonthString system\Second	Help

- Specify the tags to be logged. The maximum number of tags that can be logged by one data log model is 10,000.
- Close the dialog.

On close the **Save** dialog is opened.

Save	×
Component name:	
Power Station	
ОК	Cancel

Start Data Log

To start the data log when FactoryTalk View SE starts, access the HMI Properties dialog.

Explorer - InstantFizz_SE		×
⊡ 🗐 Local (RA-1)		
🖨 🔯 InstantFizz_SE		
	urity	
🖨 📮 InstantFind C		
🚍 듴 Syste	Add Controller Instruction Faceplates	
🔁 Cc	Server Status	
	Properties	
□ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	· · · · · · · · · · · · · · · · · · ·	

• Right click on the application and select *Properties*.

Under the Components tab,

InstantFizz_SE Properties		Х
General Components		
On startup components		
Data logging:	Power Station 🗸	
Derived tags:	~	1
Events:	~	
Macro:	startup ~	
On shutdown macro:	loginMacro \sim	
Pun Chatun Component	Ctop All Duming Components	
Hun Startup Components	s Stop Air Humining Components	
ОК	Cancel Apply Help	

• Check **Data Logging** and select the data log model.

If more than one data log model needs to be started, they can be started using the command:

DataLogOn "Component name"

Where "*Component name*" is the data log model name. If the model's name has a space in it, enclose the name in quotes. The command can be issued from the command line or from a startup or login macro. For example:

DataLogOn"Power Station"

Note that in FactoryTalk View SE, an HMI server can have up to 20 data log models running at one time.

Prerequisites

Verify Database

Open **Microsoft SQL Server Management Studio** and connect to the SQL Server or SQL Server Express instance set up for the Data Log Model.



Expand **Database** and then the database configured for the Data Log Model and expand **Tables**. Right-click the *tag* and *float tables* and choose **Select Top 1000 Rows**.

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

Connector

To configure the connector to the FactoryTalk View SE Historical values, from the **Project Explorer** select **Data, Connectors**.

- Click Add
- Select Rockwell Automation, FactoryTalk View SE Historical Values
- Click **OK**

FactoryTalk View SE Histo	rical values	x
Connector Name	FactoryTalkViewSE_History	
Description		
Primary Database		
Туре	Microsoft SQL Server	
Data Source	SQLSERVER2016\SQLEXPRESS	
Tables		
Tag Table	TagTable	\sim
Float Table	FloatTable	\sim
String Table	StringTable	~
		Settings
	C	OK Cancel

Primary Database

This defines a connection to the database where the **Data Log Model** is logging data. A browse button [...] is provided to define. If there are issues connecting to the database, please refer to the section in the Database Connectors document on the specific database.

Tables

Once the connection is established, the **Tag Table**, **Float Table** and **String Table** can be specified. This should be done exactly as they are in the **Data Log Model Setup** of FactoryTalk View SE.

Settings

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

Sattings
Settings
Client Wait Time (sec) 60
Table/Column Delimiter Start [End]
Date/Time Delimiter Start [* End [*]
Date/Time Storage
Local Date and Time $$
Date format is YYYY-MM-DD
OK Cancel

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 **FactoryTalk View SE Historical Values** connector.

Group Types

🚞 Select Group Type	Х
O Summary Values from Server	
 Summary Values from XLReporter use raw values 	
◯ Raw Values	
◯ Raw Text	
◯ Sampled Values	
◯ Live Values	
◯ Custom Values	
Base on	
 dolank> ~	
OK Cance	

For FactoryTalk View SE Historical Values the following group types are available:

Summary Values from XLReporter

This group type retrieves sampled values from the database 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 every numeric value logged to the database between the start and end time specified.

Raw Text

This group retrieves every textual value 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

	dit Previ	ew					
Setup	Columns	Time Period	Filters				
			De	scription			
			Be	trieval			
			Re	trieval Retrieval Mode	Prove Visit une	×	
			Re	Retrieval Mode	Raw Values	~	
			Re	rieval Retrieval Mode Rate (secs)	Raw Values	v	

Retrieval (Summary Values for XLReporter Group)

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. For FactoryTalk View SE only *Raw Values* are available.
- Lead Time

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

Filters Tab

	Name	Criteria	Or	Or	Or
S	erver Filtering		Status		
			C		

Server Filtering

To exclude values that do not match the criteria, set **Server Filtering** to *All Tag Values* and the condition accordingly.

The **Marker** column in the Float Table and String Table is used to mark different events that may affect data logging. For example, when the data log model starts, the first set of records has Marker set to B. Normally these records are included in data retrieval. To filter out these records, select **Marker** and set the condition to <> 'B'. For more information about the **Marker** column, see the FactoryTalk View documentation.

Status Filtering (Raw Values and Raw Text Group)

For **Raw Values** and **Raw Text** group types, the **Status** can be filtered so only values that meet the criteria selected are retrieved. For more information on the Status types available, see the FactoryTalk View documentation.

Calculations

When calculations are performed, any value where the **Status** column is set to E, D or U are considered bad quality and are not included in the calculation.

Verify the Data Connector

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

Select the FactoryTalk historical 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).

ele	ected Columns			
	Name	Scaling	Heading	
•	SYSTEM\BLINKFAST		SYSTEM\BLINKFAST	
-	SYSTEM\BLINKSLOW		SYSTEM\BLINKSLOW	
	SYSTEM\DATE		SYSTEM\DATE	
	SYSTEM\DATEANDTIMEINTEGER		SYSTEM\DATEANDTIMEINTEGER	
	SYSTEM\DATEANDTIMESTRING		SYSTEM\DATEANDTIMESTRING	
	SYSTEM\DAYOFMONTH		SYSTEM\DAYOFMONTH	
	SYSTEM\DAYOFWEEK		SYSTEM\DAYOFWEEK	
	SYSTEM\DAYOFYEAR		SYSTEM\DAYOFYEAR	
	SYSTEM\HOUR		SYSTEM\HOUR	
	SYSTEM\MINUTE		SYSTEM\MINUTE	
	SYSTEM\MONTH		SYSTEM\MONTH	
	SYSTEM\MONTHSTRING		SYSTEM\MONTHSTRING	
	SYSTEM\SECOND		SYSTEM\SECOND	
	SYSTEM\TIME		SYSTEM\TIME	
	SYSTEM\USER		SYSTEM\USER	
	SYSTEM\YEAR		SYSTEM\YEAR	

Select Preview, pick a Start date and click Refresh.

Preview					x
🔁 Refresh 💿 Stop	«	Date	SYSTEM\BLINKFAST	SYSTEM\BLINKSLOW	^
A Date		1/8/2020 1:45:09 PM	0	0	
Start 08 Jan 2020	•	1/8/2020 1:46:09 PM	1	1	
End 09 Jan 2020	r	1/8/2020 1:47:09 PM	1	0	
0 O 🚽 🕨 ᠇	H	1/8/2020 1:48:09 PM	1	1	
		1/8/2020 1:49:09 PM	0	1	
		1/8/2020 1:50:09 PM	1	1	
		1/8/2020 1:51:09 PM	1	0	
		1/8/2020 1:52:09 PM	1	0	
		1/8/2020 1:53:09 PM	0	1	
		1/8/2020 1:54:09 PM	1	1	
		1/8/2020 1:55:09 PM	1	0	
		1/8/2020 1:56:09 PM	0	0	
		<		2	

FactoryTalk View SE DataLogPro Historical values

This connector is used to get historical values from FactoryTalk View SE via the **DataLogPro** feature new in FactoryTalk View SE version 14.0.

Set up DataLogPro

The DataLogPro can be configured from within the FactoryTalk View SE Studio.

In the Studio:

• Connect to your application.



- In the **Explorer** on the left, navigate to **DataLogPro** under the HMI **Data Log** folder as seen in the image above.
- Right-click and select **Open**.

[⁹ ± ± ⊗ ⊨	1										C
Log groups		All tags (9)			Q, Sea	rch by tag name			InstantFizz		<
🥥 All tags	9	Тад	Group	Trigger	Interval/Maxi	Deadband mode	Deadband value	Heartbeat	Q V Filter		ľ
Ungrouped tags	0	system\BlinkFast	MyTagGroup	Periodic	10				Name	Data	
MyTagGroup	Ø	system\BlinkSlow	MyTagGroup	Periodic	10					Duto	
+		system\Date	MyTagGroup	Periodic	10				ETAETag Area		
		system\Hour	MyTagGroup	Periodic	10						
		system\Minute	MyTagGroup	Periodic	10				- HMI_Alea		
		system\Second	MyTagGroup	Periodic	10						
		system\DayOfMonth	MyTagGroup	Periodic	10						
		system\Month	MyTagGroup	Periodic	10						
		system\Year	MyTagGroup	Periodic	10						
									✓ Tag Components ∨ ■ Columns ∨ + 90% −		

This will open the DataLogPro Editor where FactoryTalk tags can be configured to log to the database periodically, on change, or on demand.

For more information, refer to the DataLogPro editor properties chapter of the FactoryTalk View SE Help documentation.

Generate a Token

In order to connect to the InfluxDB where data is logged, a token must be generated. To do so, on the machine where FactoryTalk View SE is installed, open a web browser and navigate to:

localhost:8086



From the left menu in the InfluxDB, click the "up arrow" and from the menu select API Tokens.

On the right side, click the **GENERATE API TOKEN** button dropdown and select either option depending on how restrictive you want to make this token.

If you select the **Custom API Token** option, be sure to grant **Read** access to every Bucket you want to retrieve data from.

Be sure to capture the token and store it away so it is available when setting up the connector.

Prerequisites

Verify Database

While logged in to the InfluxDB from your browser, open the **Data Explorer**. You can create a query by selecting items under the **FROM** and **Filter** columns. When you have made your selections, click **SUBMIT** to verify data is being collected.

If no data is returned, contact Rockwell Automation technical support and correct these issues.

Connector

To configure the connector to the FactoryTalk View SE DataLogPro Historical values, from the **Project Explorer** select **Data, Connectors**.

- Click Add
- Select Rockwell Automation, FactoryTalk View SE DataLogPro Historical Values
- Click OK

Connection Tab

FactoryTalk View SE DataL	.ogPro Settings	-		×
Connector Name	FTViewDataLogPro History_1			
Connection Database				
Protocol	http ~			
IP Address	192.168.9.124			
Port	8086			
Token	•••••	•••••	•••	
Organization	SmartSights LLC			
		Connect		
		Apply	_ _ c	lose

Protocol

Select the protocol that matches how the InfluxDB has been configured (either *http* or *https*).

• IP Address

The IP address where the InfluxDB is installed. If this is on the same machine, you can use *localhost*.

• Port

TCP port that the InfluxDB is configured for. By default, this is 8086.

• This port can be configured in the **InfluxDB** data node configuration file. (see the **Influxdata Documentation** chapter on *Configure TCP and UDP ports used in InfluxDB Enterprise*).

• Token

The API token generated in InfluxDB that allows connection to the database for reading data.

Organization

The organization	configured in the	ne InfluxDE	for the u	iser for v	which the	API toker	1 was
generated.							

Once all the information is specified, click **Connect** to connect to the InfluxDB.

Database '	Tab
------------	-----

actoryTalk View SE Dat	aLogPro Settings	- 0	×
Connector Name	FTViewDataLogPro History_1		
Connection Databas	•		
Bucket	InstantFizz_HMI	~	
Measurement	TagData	~	
		Apply	Close

Under the **Database** tab, select the **Bucket** from which to retrieve data. This should correspond to a FactoryTalk View SE project.

Once the **Bucket** is selected, select the **Measurement** from which to retrieve data. By default, this is *TagData* and should probably not change.

Data Group

The following describes the historical data group settings specific to the **FactoryTalk View SE DataLogPro Historical Values** connector.

Group Types

Summary Values from Server
O Summary Values from XLReporter
O Raw Values
◯ Raw Text
◯ Sampled Values
◯ Live Values
O Custom Values
Base on
 dlank>

For FactoryTalk View SE DataLogPro Historical Values 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:

- First Sample
- Last Sample
- Count
- Mean
- Median
- Mode
- Skew
- Range
- Standard Deviation
- Maximum
- Minimum
- Total

Summary Values from XLReporter

This group type retrieves sampled values from the database 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 every value logged to the database between the start and end time specified.

Group Settings

Setup Tab

J Summary values Act (in viewbatat	.ogPro History_1)		
e Edit Preview			
etup Columns Time Period Filters			
	Description		
	Retrieval		
	Retrieval Mode	Raw Values	
	Retrieval Retrieval Mode Rate (corc)	Raw Values ~	
	Retrieval Retrieval Mode Rate (secs)	Raw Values ~	

Retrieval (Summary Values for XLReporter Group)

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. For FactoryTalk View SE DataLogPro *Sampled Values* and *Raw Values* are available.

Sampled Values use first sample values returned from the historian.
• 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 FactoryTalk View SE DataLogPro historical 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).

elected Columns			
Name	Scaling	Heading	
MIXER_ZONE1_TEMP		MIXER_ZONE1_TEMP	
MIXER_ZONE2_TEMP		MIXER_ZONE2_TEMP	
MIXER_SPEED		MIXER_SPEED	
MIXER_RAMPRESSURE		MIXER_RAMPRESSURE	
EXTR_ZONE1_TEMP		EXTR_ZONE1_TEMP	
EXTR_ZONE2_TEMP		EXTR_ZONE2_TEMP	
EXTR_SPEED		EXTR_SPEED	
EXTR_PELLETSPEED		EXTR_PELLETSPEED	
BATCH_TANKTEMP		BATCH_TANKTEMP	
BATCH_MIXPRESSURE		BATCH_MIXPRESSURE	
BATCH_ZONE1		BATCH_ZONE1	
BATCH_ZONE2		BATCH_ZONE2	

Select Preview, pick a *Start* date and click Refresh.

Refresh in Stop	Date	MIXER_ZONE1_TEMP	MIXER_ZONE2_TEMP	MIXER_SPEED	MIXE
Date	7/15/2024	75.2514953613281	75.2514953613281	30.2514972686768	78.859
Start 15 Jul 2024	7/15/2024 12:01:00 AM	76.0377883911133	76.2697982788086	30.7119083404541	79.014
End 16 Jul 2024	7/15/2024 12:02:00 AM	77.0573883056641	76.5759582519531	31.6894912719727	79.16
	7/15/2024 12:03:00 AM	77.8605041503906	75.7008514404297	32.1360244750977	79.32
	7/15/2024 12:04:00 AM	78.0498962402344	75.1778182983398	31.1560840606689	79.47
	7/15/2024 12:05:00 AM	77.5141754150391	76.0082168579102	32.0497207641602	79.63
	7/15/2024 12:06:00 AM	76.5525741577148	76.6075210571289	31.1596412658691	79.78
	7/15/2024 12:07:00 AM	75.7629623413086	75.7748870849609	32.1476745605469	79.93
	7/15/2024 12:08:00 AM	75.6890563964844	75.3855667114258	32.1312637329102	80.08
	7/15/2024 12:09:00 AM	76.4161605834961	76.3784027099609	31.1884670257568	80.23
	7/15/2024 12:10:00 AM	77.4284744262695	76.3839416503906	30.2824649810791	80.39
	7/15/2024 12:11:00 AM	77.9343109130859	75.4555130004883	29.4010887145996	80.54
	7/15/2024 12:12:00 AM	77.5084609985352	76.1125411987305	32.4010887145996	80.69
	7/15/2024 12:13:00 AM	76.534423828125	76.5693740844727	32.0874633789063	80.83
	7/15/2024 12:14:00 AM	75.9487686157227	75.5900192260742	33.0927619934082	80.98
	7/15/2024 12:15:00 AM	76.366325378418	76.1614608764648	32.5507888793945	81.13
	7/15/2024 12:16:00 AM	77.3836975097656	76.5511016845703	32.9550704956055	81.28
	7/15/2024 12:17:00 AM	77.903923034668	75.6127014160156	32.2632446289063	81.43
	7/15/2024 12:18:00 AM	77.3383560180664	76.4835205078125	33.2593688964844	81.57
	7/15/2024 12:19:00 AM	76.3856582641602	76.2708358764648	33.5227241516113	81.72

FactoryTalk View SE Data Agent Real-time values

This connector is used to get real-time data from FactoryTalk View SE using the FactoryTalk View Data Agent.

Set up FactoryTalk View SE Data Agent

The FactoryTalk View Data Agent can be installed for **FactoryTalk View SE version 10 to version 14.x** on a FactoryTalk View SE stand-alone system, the FactoryTalk View SE server or any FactoryTalkView SE client. To obtain the FactoryTalkView SE Data Agent installation media, please contact SmartSights. You must provide your FactoryTalk View SE product serial number to be eligible.

After installation, the configuration for Data Agent must be updated so that any machine on the network can request data. To do so, open *RA.DataAgent.SDK.Service.Host.exe.config* using a text editor like Notepad. This file is typically found in *C:\Program Files* (*x86*)*Rockwell Software**RSView Enterprise**Data Agent SDK*.

In the text file, replace every instance of **localhost** with the IP address of the machine, save the file and close it. After closing it is recommended to restart the **Rockwell Data Agent** Windows Service.

FactoryTalk View SE

For **XLReporter** to collect real-time data through the FactoryTalk View SE Data Agent, the application must be running.

Windows Firewall

If the Windows Firewall is enabled in the machine where the FactoryTalk View SE Data Agent is running, the Port Number specified in the *RA.DataAgent.SDK.Service.Host.exe.config* must be opened to connect.

To do so:

- Open the **Windows Firewall**. Typically, the easiest way to do this is by typing *Firewall* into the search bar at the bottom left of Windows.
- Click Advanced Settings
- Right-click Inbound Rules and select New Rule.

What type of rule would you like to create?	
Program Rule that controls connections for a program.	
Port Rule that controls connections for a TCP or UDP port.	
O Predefined:	
AllJoyn Router 🗸 🗸	
Rule that controls connections for a Windows experience.	
O Custom Custom rule.	

• For the rule type select *Port* and click **Next**

Does this rule apply to TCP or U	DP?
● TCP ○ UDP	
Does this rule apply to all local p	orts or specific local ports?

- For **Protocol and Ports** select *TCP* protocol.
- Select **Specific local ports** and specify the port number as found in the *RA.DataAgent.SDK.Service.Host.exe.config* (this is specified after the IP address and by default is *12344*, e.g., *192.168.1.1:12344*). Click **Next**.
- Leave Allow the connection selected and click Next.
- Apply the rule for every network type required and click **Next**.
- Give the rule a Name and click Finish.

Connector

To configure the connector to the FactoryTalk View SE Data Agent Real-time values, from the **Project Explorer** select **Data, Connectors**.

- Click Add
- Select Rockwell Automation, FactoryTalk View SE Data Agent Real-time values
- Click OK

Connection Tab

ent Settings	-		×
/iewDataAgent DA_1			
Settings			
http ~			
192.168.9.49			
12344			
sytech			
Network		\sim	
	Cor	nnect	
			_
	Ant Settings AnewDataAgent DA_1 Settings http v 192.168.9.49 12344 sytech metwork	Ant Settings	Ant Settings — AwDataAgent DA_1 Settings http 192.168.9.49 12344 sytech Network Connect

The settings on this tab define where the FactoryTalk View SE Data Agent is located and how to connect to it.

Protocol

This can be either http or https. If a secure connection is required, use https, otherwise use http.

Please note, if using *https*, bind the certificate to the SSL port, and then *https* protocol will work properly.

IP Address

The IP address of the machine where the FactoryTalk Data Agent service is running.

Port

The port number configured for the FactoryTalk Data Agent service. By default, this is 12344.

User Name

A valid user name configured within the FactoryTalk View SE application.

Password

The corresponding password for the specified User Name.

Application Location

The location of the FactoryTalk View SE application to connect to. This can either be *Local* or *Network*.

Once these settings are configured, click **Connect** to verify a connection to the FactoryTalk Data Agent.

Application Tab

FactoryTalk Vi	ew Data Age	ent Settings	_		×
Connector Na	me FT\	/iewDataAgent DA_1			
Connection	Application	Settings			
Name		Global.InstantFizz		\sim	
HMI Path	i	/HMI_Area/InstantFizz	_HMI	\sim	
			Apply	Clo	se

The settings on this tab define the FactoryTalk View SE application where data can be retrieved from. Name

The application name. A list of applications is provided based on the settings in the **Connection** tab.

HMI Path

The HMI path for the Name. A list of paths is provided based on the selected Name.

Settings Tab

F	FactoryTalk View Data Agent Settings — 🛛 🗙			×	
	Connector Name FTViewDataAgent DA_1				
	Connection Application Settings				
	Request timeout 20	secs			
	Wait before request 0	msecs			
	Request retries before fail 2				
	Request retry interval 100 ≑	msecs			
		Apply	(Close	

The settings on this tab define tuning parameters that should only be altered if there are issues connecting to or retrieving data from the FactoryTalk View SE Data Agent.

Request timeout

The number of seconds to wait for a request to complete before a timeout error occurs. The default is 20 seconds.

Wait before request

The number of milliseconds to wait between connecting to the FactoryTalk Data Agent and requesting data. The default is 0 milliseconds.

Request retries before fail

If a request fails, this is the number of times the request is retried before it is considered an error. The default is 2.

Request retry interval

The number of milliseconds to wait between each retry if a request fails. The default is 100.

Verify Data Communication

To verify communication to FactoryTalk View SE Data Agent, open the **Project Explorer** and select the **Tools** tab. Launch the **System Check** application.

- Click Add
- Choose the FactoryTalk View SE Data Agent Connector from the dropdown list
- Click the pushbutton ([...]) next to Items to open the **Tag Browser** window.



• Select one or more tags, click **OK**.

System Check				×
File Edit Tools				
Connector General				
🛉 🖬 Add 🧹 Modify 📡	🕻 Delete 🛛 🔛 Clear 🛛 🥥 Stop			
Connector	Item	Description	Value	^
FTViewDataAgent DA_1	Data_Area.AB240.Online.BATCH_MI	BATCH_MIXPRESSURE	87.943695068359375	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BATCH_TA	BATCH_TANKTEMP	87.943695068359375	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BATCH_ZO	BATCH_ZONE1	87.943695068359375	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BATCH_ZO	BATCH_ZONE2	90.162956237792969	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BM_OFFSET	BM_OFFSET	0.778073251247406	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BM_RAND	BM_RAND	0.16295915842056274	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BM_SCALE	BM_SCALE	7.9436917304992676	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BT_OFFSET	BT_OFFSET	0.778073251247406	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BT_RAND	BT_RAND	0.16295915842056274	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BT_SCALE	BT_SCALE	7.9436917304992676	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BZ1_OFFS	BZ1_OFFSET	0.778073251247406	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BZ1_RAND	BZ1_RAND	0.16295915842056274	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BZ1_SCALE	BZ1_SCALE	7.9436917304992676	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BZ2_OFFS	BZ2_OFFSET	1	
FTViewDataAgent DA_1	Data_Area.AB240.Online.BZ2_RAND	BZ2_RAND	0.16295915842056274	~
🔛 Clear				
			Initialise Server and Items (ms) : 2 Open Server and items (ms) : 144 Read Server items (ms) : 92 Update display (ms) : 1	

• Click **Start** to verify the communication

FactoryTalk View SE Data Agent Data File(s)

This connector is used to get historical data from any Data Log Model configured in a FactoryTalk View SE application using the FactoryTalk View SE Data Agent.

Set up FactoryTalk View SE Data Agent

The FactoryTalk View Data Agent can be installed for **FactoryTalk View SE version 10 to version 14.x** on a FactoryTalk View SE stand-alone system, the FactoryTalk View SE server or any FactoryTalkView SE client. To obtain the FactoryTalkView SE Data Agent installation media, please contact SmartSights. You must provide your FactoryTalk View SE product serial number to be eligible.

After installation, the configuration for Data Agent must be updated so that any machine on the network can request data. To do so, open *RA.DataAgent.SDK.Service.Host.exe.config* using a text editor like Notepad. This file is typically found in *C:\Program Files* (*x*86)*Rockwell Software**RSView Enterprise**Data Agent SDK*.

In the text file, replace every instance of **localhost** with the IP address of the machine, save the file and close it. After closing it is recommended to restart the **Rockwell Data Agent** Windows Service.

FactoryTalk View SE

For **XLReporter** to collect data through the FactoryTalk View SE Data Agent, the application must be running.

Define Data Log Models

Open the **FactoryTalk View SE Studio** from the **Rockwell Software** or **FactoryTalk View** program group then open the current application.

Under the Data Log folder in the Explorer, select the Data Log Models icon.

Under the **Setup** tab,

Power Station - /InstantFizz_SE/ (Data Log Models)				
<u>S</u> etup	<u>P</u> aths File <u>M</u> ana	gement	Log <u>T</u> riggers	T <u>a</u> gs in Model
Model Name:	Power Station			ΟΚ
Description:	Power Station			
Log File Identifier String:	PowerStation			Cancel
ruenuner suring.				Help
Storage Forma	t 🔿 ODBC database	e		
Number of Cł	aracters in String:	82		

- Add a **Description** and **Log File Identifier String**.
- Set the **Storage Format** to *File Set*.

Under the Paths tab,

Setup Paths File Management Log Triggers	T <u>a</u> gs in Mode
Primary Path	OK
C:\Users\Public\Documents\RSView Enterprise\SE\HMI Projec	Cancel
Logging Path: Relative to Project Location Absolute Path	
Secondary Path	Help
Enable Switchover to Secondary Path	
Logging Path: O Relative to Project Location	
Advanced	

• Set the **Primary Path** to where the files are stored.

Under the File Management tab,

Setup Paths File Management Log Triggers	Tags in Model
Start New Files Periodic At Specified Times On Event Never	OK Cancel
Hourly Daily (Change at Midnight) Weekly (Change at Midnight Saturday) Monthly (Change at Midnight on the Last Day of the Month)	Help
Delete Oldest Files After Maximum Time 10 © Days Weeks Months After Maximum Files 10	
If you select both checkboxes, files are deleted after the maximum time or after the maximum number of files is reached, whichever happens first.	

- Specify how often you want new files created. It is suggested to create *Periodic* files that start *Daily (Change at Midnight)*.
- Indicate if old files should be deleted under the **Delete Oldest Files** section.

Under the Log Triggers tab,



• Specify how the logging of tag values will be triggered i.e., periodically, on change or on demand.

The **On Demand** option will log data when the **DataLogSnapshot** command is issued. This command can be issued from anywhere that commands and macros are supported. For example, it could be typed in the command line or specified as the action for an event. If **Periodic** or **On Change** is selected, on demand logging can still be used whenever it is appropriate.

Under the Tags in Model tab,

🍃 Untitled - /InstantFi:	zz_SE/ (Data Log Models)	×			
Setup Paths	File <u>M</u> anagement Log <u>T</u> riggers	Tags in Model			
Enter tag names, separated by a space if more than one, in the "Tag(s) to Add" box, then choose the "Add" button to add them to the list of tags in the model.					
Tag(s) to Add:	{Dashboard_Trending\Current_OEE_F	Cancel			
Tags in Model:	system\BlinkFast system\BlinkSlow system\Date	Help			
Remove	system/DateAndTimeInteger system/DateAndTimeString system/DayOfMonth				
Remove All	system/DayOf/Veek system/DayOf/Year system/Hour system/Minute				
	system/Month system/MonthString system/Second				
	16 Tag(s) in the Model				

- Specify the tags to be logged. The maximum number of tags that can be logged by one data log model is 10,000.
- Close the dialog.

On close the **Save** dialog is opened.

Save	×
Component name:	
ОК	Cancel

Add a *Component* name. This is the name of the Data Log Model.

Start Data Log

To start the data log when FactoryTalk View SE starts, access the HMI Properties dialog.



• Right click on the application and select *Properties*.

Under the Components tab,

InstantFizz_SE Properties		×
General Components		
On startup components		
		_
🗹 Data logging:	Power Station	\sim
Derived tags:		\sim
Events:		\sim
Macro:	startup	\sim
🗌 On shutdown macro:	loginMacro	\sim
		_
Run Startup Components	s Stop All Running Components	
ОК	Cancel Apply H	elp

• Check **Data Logging** and select the data log model.

If more than one data log model needs to be started, they can be started using the command:

DataLogOn "Component name"

Where "*Component name*" is the data log model name. If the model's name has a space in it, enclose the name in quotes. The command can be issued from the command line or from a startup or login macro. For example:

DataLogOn"Power Station"

Note that in FactoryTalk View SE, an HMI server can have up to 20 data log models running at one time.

Windows Firewall

For details on what to configure in the Windows Firewall, see the Windows Firewall section of the FactoryTalk View SE Data Agent Real-time values chapter of this document.

Prerequisites

Verify Data Files

Open the **FactoryTalk View SE Studio** from the **Rockwell Software** or **FactoryTalk View** program group. Then open the application to configure.

Select the Data Log Models icon under the Data Log folder, open the data log model.

• Open the **Paths** tab and note the **Primary Path**

Power Station - /InstantFizz_SE/ (Data Log Models)	—
Setup Paths File Management Log Triggers	T <u>ag</u> s in Model
Primary Path	OK
C:\Users\Public\Documents\RSView Enterprise\SE\HMI Projec	Cancel
Logging Path: Relative to Project Location Absolute Path	
Secondary Path Enable Switchover to Secondary Path	Help

Verify Tags and Data Open the FactoryTalk View File Viewer from the Rockwell Software program group.

é [Open	Ctrl+0					
Dar	Close		e	Value	Status	Marker	^
/8	Save Ac		\BLINKFAST	 0.0000000	U	В	
/8	Surce Asia		BLINKSLOW	 0.0000000	U	B	
/8	Print Preview		DATEANDTIMEINTEGER	 0.0000000	U	В	
/8	D.1.	C1 . D	DAYOFMONTH	 0.0000000	U	В	
/8	Print	Ctrl+P	DAYOFWEEK	 0.00000000	U	B	
/8	1 2020 01 08 0000 DowerStation (Elect) DAT	DAYOFYEAR	 0.0000000	U	B	
/8	1 2020 01 08 0000 POWEI3tation (i	rioaty.bAi	HOUR	 0.00000000	U	B	
8	Evit		MINUTE	 0.00000000	U	В	
/8,			\MONTH	 0.00000000	U	В	
8/2020	13:45:09	799 SYSTE	VI\SECOND	 0.00000000	U	B	
8/2020	13:45:09	799 SYSTE	VI\YEAR	 0.00000000	U	В	
8/2020	13:46:09	823 SYSTE	M\BLINKFAST	 1.00000000			
8/2020	13:46:09	823 SYSTE	M\BLINKSLOW	 1.00000000			
8/2020	13:46:09	823 SYSTE	M\DATEANDTIMEINTEGER	 1578509109.0000			
/8/2020	13:46:09	823 SYSTE	M\DAYOFMONTH	 8.00000000			
/8/2020	13:46:09	823 SYSTE	M\DAYOFWEEK	 4.00000000			
/8/2020	13:46:09	823 SYSTE	M\DAYOFYEAR	 8.00000000			
/8/2020	13:46:09	823 SYSTE	M\HOUR	 13.0000000			
8/2020	13:46:09	823 SYSTE	MMINUTE	 45.00000000			
/8/2020	13:46:09	823 SYSTE	MMONTH	 1.00000000			
							>

Select **File**, **Open** and navigate to the path. Open the most recent (*Tagname*), (*Float*) and (*String*) files in the path.

• Verify the tag file is correct and that the float and string files contain data

Connector

To configure the connector to the FactoryTalk View SE Data Agent Data file(s), from the **Project Explorer** select **Data, Connectors**.

- Click Add
- Select Rockwell Automation, FactoryTalk View SE Data Agent Data file(s)
- Click **OK**

Connection Tab

FactoryTalk View Data Age	ent Settings	_	
Connector Name FT	∕iewDataAgent Data Fi	iles_1	
Connection Application	Settings		
Protocol	http ~		
IP Address	192.168.9.49		
Port	12344		
User Name	sytech		
Password			
Application Location	Network		\sim
		Conn	rect
		Apply	Close

The settings on this tab define where the FactoryTalk View SE Data Agent is located and how to connect to it.

Protocol

This can be either http or https. If a secure connection is required, use https, otherwise use http.

Please note, if using *https*, bind the certificate to the SSL port, and then *https* protocol will work properly.

IP Address

The IP address of the machine where the FactoryTalk Data Agent service is running.

Port

The port number configured for the FactoryTalk Data Agent service. By default, this is 12344.

User Name

A valid user name configured within the FactoryTalk View SE application.

Password

The corresponding password for the specified User Name.

Application Location

The location of the FactoryTalk View SE application to connect to. This can either be *Local* or *Network*.

Once these settings are configured, click **Connect** to verify a connection to the FactoryTalk Data Agent.

Application Tab

FactoryTalk View Data Age	ent Settings —		×
Connector Name FT	ViewDataAgent Data Files_1		
Connection Application	Settings		
Name	Global.FTViewDemo	~	
HMI Path	/Line1_HMI/FTViewDemo_HMI	\sim	
	Apply	Clo	ose

The settings on this tab define the FactoryTalk View SE application where data can be retrieved from. Name

The application name. A list of applications is provided based on the settings in the **Connection** tab.

HMI Path

The HMI path for the Name. A list of paths is provided based on the selected Name.

Settings Tab

FactoryTalk View Data A	gent Setting	s	-		Х
Connector Name F	TViewData Ag	ent Data Files	s_1		
Connection Applicatio	n Settings				
Request timeout	2	20 🔹	secs		
		[Apply	Clo	se

The settings on this tab define tuning parameters that should only be altered if there are issues connecting to or retrieving data from the FactoryTalk View SE Data Agent.

Request timeout

The number of seconds to wait for a request to complete before a timeout error occurs. The default is 20 seconds.

Data Group

The following describes the historical data group settings specific to the **FactoryTalk View Data Agent Historian SE** connector.

Group Types

Select Group Type	<
 Summary Values from Server 	
Summary Values from XLReporter	
◯ Raw Values	
◯ Raw Text	
◯ Sampled Values	
O Live Values	
O Custom Values	
Base on	
 dank>	
OK Cancel	

For FactoryTalk View SE Data Agent Data File(s) 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
- Cumulative Total
- Delta Value
- End Value
- Interpolated
- Linear
- Maximum
- Time of Maximum

- Maximum and Hold
- Minimum
- Time of Minimum
- Minimum and Hold
- Range
- Sample and Hold
- Standard Deviation
- Start Value
- Raw Total
- Raw Average
- Average and Hold
- Total
- Total and Hold
- Variance

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 all the values logged to the historian between the start and end time specified.

Group Settings

Setup Tab (Summary Values for XLReporter)

ile Edit Previe	w					
Setup Column	Two Daried Divers					
Columns	Time renod ritters					
	1	Description				
		Referred				
		Retrieval				
		Retrieval Retrieval Mode	Sampled Valu	65	×	
		Retrieval Retrieval Mode Rate (secs)	Sampled Valu	65	~	
		Retrieval Retrieval Mode Rate (secs)	Sampled Valu	es	v	

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. For FactoryTalk View Data Agent *Sampled Values* and *Raw Values* are available.

Sampled Values use interpolated values returned from the historian.

• 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 (Raw Values and Summary Values from XLReporter)

t Preview				
Columns Time Period Filters				
Name	Criteria	Or	Or	Or
Server Filter				
Setting	Value			
Time Deadband (seconds)	0			
Value Deadband	0			
Guality	Good or Bad or Uncertain			

The **Server Filter** settings can be used to restrict the amount of raw data returned from the historian.

Time Deadband (seconds)

The minimum amount of time (in seconds) between raw samples. The default is 0 which basically disables this setting.

Value Deadband

When set, if the difference between the previous and current samples is less than this value, the current sample is not returned. The default is 0 which basically disables this setting.

Quality

This defines allowable quality of the values returned. For example, if the report should only show good quality values, set this to *Good*.

Please note that in a **Summary Values from XLReporter** group these settings only take affect when the **Retrieval Mode** is *Raw Values*.

Verify the Data Connector

From the XLReporter Project Explorer select, Tools, Connector Groups

Select the FactoryTalk View SE Data Agent Data Files 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).



The tags for the data log models are typically found under the **HMI_Area** branch. Notice that every data log model configured for the application is available.

up	Columns Time Period Filters			
Selec	cted Columns			
00.00	Name	Scaling	Heading	_
•	HMI Area @AB240 /Data Area (AB240)BATCH LOTID		/Data Area: (AR240)BATCH LOTID	
	HMI Area @AB240 /Data Area: [AB240]BATCH MIXP		/Data_Area::[AB240]BATCH_MIXPRESSURE	
	HMI_Area @AB240 /Data_Area (AB240)BATCH_PROD		/Data Area:: [AB240]BATCH_PRODUCTID	
	HMI Area.@AB240./Data Area::[AB240]BATCH TANK		/Data Area:: [AB240]BATCH TANKTEMP	
	HMI Area @AB240 /Data Area::[AB240]BATCH ZONE	1	/Data Area:: [AB240]BATCH ZONE1	
	HMI Area.@AB240./Data Area::[AB240]BATCH ZONE	2	/Data Area:: [AB240]BATCH ZONE2	
	HMI Area.@AB240./Data Area::[AB240]BM OFFSET		/Data Area::[AB240]BM OFFSET	
	HMI Area.@AB240./Data Area::[AB240]BM RAND		/Data Area:: [AB240]BM RAND	
	HMI Area.@AB240./Data Area;;[AB240]BM SCALE		/Data Area::[AB240]BM SCALE	
	HMI_Area.@AB240./Data_Area::[AB240]BT_OFFSET		/Data_Area::[AB240]BT_OFFSET	
	HMI_Area.@AB240./Data_Area;;[AB240]BT_RAND		/Data_Area::[AB240]BT_RAND	
	HMI_Area.@AB240./Data_Area::[AB240]BT_SCALE		/Data_Area::[AB240]BT_SCALE	
	HMI_Area.@AB240./Data_Area::[AB240]BZ1_OFFSET		/Data_Area::[AB240]BZ1_OFFSET	
	HMI_Area.@AB240./Data_Area::[AB240]BZ1_RAND		/Data_Area::[AB240]BZ1_RAND	
	HMI_Area.@AB240./Data_Area;;[AB240]BZ1_SCALE		/Data_Area::[AB240]BZ1_SCALE	
	HMI_Area.@AB240./Data_Area::[AB240]BZ2_OFFSET		/Data_Area::[AB240]BZ2_OFFSET	

Select Preview, pick a Start date and click Refresh.

Refresh 💿 Stop	Date	/Data_Area::[AB240]BATCH_MIXPRESSURE	/Data_Area::[AB240]BATCH_TANKTEM
Date	1/29/2021	70.949501	70.949501
Start 29 Jan 2021	1/29/2021 12:00:46 AM	70.686104	70.686104
End 30 Jan 2021	1/29/2021 12:01:46 AM	78.150467	78.150467
0, 0, 🔺 🕨 🔸	1/29/2021 12:02:46 AM	81.658325	81.658325
	1/29/2021 12:03:46 AM	80.58284	80.58284
	1/29/2021 12:04:46 AM	70.800186	70.800186
	1/29/2021 12:05:46 AM	90.688286	90.688286
	1/29/2021 12:06:46 AM	74.644676	74.644676
	1/29/2021 12:07:46 AM	78.252457	78.252457
	1/29/2021 12:08:46 AM	78.255707	78.255707
	1/29/2021 12:09:46 AM	70.773117	70.773117
	1/29/2021 12:10:46 AM	76.656311	76.656311
	1/29/2021 12:11:46 AM	70.357414	70.357414
	1/29/2021 12:12:46 AM	71.899185	71.899185
	1/29/2021 12:13:46 AM	77.719429	77.719429
	1/29/2021 12:14:46 AM	90.144257	90.144257
	1/29/2021 12:15:46 AM	89.824203	89.824203
	1/29/2021 12:16:46 AM	71.432625	71.432625
	1/29/2021 12:17:46 AM	75.042824	75.042824
	1/29/2021 12:18:46 AM	74.549232	74.549232
	() () () () () () () () () ()		>

Rockwell Automation Connectors

FactoryTalk View Data Agent Historian SE

This connector is used to get historical data from any FactoryTalk Historian SE configured as a Connection in a FactoryTalk View SE application using the FactoryTalk View SE Data Agent.

Set up FactoryTalk View SE Data Agent

The FactoryTalk View Data Agent can be installed for **FactoryTalk View SE version 10 to version 14.x** on a FactoryTalk View SE stand-alone system, the FactoryTalk View SE server or any FactoryTalkView SE client. To obtain the FactoryTalkView SE Data Agent installation media, please contact SmartSights. You must provide your FactoryTalk View SE product serial number to be eligible.

After installation, the configuration for Data Agent must be updated so that any machine on the network can request data. To do so, open *RA.DataAgent.SDK.Service.Host.exe.config* using a text editor like Notepad. This file is typically found in *C:\Program Files* (*x*86)*Rockwell Software**RSView Enterprise**Data Agent SDK*.

In the text file, replace every instance of **localhost** with the IP address of the machine, save the file and close it. After closing it is recommended to restart the **Rockwell Data Agent** Windows Service.

FactoryTalk View SE

For **XLReporter** to collect data through the FactoryTalk View SE Data Agent, the application must be running.

The FactoryTalk View SE Data Agent provides access to any Historian configured as a **Historical Data** connection within the FactoryTalk View Studio.

System
 Action Groups
 Policies
 Computers and Groups
 Sources and Groups
 Connections
 Databases
 Databases
 Historical Data
 Production Historian
 Broduction Lata ME
 Permission Sets

System Management Tools

For the Data Agent to access the FactoryTalk Historian SE a trust must be set up for the IP address where the Data Agent is running. This may already be set up but if the IP address of the machine where the Data Agent is running changes, the trust may need to be updated or a new one configured.

To configure or modify a trust open **the Factory Talk System Management Tools** as an administrator.



On the left expand Security and select Mappings & Trusts.

On the right side, select the **Trust** tab to view the list of existing trusts. If there is a trust configured that has the wrong IP address, double click it to modify the IP address to the machine where Data Agent is installed. Otherwise, create a new trust by clicking the icon in the upper left corner above the **Mappings** tab.

😽 Add Trust Wizard		? ×
Specify Trust Name an lype in a unique name for i server the trust will be created	Id Server the trust on a specific server, and ted on.	I specify the
Server: Trust Name: Trust Description:	RA-1 ~ XLReporter	
	Back Next	Cancel

Set the Trust Name and click Next.

😽 Add Trust Wizard	?	×
Select Type of Trust to Add Select the type of trust to add. Most PI Interfaces are PI-API to Clients are PI-SDK based.	ased. M	ost PI
PI-API application PI-SDK application on a Windows NT based OS		
Back Next	Can	cel

Select **PI-API application** and click **Next**.

😽 Add Trust Wizard		? ×
Specify Application I he application name si calling application with	Name (optional) hould be the tour character strir an "E" appended to it.	ig provided by the
Application Name:		
	Back Next	Cancel

Leave the Application Name blank and click Next.

😽 Add Trust Wizard		?	×
Specify Client Connect Specify the client node into The network path should b	tion Information (optional) rmation tor the trust. e the machines fully qualified domai	n name.	
Network Path:			
IP Address:	192 . 168 . 9 . 49		
NetMask:	255 . 255 . 255 . 255		
[Back Next	Cance	el

Set **IP** Address and **NetMask** to the settings of the machine where the Data Agent is running. Click **Next**.

😽 Add Trust Wizard			?	\times
Select PI User Select the PI User that will be a	used for the tru	ust that is being c	onfigured.	
PI Identity:	piadmin			
Trust is disabled				
	Back	Finish	Cance	l -

Set PI Identify to a user in the system. Click Finish.

If configuring the trust does not allow the browsing of Historian tags, check the *Operation, Message Logs* in the **System Management Tools** application on the historian machine. Click the magnifying glass in the upper left corner to refresh the logs for the last 5 minutes.

If the error states:

```
"Trust request from: NT
AUTHORITY\SYSTEM|ABC|fe11::11aa:bb11:c2d3:1111%10|RA.DataAgent.SDK.Service.Host.exe
failed: [-10413] No trust relation for this request (0)"
```

This indicates that IPv6 is enabled on the system and a trust has not been established to the IPv6 address. To resolve, you can either disable IPv6 or set up a new historian trust to the IPv6 address, if possible.

Windows Firewall

For details on what to configure in the Windows Firewall, see the Windows Firewall section of the FactoryTalk View SE Data Agent Real-time values chapter of this document.

Connector

To configure the connector to the FactoryTalk View Data Agent Historian SE, from the **Project Explorer** select **Data, Connectors**.

- Click Add
- Select Rockwell Automation, FactoryTalk View Data Agent Historian SE
- Click **OK**

Connection Tab

FactoryTalk View Data Age	nt Settings	_		×
Connector Name FTV	iewDataAgent Historian_	1		
Connection Application	Settings			
Protocol	http ~			
IP Address	192.168.9.49			
Port	12344			
User Name	sytech			
Password				
Application Location	Network		\sim	
		Cor	nnect	
		Apply	C	ose

The settings on this tab define where the FactoryTalk View SE Data Agent is located and how to connect to it.

Protocol

This can be either http or https. If a secure connection is required, use https, otherwise use http.

Please note, if using *https*, bind the certificate to the SSL port, and then *https* protocol will work properly.

IP Address

The IP address of the machine where the FactoryTalk Data Agent service is running.

Port

The port number configured for the FactoryTalk Data Agent service. By default, this is 12344.

User Name

A valid user name configured within the FactoryTalk View SE application.

Password

The corresponding password for the specified User Name.

Application Location

The location of the FactoryTalk View SE application to connect to. This can either be *Local* or *Network*.

Once these settings are configured, click **Connect** to verify a connection to the FactoryTalk Data Agent.

Application Tab

FactoryTalk Vi	ew Data Age	ent Settings	-		Х
Connector Na	me FT\	/iewDataAgent Historian	_1		
Connection	Application	Settings			
Name		Global.InstantFizz		~	
HMI Path		/HMI_Area/InstantFiz	z_HMI	\sim	
			Apply	Clo	se

The settings on this tab define the FactoryTalk View SE application where data can be retrieved from. Name

The application name. A list of applications is provided based on the settings in the **Connection** tab.

HMI Path

The HMI path for the Name. A list of paths is provided based on the selected Name.

Settings Tab

FactoryTalk View Data Ag	ent Settin	gs		-	×
Connector Name FT	ViewDataA	gent Histor	ian_	1	
Connection Application	Settings				
Request timeout		20	•	secs	
				Apply	Close

The settings on this tab define tuning parameters that should only be altered if there are issues connecting to or retrieving data from the FactoryTalk View SE Data Agent.

Request timeout

The number of seconds to wait for a request to complete before a timeout error occurs. The default is 20 seconds.

Data Group

The following describes the historical data group settings specific to the **FactoryTalk View Data Agent Historian SE** connector.

Group Types

📄 Select Group Type 🛛 🗙
Summary Values from Server
O Summary Values from XLReporter
◯ Raw Values
◯ Raw Text
Sampled Values
O Live Values
O Custom Values
Base on
 dank>
OK Cancel

For FactoryTalk View Data Agent Historian SE 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
- Cumulative Total
- Delta Value
- End Value
- Interpolated
- Linear
- Maximum
- Time of Maximum
- Maximum and Hold
- Minimum
- Time of Minimum
- Minimum and Hold
- Range
- Sample and Hold
- Standard Deviation
- Start Value
- Raw Total
- Raw Average
- Average and Hold
- Total
- Total and Hold
- Variance

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 all the values logged to the historian between the start and end time specified.

Group Settings

Setup	Tab (Summarv	Values	for	XLRei	porter))
betup	I an i	(Dummary	values	101	ALINU	point (i)	1

File E	dit Previ	ew							
Setup	Columns	Time Period	Filters						
			C	Description					
					L				
				Retrieval					
				Retrieval Retr	ieval Mode	Sampled Valu	ies	~	

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. For FactoryTalk View Data Agent Historian *Sampled Values* and *Raw Values* are available.

Sampled Values use interpolated values returned from the historian.

• 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 (Raw Values and Summary Values from XLReporter)

Columns Time Period Filters				
Name	Criteria	Or	Or	Or
•				
Server Filter				
Setting	Value			
Time Deadband (seconds)	0			
Value Deadband	0			
Quality	Good or Bad or Uncert	tain		
Goodity				
County				

The **Server Filter** settings can be used to restrict the amount of raw data returned from the historian.

Time Deadband (seconds)

The minimum amount of time (in seconds) between raw samples. The default is 0 which basically disables this setting.

Value Deadband

When set, if the difference between the previous and current samples is less than this value, the current sample is not returned. The default is 0 which basically disables this setting.

Quality

This defines allowable quality of the values returned. For example, if the report should only show good quality values, set this to *Good*.

Please note that in a **Summary Values from XLReporter** group these settings only take affect when the **Retrieval Mode** is *Raw Values*.

Verify the Data Connector

From the XLReporter Project Explorer select, Tools, Connector Groups

Select the FactoryTalk View Data Agent Historian SE 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).





Output Options

Timestamp on first column

Empty rows between records 0

Preview		_		
5 Refresh 💿 Stop	~	Date	[InstantFizz.Data_Area:FactoryTalk	[instantFizz.Data_Area:FactoryTalk Linx:AB24
Date		2/1/2021	83.8109512329102	82.9031143188476
Start 01 Feb 2021	•	2/1/2021 12:00:03 AM	81.8908386230469	79.0771102905273
End 02 Feb 2021		2/1/2021 12:00:08 AM	87.0001525878906	87.0001525878906
् ् ୶ 🕨	- • •	2/1/2021 12:00:13 AM	70.0548706054688	70.0548706054688
		2/1/2021 12:00:18 AM	89.4257888793945	89.4257888793945
		2/1/2021 12:00:23 AM	89.7465209960938	83.2975006103516
		2/1/2021 12:00:28 AM	72.2460861206055	72.2460861206055
		2/1/2021 12:00:33 AM	89.2181930541992	89.2181930541992
		2/1/2021 12:00:38 AM	75.7755661010742	75.7755661010742
		2/1/2021 12:00:43 AM		82.8276748657227
		2/1/2021 12:00:48 AM	71.5682907104492	71.5682907104492
		2/1/2021 12:00:53 AM	89.8965682983398	89.8965682983398
		2/1/2021 12:00:58 AM	73.7452011108398	73.7452011108398
		2/1/2021 12:01:03 AM	79.0769805908203	87.8930358886719
		2/1/2021 12:01:08 AM	70.0501861572266	70.0501861572266
		2/1/2021 12:01:13 AM	89.7991485595703	89.7991485595703
		2/1/2021 12:01:18 AM	71.3038177490234	71.3038177490234
		2/1/2021 12:01:23 AM	70.0763549804688	70.0763549804688
		2/1/2021 12:01:28 AM	72.2458267211914	72.2458267211914
		2/1/2021 12:01:33 AM	77.0159225463867	77.0159225463867

Transpose
Include Heading

FactoryTalk Historian SE (OPC HDA)

This connector is used to get historical data from the FactoryTalk Historian SE via the PI OPC HDA server. This approach requires the Historian SE, OPC Data Access Perpetual license. For more information, please contact your Rockwell Automation representative.

Set up OPC HDA Server

Installation

The OPC-HDA server is not installed by default, it is a separate installation found on the installation media under *Advanced Server Options**PIDASSetup**OPC DA_HDA**OPC DA_HA Server*.

Licensing

A license must be assigned to the Historian to allow access via OPC HDA.

Open **FactoryTalk Administration Console** from the Rockwell Software program group and select the appropriate FactoryTalk Directory.



- In the Explorer, expand Network, System, Connections.
- Expand **Historical Data**, select the Data Collection Interface configured, right-click and select **Properties**.

🕲 RSLinx Data - Historian	Server Connec	tion Properties	i -	×
General Licensing Point	Sources			
Historian Server:				
RA-1				
Activation	Total	In Use	Assigned	٦.
FHSE.5000	1	0	0	
FHSE.Advanced	1	0	1	
FHSE.H2H	1	0	0	
FHLD.2500	1	0	0	
PTY3.500	1	0	0	
AVIEW.1	1	0	0	
Show Assigned	Show All			
2	ОК	Cance	Apply	

Under the **Licensing** tab assign the OPC or Advanced Historian license under the **Assigned** column by setting the value to *1*.

OPC HDA Tuning for Automation

The first time **XLReporter** accesses data from the FactoryTalk Historian, a popup window will appear. This behavior will prevent any report scheduling and so it must be suppressed by launching the server with a specific Windows Account.

File Action View Help File Action View Help	D II ID							
	D II ID							
Services (Local) PI OPC HDA Se Stop the service Pause the service Restart the service Description: PI OPC Historica to PI								
PI OPC HDA Se Stop the service Pause the servic Restart the servi Description: PI OPC Historica to PI	Local)							
Stop the service Pause the servic Restart the servic Description: PI OPC Historica to PI	erver	Name	Description	Status	Startup Type	Log On As		^
Stop the service Pause the servic Restart the servi Description: PI OPC Historica to PI		🐘 PI Network Manager		Running	Automatic	NT SERVICE\pinetmg		
Restart the service Restrict the service Description: PI OPC Historica to PI	2	🐘 PI OPC HDA Server	PLODGUE	n 1	Automatic	.\SyTech		
Extended (Sta	ice al Data Access Server	 PI Performance Equation Sc PI Performance Monitor (fu PI Ramp Soak Simulator (r PI Random Simulator (r.ad PI Recalculator Subsystem PI Shutdown Subsystem PI Subsystem PI SQL Subsystem PI PI C Log Server 	Start Stop Pause Resume Restart All Tasks Refresh Propert Help Service to b Service to	; >	Automatic Automatic Automatic Manual Automatic Automatic Automatic Automatic Automatic Disabled Disabled Automatic	Local System NT Service\PIPerfMor Local System Local System Local System Local System NT SERVICE\PIDirecto Local System Local System Local System Local System Local System	ry	~

- Locate the **PI OPC HDA Server** service, right-click and select **Stop**.
- Right click again and select **Properties**.
- Go to the Log on tab, select This Account and specify an account.

PI OPC HI	DA Serve	r Prope	rties ((Local Co	mpute	r)		×
General	Log On	Recov	ery I	Dependen	cies			
Log on a	as:							
O Loca	I System llow servi	account ce to inte	eract \	with deskt	op			
This	account:	[.\SyT	'ech			Browse	
Pass	word:	[••••	•••••	••••			
Confi	im passw	ord:	••••	•••••	••••			
				OK		Cancel	Apply	r

Configure the server itself to launch with the same account by updating DCOM settings. To access DCOM settings, for a 32-bit operating system, select **Start**, **Run**, and enter *dcomcnfg*. For a 64-bit operating system enter *comexp.msc* /32.



- Expand Component Services, Computers, My Computer, DCOM Config.
- Select **PI OSI HDA Server r**ight-click and select **Properties**
- Select the **Security** tab
- Set Launch and Activation Permissions to Customize
- Click the **Edit** button.

Launch and Activation Permission	ı	?	\times
Security			
Group or user names:			_
SYSTEM Administrators (RA-1\Administr INTERACTIVE	rators)		
	Add	Remove	
-			
Permissions for SYSTEM	Allow	Deny	_
Permissions for SYSTEM Local Launch Remote Launch Local Activation Remote Activation	Allow	Deny	

• In Launch and Activation Permission, click Add.

Select Users or Groups	×
Select this object type:	
Users, Groups, or Built-in security principals	Object Types
From this location:	
RA-1	Locations
Enter the object names to select (examples):	
RA-1\SyTech	Check Names
Advanced	OK Cancel

• Add the current user, and/or any users associated with **XLReporter** design and runtime components.

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.

- To access data remotely with **XLReporter** Ultimate Edition, the ASPNET user should also be listed. If you experience issues retrieving the data from a team client, also add the user group EVERYONE to the list.
- If **XLReporter** is installed locally, enable **Local Launch** and **Local Activation**. For installations where **XLReporter** and FactoryTalk Historian are installed on separate machines, enable the **Remote** settings.

Launch and Activation Permissio	n	?	×
Security Group or user names: SYSTEM SyTech (RA-1\SyTech) Stadministrators (RA-1\Administ INTERACTIVE	trators)		
	Add	Remove	
Permissions for SYSTEM	Allow	Deny	_
Local Launch			
Remote Launch			
Remote Activation	V		
	OK	Cano	cel

Under the Identity tab,

PI_OSIHD	A Properti	es				?	×
General	Location	Security	Endpoints	Identity			
Which	user accour	nt do you v	vant to use to	o run this appli	icatio	in?	
The interactive user.							
) The	launching u	user.					
This	user						
User:			RA-1\SyTecl	ı		Browse	
Passy	word:	[••••••	•••••			
Confi	m password	#: [·	•••••	•••••			
() The	system acc	ount (serv	ices only).				
Leam m	iore about s	etting thes	e properties.				
		[OK	Cano	el	Ap	ply

• Set the account to **This user** and specify the same user account configured for the Windows Service to run under.

Restart the PI OPC HDA Server Windows service.

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

Validate OPC HDA Configuration

To validate that the OPC HDA server is functional, on the machine where the server is installed, run **PI_HDATool.exe**. This can be found in:

C:\Program Files (x86)\Rockwell Software\FactoryTalk Historian\PIPC\PI_OPC Tools\PI_HDATool

PI_HDATool			- 🗆 X
			^
Server Node Server N	ime ,		Load OK
	1 🚽 Connect Statu	s Browse Get Item Handles !	Show Items
			Cause 1 Lists
Selected localhost::0SI.HDA.1	Disconnect Sec	urity Release Item Handles V	alidate Items
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Start Time 🔲 Bounds	VETHISTOBIANONLY/BA/CONC 1:	817 Values	
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- 171 H.A. I	2020/02/25 20:01:46 0000000	21 670782 40000 Baw Data : Good Data :	1
End Lime / Interval	2020/02/25 20:02:46 0000000	22 242228 400C0 Baw Data : Good Data :	Add Timestamp
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	2020/02/25 20:05:46 0000000	22.547415_40000 Baw Data : Good Data :	
60	2020/02/25 20:06:16:0000000	21 523418 40000 Baw Data : Good Data :	
	2020/02/25 20:06:46 0000000	23 410595 40000 Baw Data : Good Data :	
	2020/02/25 20:07:46 0000000	22.630314 40000 Baw Data : Good Data :	
List Aggregates Select Aggregates	2020/02/25 20:08:46 0000000	23 199051 40000 Baw Data : Good Data :	
	2020/02/25 20:09:16 0000000	21 921 261 400 C0 Baw Data : Good Data :	
List Attributes Select Attributes	2020/02/25 20:00:17 0000000	23 368183 40000 Baw Data : Good Data :	
	2020/02/25 20:10:11:46 0000000	22.300103 40000 Naw Data: Good Data:	
Construction Association	2020/02/25 20:12:46 0000000	24 283258 40000 Baw Data : Good Data :	
Synchronous Asynchronous	2020/02/25 20:13:46.0000000	22 918634 40000 Baw Data : Good Data :	
Bead Baw Bead Baw	2020/02/25 20:13:40:0000000	24.561321 40000 Baw Data : Good Data :	
Tread Travy	2020/02/25 20:14:46 0000000	23.921512 40000 Raw Data : Good Data :	
	2020/02/25 20:15:16 0000000	24.463728 40000 Baw Data : Good Data :	,
Head At lime Read At lime	2020/02/25 20:15:46 0000000	24.403720 40000 Haw Data : Good Data :	
	2020/02/25 20:15:46:0000000	25.792125 40000 Paw Data : Good Data :	Advise Baw Cancel
Bead Processed Bead Processed	2020/02/25 20:16.16.0000000	25.135135 40000 Haw Data : Good Data :	
	2020/02/25 20:10:40:0000000	27.673704_40000 Haw Data : Good Data :	Cancel IDs
Decamerational Decamerational	2020/02/20 20:17:10:0000000	20 C47424 400C0 Daw Data : Cood Data :	Advise Processed
Read Modified Read Modified	<	>	
	1		1 Pause
<			<u>ن (</u>

- Set Server Name to OSI.HDA.1.
- Click **Connect**.
- Click Browse.

Set Filters	Make Browser	Browse Type	OPCH	DA_FLAT	•	
Get Position						
Browse Up	Current Branch					
Go Directly To			Count	189	Get Ite	em ID s
Items						^
\\FTHISTORIAN		Total)_Interrupts/se	ес			
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• Click Make Browser.

- Change **Browse Type** to *OPCHDA_FLAT* and a list of tags should appear.
- Select a tag that is currently being logged and click **Add**.
- If a prompt appears about the tag not being a full ItemID, click Yes to continue.
- Click **Done** to close the browser.
- Click **Show Items** and then **Get Item Handles**. The tag should appear with *Connected* appended to it.
- On the right side, under **Timestamps**, check **Local Time**.
- On the left side, set **Start Time** to *now-1d* and **End Time / Interval** to *now*.
- Under Synchronous click Read Raw.

The raw values collected for the past day for the selected tag should appear.

If there are any errors or no data is returned, contact Rockwell Automation technical support to correct the issue.

Remote Communication

If XLReporter is not installed on the same machine as the OPC HDA server, 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 <u>www.opcfoundation.org</u>.

Server Settings

To connect 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 HDA server, certain DCOM settings must be enabled. For details on what DCOM settings to enable, see <u>OPC and DCOM: 5 Things You Need to Know</u>.

Windows Firewall

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

Connector

To configure the connector to the FactoryTalk Historian SE, from the **Project Explorer** select **Data**, **Connectors**.

- Click Add
- Select Rockwell Automation, FactoryTalk Historian SE (OPC HDA)
- Click OK

FactoryTalk Historian	SE (OPC HDA)	د
Connector Name	FactoryTalk_HistorianS	E_1
Description		
Primary Server		
Server Name	OSI.HDA.1	
Node		🗹 local
		Test Connection
Secondary Serve	r	
Server Name	OSI.HDA.1	
Node		🗹 local
		Test Connection
		Settings
		OK Cancel

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 **FactoryTalk Historian SE** connector.

Group Types

📄 Select Group Type 🛛 🗙
Summary Values from Server
Summary Values from XLReporter
◯ Raw Values
◯ Raw Text
◯ Sampled Values
◯ Live Values
◯ Custom Values
Base on
<pre></pre>
OK Cancel

For FactoryTalk Historian SE 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 Value
- 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

File Edit Preview Setup Columns Time Period Filters Description Retrieval Retrieval Mode Sampled Values Rate (secs) 30 Lead Time (secs) 30	📄 Sum	nmary Valu	ues XLR (Facto	oryTalk_H	istorianSE_1)				:
Setup Columns Time Petiod Filters Description	File E	dit Prev	iew						
Retrieval Retrieval Retrieval Rate (secs) 30 Lead Time (secs) 30	Setup	Columns	Time Period	Filters					
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Retrieval Retrieval Mode Sampled Values ~ Rate (secs) 30 Lead Time (secs) 30				De	escription				
Retireval Retireval Mode Sampled Values ∽ Rate (eccs) 30 Lead Time (secs) 30									
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Retrieval Retrieval Mode Sampled Values ~ Rate (secs) 30 Lead Time (secs) 30									
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Retrieval Mode Sampled Values ~ Rate (secs) 30				R	etrieval				
Fate (secs) 30 Lead Time (secs) 30					Retrieval Mode	Sampled Values	\sim		
Lead Time (secs) 30					Rate (secs)	30			
Ledu time (secs) Su					Land Time (man)	20			
					Lead Time (secs)	30			

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 FactoryTalk Historian SE 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).

Name SYSTEM\BLINKFAST	Scaling		
* SYSTEM\BLINKFAST	Scaling		
SYSTEM\BLINKFAST		Heading	<u>^</u>
		SYSTEM\BLINKFAST	
SYSTEM\BLINKSLOW		SYSTEM\BLINKSLOW	
SYSTEM\DATE		SYSTEM\DATE	
SYSTEM\DATEANDTIMEINTEGER		SYSTEM\DATEANDTIMEINTEGER	
SYSTEM\DATEANDTIMESTRING		SYSTEM\DATEANDTIMESTRING	
SYSTEM\DAYOFMONTH		SYSTEM\DAYOFMONTH	
SYSTEM\DAYOFWEEK		SYSTEM\DAYOFWEEK	
SYSTEM\DAYOFYEAR		SYSTEM\DAYOFYEAR	
SYSTEM\HOUR		SYSTEM\HOUR	
SYSTEM\MINUTE		SYSTEM\MINUTE	
SYSTEM\MONTH		SYSTEM\MONTH	
SYSTEM\MONTHSTRING		SYSTEM\MONTHSTRING	
SYSTEM\SECOND		SYSTEM\SECOND	
SYSTEM\TIME		SYSTEM\TIME	
SYSTEM\USER		SYSTEM\USER	
SYSTEM\YEAR		SYSTEM\YEAR	

Select Preview, pick a Start date and click Refresh.

Preview				x
😂 Refresh 👜 Stop 🛛 🔍	Date	SYSTEM\BLINKFAST	SYSTEM\BLINKSLOW	^
🔺 🏢 Date	1/8/2020 1:45:09 PM	0	0	
Start 08 Jan 2020	1/8/2020 1:46:09 PM	1	1	
End 09 Jan 2020	1/8/2020 1:47:09 PM	1	0	
0 0 🔺 🕨 - 🕨	1/8/2020 1:48:09 PM	1	1	
	1/8/2020 1:49:09 PM	0	1	
	1/8/2020 1:50:09 PM	1	1	
	1/8/2020 1:51:09 PM	1	0	
	1/8/2020 1:52:09 PM	1	0	
	1/8/2020 1:53:09 PM	0	1	
	1/8/2020 1:54:09 PM	1	1	
	1/8/2020 1:55:09 PM	1	0	
	1/8/2020 1:56:09 PM	0	0	
	<		>	

FactoryTalk Alarms and Events

This connector is used to get alarms from the FactoryTalk View SE Alarms and Events Historian Database.

Set up FactoryTalk Alarms and Events

Define a Database

FactoryTalk Alarms and Events are logged to either Microsoft SQL Server or SQL Server Express. This database can be located on the local machine or across the network

To specify the database, open the **FactoryTalk View Studio**, expand **System**, **Connections**, **Database**.



Right-click Database and select New Database.

eneral	Size Management	Advanced		
Definiti	on name:			
FTAE	InstantFizz			
Type:			_	
Micr	osoft SQL Server Ex	press	Microsoft SQL Server	
Compu	ter name:			
SY020)			
Databa	se user name:			
sa				
Databa	se password:			
Databa	se name:			
Databa FTAla	se name: rms			
Databa FTAla	se name: rms			
Databa FTAla	se name: rms			
Databa FTAla	se name: ms			
Databa FTAla	se name: rms			
Databa FTAlar	se name: ms			
Databa FTAlar Sh	se name: rms			
Databa FTAlar Sh	se name: rms ow Usage			

Under the **General** tab specify the settings for your available *Microsoft SQL Server Express* or *Microsoft SQL Server* installation. For **Database name** browse to select an existing database or enter a new database name.

Configure Alarm Monitoring

FactoryTalk Alarms and Events support device-based monitoring and tag-based monitoring.

Device-based monitoring is configured and downloaded to the controller with built-in alarm instructions.

Tag-based monitoring is configured in FactoryTalk View Studio by first adding a Tag Alarm and Event Server. On the left side of the Studio, right-click an application and select **Add New Server**, **Tag Alarm and Event Server**.
Under the General tab specify the Name for the server.

Tag Alarm and Event Server Properties						
General Priorities and History						
Name:						
FTAE_InstantFizz						
Description:						
Computer hosting the alarm server:	. 1					
localhost						
Startup type						
C Load when operating system initializes						
When first client connects (Redundancy will be disabled)						
OK Cancel Help						

Under the **Priorities and History** tab

- Check Enable History
- Set **Database definition** to the name defined in the previous step

lag Alarm ar	id Event Se	rver Prope	rties				\times
General Pr	iorities and I	History					
Priorities							
- E	hable server	-assigned p	riorities	1			
		Seve	rity Ra	nge			
Pric	ority	Low		High			
Urg	jent	751		1000			
Hig	h	501		750			
Me	dium	251		500			
Lov	v	1		250			
Database FTAE_In	e definition: stantFizz					\sim	
Computer	name:	SY020\S	QLExp	ress			
Database	e name:	FTAlarms					
Cache file	e path:						
C:\Progra	amData\Roo	ckwell\Alam	ns				
Log lang	lage:						
English (United State	s), en-US				\sim	
				ОК	Cancel	Help	

Tag-based alarms can now be configured in the Studio. Expand the Tag Alarm and Event Server defined in the previous step and double-click **Alarm and Event Setup**.



Tag-based alarms can be added, modified, or removed within this application.

Alarm and Event Setup - RNA://\$Loc	al/InstantFizz_SE/FTAE_I	nstantFizz		- • •
D, 🛯 🖀 🗙 🖬 🗿 🔞				
All Alarms Messages Tag Update Rat	es			
Search for Group	Type All 🗸			
ALL Alarms	Name # Alarm1	Type Event	Input Tag system\BlinkFast	Ack Re false
	* Alarm2	Event	system\BlinkSlow	false
				>
Alarms - 2 items		De	efault max shelve time: 480	Minutes
1				

To add a new alarm to the Alarms and Events Server you defined, select it on the left-hand side, then select the **New** icon \square and choose the type of alarm to configure: *Digital, Deviation, Level* or *Event*. Refer to the FactoryTalk Alarms and Events System Configuration Guide for details on how to configure each alarm type.

Every alarm configured for the selected server is listed on the right. An existing alarm can be modified by double clicking anywhere on the row. An existing alarm can be deleted by selecting the row and clicking the **Delete** icon \checkmark .

Prerequisites

Verify Database

Open Microsoft SQL Server Management Studio and connect to the SQL Server or SQL Server Express installation set up for the Alarms and Events Server.

E KONSTRANT STRATE S 😑 🚞 Databases 🕫 🚞 System Databases 🕣 🚞 Database Snapshots 🗉 间 Alarms 🖃 🧻 FTAlarms 🗉 🚞 Database Diagrams 🖃 🚞 Tables ⊕ ■ dbo.AllEvent 🗉 🔲 dbo.ConditionEvent 🚯 🔝 dbo.FTAEInstance 🚯 🔲 dbo.SimpleEvent 🗉 🔲 dbo.TrackingEvent 🗉 🚞 Views 🗄 🚞 Synonyms 🗉 🚞 Programmability 🗉 🚞 Service Broker 🗉 🚞 Storage 🗉 🚞 Security 🗄 🚞 Security 🗉 🚞 Server Objects 📧 🚞 Replication 🗉 🚞 Management

Expand the Database configured for the Alarms and Events Server and expand **Tables**. Right-click *AllEvent* and choose **Select Top 1000 Rows**.

If no data is returned or there is anything described is missing contact Rockwell Automation technical support and correct these issues.

SQL Server Considerations

When using SQL Server there are some things to take into consideration including remote connectivity, instance browsing and user authentication. For information on what to consider, see the technical note: <u>How to Configure Microsoft SQL Server</u>.

Connector

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

- Click Add
- Select Rockwell Automation, FactoryTalk Alarms and Events
- Click OK

FactoryTalk Alarms and E	vents		x
Connector Name	FactoryTalkView_AE_1		
Description			
Primary Database			
Туре	Microsoft SQL Server		
Data Source	192.168.9.49\FACTORYTALK		
Table/Column			
Table	AllEvent		\sim
Date Column	EventTimeStamp		\sim
	Date includes Time		
Time Column			\sim
			Settings
		ОК	Cancel

Primary Database

This defines a connection to the database where the FactoryTalk Alarm and Events server is logging data. A browse button [...] is provided to define. This is always a SQL Server database.

If there are issues connecting to the database, please refer to the section in the Database Connectors document on Microsoft SQL Server.

Table/Column

Once the connection is established, specify the **Table** where the alarms are stored and the **Date** and **Time Column**(s). **Table** should be set to *AllEvent* and **Date Column** set to *EventTimeStamp* with **Date includes Time** checked.

Settings

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

Settings ×
Client Wait Time (sec) 60
Table/Column Delimiter Start [End]
Date/Time Delimiter Start [*End [*
Date/Time Storage
UTC Date and Time V
Date format is YYYY-MM-DD
OK Cancel

Typically, these settings are defaulted correctly based on SQL 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 **FactoryTalk 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	
O Sampled Values	
◯ Live Values	
O Custom Values	
Base on	
 dank>	\sim
ок	Cancel

For FactoryTalk View Alarms 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

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 FactoryTalk View 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

elected (Columos			
Nar Eve	ne entType	Scaling	Heading EventType	
Sou	irceName intCategory		SourceName EventCategory	
Act	verity ive		Severity Active	

Select Preview, pick a *Start* date and click Refresh.

PanelView Plus Historical values

This connector is used to get historical values from a set of text files logged by a DataStore Plus control configured in the PanelView Plus.

The DataStore Plus ActiveX control is used for logging data to log files. The log files on the terminal can be accessed using a flash drive, directly across the local network or by FTP. Using FTP, a layer of security may be added to prevent unauthorized access.

XLReporter uses these methods to copy the log files to a secondary location on the local system. By using network access, this can be done automatically, on time or event. The advantage of copying the files automatically to the connector is that they are archived before the data is overwritten by the device.

This connector makes the log files appear as a single data entity like a database, so reports are not limited to the content of a single file. In addition, the connector maintains a list of tag names so that any tag selection can be done using a tag browser. Database features such as filtering and sorting are supported together with analytic calculations such as the average for each hour of a day.

Set up DataStore Plus

The DataStore Plus ActiveX control is used to collect data in comma separated values files (CSV files).

In FactoryTalk View Studio – Machine Edition, place the **ME DataStore Plus** ActiveX control on a display that cannot be closed by a user.

*If this control is not available, it may need to be registered.

Double-click the control to view its properties.

General Tab

The General tab settings determine when csv files are created.



To optimize reporting runtime, enable the following:

- Start New Files either Periodic (Hourly or Daily) or At Specific Times.
- Delete Oldest Files value longer than the transfer rate scheduled for the Connector.

Advanced Tab

The Advanced tab settings determine when the data is logged.

ME DataStore Plus Properties 🛛 🔀
General Advanced Common Connections
File Headers
O Default O Template O Use tag names
Log periodically every 30 second(s)
Round logged data to 7 ecimal points
Suppress log file row numbering
✓ Log System Time and Date of each record
Include timezone indicator
Log UTC Time and Data of each record
Overwrite oldest data when file reaches
✓ Log assigned connections only
CSV File Logging Order
String> data followed by <float> data</float>
OK Cancel Apply Help

- For **File Headers** select *Use tag names*.
- Enable Suppress log file row numbering.
- Enable Log System Time and Date for each record.
- Enable Log assigned connections only.

Connections Tab

The Connections tab settings determine what data is logged and where the csv files are saved.

E DataStor	e Plu	us Properties			X
General Ad	lvance	ed Common Connections			
Name		Tag / Expression	Tag	Exprn	^
FileLocation	+	"\Windows\Logs\logData.csv"	•••	•••	
Trigger	+	{Maintenance\Datalog_trigger}	•••	•••	
Float01	↔	{::[Rubiks]Program:Zone1_Temperature.Temperatur	•••		
Float02	↔	{::[Rubiks]Program:Zone2_Temperature.Temperatur	•••		
Float03	↔	{::[Rubiks]Program:Zone3_Temperature.Temperatur	•••		
Float04	↔	{::[Rubiks]Program:Zone4_Temperature.Temperatur	•••		
Float05	+	{::[Rubiks]Program:Zone5_Temperature.Temperatur	•••		
Float06	+	{::[Rubiks]Program:Zone6_Temperature.Temperatur	•••		
Float07	↔	{::[Rubiks]Program:Powder_Feeders.Powder_Feede	•••		
Float08	\leftrightarrow	{::[Rubiks]Program:Head1_Temperature.Temperatur	•••		
Float09	\leftrightarrow	{::[Rubiks]Program:Head2_Temperature.Temperatur	•••		1
Float10	\leftrightarrow	{::[Rubiks]Program:Head3_Temperature.Temperatur	•••		1
Float11	↔		•••		1
Float12	↔		•••		1
Float13	↔		•••		1
Float14	↔		•••		1
Float15	↔		•••		1
Float16	↔		•••		1
Float17	↔		•••		1
Float18	\leftrightarrow		•••		1
Float19	\leftrightarrow		•••		1
Float20	↔		•••		1
Float21	↔		•••		1
Float22	↔		•••		1
Float23	↔		•••		~
		OK Cancel <u>A</u> pply		Help	

The **FileLocation** setting determines both where the csv files are located as well as the fixed text portion of the naming convention. It is important that this location is configured to a folder that is accessible either from the local network or via FTP for **XLReporter** to have access to these files.

The **Trigger** setting is typically set to a tag that determines if data should be logged. Only when the value of the tag is non-zero will data be logged to the CSV file. Use this setting if logging needs to be performed for cycles such as the production of a batch or a machine cycle.

Configure FTP Server

For FTP access, enable a Windows FTP Server.

- Open the Windows Control Panel
- Open Services
- Click the **FTP Server** button so it is green. If the button is green, the FTP Server is running.

To configure the FTP Server settings:

- Open the Windows Control Panel
- Open Server Config
- Select the **FTP Server** tab

The **Default Directory** and **Base Directory** determine the root folder of the FTP server. To set this to the root folder of the system, configure both settings to \setminus .

To allow anonymous access, check all the Allow Anonymous options for the FTP Server.

Prerequisites

Files

On the PanelView Plus, verify that csv files have been created by the DataStore Plus control. A connector cannot be defined in XLReporter until at least one csv file is generated.

If csv files are not being generated, contact Rockwell Automation technical support to troubleshoot and correct this issue.

Connectivity

FTP

If files are transferred via FTP Server to XLReporter, ensure a connection to the FTP Server can be established.

Open Windows File Explorer and navigate to:

ftp://<Panel View IP Address>

If successful, a list of files and folders on the PanelView Plus is displayed.

If this cannot be done, please contact the local network administrator for further assistance.

Local Network

Open Windows File Explorer and browse the network to the PanelView Plus machine and drill into the folder where the csv files are located.

If this cannot be done, please contact the local network administrator for further assistance.

Connector

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

- Click Add
- Select Rockwell Automation, PanelView Plus Historical Values
- Click **OK**

Connector Name	PanelViewPlus_1	
escription	C:\XLRprojects\XLR_Demo\Data\Packing	
✓ Enable File Transfer		Settings
File Location and Name		
Folder	C:\XLRprojects\XLR_Demo\Data\Packing	
File Name Format	YYYY_MM_DD_hh_??_???Packing.csv	Refresh
Base File	2020_10_21_00_00_0000_Packing.csv	View
		Settings
File Content		
Date Column	LocalDate	~
	Date includes Time	
Time Column	LocalTime	~
Separator	Comma Semicolon	
	◯ Tab ◯ Other	
Decimal Symbol		

Please note a separate **Data Connector** is required for each PanelView Plus terminal used.

For details on all the settings of this connector, see the **Text File Historian** section of the **Text File** document.

Since the text files for this connector are generated on the PanelView Plus station, the **Enable File Transfer** option should be checked and configured to download the text files periodically from the PanelView Plus station either through the configured *FTP Server* or *Local Network*.

If the format of the **Date Column** does not match the date format of the Windows Operating System, the format needs to be specified explicitly. This is done by clicking the **Settings** button under **File Location and Name** and under the **[consolidated.csv]** settings, adding:

DateTimeFormat=MM/dd/yyyy hh:nn:ss

The setting above indicates that the date format for the Date Column is US format.

Data Group

The following describes the historical data group settings specific to the **PanelView Plus Historical Values** connector.

Group	Types
-------	-------

O Summary Values from Server
Summary Values from XLReporter use raw values
◯ Raw Values
O Raw Text
O Sampled Values
O Live Values
O Custom Values
Base on

The following group types are available:

Summary Values from XLReporter

This group type retrieves sampled values from the database 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 every numeric value logged to the database between the start and end time specified.

Group Settings

Setup Tab

	r				
Setup Columns 1	ime Period Filters				
	Des	cription			
	Ret	rieval			
	Ret	rieval Retrieval Mode	Raw Values	×	
	Ret	teval Retrieval Mode Rate (secs)	Raw Values	~	

Retrieval (Summary Values for XLReporter Group)

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. For this connector, only *Raw Values* are available.

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 PanelView Plus historical 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).

Ed	lit Preview			
tup Sele	cted Columns			
	Name	Scaling	Heading	^
	::(Line2)Count		::(Line2)Count	
	::(Line3)Count		::(Line3)Count	
	::(Line4)Count		::(Line4)Count	
_				
-				
-				
-				N
	Output Options			•
	Times	mp on first column V	Transpose	

Select Preview, pick a Start date and click Refresh.

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