FactoryTalk® Linx v6.31, FactoryTalk® Linx Gateway v6.31, FactoryTalk® Live Data v6.31, FactoryTalk® Data Bridge v6.31 (CPR9 SR13.00)

What's NEW in Communication Software at Rockwell Automation

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expanding human possibility™

Significant v6.31 Capabilities

Released Nov 30, 2022

FT Linx

- PLC-5®/SLC™ Unsolicited messaging
- Network Browser
  - “Remote Proxy” driver
  - LLDP display of neighbor information
  - Audit device configuration changes
- CIS Benchmark testing

FT Linx OPC UA Connector

- Methods with no arguments
- CIS Benchmark testing

Released Jan 18, 2023

FT Linx Gateway

- Reverse connection (server initiated)
- Custom data model for OPC UA Companion Specifications
- DDE and Excel RTD egress
- Remote workstation proxy services
- SDK – (DTL™ API)
- CIS Benchmark testing

FT Linx v6.31 CPR9-SR13.00

Reducing reliance on RSLinx® Classic

- Microsoft Windows
  - Validation with Windows 10 21H2, 22H1 and Windows 11 and Server 2022
  - Kernel divers updated signatures for Windows Memory Integrity security feature
  - CIS Benchmark testing for all software
- FactoryTalk® Linx
  - Logix version 35 (includes L8 TrackedState change value)
  - Automatic switch to active 5015 module route
  - PLC-5® /SLC Unsolicited messaging for B, N & F data-files
  - Redundancy Module Configuration Tool v9.01.01 install on Win 10 2016 LTSB
- FactoryTalk® Linx Network Browser
  - Device locator displays text when device does not support the feature
  - Device configuration change audit messages
  - Device configuration LLDP neighbor information
- FactoryTalk® Live Data
  - Test Client option to copy tag reference ID
- FactoryTalk® Linx Gateway
  - Custom data model to support OPC UA Companion Specifications
  - Reverse connection (server initiated)
  - Remote workstation proxy services
  - SDK - DTL API access
- FactoryTalk® Linx OPC UA Connector
  - GUI display namespace upload progress
  - Simple Methods without parameters
  - Deliver data with time stamp reversion
- FactoryTalk® Linx Data Bridge (FTSP refresh)
- FactoryTalk® Action Manager™ (FTSP refresh)
- RSLinx® Classic
  - USB kernel drivers updated for Windows Core Isolation Device Security

CIS Benchmarks™

Goal: Provide guidance and best practices for securely configuring an OT system

Target: Microsoft Operating Systems

Strategy: Leverage CIS Benchmarks

Execution: FactoryTalk® Service Platform Win10 21H2 Level 1

https://rockwellautomation.custhelp.com/app/answers/answer_view/a_id/1134588/loc/en_US

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FT Linx

System release

Studio 5000 Logix Designer® version 35, Logix 5x80 version 35

Enabling the latest system capabilities

- FactoryTalk® Linx v6.31 tested and released with FactoryTalk® Logix version 35
- FactoryTalk® Logix version 35 notable features
  - SequenceManager™ for 5x80P controllers
  - Controller Change Detection on 5x80 controllers - @TrackedState predefine
  - FLEXHA 5000™ (5015) I/O
  - Axis Test Mode
  - Process instructions P_D4SD, P_nPos, P_ValveMP
  - GuardLink® support

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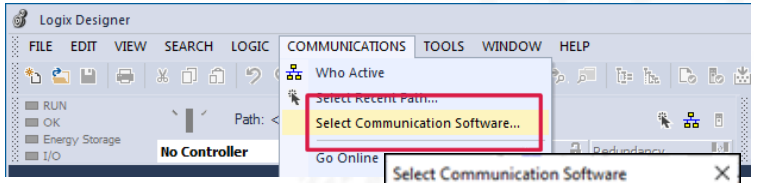
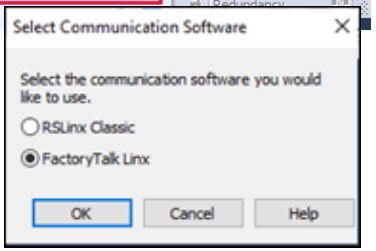
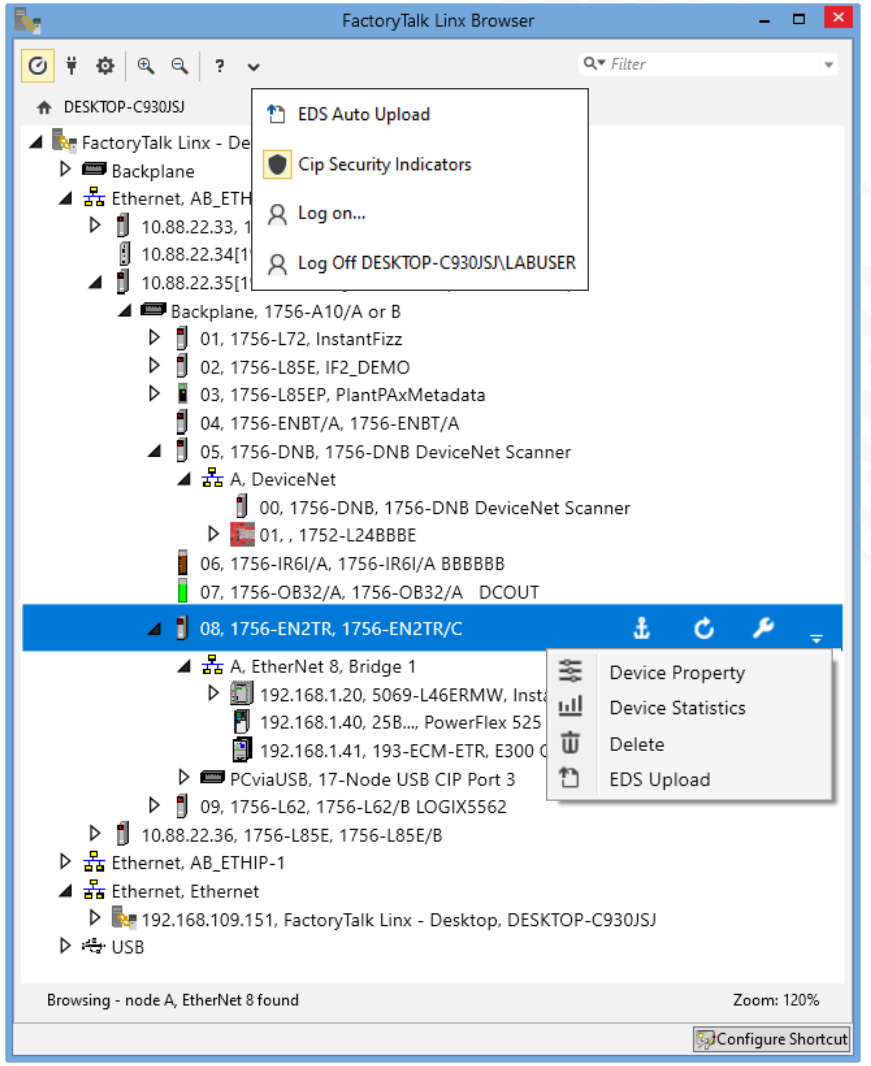
Linx Network Browser

More productive alternative to RSLinx® Classic “Who Browser”







Enhanced Capabilities

- Configure Ethernet drivers in the browser
- Improved driver address management
- View topology and modify config while running
- Topology view ~200 more devices
- Tree zoom (60% to 200%)
- Filter
- Anchor view
- Automatic discovery of bridged devices
- Windows standalone Network Browser v6.10
- CIP Security state indicator v6.11
- Device commissioning v6.20
- Security authorization, audit logging v6.20
- Web user interface component v6.20
- Locate device (Blink light-emitting diode (LED) v6.21
- Faster Logix 5000™ ControlFLASH™ transfers v6.21
- Config import/export & backup/restore v6.21
- Communicate to device not browsed v6.30
- Option to disable CIP Security & LLDP v6.30
- New platforms: 5015, GuardLink® v6.30
- Connect without first browsing v6.30
- Remote Proxy driver v6.31
- LLDP neighbor information display v6.31

Supported by

- Studio 5000® Launcher version 31
- Studio 5000® Logix Designer version 31
  (version 33 defaults to FactoryTalk® Linx, version 34 faster download)
- PlantPAx® Process Object Config. tool v4.10.01
- PlantPAx® MPC v2.0
- ControlFLASH™ v14
- ControlFLASH™+ v1
- Connected Components Workbench™ v12
- FactoryTalk® AssetCentre v9
- FactoryTalk® Policy Manager v1.0
- FactoryTalk® Linx CommDTM v1
  (v1.04.00 support for RSLinx® Classic removed)
- PowerFlex® eHIM v1.0
- Studio 5000 View Designer® v7
- FactoryTalk® Batch v14
- Redundancy Module Configuration Tool (v9.00)
- FactoryTalk® Logix Echo v1
- FactoryTalk® Action Manager™ v1.00
  (replaces Logix Clock Update tool)
- SequenceManager™ v2.00
- More to come…

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FTL≥ v6.31

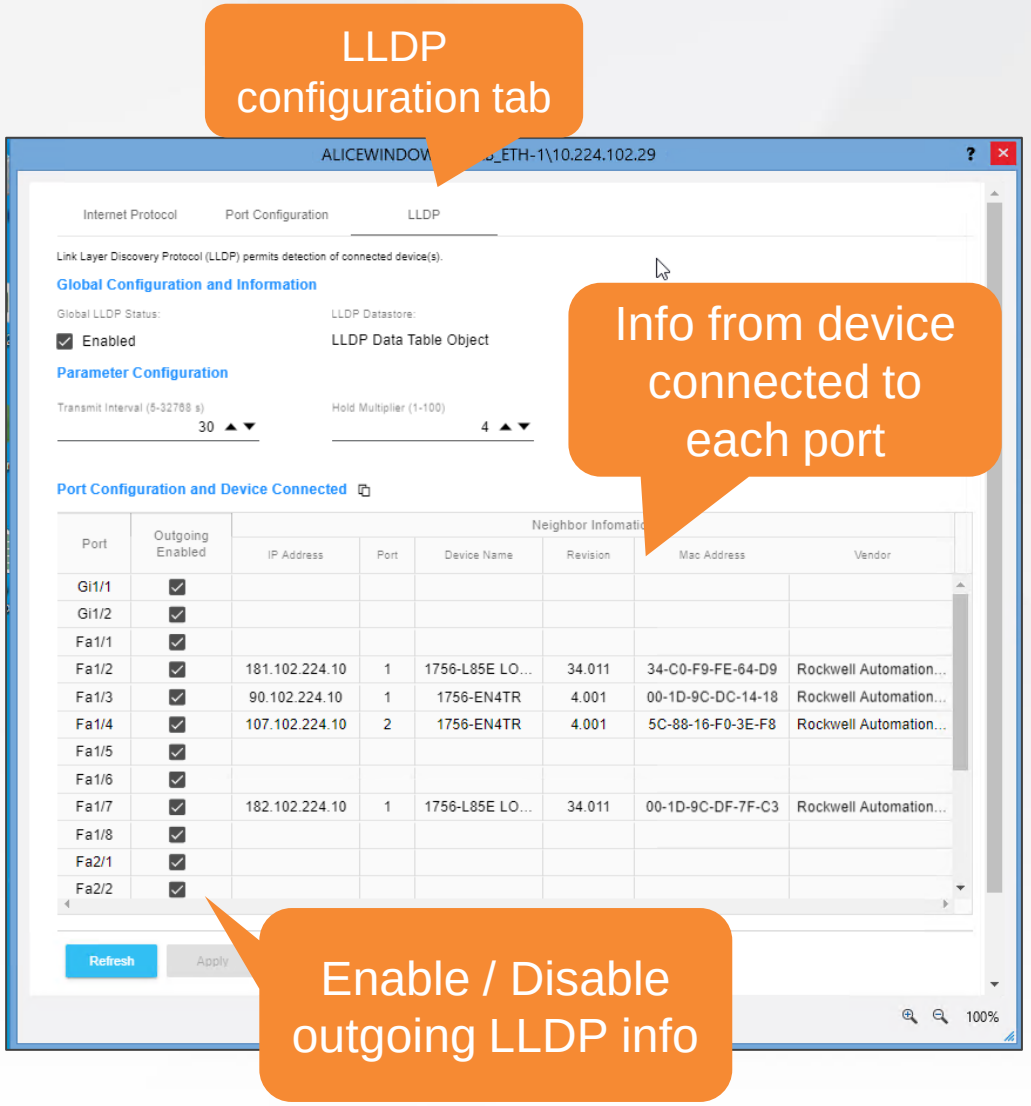
FTL ≥ v6.31

Linx Network Browser

LLDP device neighbor information display

Improved network connection visibility

- Link Layer Discovery Protocol (LLDP) added to ODVA EtherNet/IP specification v1.25 effective 12/2021
  - IEEE 802 Technology
  - Permits a device to detect connected neighbor devices
  - Beginning March 2022, required for EtherNet/IP devices
- FactoryTalk® Linx v6.30 Network Browser device configuration added LLDP tab with option to enable/disable service
- FactoryTalk® Linx v6.31 extends the LLDP capabilities
  - Option to enable / disable each port to deliver LLDP information to other devices
  - Displays information for connected device for each port
  - Copy / save neighbor device information
- Support for LLDP is still limited



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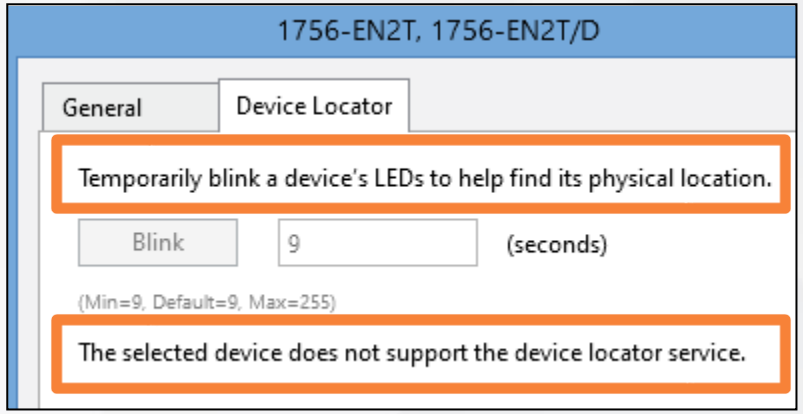
Linx Network Browser

Device Locator tab

FTL ≥ v6.31

Confirms that the reason device locator option is disabled

- FactoryTalk® Linx V6.21 Added the Device Locator tab to the device properties dialog
  - Uses an ODVA CIP Service to blink the LEDs of a supported device
  - Aids in locating a specific device in the system
  - Stratix® switches were the first device to support the operation, planned for other devices
  - Tab is grayed out for unsupported devices
- To reduce confusion, FactoryTalk® Linx v6.31 added description text to the dialog and when disabled
  - “Temporarily blink a device’s LEDs to help find its physical location”
  - “The selected devices do not support the device locator service”



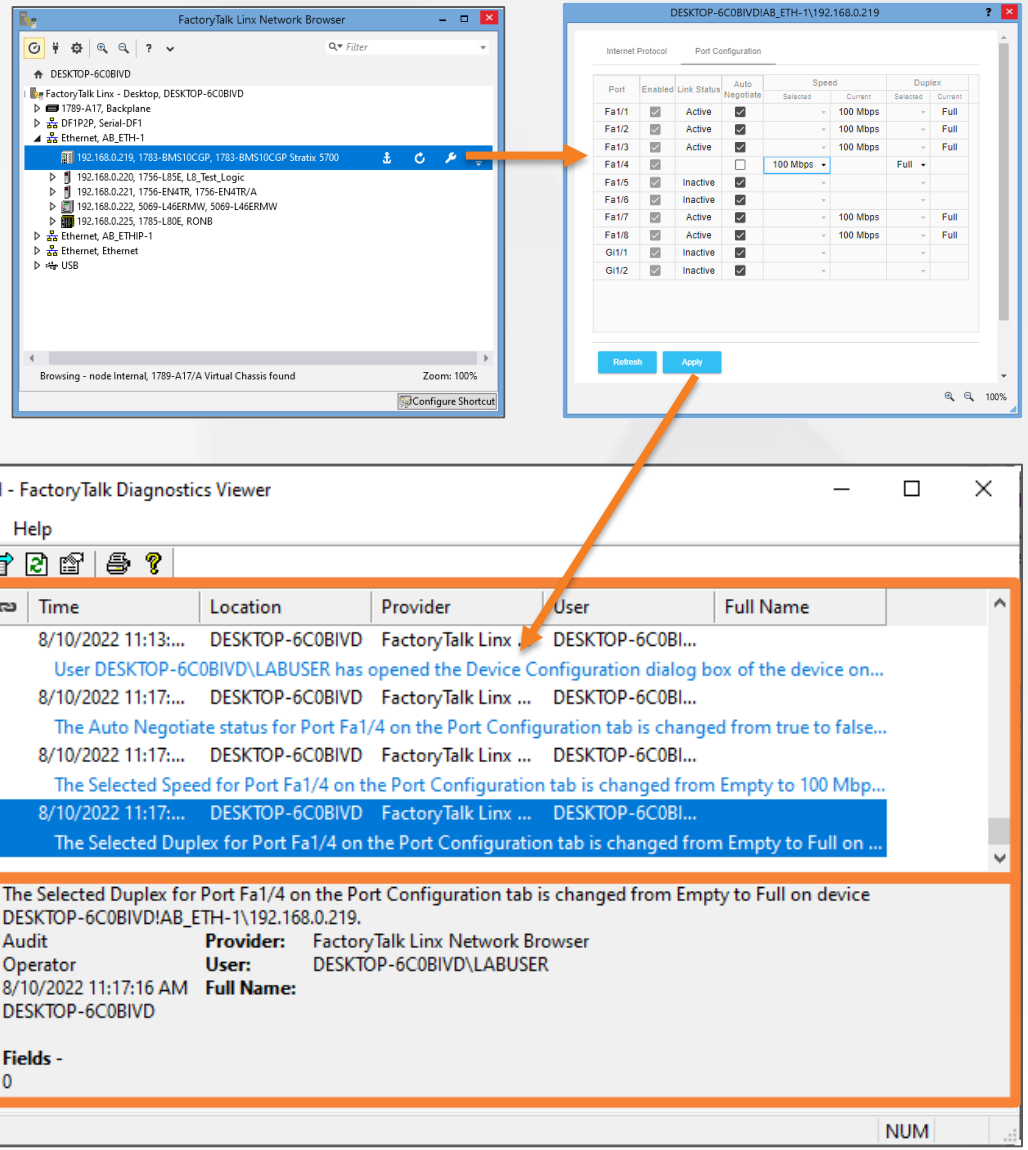
FTL ≥ v6.31

Linx Network Browser

Device configuration change audit messages

Meet regulated system change tracking

- Previously device configuration changes made in RSLinx® Classic of FactoryTalk® Linx were not logged
- V6.31 extends the FactoryTalk® Linx network browser to log changes
  - Informational – Diagnostic counter reset
  - Audit – Device configuration changes
  - Who made the change, when it was done and the old and new values



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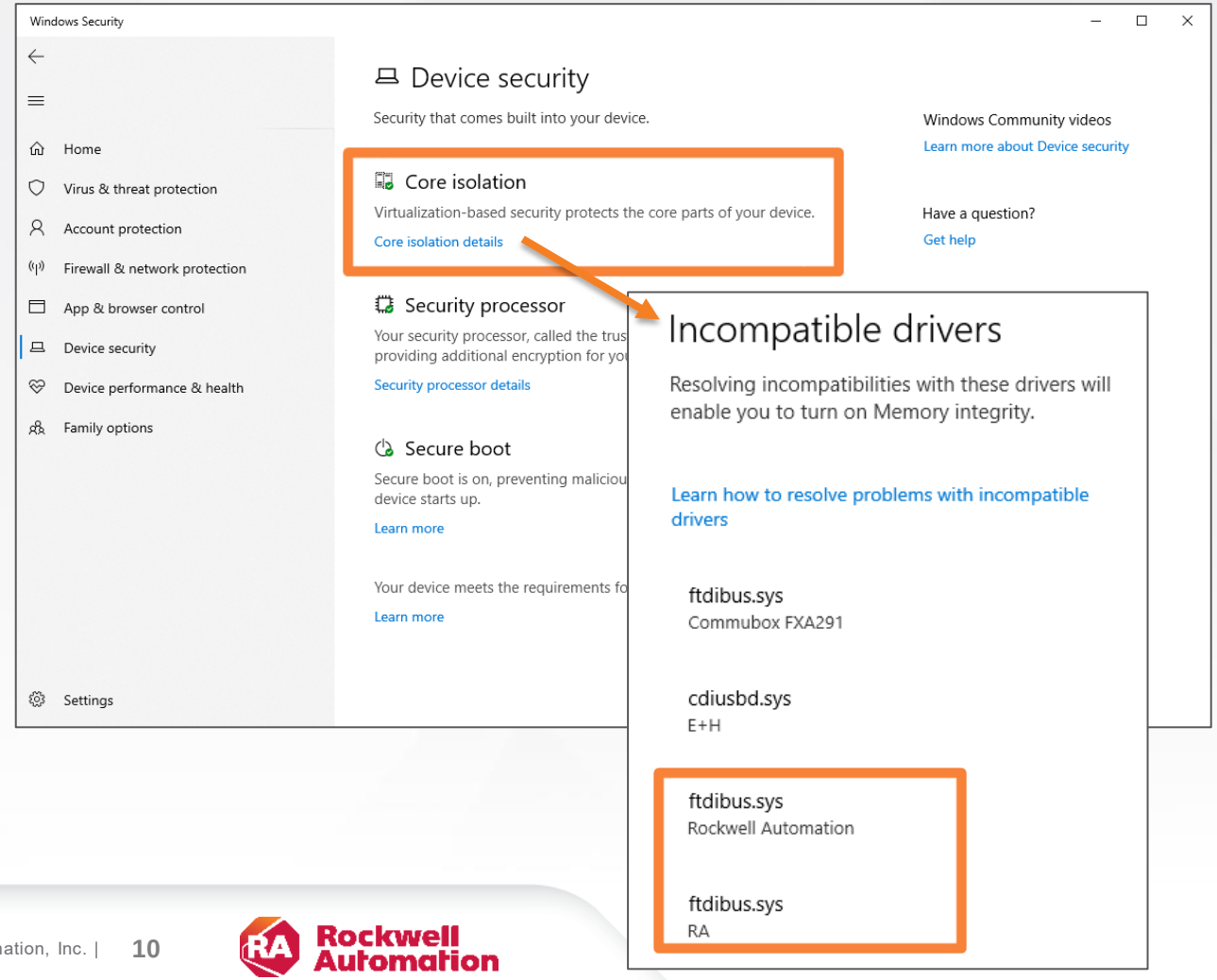
RSLinx® Classic

USB Kernel drivers updated for Windows Core Isolation Memory Integrity

Enhanced Windows security

- Microsoft Windows 10 April 2028 updated added Core Isolation memory integrity feature
  - Isolates the operating system memory
  - Checks kernel driver for conformance
- A couple of the RSLinx® Classic / FactoryTalk® Linx USB drivers based for did not meet the requirement and blocked the feature
  - 1747-UIC
  - SmartGuard™ 600
  - Micro820® 2080-REMLCD
- RSLinx® Classic V4.31 includes updated the drivers to provide compatibility
- Updates to be included with FactoryTalk® Linx v6.40

Win → Settings → Update & Security → Windows Security → Device Security → Core Isolation

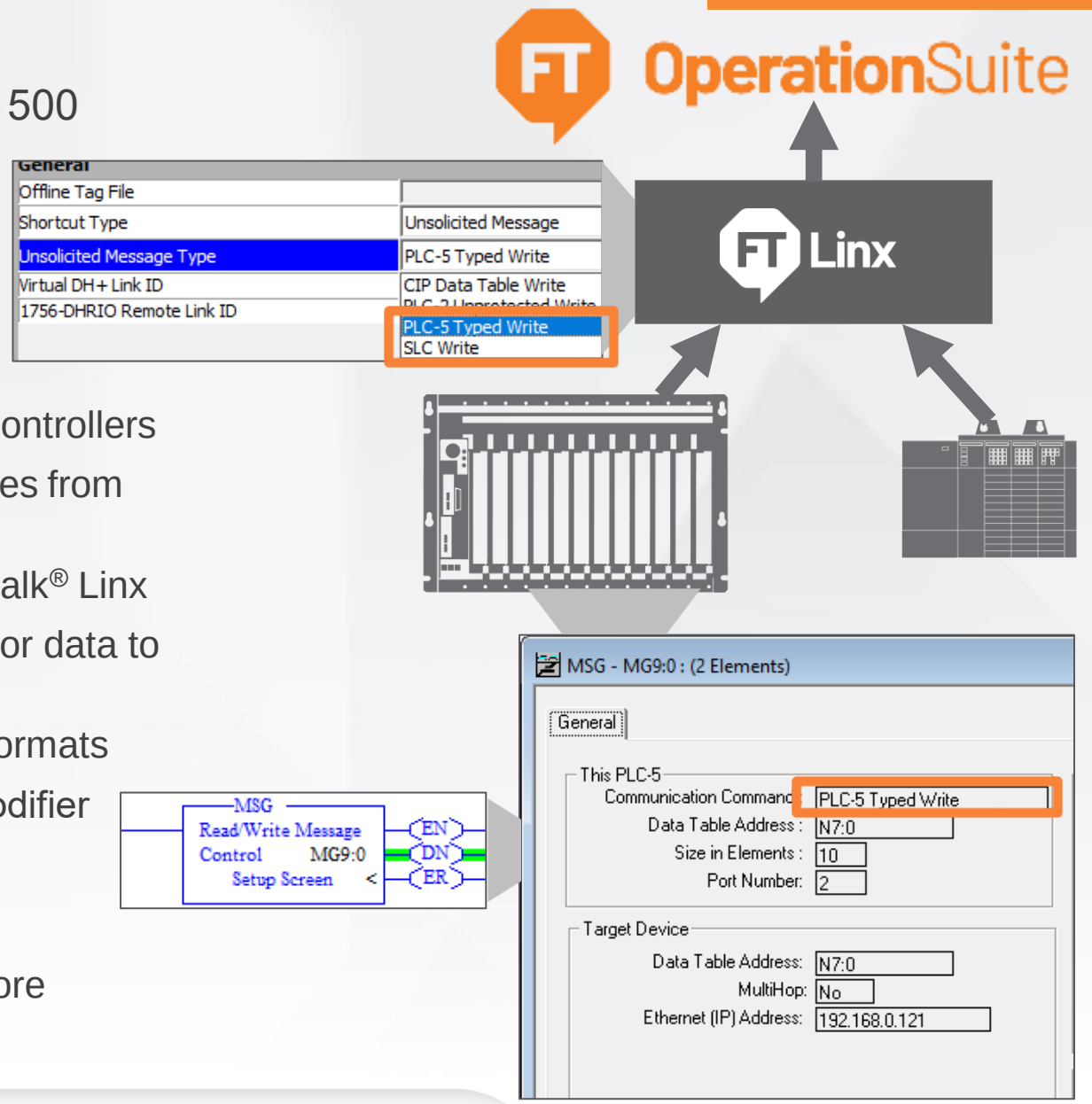


FTLGW ≥ v6.31

Unsolicited messaging from PLC-5® and SLC™ 500

Event-based data deliver reduces system overhead associated with polling

- Most automation system data is requested / solicited from controllers
- Previously FactoryTalk® Linx supported unsolicited messages from Logix and using PLC-2® formatting
  - Controller Message instruction sends data to FactoryTalk® Linx
  - Unsolicited shortcut causes FactoryTalk® Linx to wait for data to arrive from controller and delivers to client(s)
- FactoryTalk® Linx v6.31 adds both PLC-5® and SLC™ 500 formats
  - Individual items or multiple data elements using“,L” modifier
  - Originating on Ethernet or DH+™
  - Supports Bool, iNteger and Float data tables
- Enables FactoryTalk® Linx to replace RSLinx® Classic in more applications

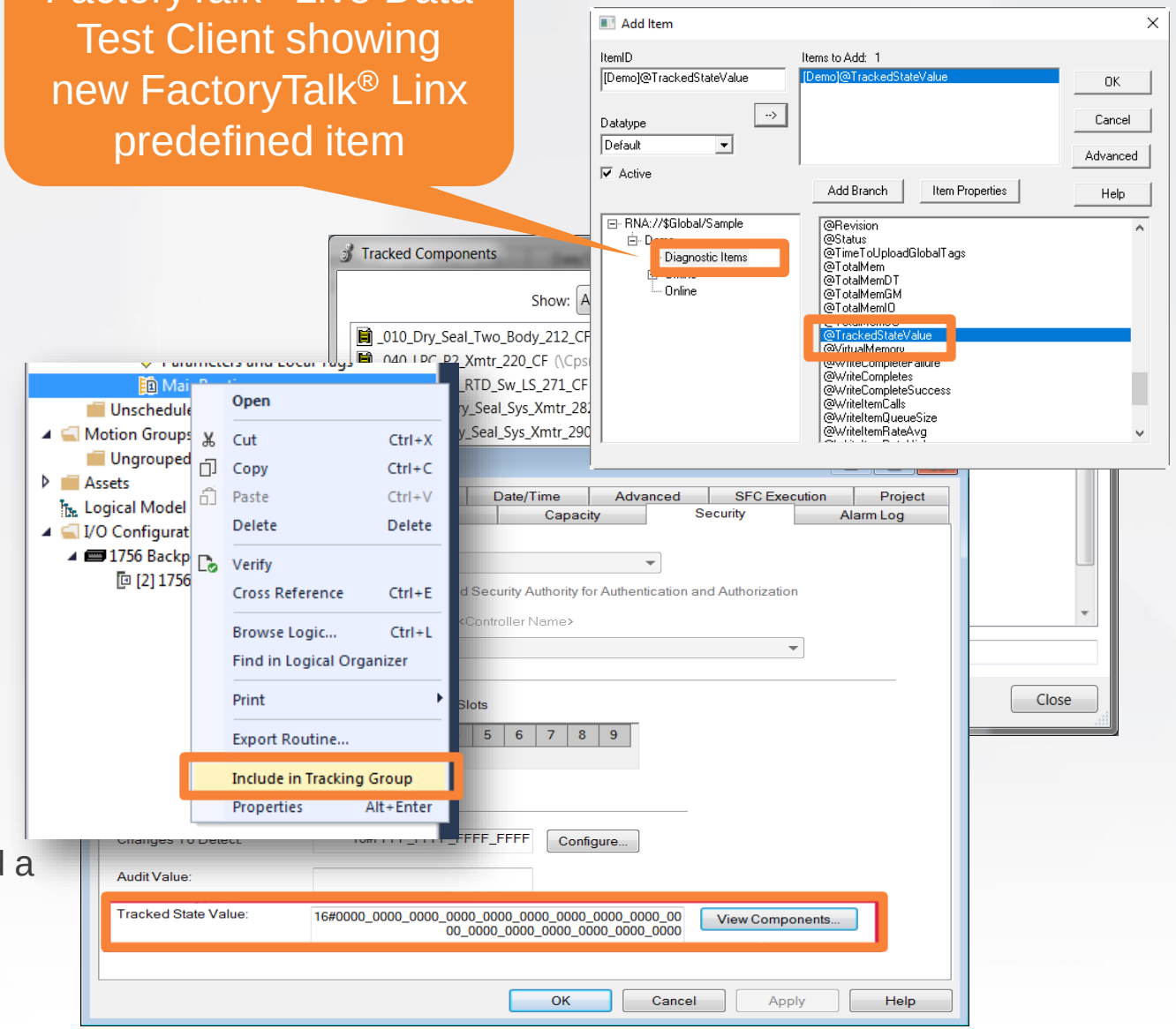


FT Linx

@TrackedState predefined tag

RSLC ≥ v4.10, FTL ≥ v6.30,
L7 ≥ V30, L8 ≥ V35

FactoryTalk® Live Data Test Client showing new FactoryTalk® Linx predefined item



Determine if the state of key components in a Logix application has changed

- Previously Logix 5000® L7 controllers added “Tracked State Value” with version 30
  - Scans a user-selected portion of the application to generate a unique code
  - Routine logic changes
  - Add-On Instruction changes
  - I/O module configuration
  - Constant tag value changes
- Removes application code to read the value
- Uses the value in displays or for historical change tracking
- RSLinx® Classic v4.10 and FactoryTalk® Linx v6.30 included a predefined to enable data clients to read the value
- Logix version 35 added this feature to L8 controllers

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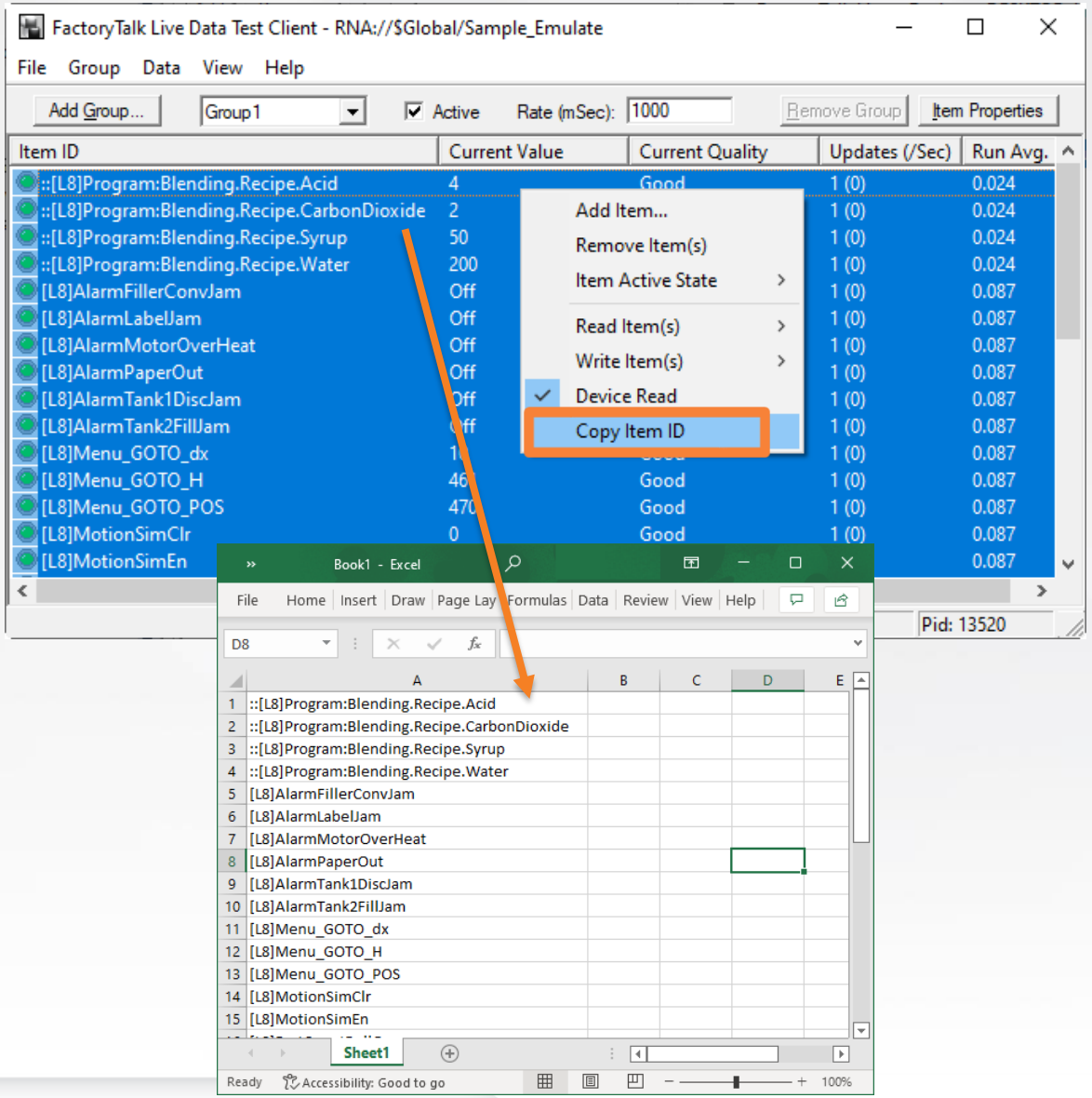
FTSP ≥ v6.31

Live Data Test Client

Copy Item ID text

Improved productivity

- FactoryTalk® Live Data tag references can be difficult to create manually
  - For example: Program scope and nested structures
- The v6.31 FactoryTalk® Live Data Test Client adds an option to copy item IDs to the windows clipboard
  - Individual item
  - Multiple items simultaneously
  - Copy as text or to Excel table
- Helpful for DDE, RTD and other third-party software that needs the item IDs for data access



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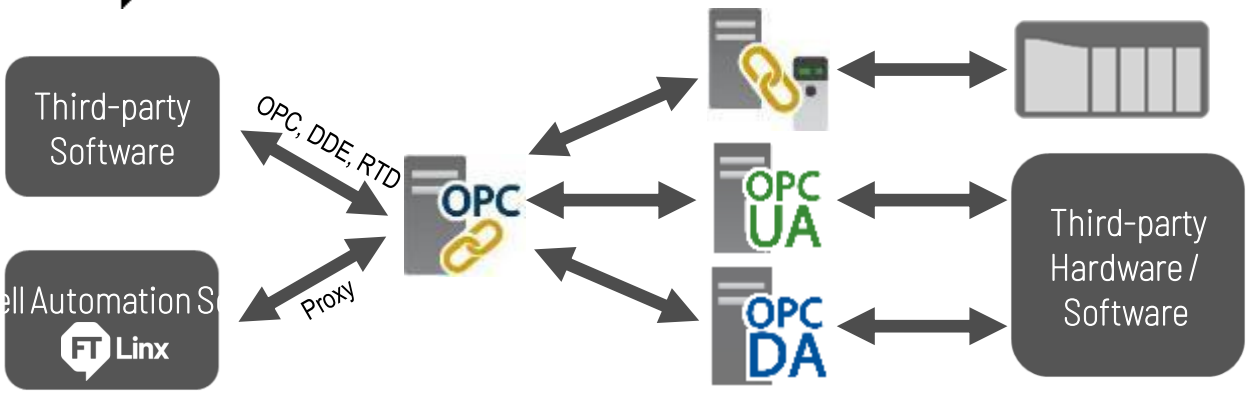
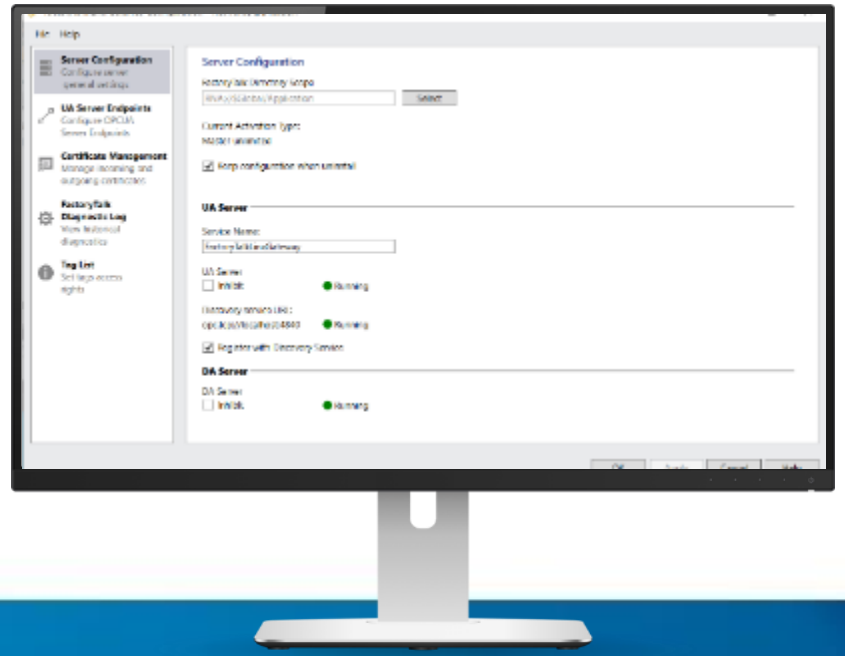
FT Linx Gateway





Services

- Data acquisition - Classic OPC DA, UA, DDE* and Excel RTD[1]
- Security - CIP Secured Logix controllers and OPC UA security
- High Availability – redundant FactoryTalk® Linx and OPC servers
- Remote Proxy to share network CIP connection and drivers with multiple computers[1]

Scalable offering

- Scaled by tag capacity, data source location and other functionality
- 500,1K, 5K, 15K, 32K, 500K, station / distributed[2]
- SDK / API in standard (one device), or Extended and above (multiple devices)
- Professional Includes FactoryTalk® Linx Data Bridge[1] with capacity of 200K tags, and Remote Proxy service[1]

Data access

- Access data from controllers and CIP hardware via FactoryTalk® Linx and OPC DA / UA servers
- Global namespace browse service
- Expanding capability
  - v6.20 array index reads
  - v6.21 access lists and Logix structures
  - v6.30 array elements
  - v6.31 custom data model

1. Not supported with Legacy FactoryTalk® Gateway activation
2. DDE and Excel RTD have lower limits

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FTLGW ≥ v6.31

Catalog Numbers and Capabilities

New in v6.31

FTLGW ≥ v6.31

	Edition	Server Quantity	Server type	Tag Quantity: OPC DA	OPC UA	Excel RTD [2]	DDE [2]	Remote Proxy [2]	SDK / API [2]	FactoryTalk® Linx Data Bridge
	FactoryTalk® Linx Free Download	Single	Station	N/A	N/A	N/A	N/A	Client	N/A	Sold Separately
FactoryTalk® Linx Gateway	Embedded [1] 9355x-FTLNXGWT6xx	Single	CompactLogix™ 5480	500	500	N/A	N/A	N/A	N/A	500 tag pairs
	Basic 9355x-FTLNXGWT1xx	Single	Station	1K	1K	1K	1K	N/A	N/A	Sold Separately
	Standard 9355x-FTLNXGWT2xx	Single	Station	5K	5K	5K	4K [3]	N/A	Single Device	Sold Separately
	Extended [1] 9355x-FTLNXGWT5xx	Single	Station	15K	15K	15K	4K [3]	N/A	Multiple Devices	Sold Separately
	Distributed 9355x-FTLNXGWT3xx	Multiple (10max)	Distributed/ Redundant	32K	32K	32K	4K [3]	N/A	Multiple Devices	Sold Separately
	Professional 9355x-FTLNXGWT4xx	Multiple (10max)	Distributed/ Redundant	200K [3]	500K	40K [3]	4K [3]	Server	Multiple Devices	200K tag pairs
	FactoryTalk® Linx Data Bridge Standard 9355x-FTLNXDB7T1xx	Multiple (10max)	Distributed/ Redundant	N/A	N/A	N/A	N/A	N/A	N/A	2K tag pairs
	KEPServer Enterprise 9301M-KSET1x	Single	Station	Yes	Yes	N/A	Yes	N/A	N/A	N/A

1. Initially released with v6.21
2. Initially released with v6.31, not supported with discontinued FactoryTalk Gateway activation
3. Functional limit determined via testing
4. Enabled with discontinued FactoryTalk Gateway activation

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FTLGW ≥ v6.31

FT Linx Gateway vs. RSLinx® Classic

Capability comparison summary

RSLinx® Classic	Capability	FT Linx Gateway
☑	OPC DA	☑
⊗	OPC UA	☑ w/ access groups
☑	DDE	☑
☑	Excel RTD	☑
☑[1]	EtherNet/IP, DH+™	☑[1]
Logix, PLC-5®, SLC™	Solicited	Logix, PLC-5®, SLC™, Micro800[1]
PLC-2®, PLC-5®, SLC™	Unsolicited	Logix, PLC-2®, PLC-5®, SLC™[1]
⊗	CIP Energy, CIP to device	☑
☑	Serial DF1 Mult-drop/radio Modem	⊗
☑ "Gateway"	Computer bridging	☑ "Remote Proxy"
☑	SDK/DTL API	☑[1]

RSLinx® Classic	Capability	FT Linx Gateway
⊗	Multi-user	☑
⊗	Configure drivers without reset	☑
⊗	High Availability	☑
☑	Redundant paths	☑[1]
⊗	Distributed source	☑
⊗	Data from OPC DA and UA servers	☑
⊗	Security: FactoryTalk®, CIP and OPC UA	☑
⊗	FactoryTalk® Audit	☑
Low	Capacity	High
Good	Performance	Generally better[1]
Active Mature	Lifecycle status	Active

1. Limitations for select configurations

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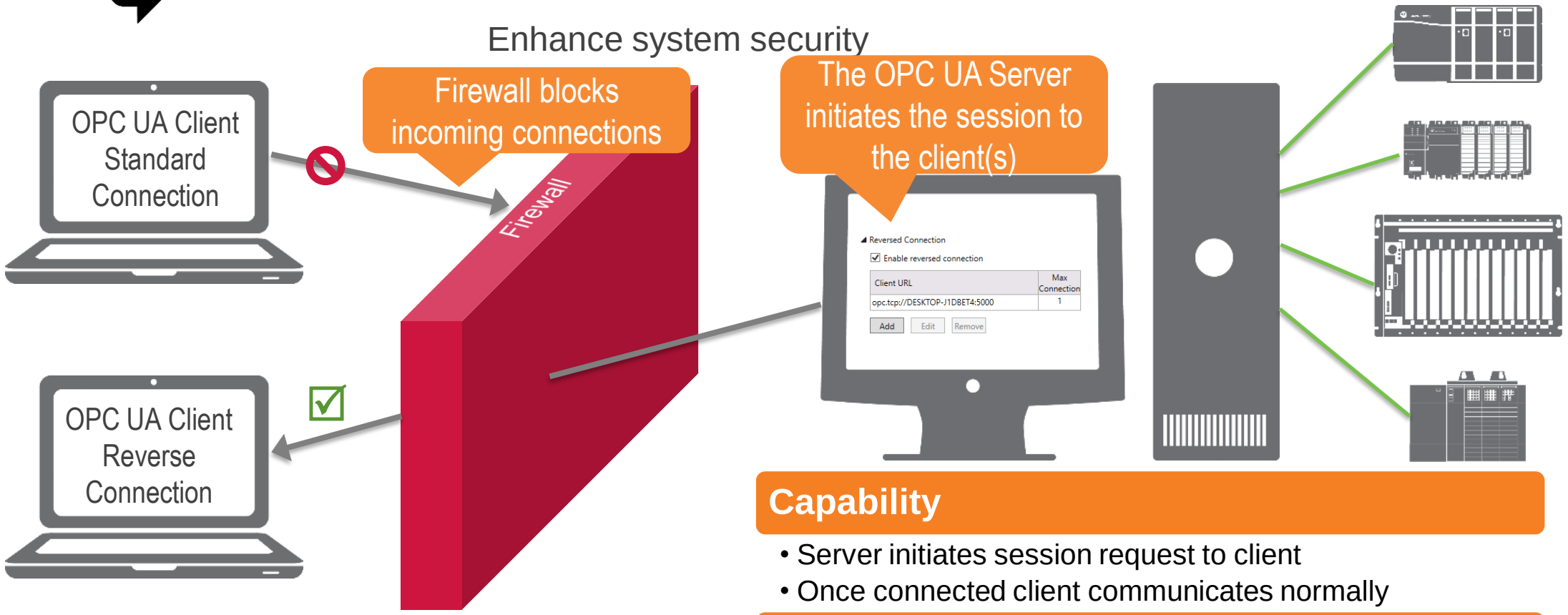
FactoryTalk Linx Gateway OPC UA Reverse Connection

Enhance system security



Capability

- Server initiates session request to client
- Once connected client communicates normally

Enhanced Security

- Limit access to OPC UA clients configured in FactoryTalk® Linx Gateway
- Keep server firewall ports closed
- Endpoint security and client authentication fully supported

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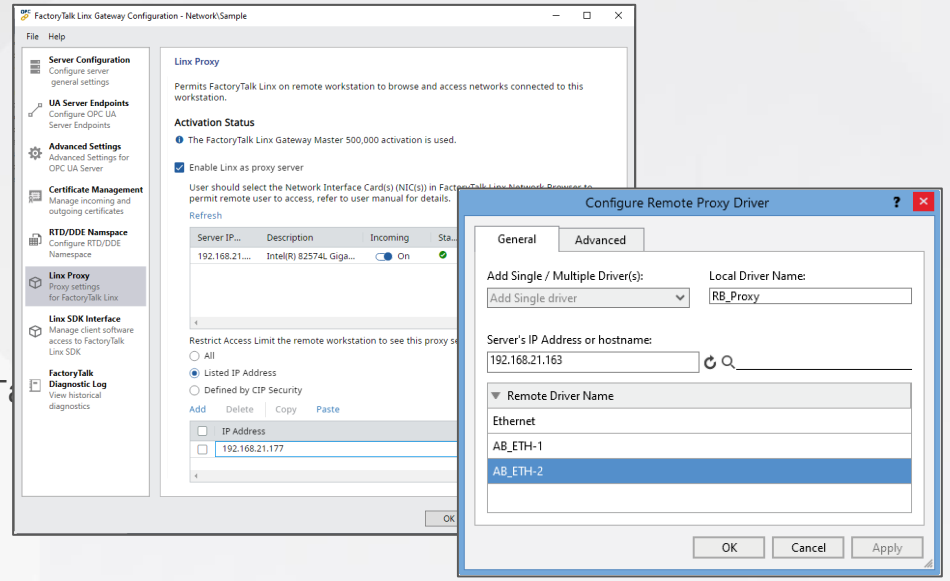
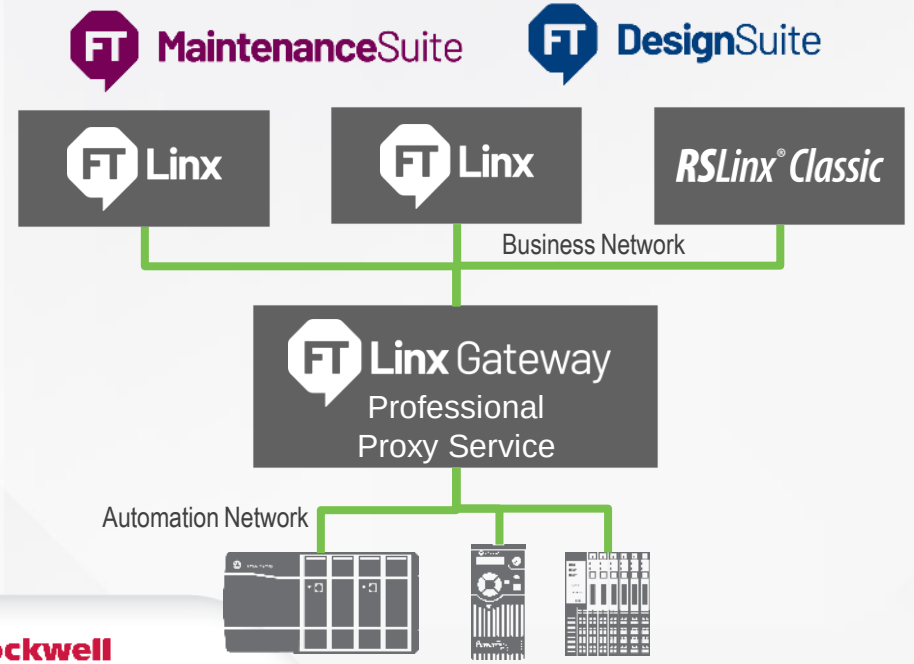
Linx Gateway
Remote Proxy Service

FTL+FTLGW ≥ v6.31



Centralize automation system access and management

- Enables FactoryTalk® Linx on multiple workstations to access an automation network using FactoryTalk Linx on another workstation
  - Bridge between business and automation networks
    - Multiple client workstations share drivers configured on the Proxy
    - Design / maintenance software using the .NET Network Browser can browse and interface with hardware bridged through the Proxy Service (for example, FactoryTalk® Logix Designer, Connected Components Workbench™, ControlFLASH™+…)
    - Including downstream / bridged networks
  - Change the Proxy driver configuration while active
  - Enables Logix Designer remote online access to Emulate5000 or FactoryTalk® Logix Echo controller on a loopback IP address (for example, 127.0.0.1)
- Control / limit access
  - FactoryTalk® Security to authorize clients to access the proxy
  - Proxy Service IP address authorization
  - Use FactoryTalk® Policy Manager to configure integrity and confidentiality for both server and client computers
- More functional and secure than RSLinx® Classic Gateway



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FT Linx Gateway Professional - **Remote Proxy Service**

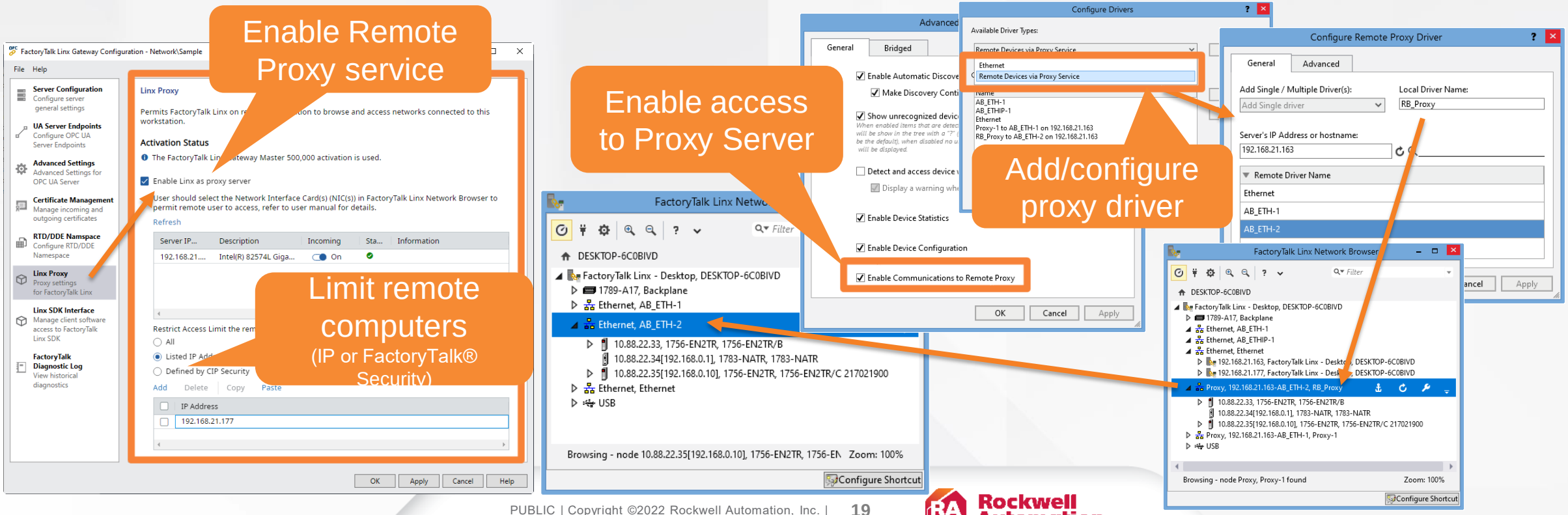
Bridging through a remote computer to access automation network / equipment

Configure the Proxy Service computer

1. Install and Activate FactoryTalk® Linx Gateway Professional
2. Enable the remote Proxy service (uses port 44818)
3. Optionally control / authorize access

Point the Client computer network browser at the Proxy

1. Enable Communication to Remote Proxy option
2. Add the driver in FactoryTalk® Linx Network Browser and select a driver from the Remote Proxy computer
3. Browse using the Remote Proxy driver



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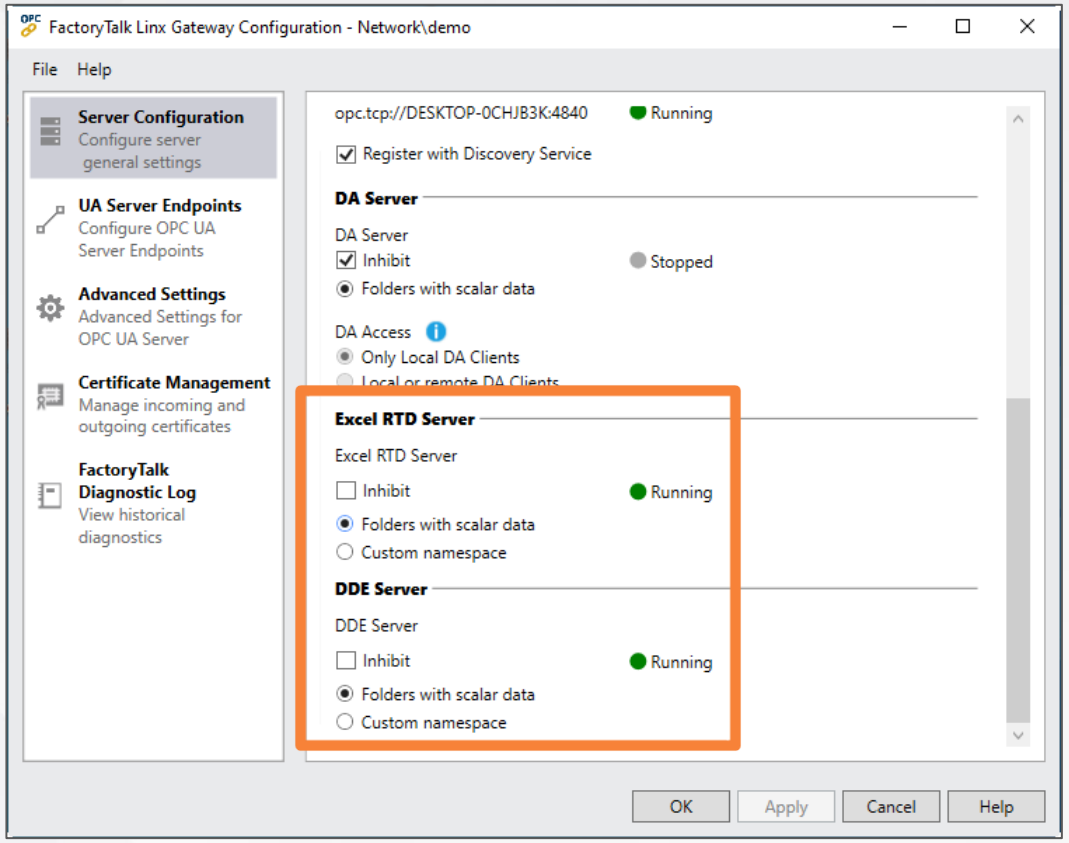
FTLGW ≥ v6.31

Linx Gateway

DDE and Excel RTD interface

Simple way for Microsoft office tools to access control system data

- Previously FactoryTalk® Linx Gateway provided OPC DA and UA interfaces
- V6.31 added both DDE and Excel RTD interfaces
  - Full access to all tags or option to limit available data
  - Supported by all editions at their defined tag capacities
  - Leverage “,L” modifier to obtain multiple array values
- Migrate legacy software tools to FactoryTalk® Linx Gateway
- Use Excel to read/write data to improve productivity
- Include live automation data and charts in Microsoft Office
- Only support with FactoryTalk® Linx Gateway activations (not support using legacy FactoryTalk® Gateway activations)



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FT Linx Gateway

Options for access to automation system data

Folders / Scalars

Simple access

- Folders for controller, scopes, structures and arrays
- Scalar data
- All data available to clients
- Logix access control
- OPC DA/UA, DDE and RTD

Tag Lists

Access Logix UDTs

- Logix scalars, UDTs, arrays
- Option for array element enumeration
- Access limited to tag groups
- OPC UA only

Custom Namespace

Reorganize / rename data

- Custom UDTs (OPC UA only), tags and arrays defined in the Gateway
- Mapped to system data values
- Access limited to namespace
- OPC UA, DDE and RTD

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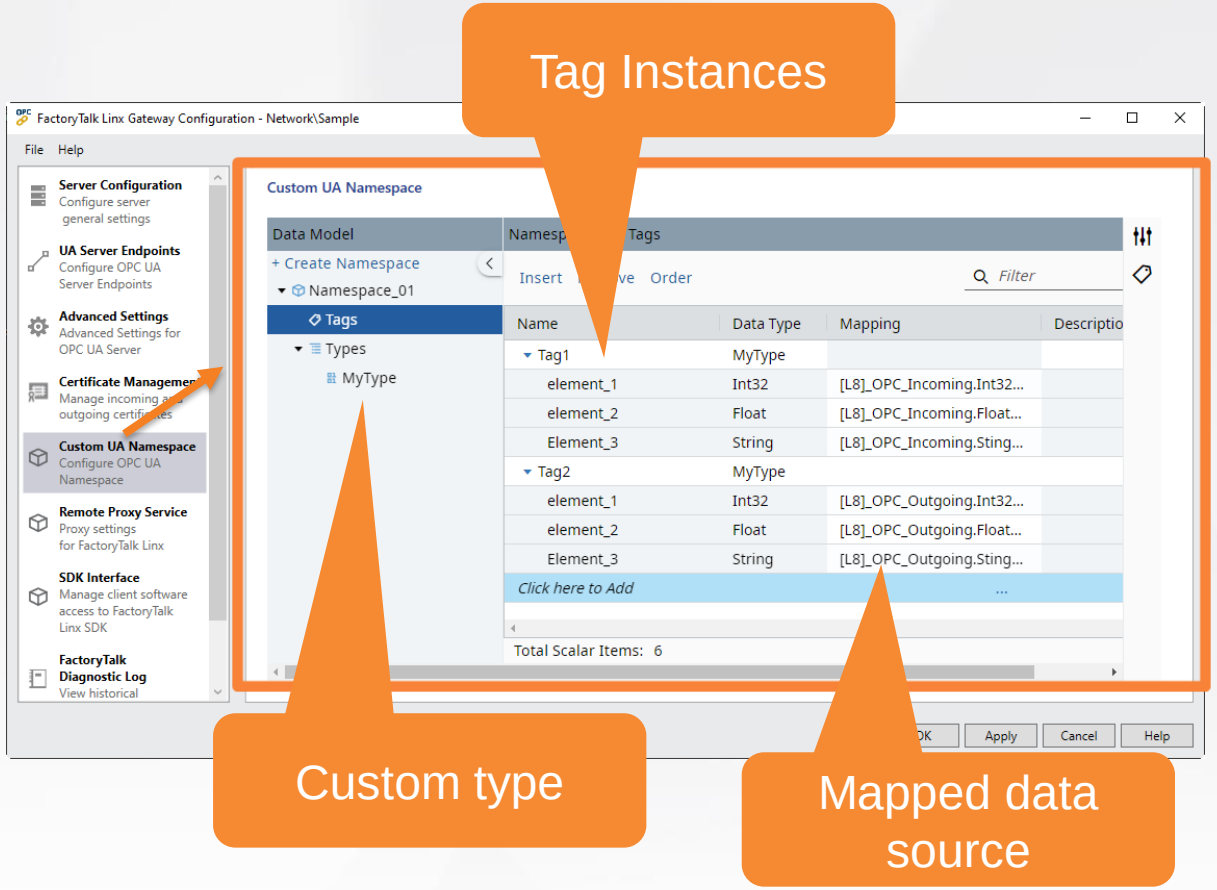
Linx Gateway

Custom Data Models for OPC UA Custom Companion Specifications

Unify /standard data layout from multiple sources

- FactoryTalk® Linx Gateway has expanded the forms of data to be accessed
  - Scalars, Arrays, Structures, user-selected lists
  - Names and types all determined by the tags defined in Logix Controllers
- FactoryTalk® Linx Gateway v6.31 provides an option to create a custom namespace / data model
  - Custom structures and items
  - Map to Logix data with different names
  - Permits machine built for one industry to be used in another one by rearranging the data model to support another convention or standard



https://opcfoundation.org/about/opc-technologies/opc-ua/ua-companion-specifications/

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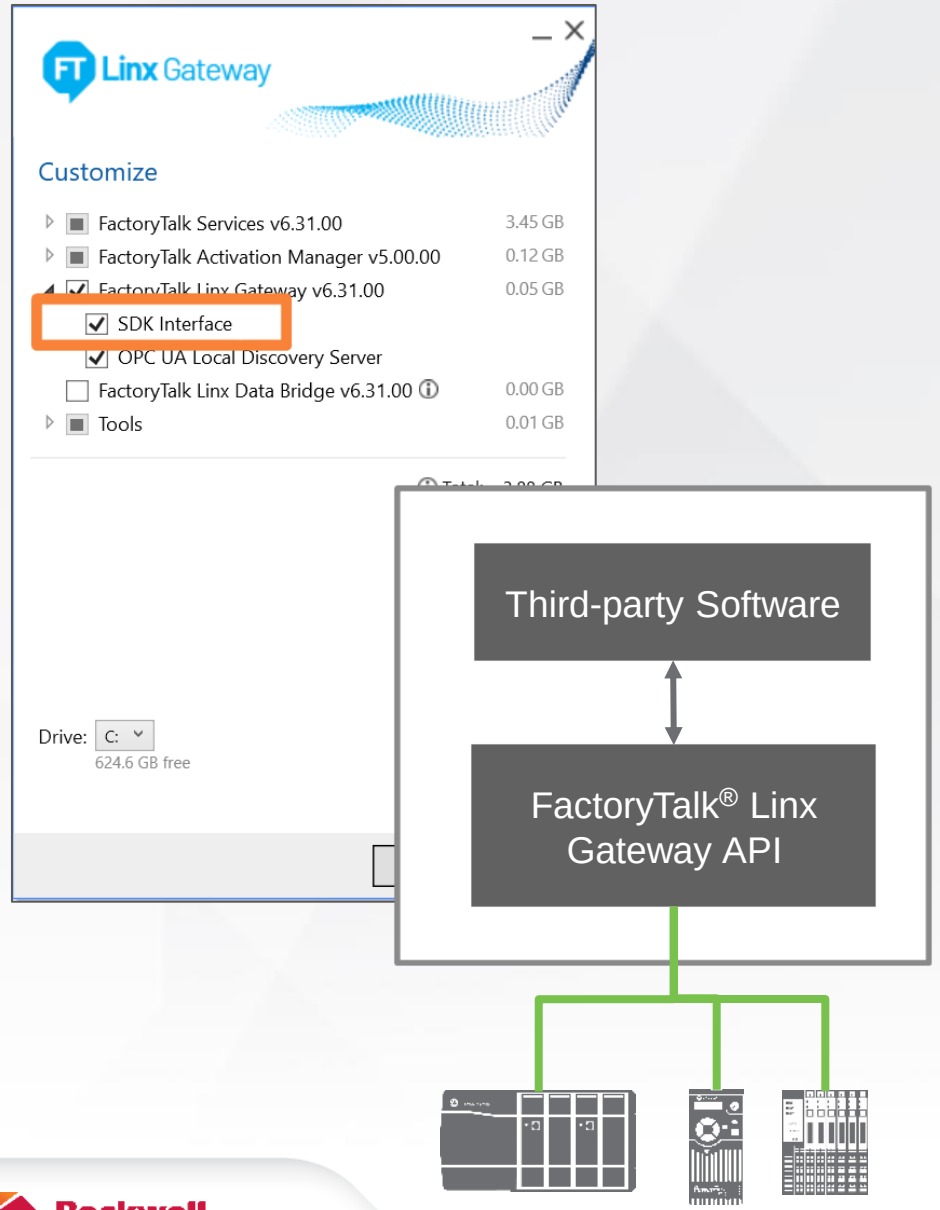
FTLGW ≥ v6.31

Linx Gateway
SDK Software Development Kit

Enables custom / purpose-built software to communicate to automation devices via CIP using FactoryTalk® Linx

- RSLinx® Classic provided an Application Program Interface (API)
  - Enabled with the OEM or Gateway activation
  - Some legacy software still uses this interface
  - The only method to access certain hardware data (for example, vibration sensors)
- FactoryTalk® Linx Gateway v6.31 adds the API
  - Standard or Extended activations for one device
  - Distributed and Professional activations for multiple devices
  - Supports many of the commands from RSLinx® Classic (excludes Harmony related commands)
  - Low-level interface to open a CIP connection and request CIP services (Initially unable to access browser, paths from shortcuts, or tag subscriptions)
  - User option to control which software can access the interface
  - Standard support covers installation, setup configuration, and understanding some error codes. Assistance developing code or debugging provided with a fee-based option.



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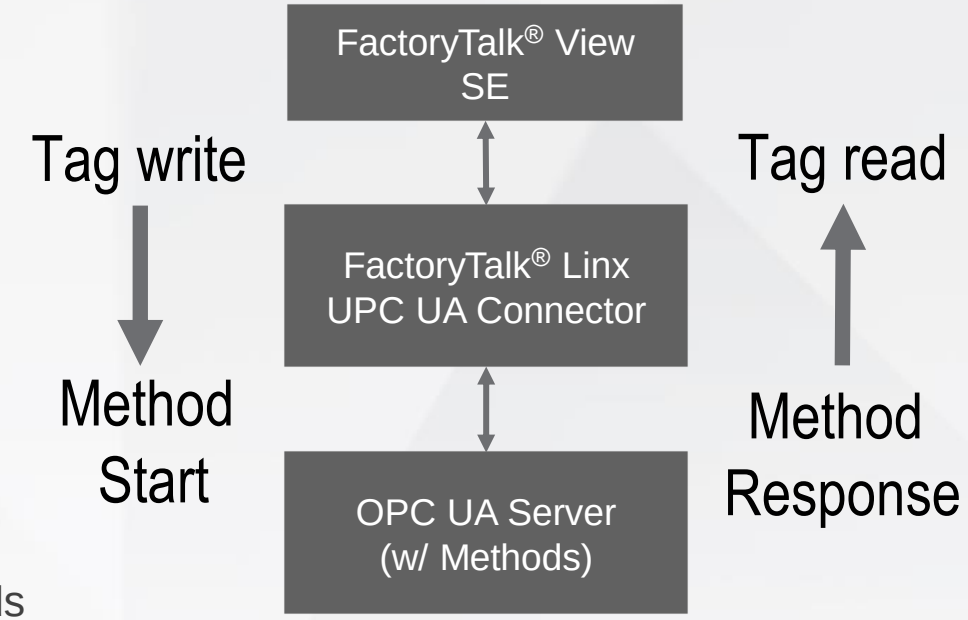
FT Linx OPC UA Connector

Simple Methods

FTLUAC ≥ v6.31

Use FactoryTalk® View SE to coordinate operations in OPC UA Servers defined using OPC companion specifications

- The FactoryTalk® Linx OPC UA Connector increased data access capabilities with each release
  - Scalar, arrays, tags-in-tags, subtypes, structures and alarms
- V6.31 adds ability to initiate simple methods in OPC UA Servers
  - Limited no input/output parameters
  - Creates predefined tags for method management
  - Write operation or VBA from FactoryTalk® View SE to initiate methods
  - Write from FactoryTalk® Live Data Test Client for testing



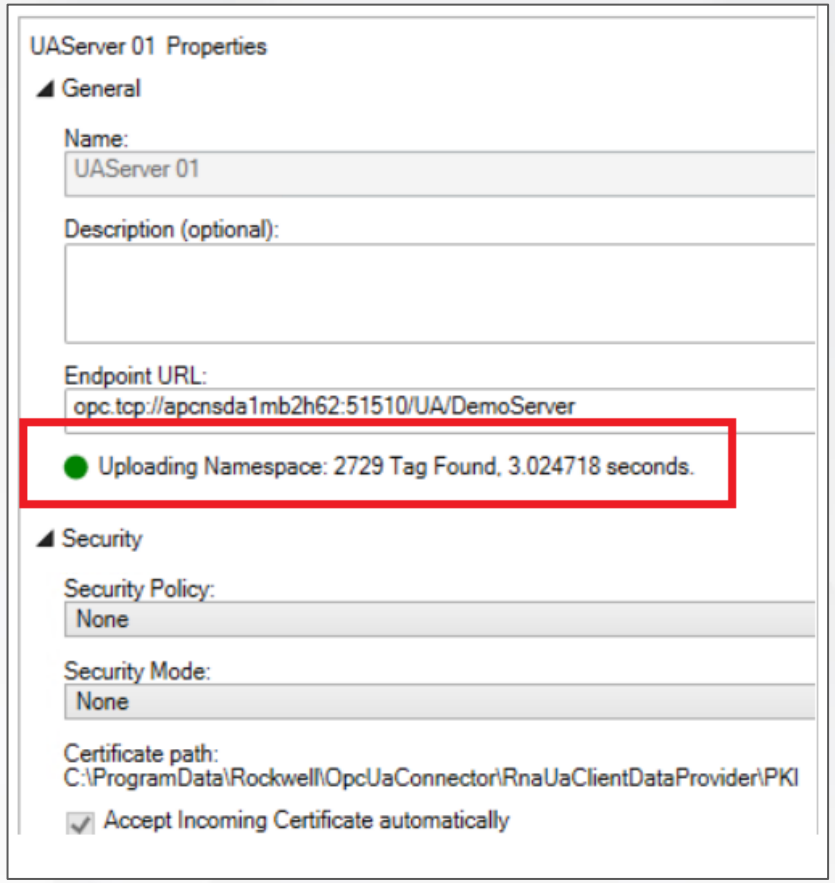
Rockwell Automation

Linx OPC UA Connector

Configuration screen namespace upload progress

Improved visibility to UA Connectors startup process

- The FactoryTalk® Linx OPC UA Connector uploads and saves a UA Servers namespace
  - Provides tag information for FactoryTalk® Live Data tag browser
  - Faster subscription requests
  - Save a cache file for faster service restart
- The UA Connector provides a set of predefined tags to confirm the namespace upload operation
- FactoryTalk® Linx OPC UA Connector v6.31 animates the upload information directly onto the user interface



Rockwell Automation

Linx OPC UA Connector

Data delivery with time stamp reversion

Delivers most recent data values delivered

- Initially the FactoryTalk® Linx OPC UA Connector monitors each data item's time stamp coming an OPC UA Server
  - Value changes were delivered when a newer time was detected
    - Data with old time stamps discarded to avoid reverting to old value
    - Some data would not update if UA Server's clock adjusted backwards
- FactoryTalk® Linx OPC UA Connector v6.31 updated to ignore the time stamp and send all value changes
  - Patch 1136548 Updates v6.20, v6.21 and v6.30
    https://rockwellautomation.custhelp.com/app/answers/answer_view/a_id/1136548

	 Time1	 Time2	Last Value Delivered
Previously	Val_T1	Val_T2	Val_T1
V6.31+Patch	Val_T1	Val_T2	Val_T2

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Thank You!

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