



# GTC Webinar: CPR9 SR12 Connectivity Products – What's New

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12 • 09 • 2020

# Agenda

**1** Connectivity  
Product List

**2** OS Updates

**3** FactoryTalk Linx  
V6.20 Features

**4** FactoryTalk Linx  
OPC UA Connector  
V6.20 Features

**5** FactoryTalk Linx  
Gateway / Data  
Bridge v6.20  
New Features

**6** RSLinx Classic  
4.20 Features

**7** Kepserver  
Enterprise V12  
Features

**8** Tool and Utilities

**FactoryTalk® Linx v6.20**

**FactoryTalk® Linx Gateway v6.20**

**FactoryTalk® Live Data v6.20**

**FactoryTalk® Data Bridge v6.20**

**KEPServer Enterprise V12 (v6.9)**

**RSLinx® Classic V4.12 & v4.20 (CPR9 SR12)**

**Release Sept. 28, 2020**

What's NEW in Communication Software at Rockwell Automation

# FactoryTalk® Software Portfolio

Communications Services

 **MaintenanceSuite**

 **DesignSuite**

 **OperationSuite**

## FactoryTalk® Linx CommDTM

Communications service for asset management of EtherNet/IP process devices

## FactoryTalk® Linx Data Bridge

\*Moves data between FactoryTalk® sources

## FactoryTalk® Linx Gateway

\*Enables third-party OPC-DA / UA Software to share information

## FactoryTalk® Edge Gateway

\*Enables cloud and ThingWorx Software to share information (planned late 2020)

## FactoryTalk® Services Platform

### FactoryTalk® Linx

Premier connectivity to Allen-Bradley® control hardware

### FactoryTalk® OPC-DA Interface

Connectivity to third-party OPC-DA Servers

### FactoryTalk® Linx OPC UA Connector

Connectivity to third-party OPC UA Servers

## FactoryTalk® KEPServer Enterprise

\*Connectivity for third-party hardware and network protocols

# Significant v6.20 Capabilities Released Sept 2020

## FactoryTalk® Linx

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- Access CIP device data (e.g. PowerFlex®, E300, third-party...)
- Network browser device commissioning
- EtherNet/IP to DH+™ bridging
- CIP Security Proxy device

## FactoryTalk® Linx OPC UA Connector

- Certificate import
- Redundant connectors
- Access tags defined in tags (sub-folder)
- Subscription rate override

## FactoryTalk® Linx Gateway

- Certificate import
- Indexed array reads
- Data Bridge capacity increase (200K tags)



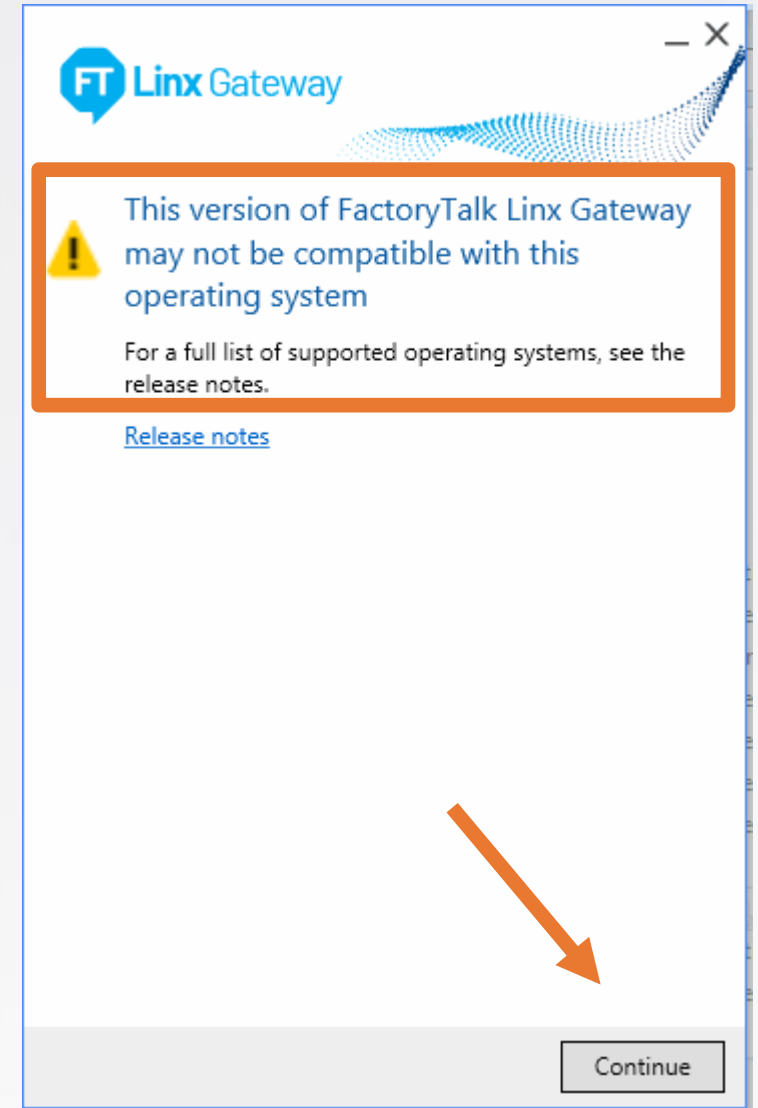
# OS Updates

# Windows Operating System Testing

Install Errors, Warnings and New Editions

Operating System	Installation Message
Win7 SP1 or Windows Server 2008 R2 and Earlier	Prevents Installation
Windows 7 SP1 and Newer	Warning - Not Compatible
Windows 8	
Windows 8.1	
Windows 10 32-bit	
Windows 10 Versions <= 1511	
Windows Server 2019	Tested and Compatible
Windows 10 1903, 1909, 2004, and IOT Enterprise LSB 1809	

- Documentation can be found in Release Notes
- Benefit
  - Supports latest Windows releases
  - Receive immediate feedback when installing on an operating system that is not being tested









# FactoryTalk Linx

# FactoryTalk® Linx Network Browser

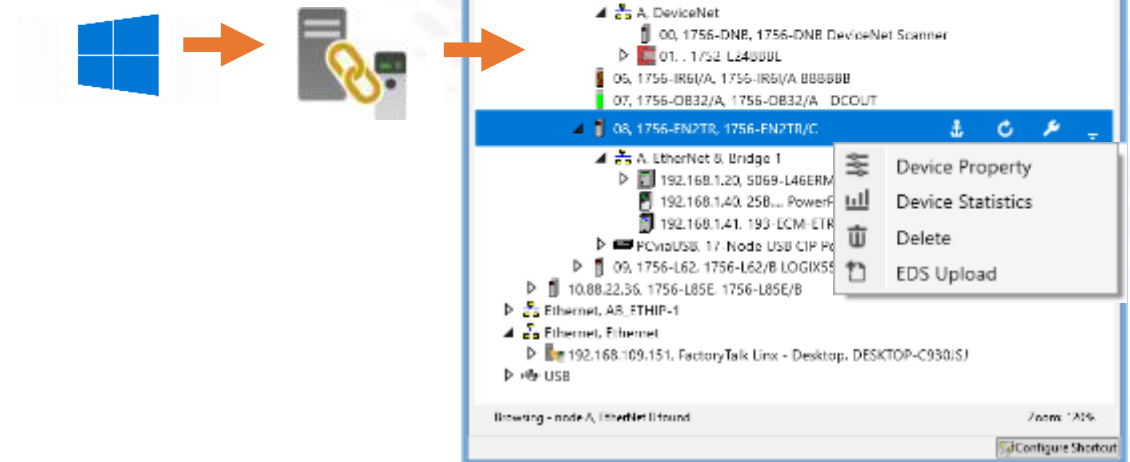
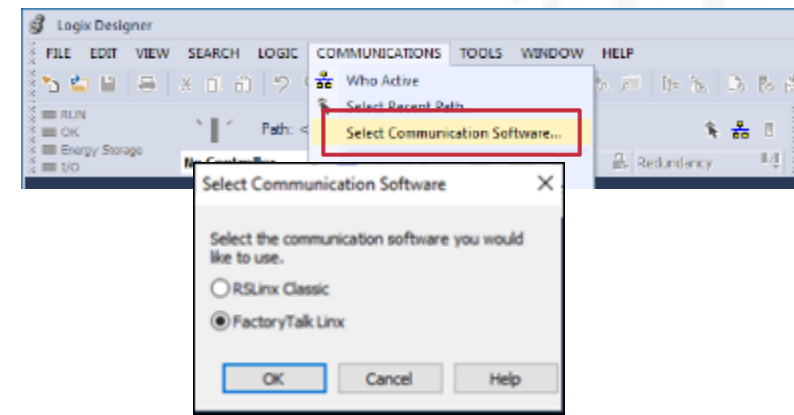
Alternative to RSLinx® Classic browser with a more productive user interface

## Existing Support:

- Studio 5000® Launcher v31 and Studio 5000® Logix Designer v31
- PlantPAX Process Object Online Configuration tool v4.10.01
- ControlFLASH™ v14, ControlFLASH™+ v1
- CCW v12
- FactoryTalk® Asset Centre v9
- FactoryTalk Policy Manager v1.0
- FactoryTalk® CommDTM v1

## New Support with Version 6.20

- Studio 5000® Logix Designer v33 defaults to FactoryTalk® Linx
  - See Image (top right)
- PowerFlex eHIM v1.0
- Studio 5000® View Designer v7
- FactoryTalk® Batch v14
- PlantPAX MPC v2.0
- **More to come...**

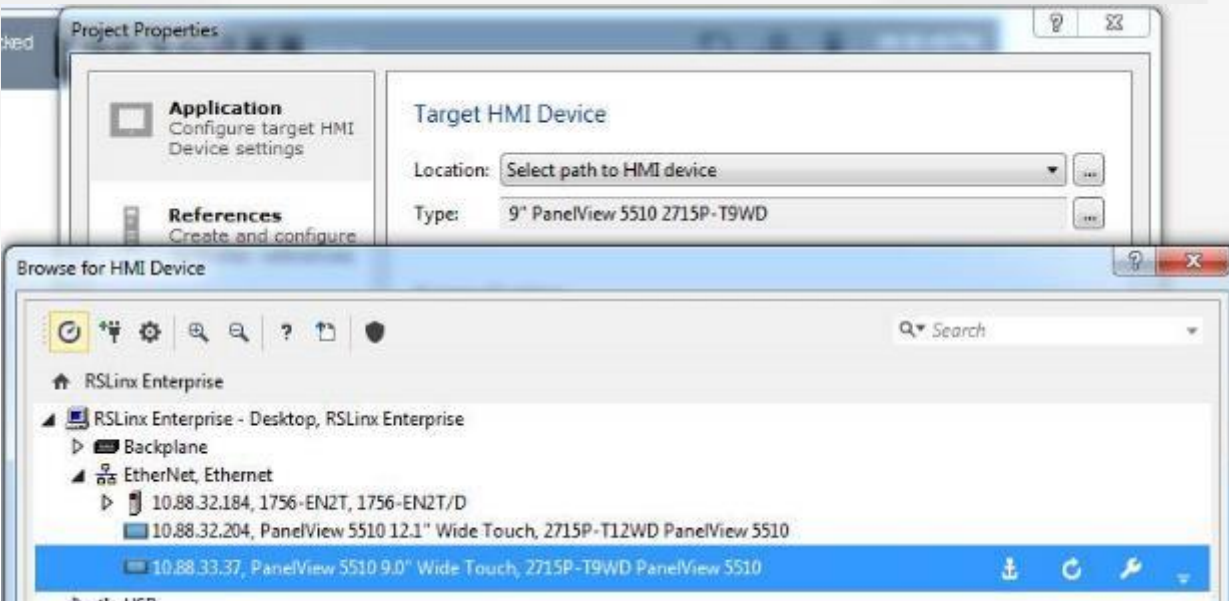


# RA Software Adoption of FactoryTalk Linx

## Studio 5000® View Designer V7

S5K ≥ v33

- View Designer v7.0 switched from RSLinx® Classic to utilize FactoryTalk® Linx to transfer applications
- The FactoryTalk® Linx Network Browser is now part of the View Designer's user interface

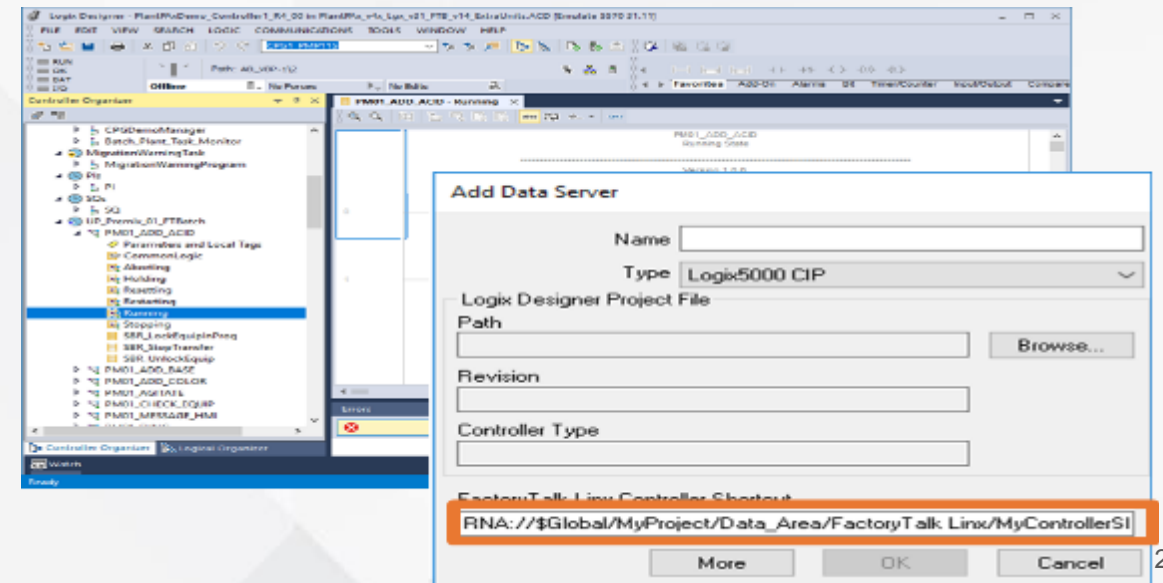


## FactoryTalk® Batch V14

FTB ≥ v14, FTSP ≥ v6.20

FactoryTalk Batch utilized both FactoryTalk® Linx and RSLinx® Classic for runtime communications

- FactoryTalk® Linx provided data acquisition
- RSLinx® Classic delivered phase manager state information and batch sequence management
- FactoryTalk® Batch v14 will utilize FactoryTalk® Linx for all runtime communications
- Future extensions will improve operation with ControlLogix® redundancy and CIP Security



# FactoryTalk® Linx Network Browser Enhancements

FTL ≥ v6.20

## Driver Management Dialog – List Configured Drivers

- Add / Modify / Delete Drivers from dialog
- Similar to RSLinx® Classic driver configuration

## Device Property – New Attributes Added

- Supports new ODVA specification (Includes device label S/N)
- Added to select Rockwell Automation hardware

## Device Web Page – Detect / Display device embedded web page

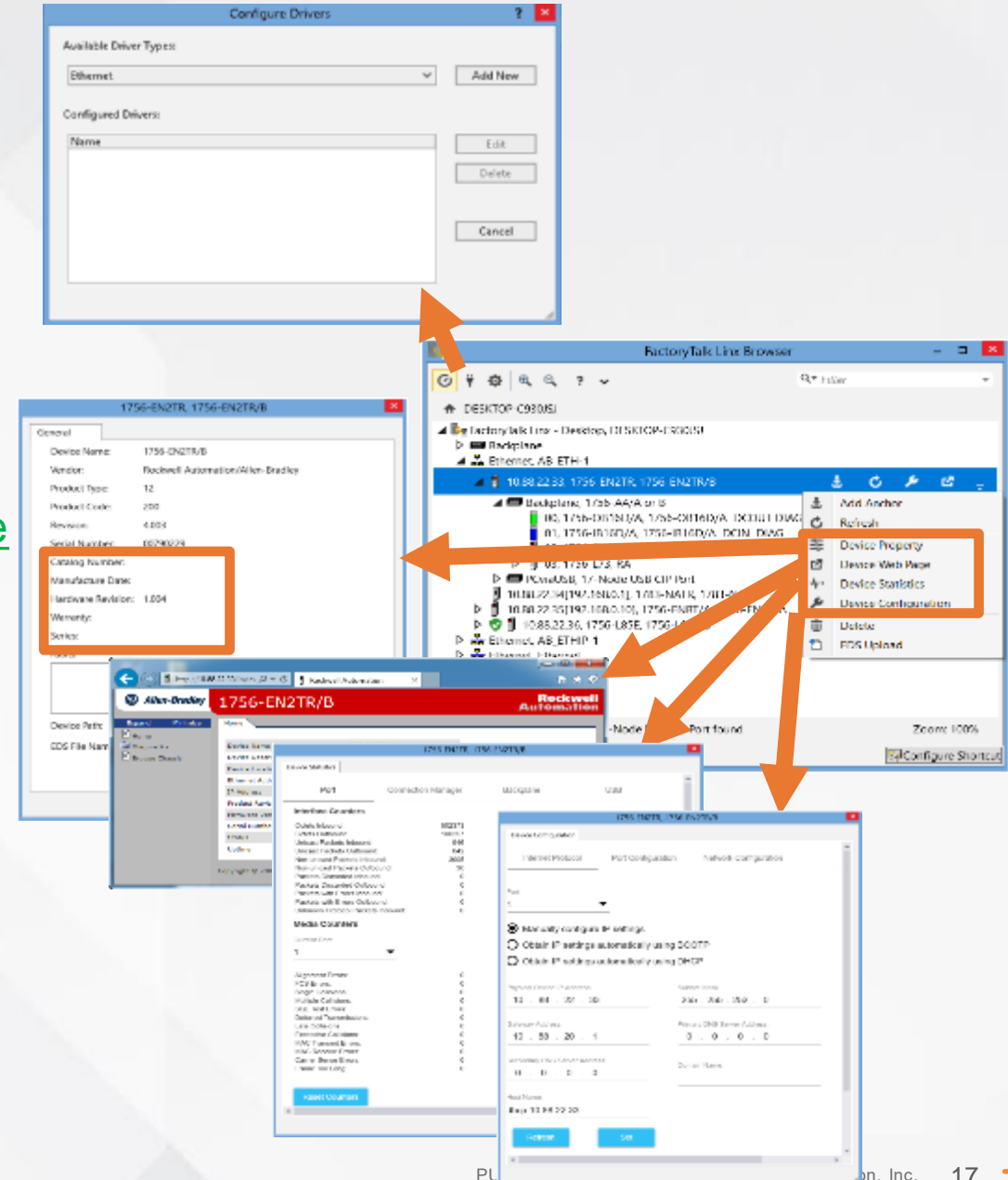
- Limited to devices on the same Ethernet subnet
- Ethernet modules / Stratix Switches / L8 Controllers Supported

## Device Statistics – Access network module diagnostic counters

- Monitor Port / Connection / Backplane / USB Traffic
- Troubleshoot network device issues

## Device Configuration – Configure Device network settings

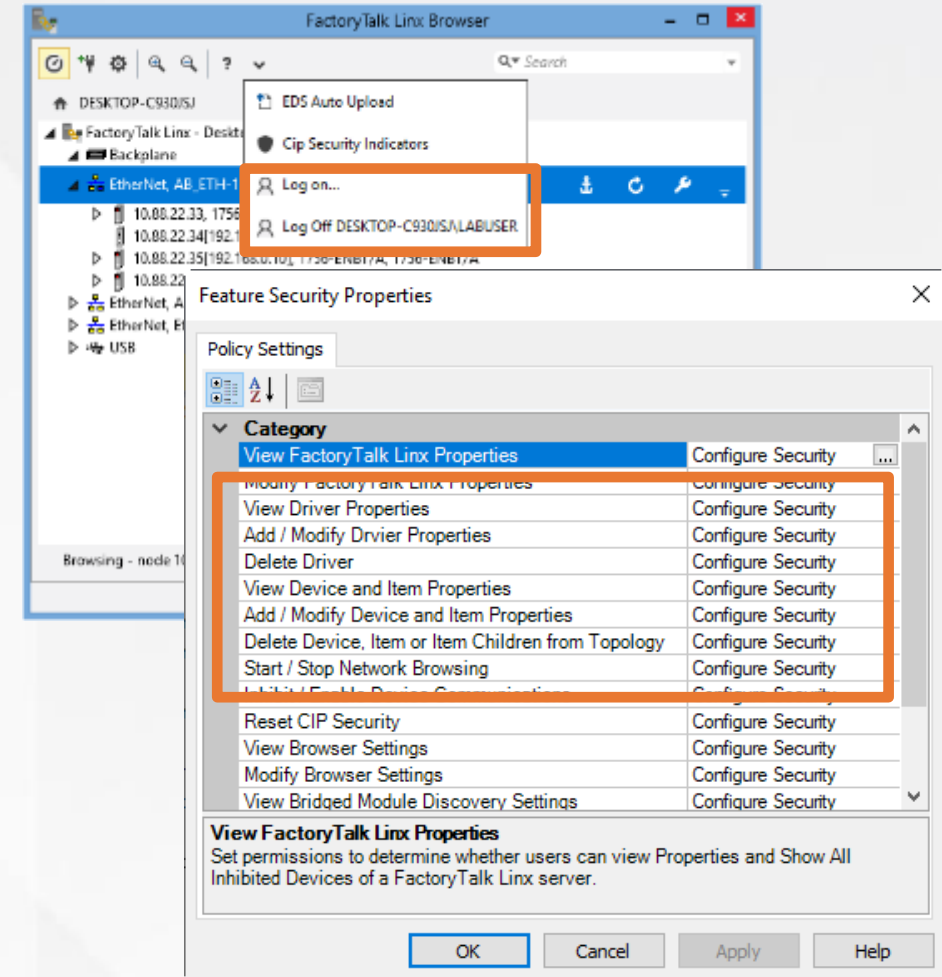
- Configure Internet Protocol / Port / Network settings
- Use to Commission an EtherNet/IP device



# FactoryTalk® Linx Network Browser Security

Authorization with FactoryTalk® Security

- Control, Limit, and Track Changes to devices from the Network Browser
  - Network browser settings
  - Driver configuration
  - Device configuration
  - Device Diagnostics
  - Inherits signed on user or login as different user
- v6.20 also adds FactoryTalk® Audit to track driver and device changes



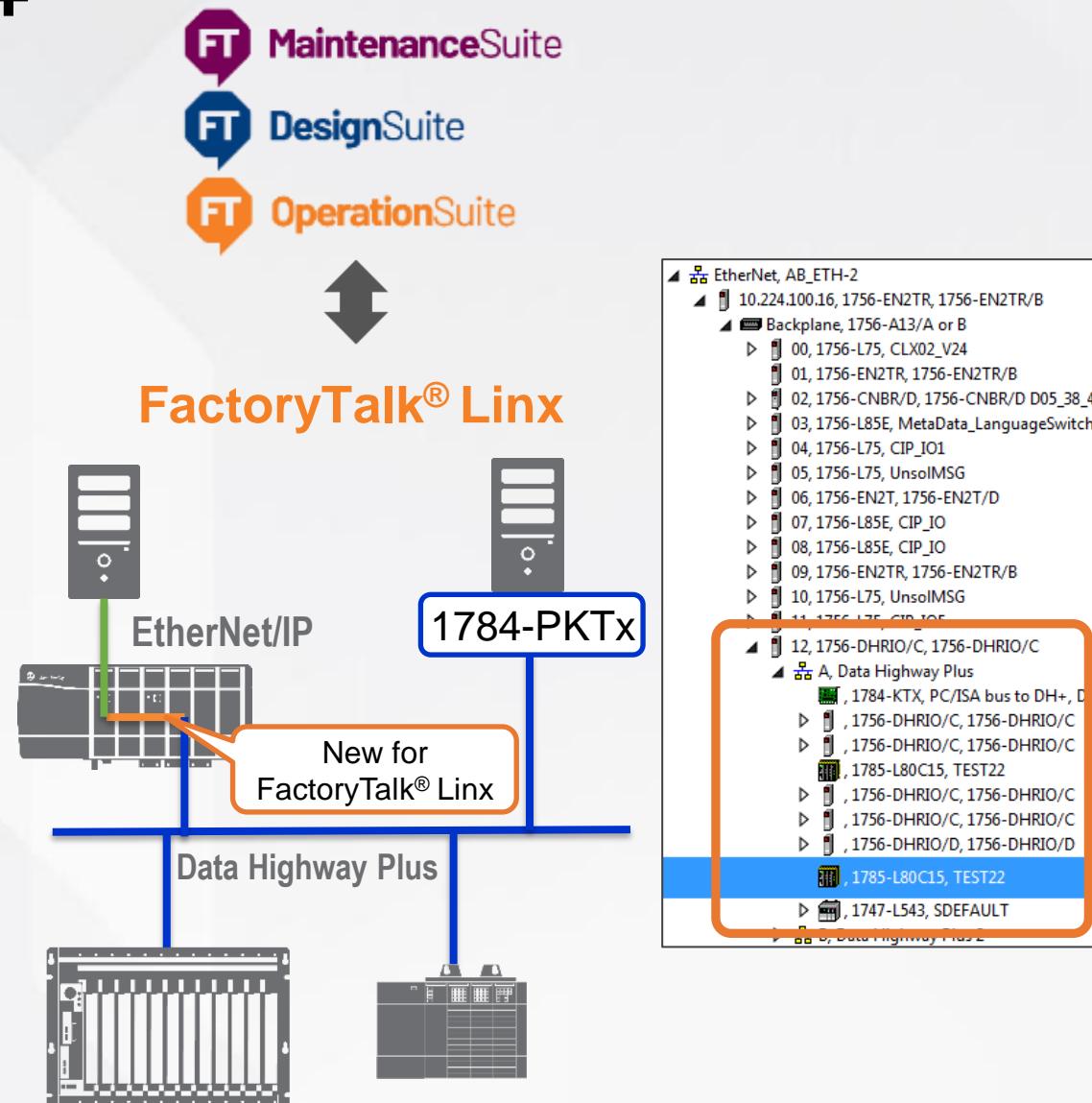


# Demo Network Browser

# FactoryTalk® Linx Bridging to DH+

Interface with DH+ legacy controllers from EtherNet/IP

- Enables FactoryTalk Software to interface with older systems
  - V6.20 adds the ability to bridge from EtherNet/IP across a ControlLogix chassis to DH+
- Benefits:
  - Eliminates the need for a PCI slot for DH+ PC Card
  - Support processor shortcut with polled/solicited data
  - Migrates another RSLinx® Classic capability to FactoryTalk® Linx
- Supported on Windows PC and PanelView® Plus v12

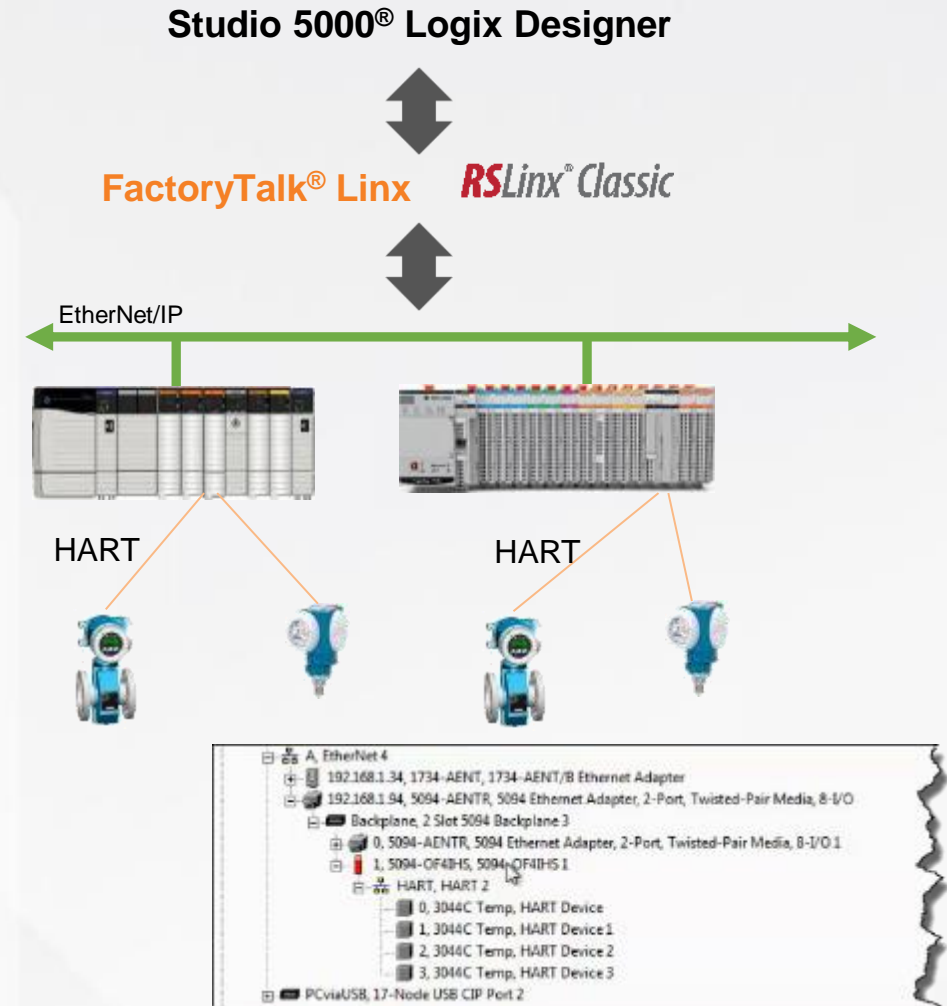


# HART integration

Interfacing with online HART instruments

Enable Studio 5000® Logix Designer's new HART device capabilities to interface and configure HART instruments

- New HART modules, FactoryTalk® Linx v6.20 and RSLinx® Classic v4.20 present information about HART devices in the topology view
  - Requires new 5094-IF8IH and 5094-OF8IH HART Modules
  - Browse, detect and display HART instruments





# FactoryTalk® Linx

Interfacing with the CIP Security Proxy Device (1783-CSP)

**Standalone hardware solution that provides CIP Security for a device that does not natively support CIP Security**

- Use CIP Security Proxy to interface with a device that does not originate connections
  - ControlLogix L8 controllers and FactoryTalk Linx can originate CIP Security connections to devices behind the proxy
  - Proxy connection origination future enhancement
- **Target AFC Early 2021**
- Provides a path forward for non-CIP Security capable products

**FactoryTalk Linx v6.20 adds support for CIP Security Proxy device**

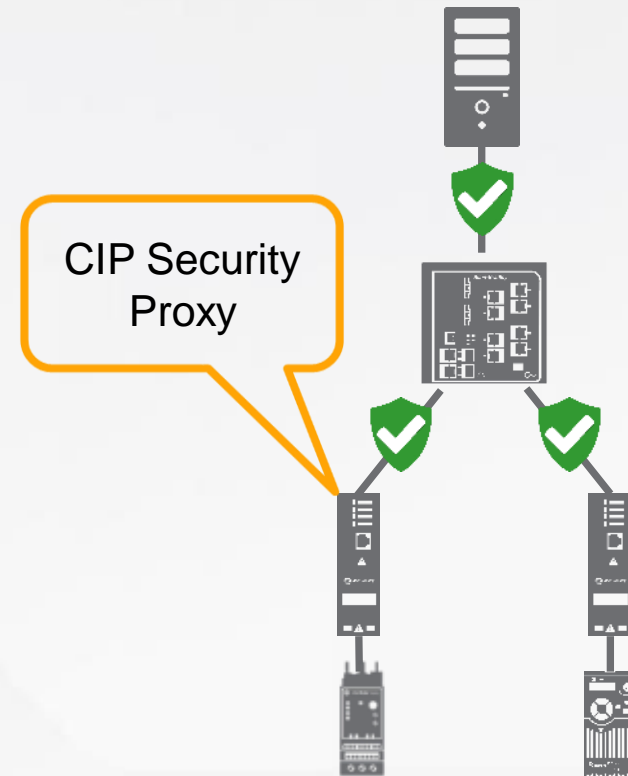
- Browse and display information to/for a device configured behind the CIP Proxy
- Direct to device communications using CIP security
- The proxy prevents the device from being accessed by other workstations of equipment not defined in FactoryTalk® Policy Manager



**FactoryTalk® Policy Manager**



**FactoryTalk® Linx**



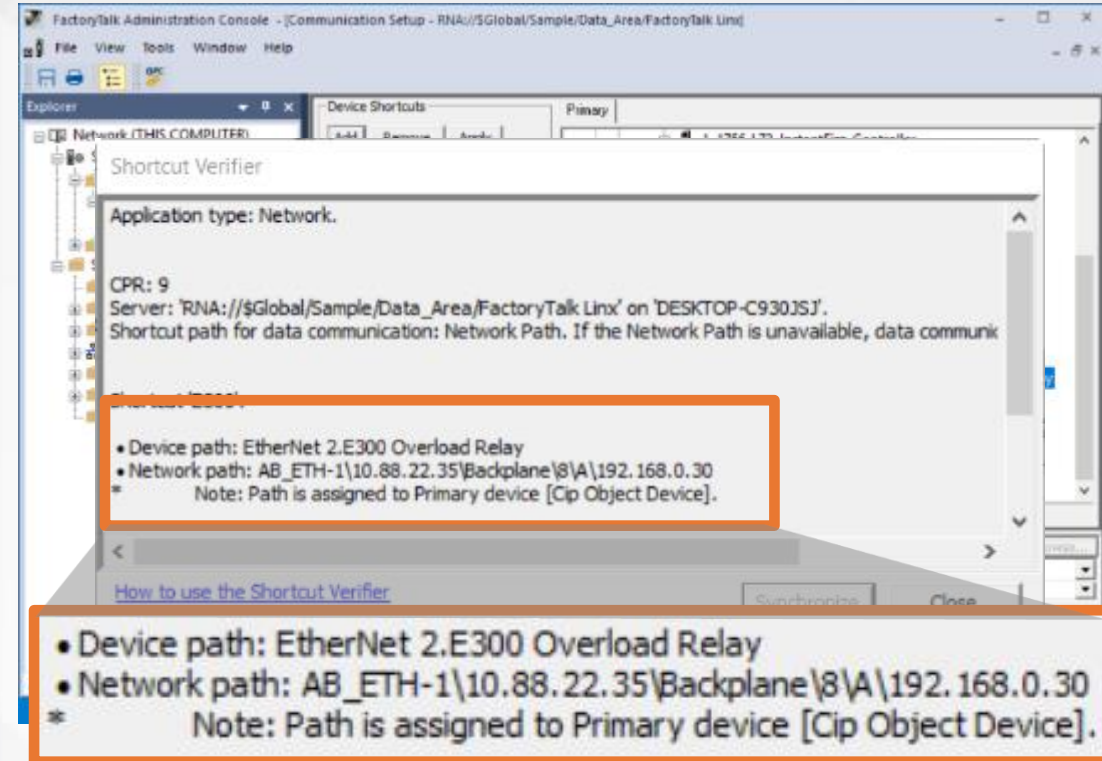
(e.g. E300, PowerFlex Drive, SMC I/O...)

# FactoryTalk® Linx

Shortcuts linked using “Network Path”

Reduced effort to relocate a server or perform configuration restore and improves system uptime

- With FactoryTalk® Linx v6.11 and earlier, shortcuts are bound to a device by name
  - Certain scenarios resulted in manual operations to restore shortcut operation
- **FactoryTalk® Linx v6.20 adds and uses relative based network path attribute to shortcuts**
  - More resilient than device names
  - Device names retained for backward compatibility
  - Shortcut “Verifier” dialog includes an option to “Synchronize” device and network shortcuts and will convert and old configuration to add the new format



Full network path to device  
now saved for shortcut

# FactoryTalk® Linx ODVA CIP Messaging

Direct access to device data

Enables FactoryTalk® and third –party software to directly access EtherNet/IP & CIP device data

- Use FactoryTalk® Linx v6.20 to read/write device data directly
  - New “CIP Object – Class/Instance/Attribute access” shortcut type
  - Use custom reference with CIA codes and type specifier
  - Works with CIP Secured device
  - User option to block writes
  - Available to most FactoryTalk® software and third-party software using FactoryTalk® Linx Gateway
- Access data in PowerFlex® drives, E300 motor protectors, SMC™ soft starts, other Allen-Bradley® and third-party equipment
- Review ODVA CIP specification, device documentation or contact vendor for CIP message codes (similar to Logix MSG instruction)
- FactoryTalk® Linx Gateway v6.20 added a user option to block read/write and a FactoryTalk® Security policy to control OPC UA client access
- Supported on Windows PC and PanelView Plus

●	::[E300]CIA:4:2:4,u16	1
●	::[E300]CIA:4:2:100,str1	Trip Reset Cmd
●	::[E300]CIA:x0008:0:1,u16	2

**FT** OperationSuite

**FactoryTalk® Linx**



Offline Tag File	
Shortcut Type	CIP Object
CIP Object	Class/Instance/Attribute Message
<input type="checkbox"/> Disable write service	



CIP Set / Get Service

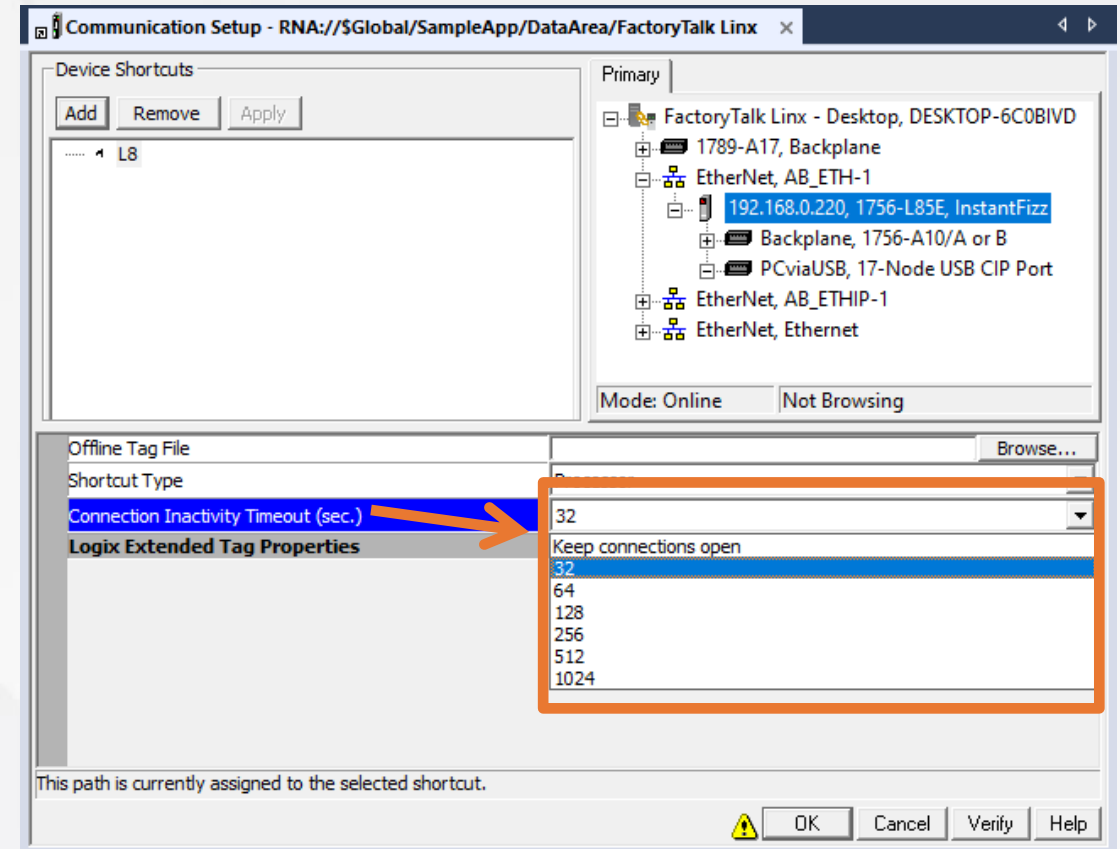


# FactoryTalk® Linx

Option to close connections after data request terminate

## Reduces connection issues in systems with isolated FactoryTalk Linx data servers (e.g station-based HMIs)

- FactoryTalk Services open many CIP connections to each Logix controller
  - FactoryTalk Linx opens ~8 connections to upload the namespace, access extended tag properties, read / write data and monitor the controller's namespace for changes
  - FactoryTalk Alarms and Events open ~4 connections
  - Most connections held open for quicker data retrieval
  - Controllers have limited connection capacity
- **FactoryTalk Linx V6.20 provides option to close many connections after a time-period where no data is requested**
  - Default setting keeps connections open
  - New inactivity timeout 32, 64, 128, 256, 512, 1024 seconds



\*Limited to FactoryTalk "Network" applications (not supported by "Local" directory or PanelView Plus)



# Demo Shortcut Editor

# FactoryTalk® Linx

Support for new Logix data-types

Allows larger values to be stored in smaller tags to reduced Logix memory usage and improve communications bandwidth

- Logix V32 added several new data-types
  - USINT, UINT, UDINT, ULINT, LREAL
- FactoryTalk® Linx v6.20 adds support to access tags of these types
  - Support is limited to certain FactoryTalk® client software
  - FactoryTalk® Live Data test client and FactoryTalk® Linx Gateway updated to support

The image shows two screenshots from the FactoryTalk software. The top screenshot is a 'New Tags' configuration window. It displays a table of tag configurations with columns for Name, Usage, Value, Force Mask, Style, Data Type, and Description. The bottom screenshot is the 'FactoryTalk Live Data Test Client' window, showing a table of live data for the same tags. Both tables are highlighted with orange boxes.

Name	Usage	Value	Force Mask	Style	Data Type	Description
Tag_USINT	Local	1000	1000	Hex	USINT	
Tag_UINT	Local	10000	10000	Hex	UINT	
Tag_UDINT	Local	10000000	10000000	Hex	UDINT	
Tag_ULINT	Local	1000000000000000	1000000000000000	Hex	ULINT	
Tag_LREAL	Local	0.000000000000000002		Float	LREAL	

Item ID	Current Value	Current Quality	Updates (/Sec)	Run Avg.
::[L8]Program:NewTags.Tag_LReal	1e+23	Good	1 (0)	0.022
::[L8]Program:NewTags.Tag_UDINT	4294967295	Good	1 (0)	0.022
::[L8]Program:NewTags.Tag_UINT	65535	Good	1 (0)	0.022
::[L8]Program:NewTags.Tag_ULINT	18446744073709551615	Good	1 (0)	0.022
::[L8]Program:NewTags.Tag_USINT	255	Good	1 (0)	0.022

# FactoryTalk® Linx

Alias Tag Description Pass-through / Concatenation

Greatly enhances FactoryTalk® View SE productivity by creating parameterized reusable faceplate and objects

- FactoryTalk® Linx v5.90 added the ability to read Logix Tag Descriptions from the controller (base reference only)
- FactoryTalk® Linx v6.10 adds option to enable description pass-through / concatenation similar to Logix Designer
  - Root / base tag, parent or UDT member
  - Combines descriptions from multiple levels to create more complete description
  - Option to disable if not desired (enabled by default)
- FactoryTalk® Linx v6.20 adds alias tags
  - L7 Limited to user tags references
  - L8 supports I/O and AOI alias references

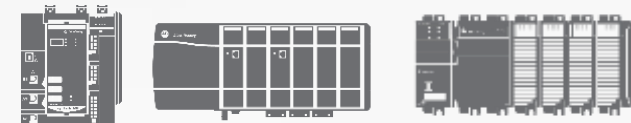
## FactoryTalk® View SE



AliasTag @Description



BaseTag / element / subcomponent  
@Description



# FactoryTalk® Linx

New Logix Extended Tag Attributes for FactoryTalk® View SE, ME and PanelView® Plus

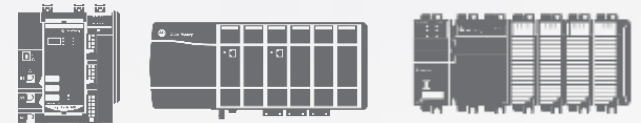
FactoryTalk® View SE improved design productivity by inheriting display text from Logix applications

- Logix V21 introduced Extended Tag Attributes
- FactoryTalk® Linx V5.90 added support for Logix Extended Tag Properties
- FactoryTalk® Linx V6.10 added UDT Description pass-through and improved screen load performance
- **Logix V33 and FactoryTalk® Linx V6.20 adds new Extended Tag Attributes** for PlantPAX® process instructions and to obtain access to tag communication status from Logix

## FactoryTalk® View SE / ME



## FactoryTalk® Linx



Previous / Existing

@Description  
@EngineeringUnit  
@Min  
@Max  
@State0  
@State1

New

@Name  
@Scope  
@Quality  
@Timestamp

New PlantPAX®

@Label  
@Library  
@Instruction  
@Area  
@URL  
@Navigation





# FactoryTalk® Linx

## Tag Reference Modifiers

Permits FactoryTalk® software or OPC UA Client to change how tag referenced from FactoryTalk® Linx, enhances productivity by eliminating controller conversion code

- **FactoryTalk® Linx v6.20 adds new tag modifiers**
  - “,Ctime” – Convert LINT / ULINT to a date/time string formatted as YYYY/MM/DD HH:MM:SS.SSS using the Logix time epoch base
  - “,SC#” – Converts a numeric tag to ASCII string of 8bit characters
  - “,S1” & “,S2” – Retrieve a tag from the Primary (S1) or Secondary (S2) FactoryTalk Linx data server in a redundant configuration (vs from the currently active server), valuable for status (also functions with the FactoryTalk® Linx OPC UA Connector)
- See FactoryTalk® Service Platform Help – “Modifiers in FactoryTalk Linx”

[ShortcutName]TagName,Modifier

[Shortcut]LintTag,Ctime

[Shortcut]DintTag,SC4

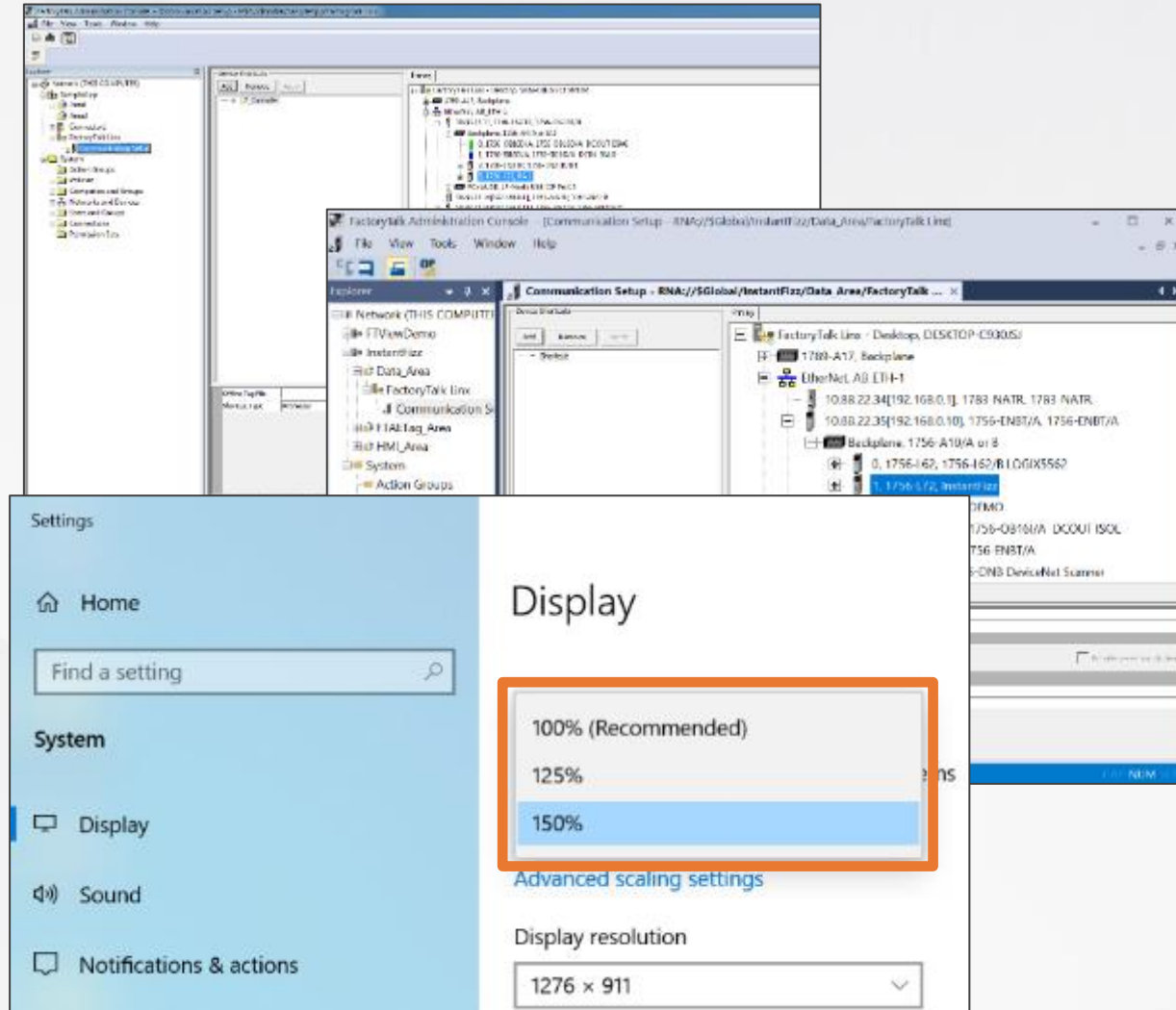
[Shortcut]@Status,S1

[Shortcut]@Status,S2

# Windows Font Scaling with FactoryTalk® Linx Shortcut Dialog

## Manage FactoryTalk® Linx at any display resolution

- High resolution monitors (eg. 4K) require user to set text scaling to >100% to be able to read screen content
  - FactoryTalk Linx shortcut dialog could only operate with font scaling set to 100%
  - Forces display to a resolution that is difficult to read
- **FactoryTalk® Linx v6.20 reworks the dialog to support font scaling**
- Patch released for v5.90, v6.00, v6.10 and v6.11
- [Patch: Cannot display Communication Setup dialog, FactoryTalk Linx 5.90/6.00/6.10/6.11](#)

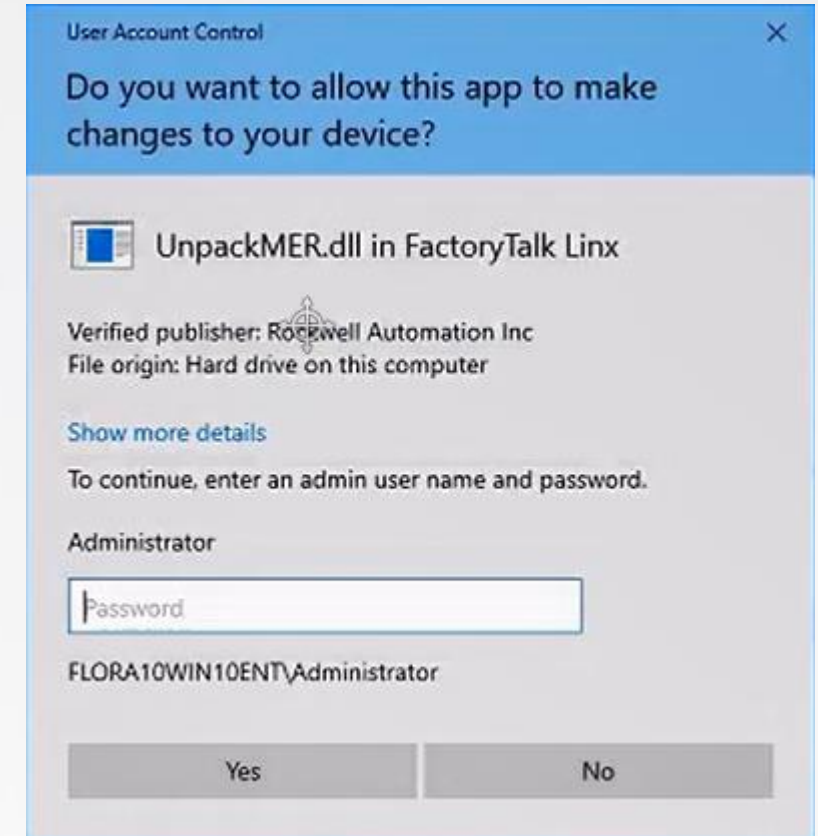


# FactoryTalk® Linx

Eliminate need for Windows Admin rights to deploy FactoryTalk® View ME application

## Enhances workstation security by eliminating the need for administrative rights to access a project

- Previously when a FactoryTalk® View ME application was opened, the Windows User Account Control (UAC) requested administrative rights
  - Caused when the MER unpacker restarted FactoryTalk® Linx to load the network / shortcut configuration from the MER file
- **FactoryTalk® Linx Version 6.20 was enhanced to eliminate the privilege escalation**
  - Changed the method used to reload the configuration so FactoryTalk® Linx did not have to be reset
  - MER deploy now works with either admin or user privileges

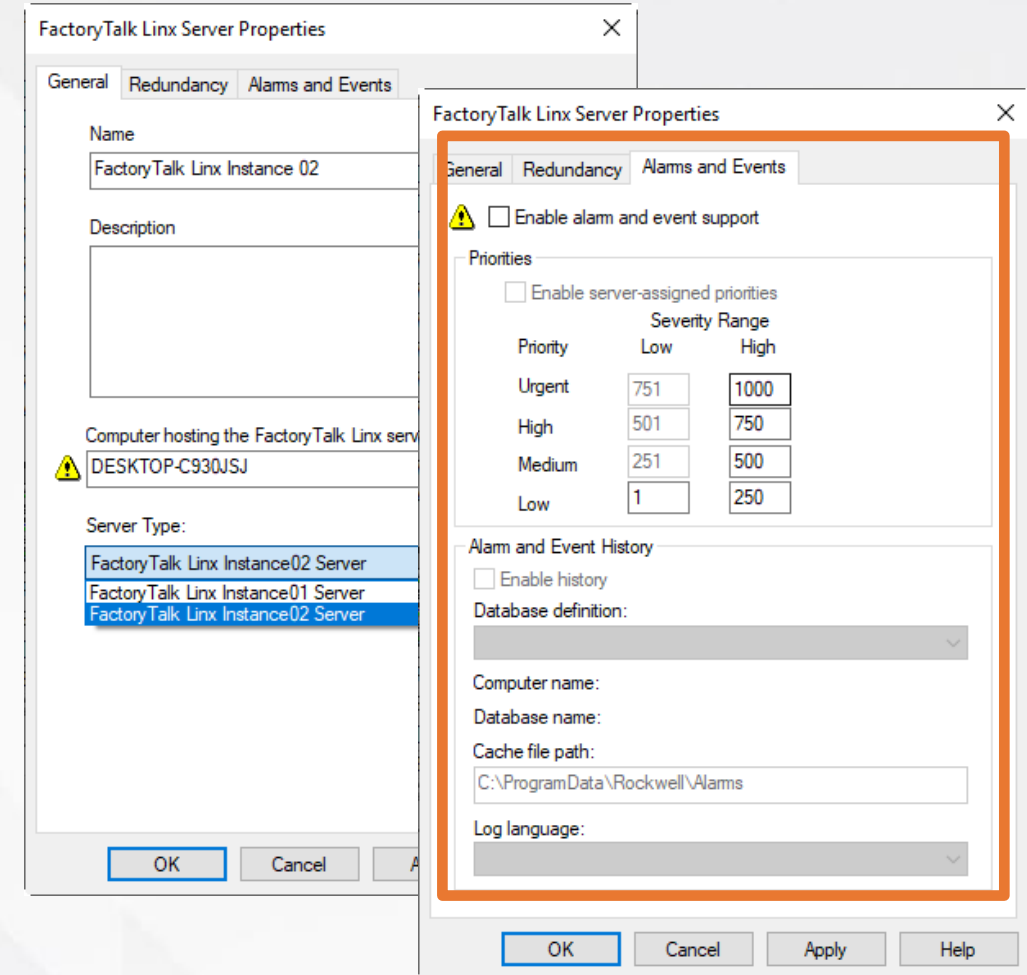


# FactoryTalk® Linx

Instance 2 adds support for Logix based alarms

## Reduce system cost by using fewer computers in large applications

- FactoryTalk® Linx V6.10 added the ability to run two instances of the data server on a single computer
  - Initially the second instance was limited to data
  - Alarms and Events options were disabled
- **Version 6.20 extends the second instance to support FactoryTalk® Alarms and events**
  - Ensure workstation has sufficient resources
  - Best practice to avoid pointing both instances at same controllers in order minimize resource impact

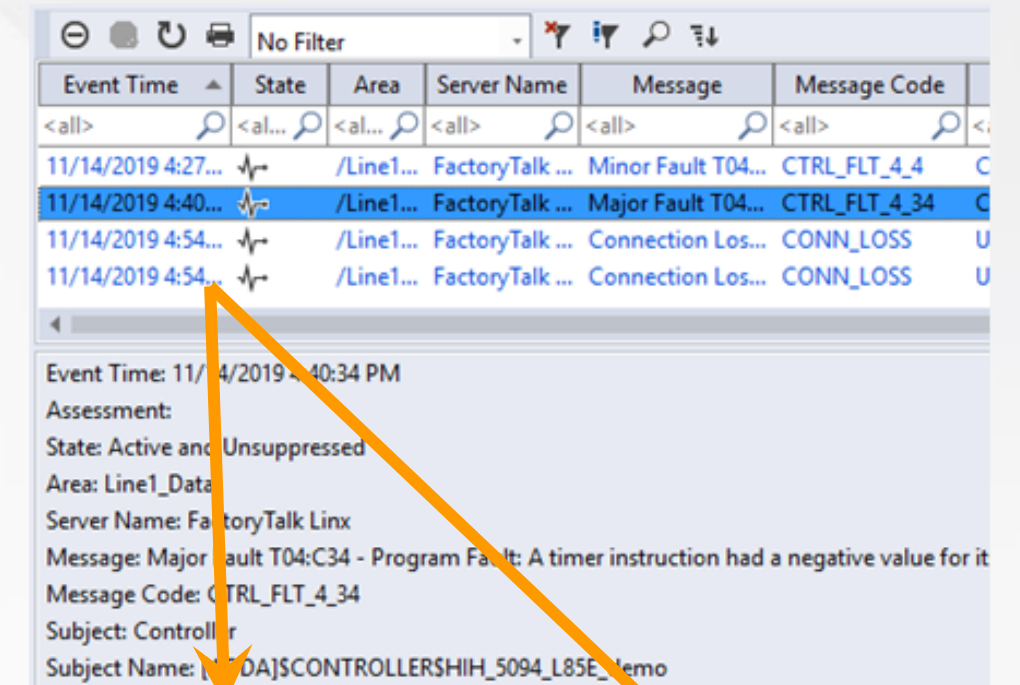
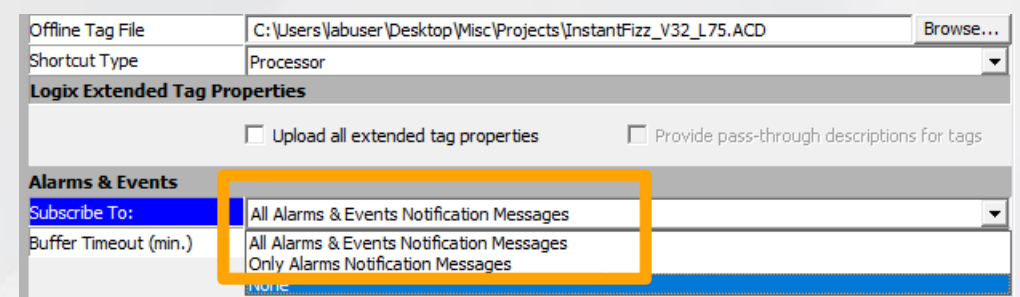


# Automatic Diagnostics

FactoryTalk® View SE display of device diagnostic information


Improves detection information about device or module failures while eliminating the controller programming

- Logix v33 Automatic Diagnostics
  - Diagnostics automatically created for all devices in IO tree
  - Logix controller collects diagnostic events from connected devices and I/O and pushes event notifications to FactoryTalk Alarms and Events
- FactoryTalk® Alarms and Events v6.20 provides both real time and historic diagnostic information
  - Default option when creating a FactoryTalk® Linx v6.20 shortcut
- FactoryTalk® View SE V12.00 Automatic Diagnostic frame is automatically populated with device diagnostics events



**Maintenance screens**  
Connection Fault North Building rack 8 slot 3  
Open Wire Channel 3 module 7 slot 5

**Alarms and Events database**

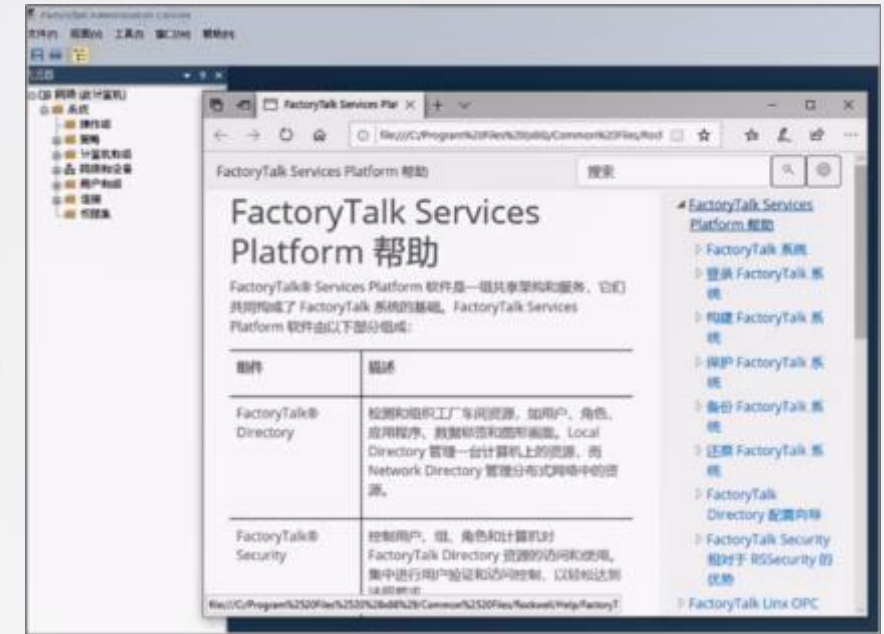


# FactoryTalk Linx

Local Language Support

## FactoryTalk View users are able to utilize local language versions of FactoryTalk Linx

- Previously the FactoryTalk Linx user visible content was limited to English
  - Data Server Configuration
  - Shortcut Configuration
  - Error / warning screens
  - On-line help
- Starting with V6.20 some localized FactoryTalk Linx content is included with FactoryTalk View Studio SE / ME
  - Note the standalone FactoryTalk Service Platform and FactoryTalk Linx install is limited to English
  - FactoryTalk Linx Network Browser, FactoryTalk Linx OPC UA Connector and FactoryTalk Linx Gateway are limited to English



	FactoryTalk Administration Console	
	User Interface	Help
English	Yes	Yes
Chinese	Yes	Yes
Japanese	Yes	No
German	Yes	No
French	Yes	No



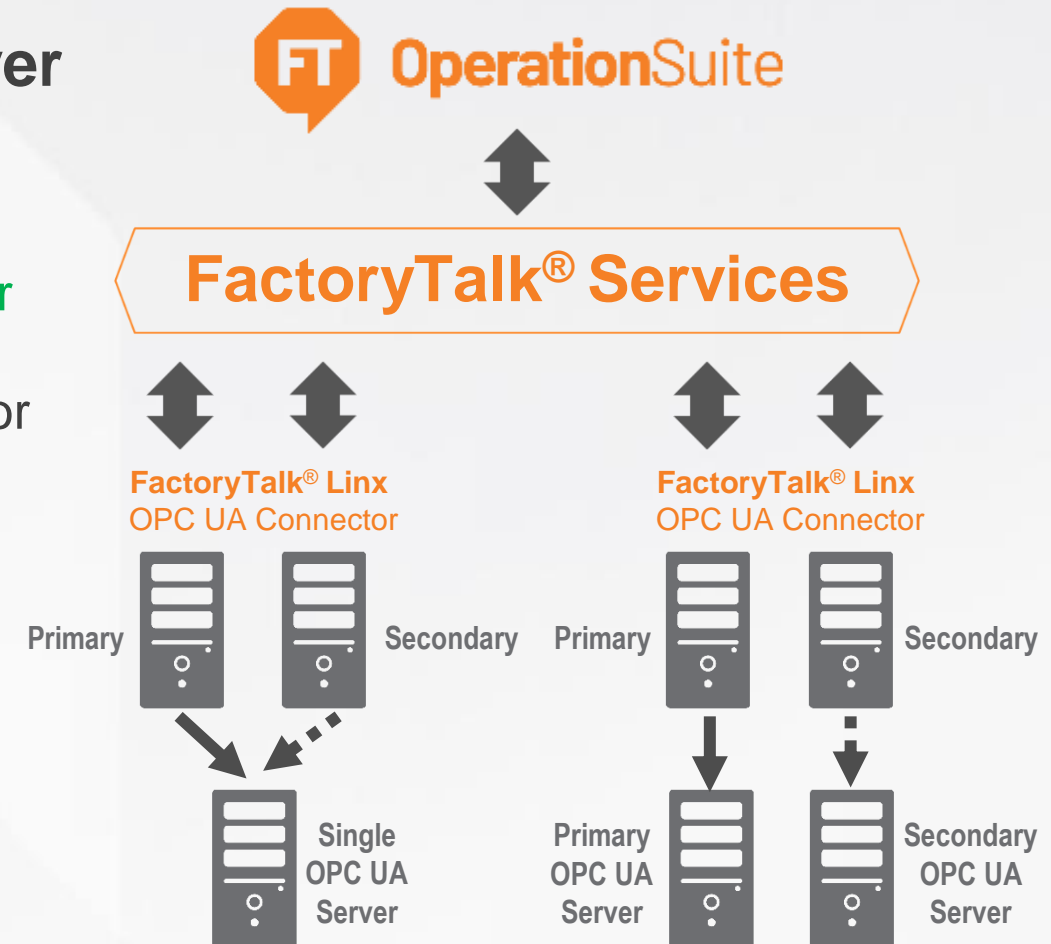
# FactoryTalk Linx OPC UA Connector

# FactoryTalk® Linx OPC UA Connector

## Redundancy

## Enabling communications to an OPC UA server in a High Availability application

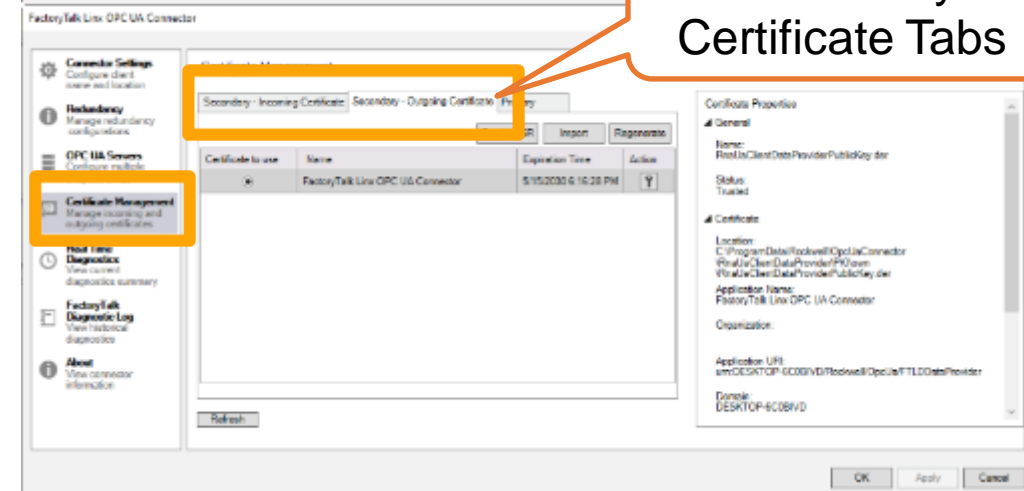
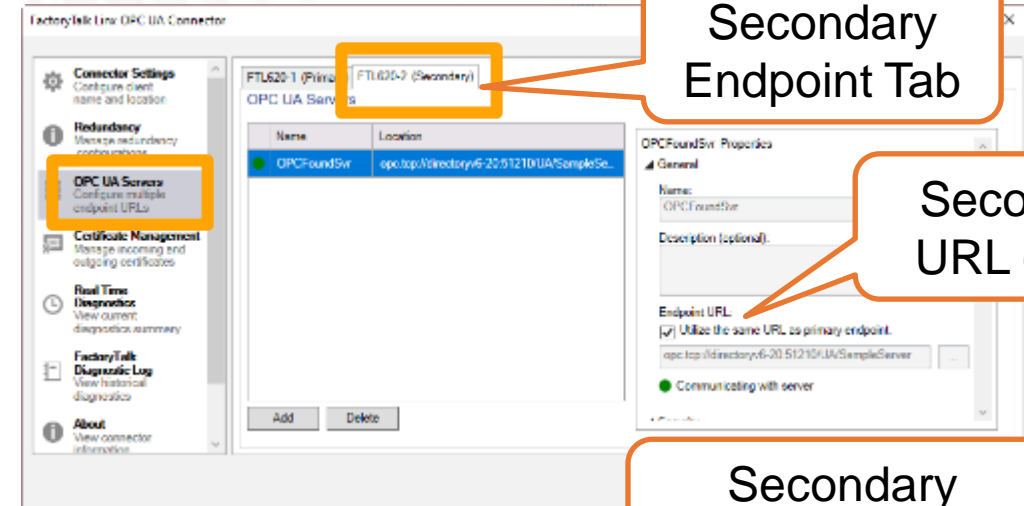
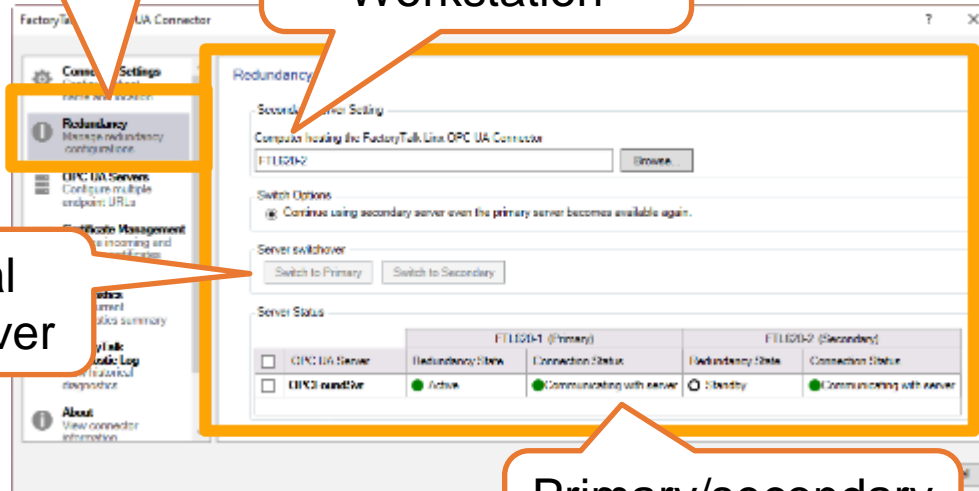
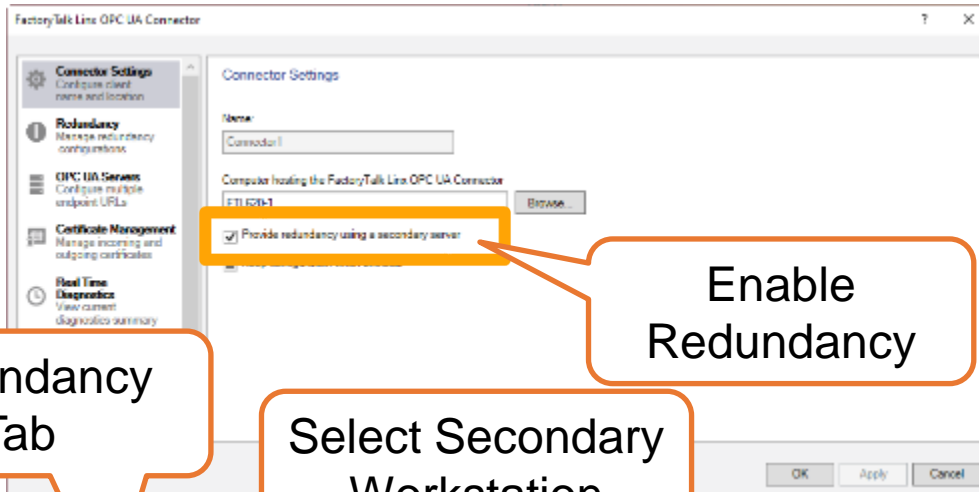
- FactoryTalk® Linx OPC UA Connector v6.20 adds option for redundant operation
  - Configure both connectors to a single OPC UA server or to different / redundant OPC UA servers
  - Two workstation with UA Connector provide warm standby operation (similar to FactoryTalk® Linx)
    - Tag requests simultaneously made to both
    - Only active server delivers data
    - Switches to standby when active Connector fails
  - Ability to force switchover via GUI
  - “,S1” & “,S2” modifiers pull data from specific server
  - Utilize FactoryTalk View SE sever status function and switchover command monitor or change state



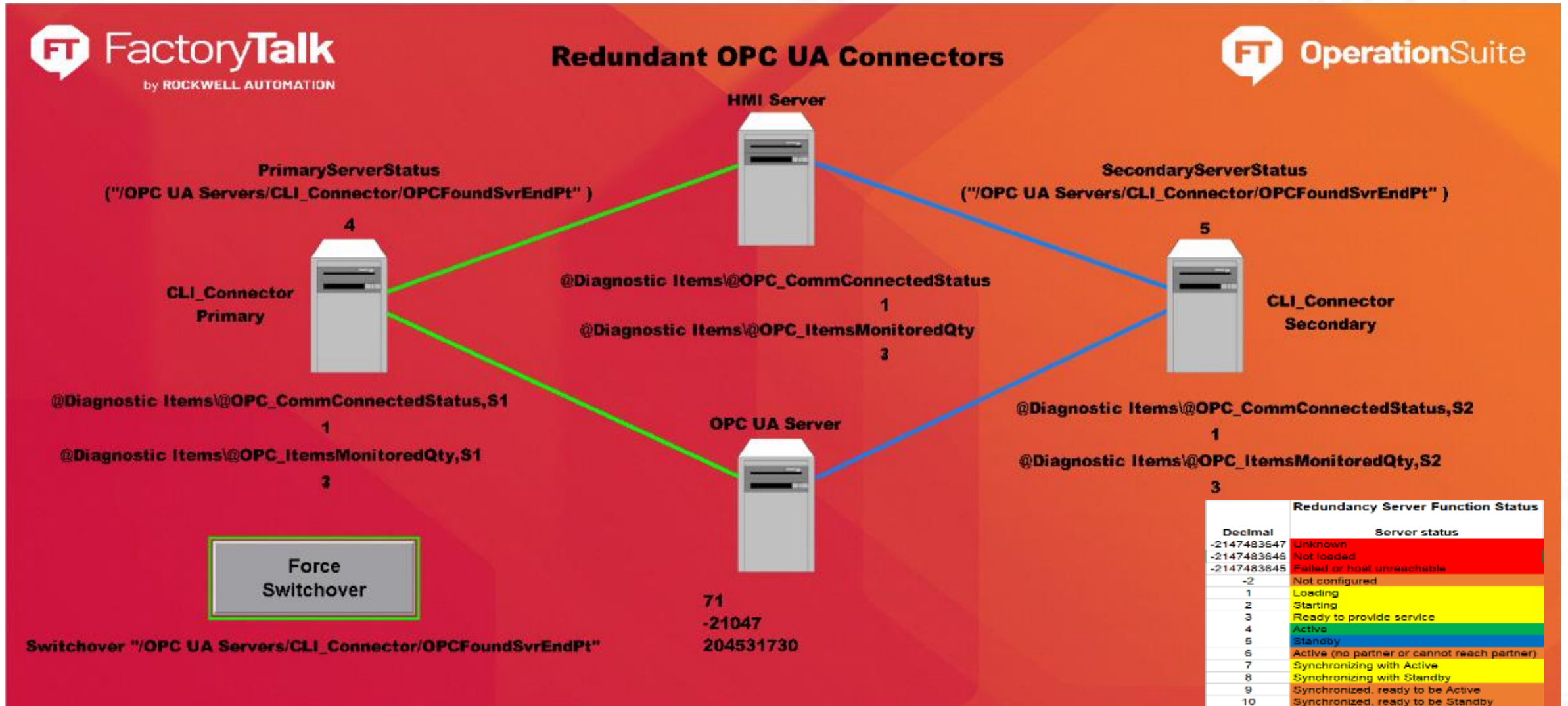


# FactoryTalk® Linx OPC UA Connector

## Redundancy Configuration



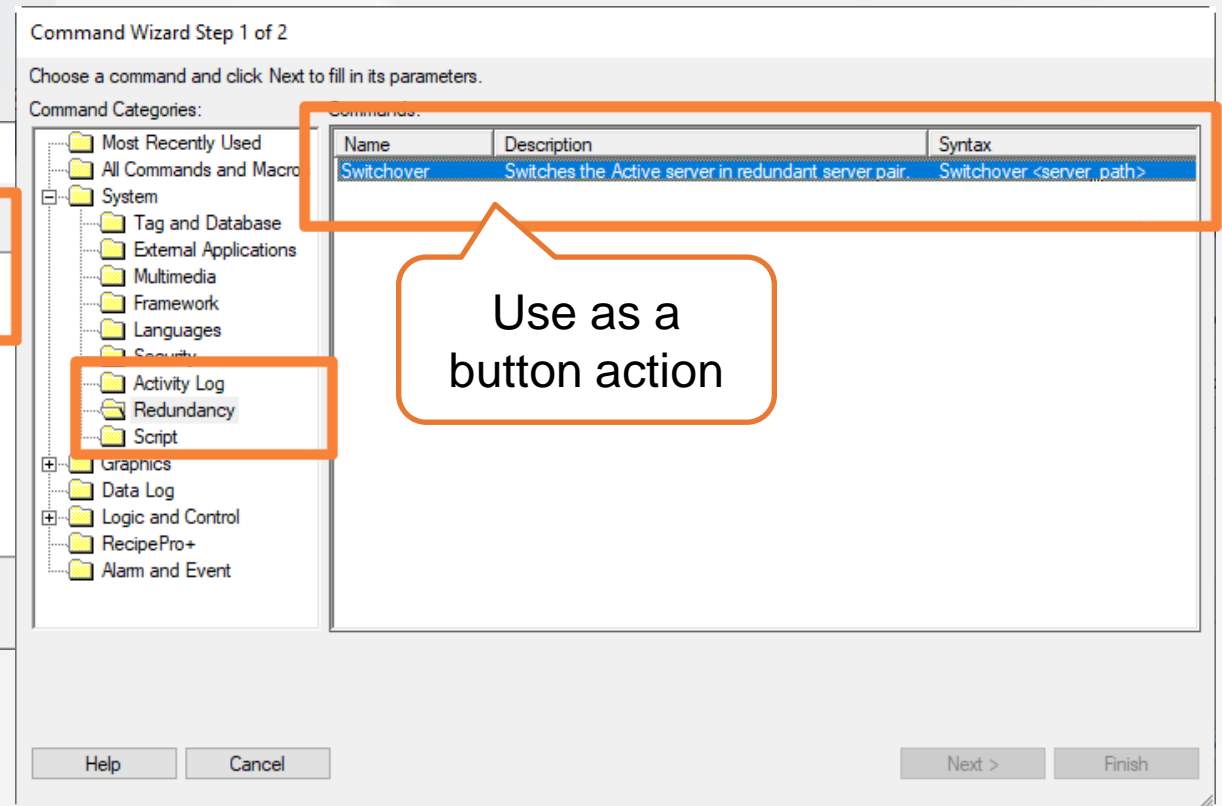
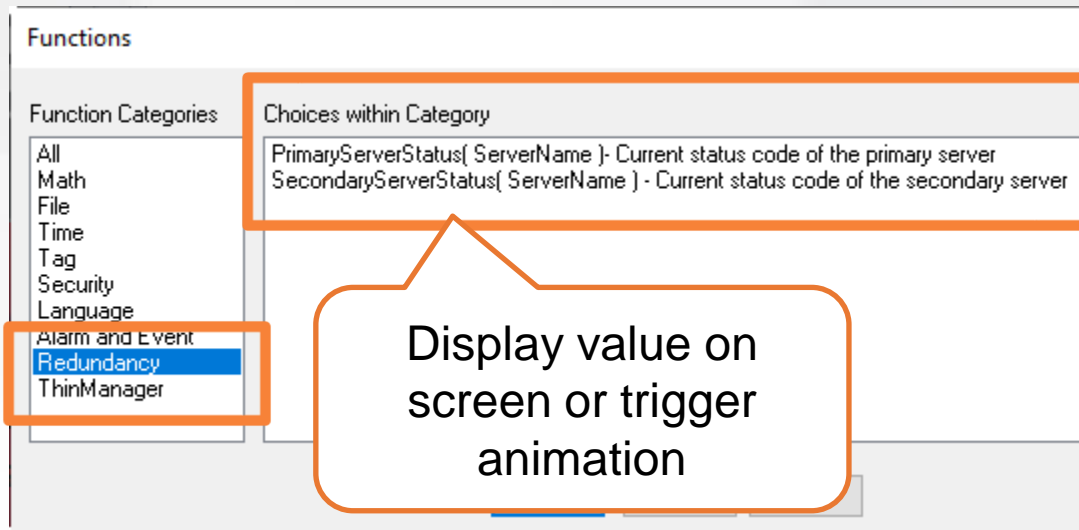
# Redundant OPC UA Connector Demo



# FactoryTalk® View SE

Redundancy functions and command

## Monitor OPC UA Connector redundancy state and force switchover from FactoryTalk View SE screen



# FactoryTalk® Linx OPC UA Connector

Individual Item quality + timestamp

## Improved accuracy of data delivered from an OPC UA Server

- FactoryTalk Live Data was designed to optimize data delivery, so each group of tags shared a single quality and timestamp
  - This worked well for FactoryTalk Linx since most information is delivered as a group
  - Many OPC UA servers accessed by FactoryTalk Linx OPC UA Connector operated differently
    - When one OPC UA Server item reported bad quality, up to 100 items would return bad quality from the FactoryTalk Linx OPC UA connector
- With v6.20 FactoryTalk Live Data and the FactoryTalk Linx OPC UA Connector were enhanced to provide each tag its own quality and timestamp

FactoryTalk Live Data Test Client - RNA://SGlobal/FTViewDemo

File Group Data View Help

Add Group... Group1 Active Rate (mSec): 250 Remove Group Item Properties

Item ID	Current Value	Current Quality	Updates (s)
tor1::[UAServer 01]\Server\Auditing	Off	Communications failure	2 (0)
tor1::[UAServer 01]\Server\ServiceLevel	255	Communications failure	2 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_Boolean	Off	Communications failure	61 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_Byte	127	Communications failure	135 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_Double	-3.21667e+22	Communications failure	135 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_Enabled	On	Communications failure	2 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_Float	-1.63915e+09	Communications failure	135 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_Int16	10237	Communications failure	135 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_Int32	1337985191	Communications failure	135 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_Int64	869940989473...	Communications failure	135 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_Interval	1000	Communications failure	2 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_SByte	-93	Communications failure	133 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_String	Cow+ Dog Sn...	Communications failure	135 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_UInt16	45883	Communications failure	135 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_UInt32	681491890	Communications failure	135 (0)
tor1::[UAServer 01]\CTT\Scalar\Scalar_Simulation\Scalar_Simulation_UInt64	137906768453...	Communications failure	135 (0)

Ready Items: 17 Pid: 16128 Elapsed: 0:00:04:11

e.g. Data from OPC UA Server prior to v6.20 – Group

FactoryTalk Live Data Test Client - RNA://SGlobal/FTViewDemo

File Group Data View Help

Add Group... Group1 Active Rate (mSec): 250 Remove Group Item Properties

Item ID	Current Value	Current Quality	Updates (s)
Line1_Data/Connector1/UAServer 01/Server/Auditing	Off	Good	1 (0)
Line1_Data/Connector1/UAServer 01/Server/ServiceLevel	255	Good	1 (0)
Line1_Data/Connector1/UAServer 01/Server/NamespacesArray[0]	http://opcoun...	Good	1 (0)
Line1_Data/Connector1/UAServer 01/Server/NamespacesArray[1]	urn:is4:opcun...	Good	1 (0)
Line1_Data/Connector1/UAServer 01/Server/NamespacesArray[2]	http://opcoun...	Good	1 (0)
Line1_Data/Connector1/UAServer 01/Server/NamespacesArray[3]	http://opcoun...	Good	1 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_Boolean	Off	Good	47 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_Byte	222	Good	97 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_Double	3.24101e+11	Good	97 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_Enabled	On	Good	1 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_Float	-4.72905e-33	Good	97 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_Int16	11179	Good	97 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_Int32	179822487	Good	97 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_Int64	-6.210170/19...	Good	97 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_Interval	1000	Good	1 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_SByte	92	Good	97 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_String	hawket Awe...	Good	97 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_UInt16	57728	Good	97 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_UInt32	3561728310	Good	97 (0)
Line1_Data/Connector1/UAServer 01/CTT/Scalar/Scalar_Simulation/Scalar_Simulation_UInt64	218534320157...	Good	97 (0)
Line1_Data/Connector1/UAServer 01/Server/Namespaces/https://opcfoundation.org/UA/DefaultAccessRestrictions.aspx	(Empty Data)	Bad	1 (0)

Ready Items: 21 Pid: 4954 Elapsed: 0:00:03:10

e.g. V6.20 data from OPC UA Server – Individual Q

# FactoryTalk® Linx OPC UA Connector

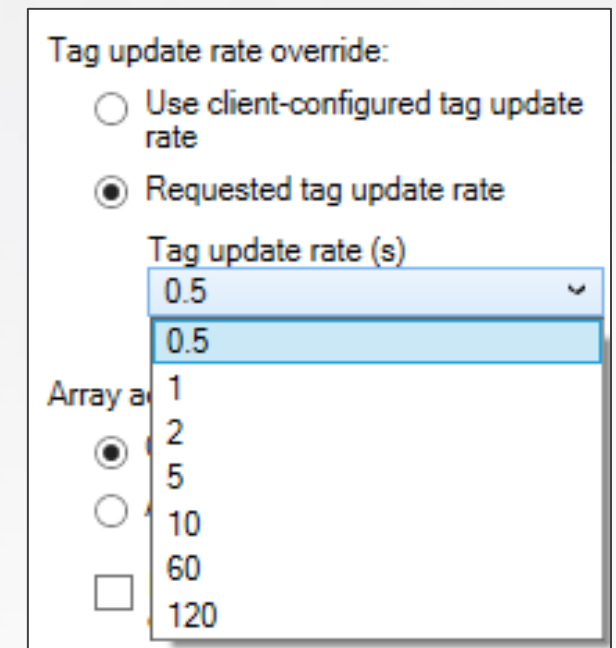
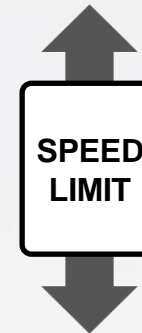
Subscription rate override

## Reduce amount of load placed on the system

- The FactoryTalk® Linx OPC UA connector subscribes to data in an OPC UA server using the rate requested by a FactoryTalk® client
  - FactoryTalk View SE uses the screen refresh rate
  - In some cases this rate is faster than the OPC UA server can deliver
- **FactoryTalk Linx OPC UA Connector v6.20 now provides a user option to define the rate for each endpoint**
  - Tip: create different endpoints for normal and slow speed data (e.g. configuration settings) to balance system loading



FactoryTalk® Linx  
OPC UA Connector



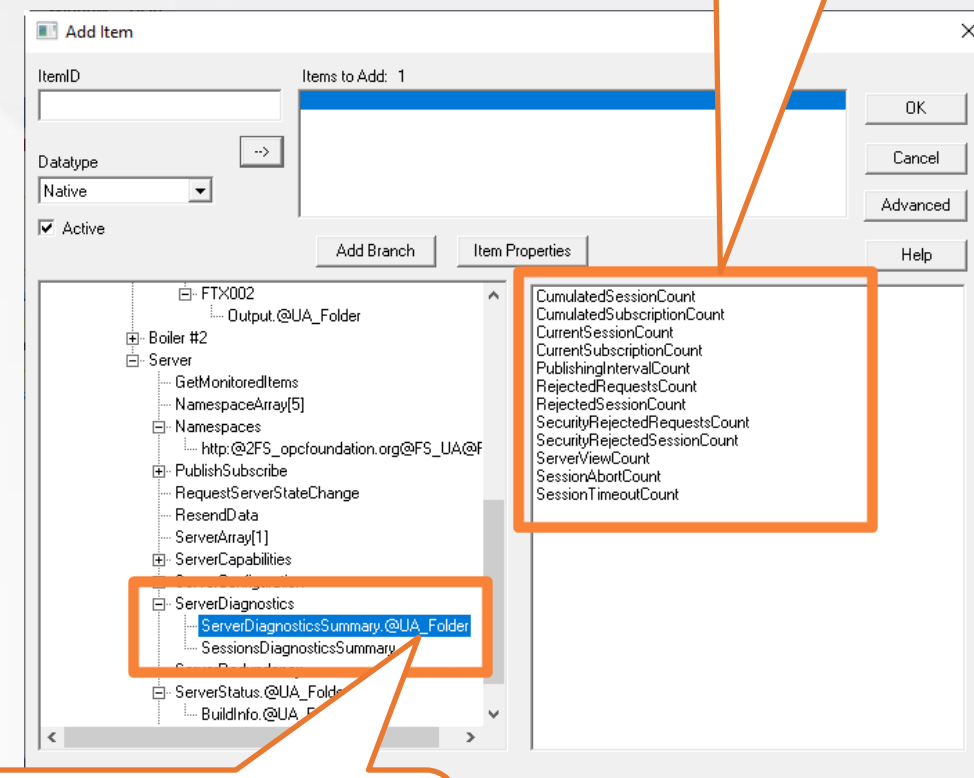
# FactoryTalk® Linx OPC UA Connector

Expanding data access capabilities

## Permits FactoryTalk® software to directly access more type of system data

- The earlier FactoryTalk® Linx OPC UA Connector versions could access tags or structure members that had a pre-defined node ID
- **Version 6.20 adds support for tags defined in other tags**
  - “Tag.@UA\_Folder” created to present the embedded tags

Nested tags

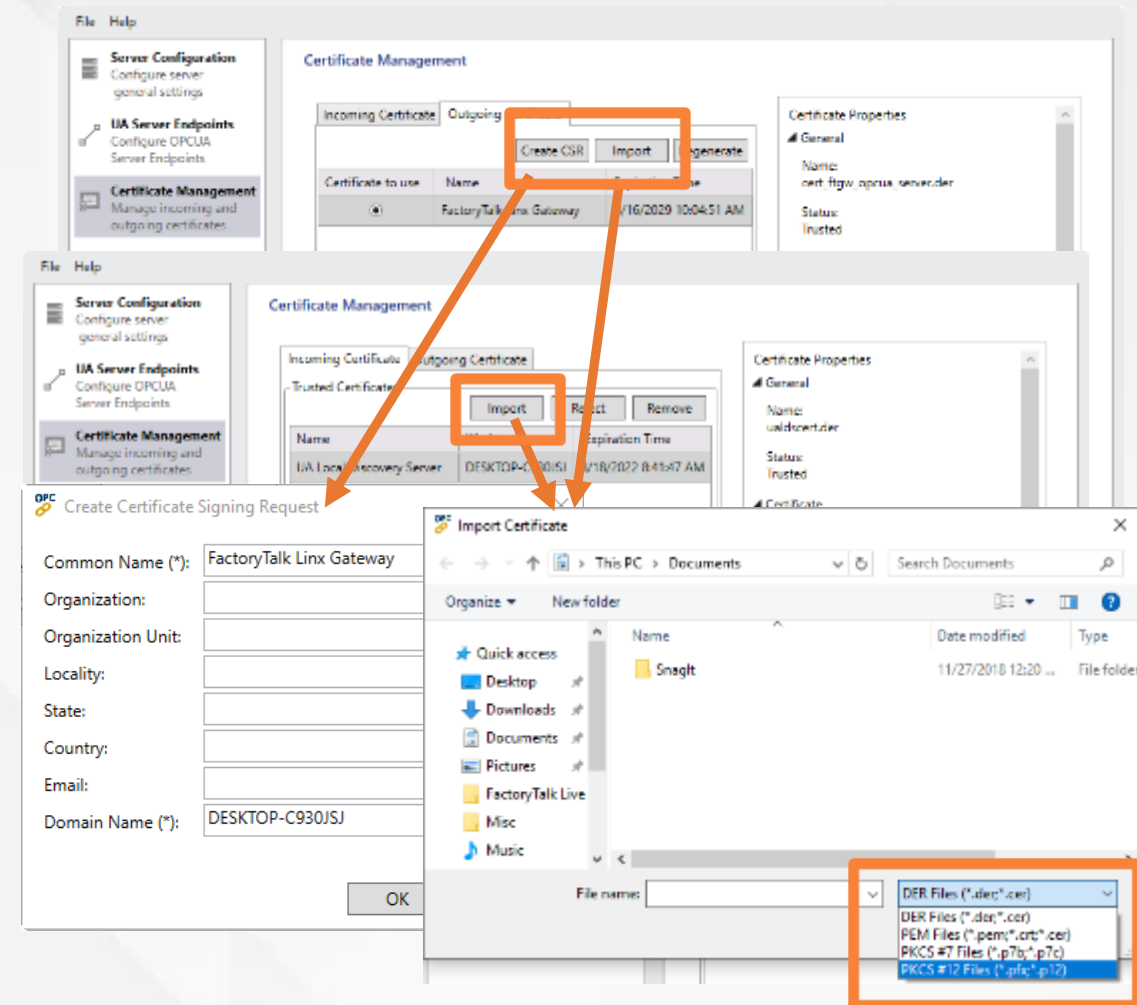


...@UA\_Folder

# OPC UA Certificate Import / Signing Request

## Permits use of a company preferred certificate authority

- The FactoryTalk Linx® Gateway and FactoryTalk Linx® OPC UA Connector provide a self signed outgoing X509 certificate by default
- With v6.20 externally generated / signed certificates can be more easily utilized
  - Import certificate and public/private key files
  - Generate a custom Certificate Signing Request (CSR) that can be signed by an external Certificate Authority (CA)
  - Supports DER, CER, PEM, CRT, P7B, P7C, PFX and P12 formatted files
  - Incoming certificates can also be imported to pre-load a system and streamline incoming certificate approvals





# FactoryTalk Linx Gateway /FactoryTalk Linx Databridge



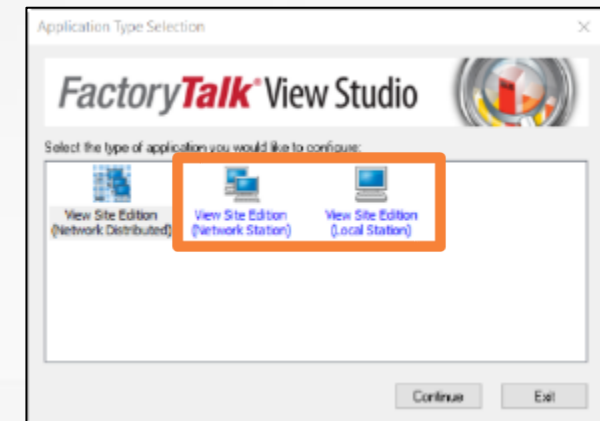
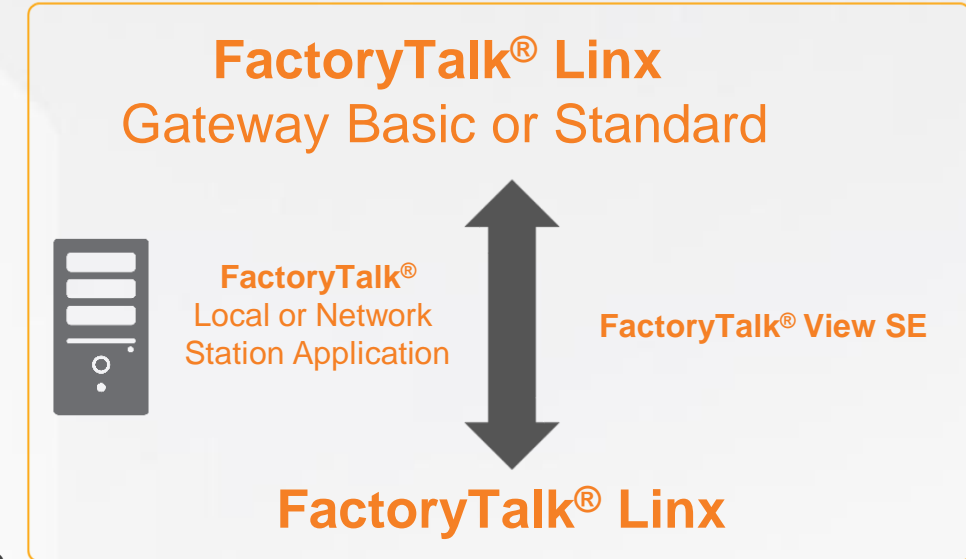
# FactoryTalk® Linx Gateway

Network Station Operation

Enables FactoryTalk® Linx Gateway to operated with FactoryTalk® View SE and FactoryTalk® Historian in a “Network Station” configuration

- Initially FactoryTalk® Linx Gateway activated as “Basic” or “Station” were limited to a “Local” FactoryTalk® directory / application
- V6.20 adds support for “Network Station” for these activation levels
  - Supports a Network directory / application where FactoryTalk Linx Gateway and FactoryTalk Linx are operating on the same workstation
- V6.20 also permits the user to choose which activation to request from the activation server
  - Simplifies the workstation setup to ensure the correct activation is loaded
  - Previously activation file management was required

Third-party OPC UA or DA Client

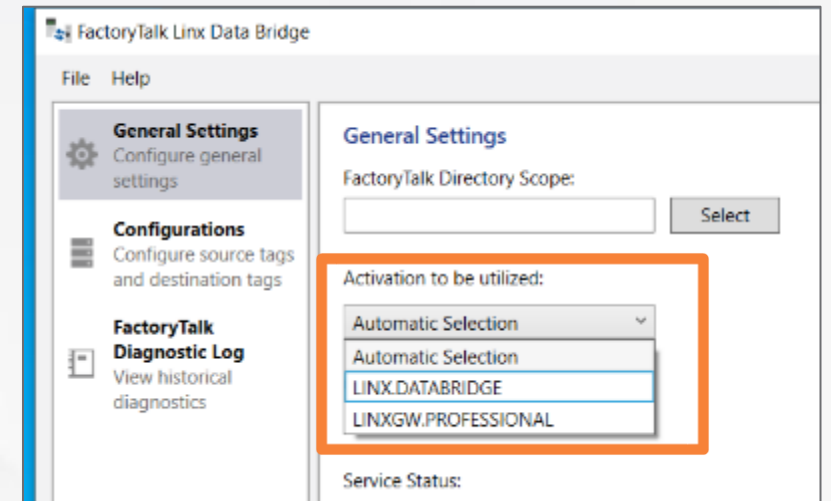
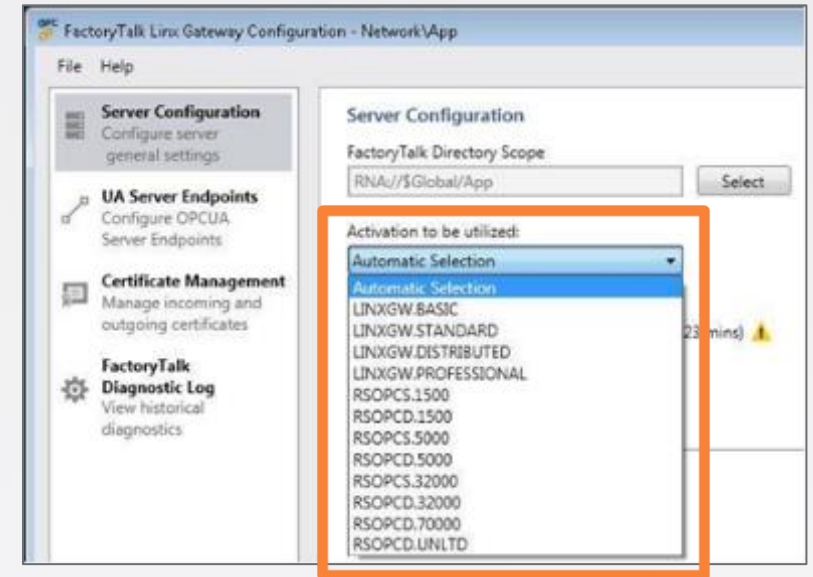


# FactoryTalk® Linx Gateway and Data Bridge

Selecting the desired activation

Ensures the correct functionality is enabled in large systems with multiple installations and a centralized FactoryTalk® Activation server

- Previously FactoryTalk® Linx Gateway and Data Bridge requested to most functional activation available
  - When using an FactoryTalk® Activation server, server startup order could result in the different activation being used than was needed
  - Optionally an activation configuration file could be created to force a specific activation request
- With V6.20 both FactoryTalk® Linx Gateway and Data Bridge permit the user to select the desired activation
  - Simplifies the activations selection
  - Defaults to Automatic Selection like previous versions

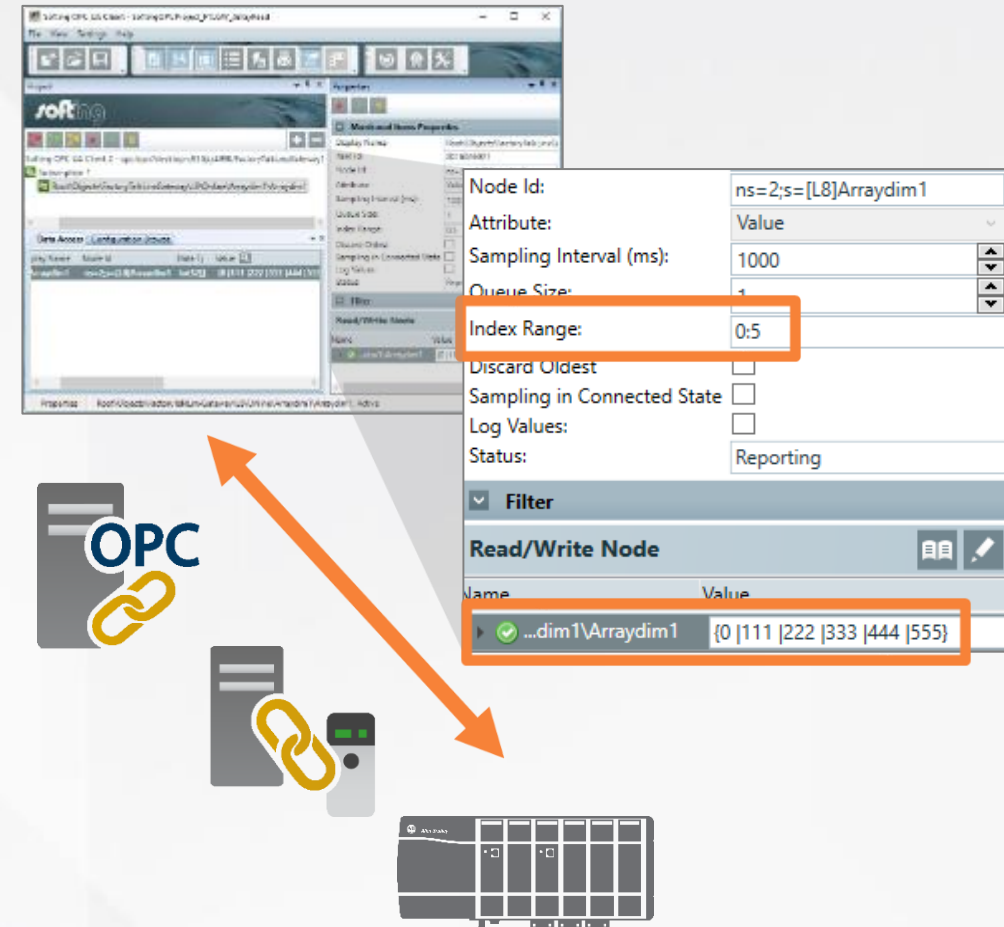


# FactoryTalk® Linx Gateway

Contiguous multi-element array read

## Improved client efficiency and enhanced development productivity

- Initially FactoryTalk® Linx Gateway was limited to accessing scalar tags only
- With v6.20, the OPC UA interface includes ability to read multiple contiguous elements from an array with a single request
  - OPC UA Client must request starting and ending indexes
  - Array range confirmed and appropriate error responses provided when request exceeds array size
  - Limited to Logix single dimension arrays



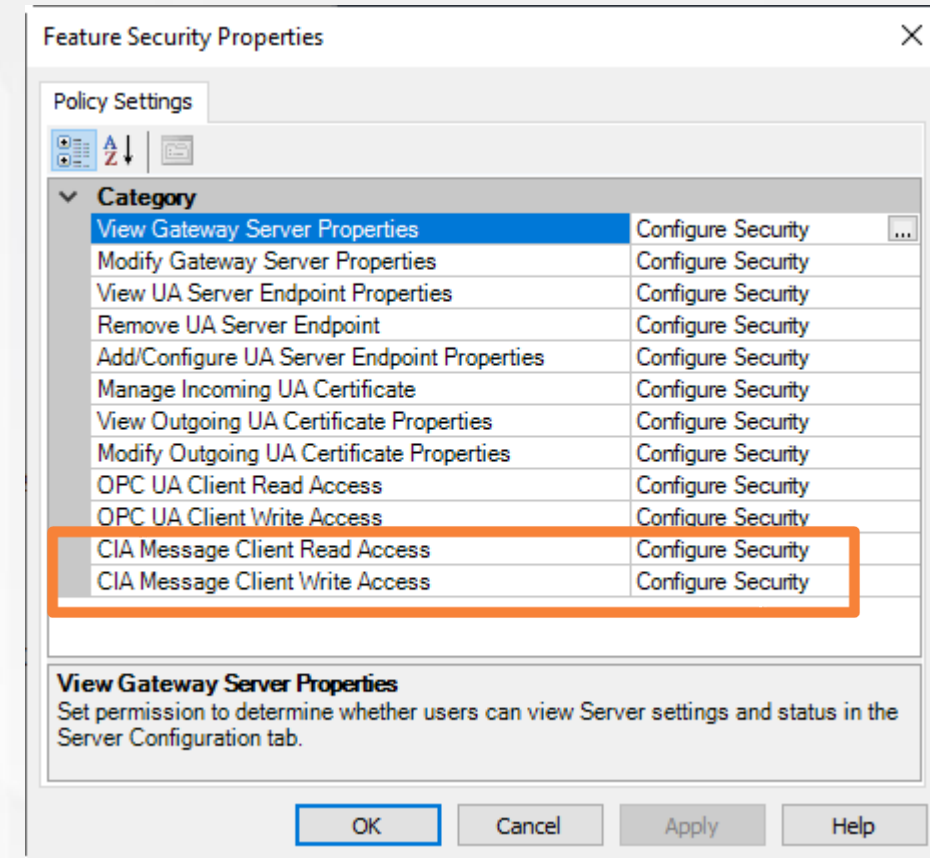
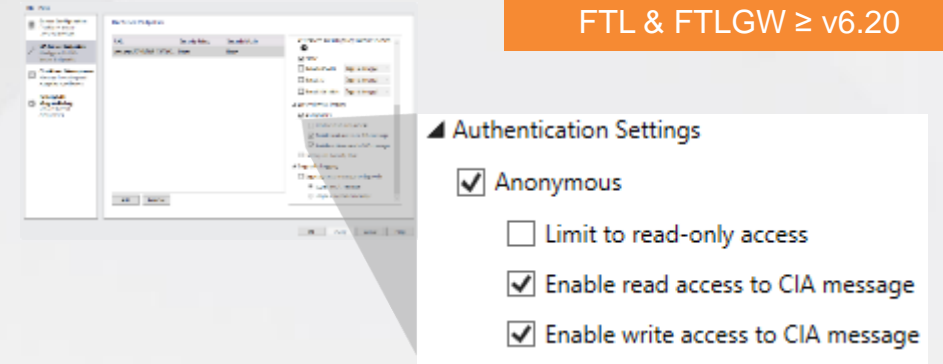
# FactoryTalk® Linx Gateway

CIP CIA Messaging security controls

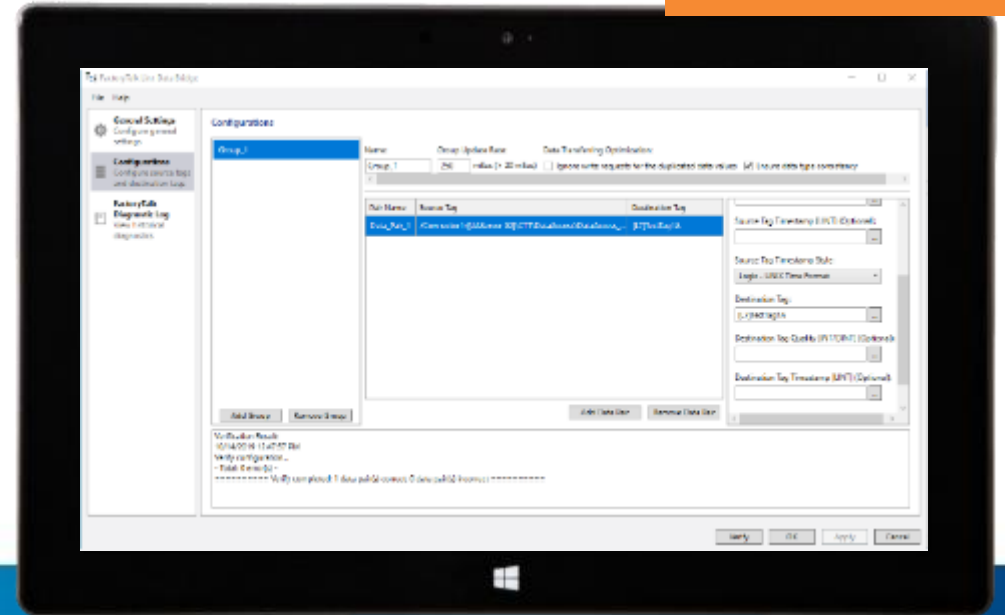
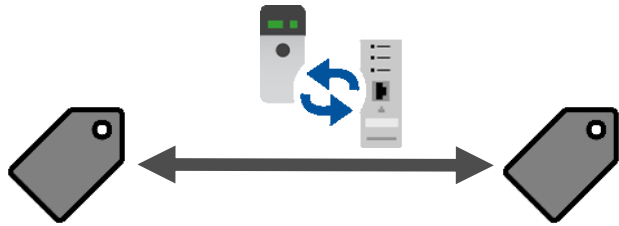
## Control and track device level access by OPC UA clients connected via FactoryTalk Linx Gateway

- FactoryTalk Linx v6.20 adds CIP Class/Instance/Attribute (CIA) messaging capability direct to CIP / EtherNet/IP connected devices
  - Useful for read / write data to PowerFlex drives, E300 Motor protectors and other devices
- **FactoryTalk Linx Gateway provides security options to limit access to this capability**
  - OPC UA Endpoint anonymous read / write
  - OPC UA & DA FactoryTalk security policy
  - Enabled by default, user options to disable
  - FactoryTalk Audit tracking if value writes initiated from OPC UA Clients

FTL & FTLGW ≥ v6.20



# FactoryTalk® Linx Data Bridge



## Connectivity

- Moves data between multiple FactoryTalk® sources
  - Allen-Bradley® control hardware
  - OPC UA Servers
  - OPC-DA Servers
  - Third-party equipment via KEPServer Enterprise

## Availability

- Included with FactoryTalk® Linx Gateway Professional edition 9355-LNXGWPROENE ([v6.20 enhanced to support 200K tag pairs](#))
- Purchase standalone 9355-LNXDBENE (2K tag pairs)

## Data Access

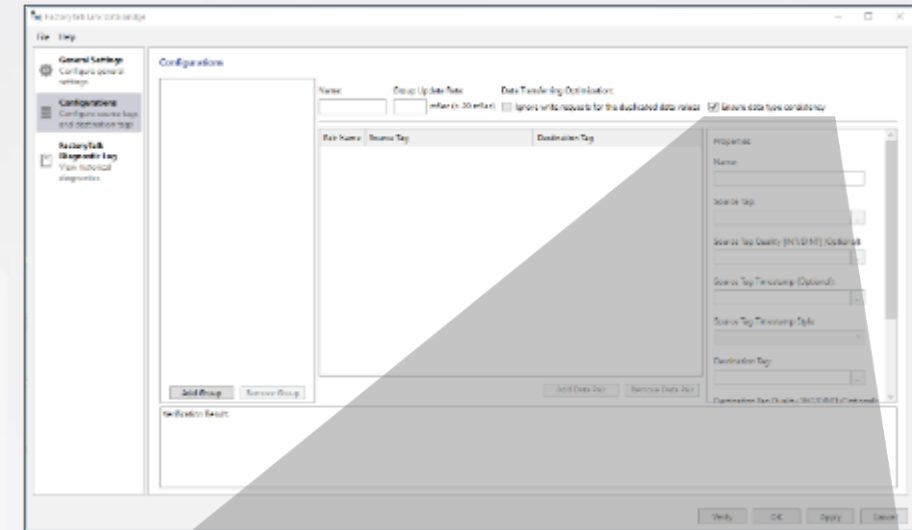
- User configurable tag groups and update rates
- Includes time stamp and quality status tag both source and destination
- Import / export of configuration
- Enables Logix controllers to access OPC UA server data

# FactoryTalk® Linx Data Bridge

Option to disable type matching

## Relaxes type matching to permit exchange of more data

- The FactoryTalk® Linx Data Bridge initially required the source and destination tag type to have the same type
  - Ensures data is directly usable in the destination without modification
  - In some cases this has proven to be too strict
- V6.20 adds a user option to permit delivery of data when the source and destination tag types do not match
  - Requires recipient to perform type conversion



Ensure data type consistency



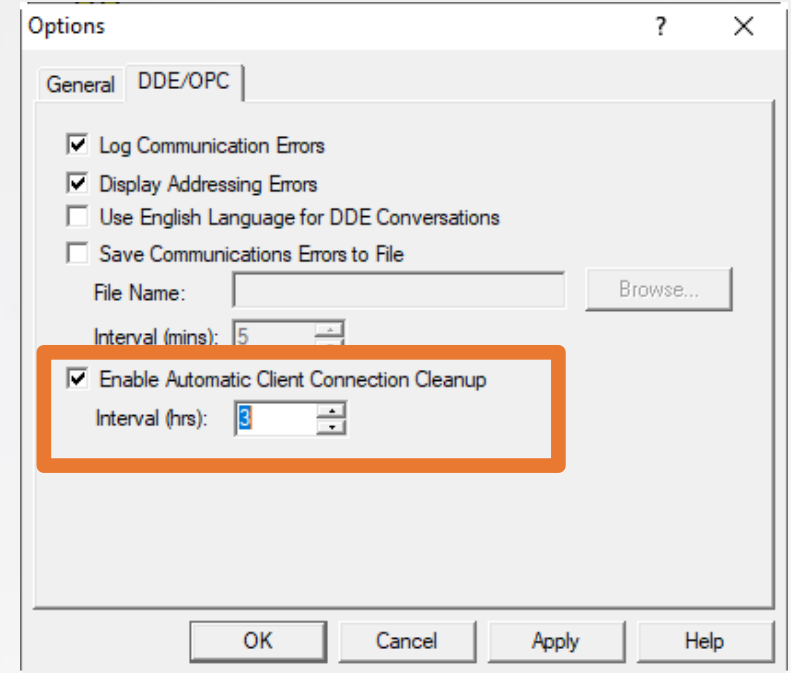
# RSLink Classic

# RSLinx® Classic

## OPC DA Connection Management Improvement

### Increased system uptime

- OPC DA does not provide a method to close unneeded Client connections to an OPC DA server
- RSLinx Classic was forced to retain connections even though they were orphaned by an OPC DA client
  - Memory and threads were retained, and worst case expended
  - Periodic restart required to release resources
- RSLinx® Classic v4.12 will periodically check / close orphaned OPC DA client connections
  - User selectable time period to determine how often to run the check

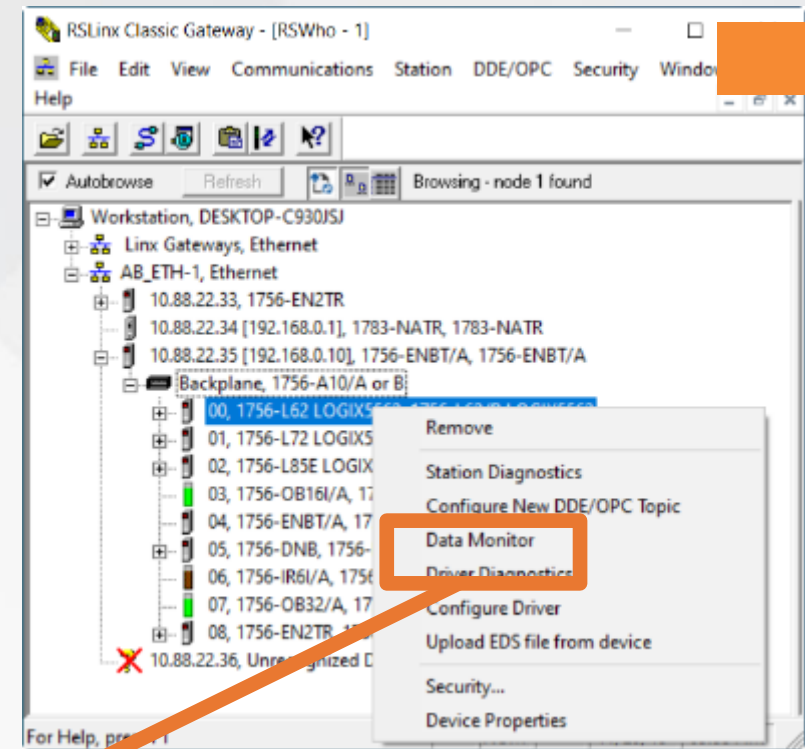




# RSLinx® Classic

## Securing access to Data Monitor

- v4.12 of RSLinx Classic Lite removed access to the Data Monitor feature
- v4.12 of RSLinx Classic Single Node, OEM and Gateway continue to support Data Monitor but were enhanced to provide a Security Policy to control which users can leverage the feature
- Patch released to v4.11 with similar changes



The screenshot shows the 'Data Table Monitor' window. The table displays the following data:

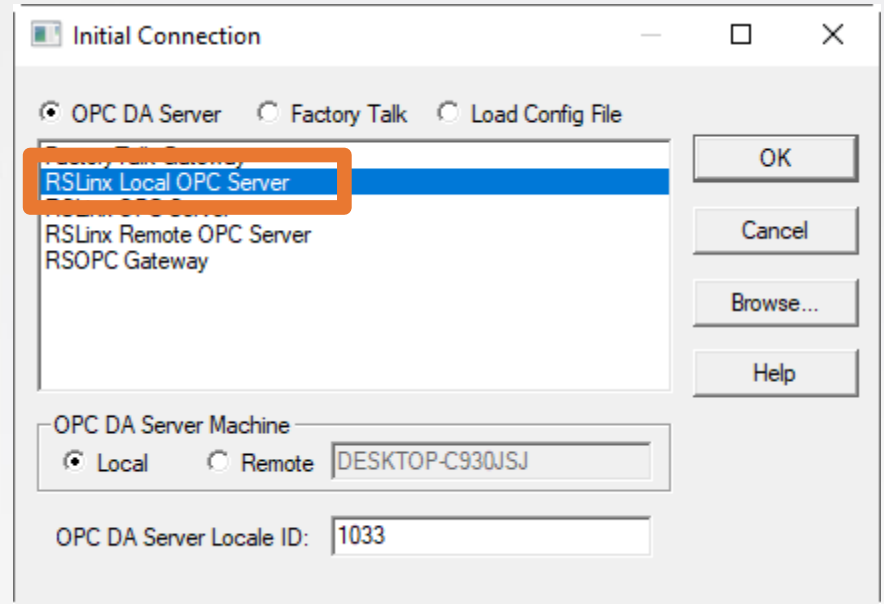
Tag Name	Value	Radix	Type	Access Rights
AlarmFilerConvJam	0	Decimal	BOOL	Read/Write
AlarmLabelJam	0	Decimal	BOOL	Read/Write
AlarmMotorOverHeat	1	Decimal	BOOL	Read/Write
AlarmPaperOut	0	Decimal	BOOL	Read/Write
AlarmTank1DiscJam	0	Decimal	BOOL	Read/Write
AlarmTank2FillJam	0	Decimal	BOOL	Read/Write
DispenserLine				Read/Write
CustomerName				Read/Write
PartName				Read/Write
OrderName				Read/Write
OrderQty	40000	Decimal	DINT	Read/Write
HML_Motion				Read/Write
Menu_GOTO_dx	10	Decimal	DINT	Read/Write
Menu_GOTO_H	461	Decimal	DINT	Read/Write
Menu_GOTO_POS	470	Decimal	DINT	Read/Write
MLHMI				Read/Write
MotionSimCnr	0	Decimal	DINT	Read/Write
MotionSimCntr		Decimal		Read/Write
MotionSimCount				Read/Write
MotionSimEn	0	Decimal	DINT	Read/Write
Motor_1				Read/Write
Motor_1_I				Read/Write

Status: Active

# RSLinx® Classic

## Single Node and OEM Activations on Windows x64 bit Operating Systems

- RSLinx Classic “Single Node” and “OEM” activations are limited to OPC DA Clients running on the same workstation
  - Certain clients would not activate on x64 bit Windows because of how COM interfaces functioned with 32 bit application
  - This required some customers to purchase the Gateway activation
- **RSLinx Classic V4.12 added a new local OPC DA interface that is accessible to clients on x64 bit Windows**
  - Address a long-standing limitation
  - New service is automatically installed and started when needed on x64 bit windows



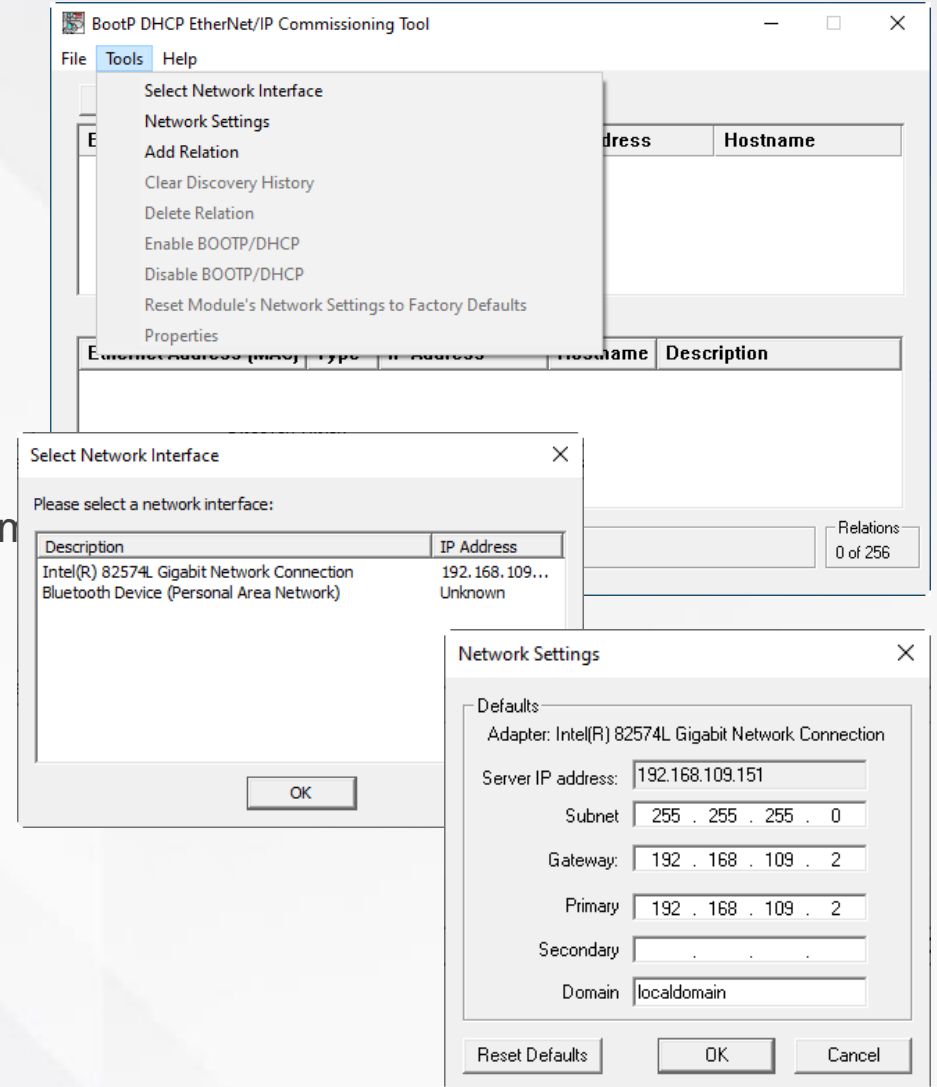


# Tools and Utilities

# BootP / DHCP EtherNet/IP Node Commissioning Tool

Improved robustness to bring devices online more quickly

- Recent version of the tool have greatly improved its operation
  - Detect / report DHCP port conflicts
  - User NIC selection vs default
  - Added on-line help
  - Windows Font scaling
  - Static button anomaly
- Improvements to v3.04 of the BooTP/DHCP Tool (released 6/19/20)
  - Warn user when selected NIC is configured on different subnet from device (blocks some operations)
  - Prompt user for subnet setting
  - Option to change NIC selection without tool restart
  - Reset network settings with NIC change
- **Improvements to v3.05 of the BooTP/DHCP Tool**
  - Warning if windows firewall blocks the required port



# FactoryTalk Updater™

No more wondering what you have on various PCs

The screenshot shows the FactoryTalk Updater application window. It has a 'Software Inventory' tab selected. The window title is 'FactoryTalk Updater'. Below the title bar, there are tabs for 'Software Inventory' and 'System Logs'. A sub-header indicates 'Installed Software: 8' with 'Export' and 'Refresh' buttons. A table lists the installed software with columns for Name, Installed Version, Latest Version, and Latest Patch. A desktop notification is overlaid on the bottom right, titled 'Rockwell Software Update Notice', stating that 'FactoryTalk View Site Edition V11.00.00 is available' and providing a link for more information.

Name	Installed Version	Latest Version	Latest Patch
- FactoryTalk View Site Edition	10.00.00	10.00.01	① Patch Roll-up - Aug 2018 ①
FactoryTalk View Studio Enterprise 10.00.00...	10.00.00		
FactoryTalk View Site Edition Server 10.00.0...	10.00.00		
FactoryTalk View Site Edition Client 10.00.0...	10.00.00		
+ FactoryTalk ViewPoint	10.00.00	Up to date	
+ FactoryTalk Activation	4.02.00	4.03.02	①
+ FactoryTalk Services	6.00.00	Up to date	Patch Roll-up - Aug 2018 ①
+ RSLinx Classic Lite	4.00.00 CPR 9 SR 10.0	4.00.01	①
+ Studio 5000 Logix Designer	31.00.00	31.00.01	①
+ Studio 5000 View Designer	4.2.00000.00035	Up to date	
+ ControlFLASH	15.01.00	Up to date	

1.0

## At-a-Glance

- What software and version is installed on your PC
- The latest version available for software and patch rollups
- Desktop notifications when new versions release

2.0

## More than a PC

See software and patch rollup information for any machine on the same network.  
Compare multiple machine software inventory.

## Disconnected Inventory

Collect multiple machine inventories even from disconnected networks. Maintain visibility without all individual machines being connected to the internet.



# Keyserver Enterprise

# KEPServer Enterprise v12

Capabilities that align with Kepware's KepserverEX v6.9.584 (released 10/30/2020)

## Enabling FactoryTalk Software to interface with third-party hardware and network protocols

- Added support for Windows Server 2019
- Improved security
- Stability and robustness
- Configuration now limited to local runtime (non-remote)
- 64bit types for ThingWorx interface
- OPC DA Client new system to control group active / inactive
- OPC UA Client expanded access to additional properties and types
- OPC UA interface added Basic256Sha256 security Policy
- Torque tool driver added new devices
- U-con driver added new CRC DCE3 (16-bit)



# FactoryTalk® Linx v6.20 CPR9-SR12.0

- Logix v33, FTView v12, PVP V12 (W/ ODVA CT16)
- Validation testing with Windows 10 1903 & 1909, IOT Enterprise LTSC v1809, Server 2019 and stop testing with Server 2008 R2 (blocked) and Win 10 32 bit (warning)
- Windows 10 Secure boot with Microsoft signed PKTX driver
- RSLinx® Classic enhancements in v4.12 & v4.20
  - Periodically check and close orphaned OPC DA client connections
  - Data Monitor security policy and removed from Lite Edition
  - Single Node and OEM Activation on x64 Windows
- FactoryTalk® Linx
  - HART instrument / device browsing
  - New CIP Identity object attributes
  - Class/Instance/Attribute (CIA) Messaging
  - Browsing and Routing from EtherNet/IP to DH+
  - Retain off-line configured shortcut (Network Path)
  - Logix new data-types (LREAL, USINT, UINT, UDINT, ULINT)
  - Support for PlantPAX controllers
  - PlantPAX Instruction extended tag properties
  - Instance 2 supports FactoryTalk Alarms and Events
  - Localized user interface in FactoryTalk Administration Console German, French, Japanese and Chinese and help in Chinese
  - Option for FactoryTalk® Alarms and Events to collect “Automatic Device Diagnostics” from Logix
  - Eliminate need for Windows Admin rights to deploy FTView ME application
    - Option to close some controller connections after data requests terminate
- FactoryTalk® Linx Network Browser
  - Added driver management screen
  - EtherNet/IP device address configuration and statistics
  - Web based user interface for FactoryTalk Policy Manager and ControlFlash Plus
  - FT Security and Audit of configuration changes
  - Logix Designer defaults to FactoryTalk Linx
  - Browsing through CIP Security proxy (1783-CSP)
- FactoryTalk® Linx Gateway
  - Network Station activation for Basic and Standard keys
  - User activation selection
  - Certificate import and signing request
  - Read Multiple scalar array items with a single request
- FactoryTalk® Linx OPC UA Connector
  - Redundant OPC UA Connector workstations
  - Individual Item quality + timestamp
  - Access to tags defined under other tags
  - User configurable tag update rate override
  - Certificate import and signing request
- FactoryTalk® Linx Data Bridge
  - Option to disable type matching
  - Capacity and performance improvements
  - User activation selection
- KEPServer Enterprise V12.00
  - Kepware Version 6.09 for PC operation (not supported on PanelView® Plus)



# FactoryTalk® Linx Priorities

Ensuring FactoryTalk® Linx is the preferred communications service for Rockwell Automation

- Migrate RSLinx® Classic
- Capacity
- Performance
- Differentiate
- Structures
- Device connectivity
- High availability
- PTC connectivity
- Local languages
- Many OPC UA extensions
- SECURITY





**Thank You!**



**Rockwell  
Automation**

# Questions

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[www.rockwellautomation.com](http://www.rockwellautomation.com)