

Industrial Communications

 **FT** Linx

 **FT** Linx Gateway

 **FT** Linx Data Bridge

 **FT** Linx CommDTM

 **FT** Linx OPC UA Connector

 **FT** Live Data

 **FT** Action Manager

RSLinx[®] Classic

EtherNet/IP Address
Commissioning Tool



expanding human possibility[®]



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V6.40 (CPR 10 SR 14.0) Product Improvements

Significant v6.40 Capabilities

Target Q4CY2023



- New FactoryTalk® Live Data tag browser (includes bits and extended tag properties)
- Shortcut paths through FactoryTalk® Linx Gateway Proxy Service
- Socket IO alternative for DCOM for FactoryTalk® Directory service



- Methods with scalar, array and structure arguments
- Reverse Connection
- Increased namespace capacity



- DDE and OPC-DA direct Logix communications without FactoryTalk® application
- Access bits in integers from tag list and custom namespace
- Custom namespace folders
- Faster startup with namespace cache (sec vs min)
- Data Bridge tag group enable /disable manually or via tag

Local language switching via user interface (vs install)

V6.40 Communications Software Improvements

Modernization, enhanced usability, productivity and capacity

- Microsoft Windows
 - Stop testing with Windows Server 2012 & 2012 R2 (install warning)
- FactoryTalk® Linx
 - USB Kernel drivers updated for Windows Core Isolation Device Security
 - Deprecate 32bit Kernel Drivers, network driver for 1784-PCICS
 - CIP CIA Messaging to 32-bit & 64-bit Floating Point / REAL arrays
 - 64bit DTL™ Service (FactoryTalk® Policy Manager)
 - Symbolic shortcut communications to PowerFlex® 755T v12 platform drives
 - Shortcut paths through FactoryTalk® Linx Gateway Proxy Service
 - Micro800™ Access for BOOL in Integer tags
 - Support MER download to FTView ME on ASEM / VersaView computers
 - Multi-languages install with user interface language switching
- FactoryTalk® Linx Configuration Import/Export Tool
 - Import/export drivers without FactoryTalk® application selection
- FactoryTalk® Linx Network Browser
 - Increase list & bridge driver items from 64 to 255
 - Display driver DNS host names in topology tree / filter
 - 5032 user-defined rotary switch private network prefix
 - Device Explicit Protected node warning and device configuration disable
 - Auto-start / launch from system tray
 - IO-Link browse, properties and IO-Link file registration with EDS subsystem
- EtherNet/IP Address Commissioning Tool v3.00
 - Option to block unwanted MAC addresses
 - Converted to single app that can run in the Windows system tray
- FactoryTalk® Live Data
 - New tag browser with Int-bits, scalar element extended tag properties (not PlantPAX® properties)
 - FactoryTalk® Directory communications with SocketIO as an alternative to DCOM
 - Increase tag reference character length from 260 to 1024
- FactoryTalk® Linx Gateway
 - OPC-DA & DDE Direct Logix communications without FactoryTalk® application
 - Add folders to custom namespace
 - Access bits in Integer tags (scalar, structure, array)
 - Option to use IP address for URL
 - Faster startup with tag list (namespace cache)
- FactoryTalk® Linx OPC UA Connector
 - Methods arguments (scalar, array, structure [Excludes variable length arrays])
 - Reverse Connection
 - Option to relax some security checks for non-compliant servers
 - Increase namespace capacity (from ~200K to ~400K items)
- FactoryTalk® Linx Data Bridge
 - Group enable / disable manual or via tag
 - Export with invalid tag references
 - Option to enable/disable trigger value change logging
- FactoryTalk® Action Manager™
- HTML Help and Release Notes redesign



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Enabling the latest system capabilities

- FactoryTalk® Linx v6.40 tested and released with Studio 5000 Logix Designer® version 36
- Studio 5000 Logix Designer® version 36 notable features:
 - Embedded OPC UA (CIP recommended for FactoryTalk® software)
 - Granular Safety Signatures
 - Additional Safety RLL Instructions
 - Axis Test Mode for Safety
 - Motion Indirect Referencing
 - Multi-device Interaction
 - Software Performance Improvements
 - EDS tool renamed Device Descriptor tool, supports IO-Link files and adds device file import/export



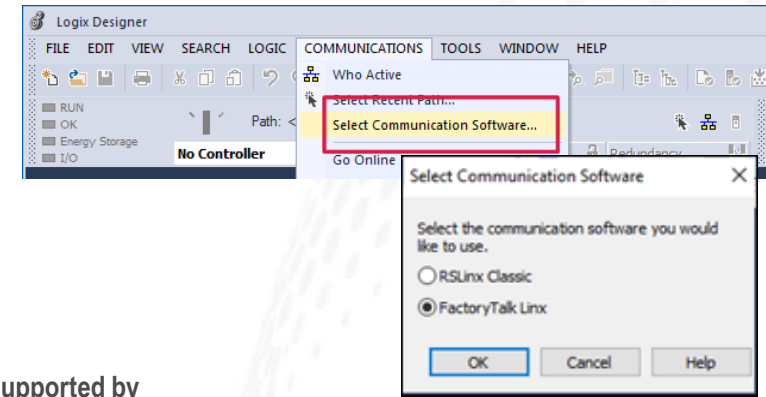
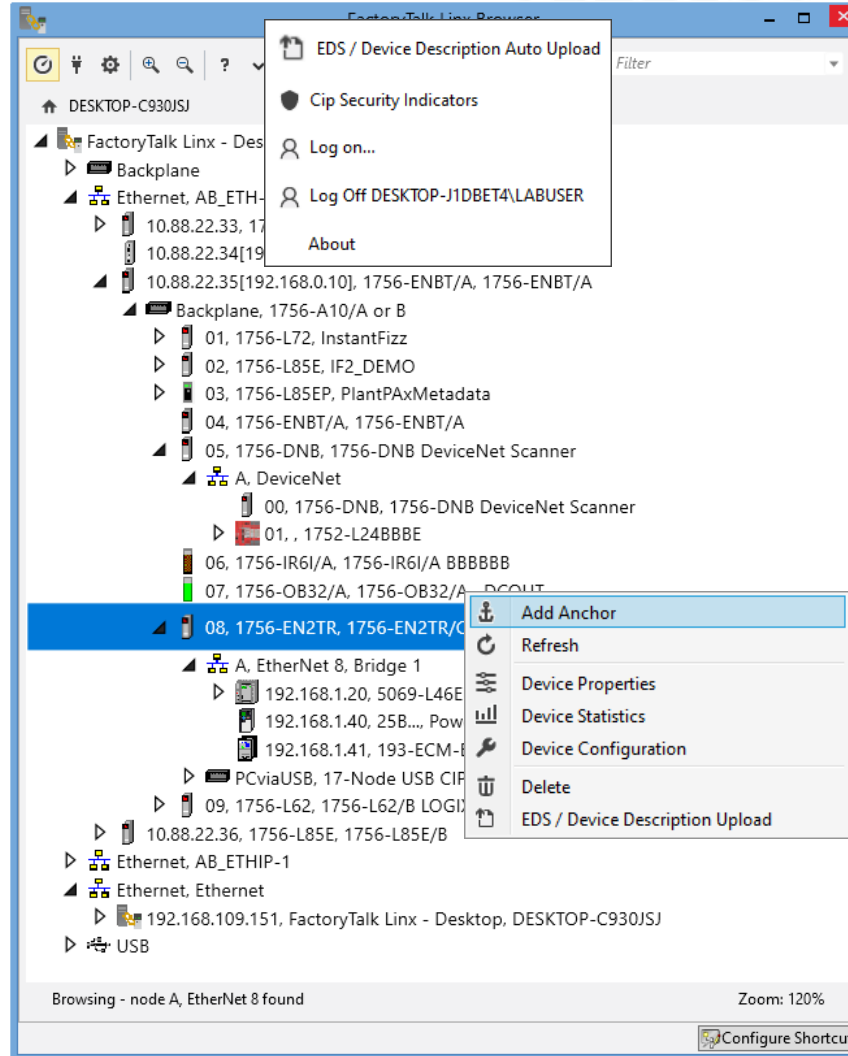
FT Linx Network Browser

More productive alternative to RSLinx® Classic “Who Browser”



Enhanced Capabilities

- Configure Ethernet & Proxy drivers in the browser
- Improved driver address management & range
- 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
- 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
- Change rotary switch private subnet v6.40
- IO-Link browse, properties & device description Upload v6.40
- Device Explicit Protected mode detection v6.40
- Auto-start and hide to tray options v6.40
- DNS and device list expanded to 255 items v6.40



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® HIM 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
- SequenceManager™ v2.00
- More to come...



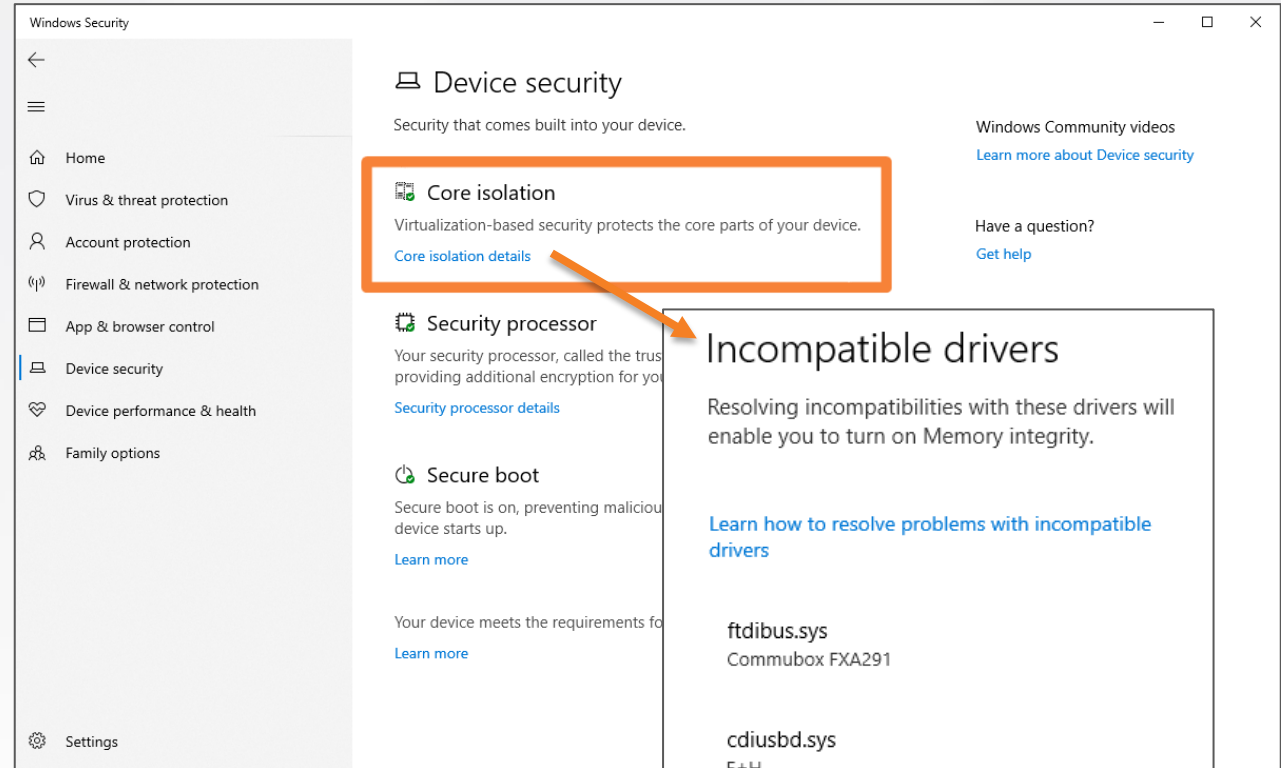
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FTL ≥ v6.40

Enhanced Windows security

- Microsoft Windows 10 April 2018 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
 - 1752-SmartGuard 600 USB
 - Micro820® 2080-REMLCD
- RSLinx® Classic V4.31 includes updated the drivers to provide compatibility
- Released with RSLinx® Classic v4.31 and FactoryTalk® v6.40

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



Incompatible drivers

Resolving incompatibilities with these drivers will enable you to turn on Memory integrity.

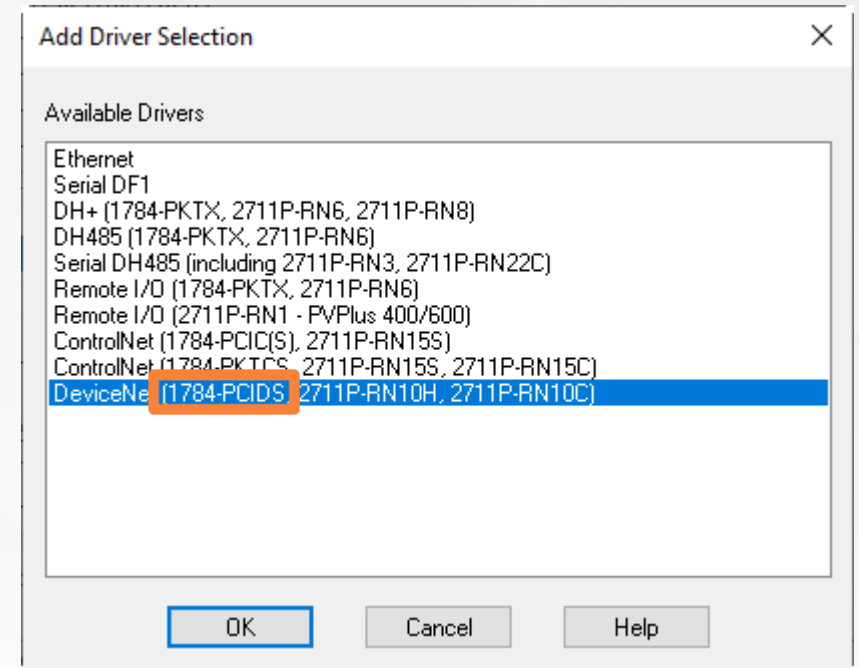
[Learn how to resolve problems with incompatible drivers](#)

ftdibus.sys	Commubox FXA291
cdiusbd.sys	E+H
ftdibus.sys	Rockwell Automation
ftdibus.sys	RA



Eliminates unnecessary binaries from installation image

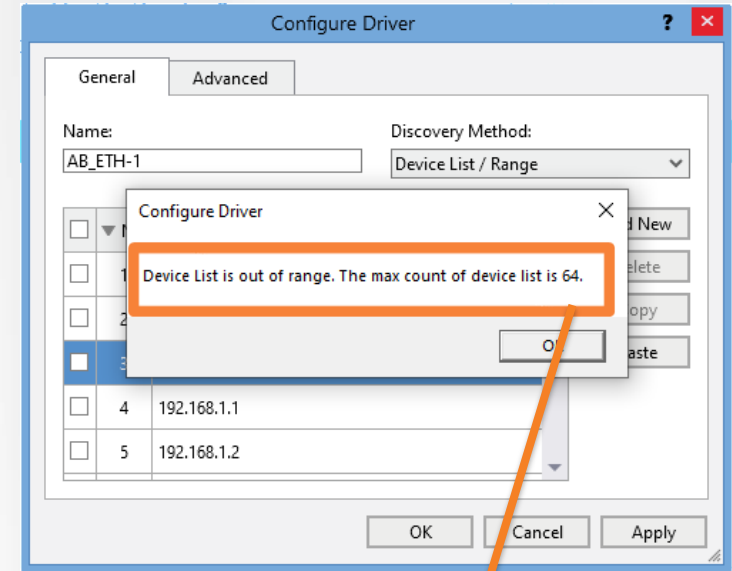
- In 2022 FactoryTalk® Linx v6.30 and RSLinx® Classic 4.30 stopped supporting 32bit windows
 - The installation image continued to deliver both 32bit and 64bit Windows kernel drivers
- FactoryTalk® Linx V6.40 and RSLinx® Classic v4.40 removes the 32bit drivers from the installation
- The DeviceNet 1784-PCIDS PCI card's driver was designed for 32bits
 - The FactoryTalk® Linx DeviceNet 1784-PCIDS Network driver / option will also be removed because there is no Kernel Driver to interface with



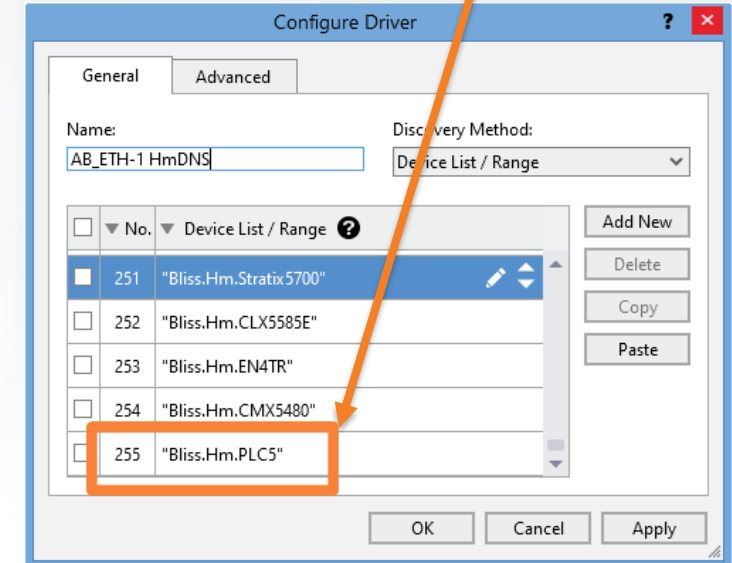
Enhanced productivity by supporting larger configurations with fewer drivers

- Previously the FactoryTalk® Linx Network Browser Ethernet driver device list was limited to 64 items (IP address or DNS name)
 - Required many drivers to support a typical system
 - Limit was migrated from RSLinx® Classic
- FactoryTalk® Linx v6.40 increases the list to 255
 - Items can be manually entered or pasted (e.g. from Excel)
 - Reduces the number of drivers needed for large configurations
 - Fewer manual operations to extract and replace the list driver configuration

≤ v6.31



≥ v6.40



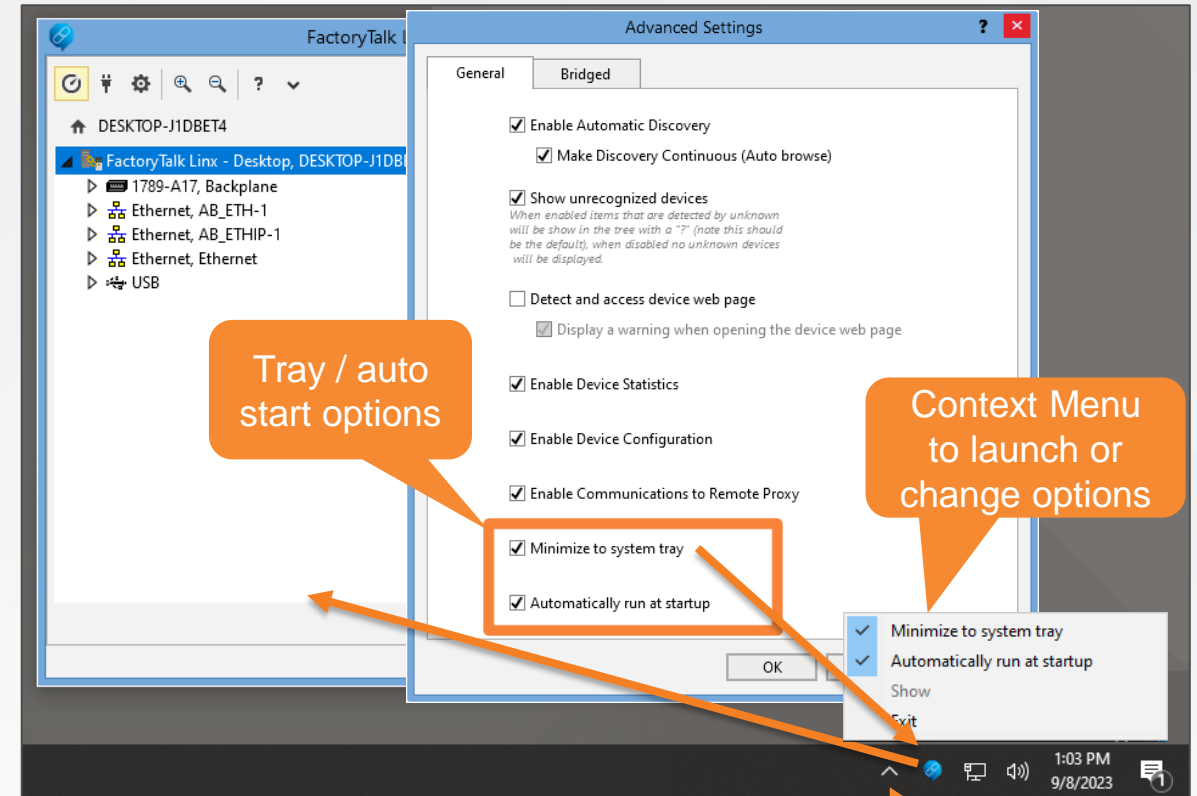
FT Linx Network Browser

Auto-run and minimize / close to Windows tray

FTL ≥ v6.40

Faster Network Browser launching for Enhanced productivity

- Previously, the FactoryTalk® Linx Network Browser was launched from the Windows Start Menu
 - Extra steps to initiate
 - Short delay while starting up / logging user in
- FactoryTalk® Linx v6.40 enhances the Network Browser to make it more responsive
 - User options to control startup and tray behavior
 - Default to auto run on startup
 - The browser is immediately ready when needed
 - Browsing suspended while minimized to avoid impacting network / system



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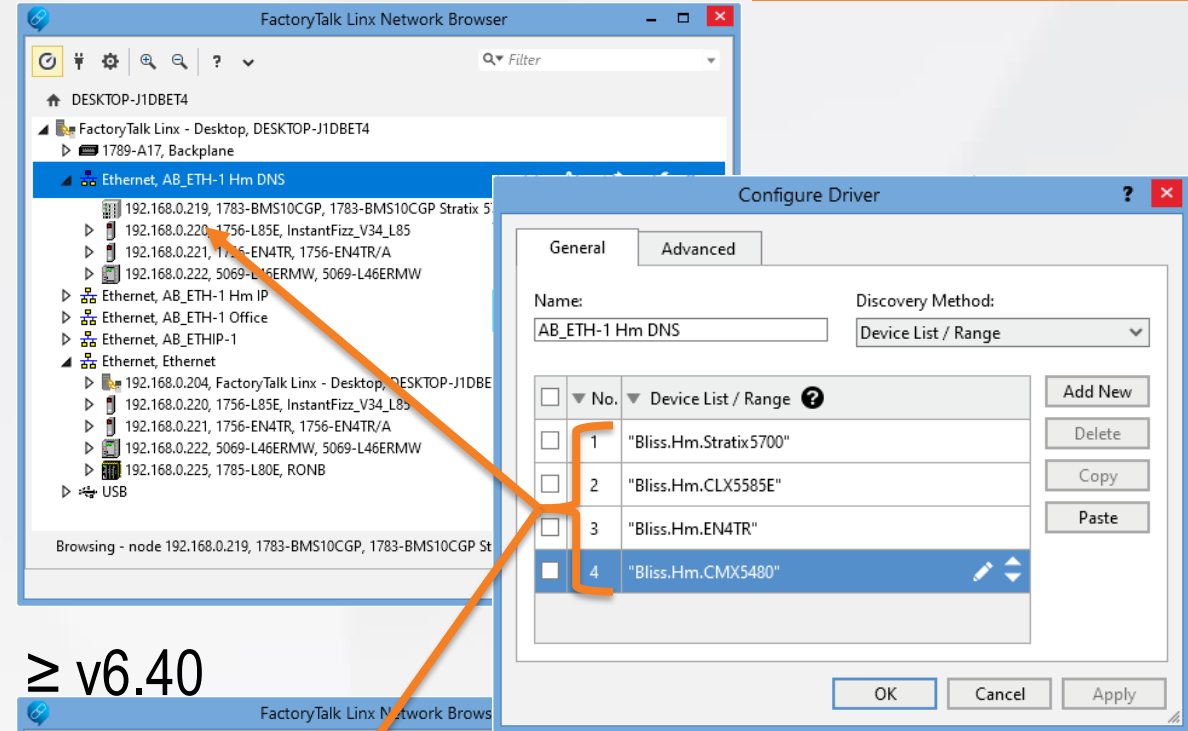
FT Linx Network Browser

DNS names

Simply system navigation and management using names instead of IP addresses

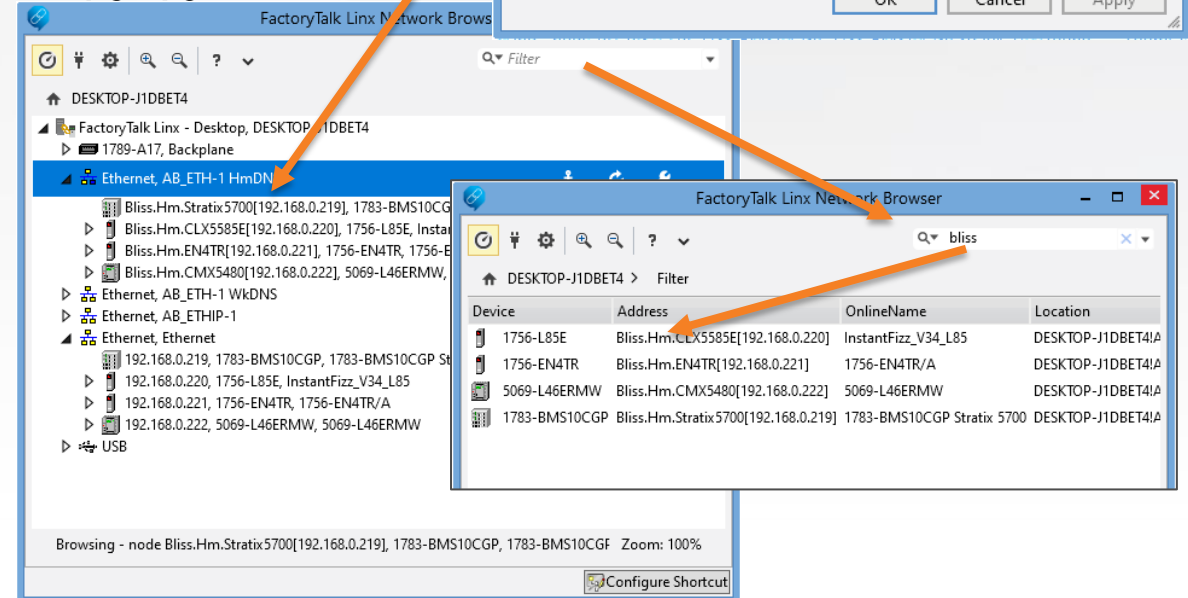
- Previously, the FactoryTalk® Linx Network Browser supported DNS device names, but the topology continued to show the resulting IP address
 - Required user to remember the IP addresses
- V6.40 enhances the Network browser to present the DNS name and supports
 - DNS name and IP address (Public & Private) listed
 - Filter also supports searching on DNS names
- V6.40 also enhances the communications to support DNS names in controller paths in Studio 5000® and Connected Components Workbench™

≤ v6.31



FTL ≥ v6.40

≥ v6.40

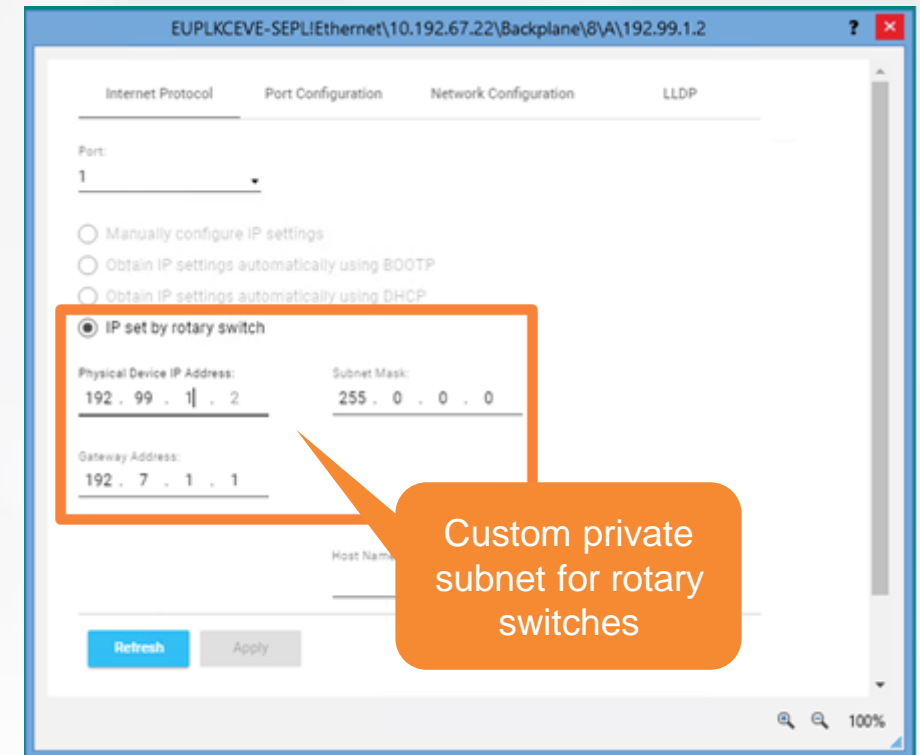


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Device Configuration IP rotary switch custom subnet settings

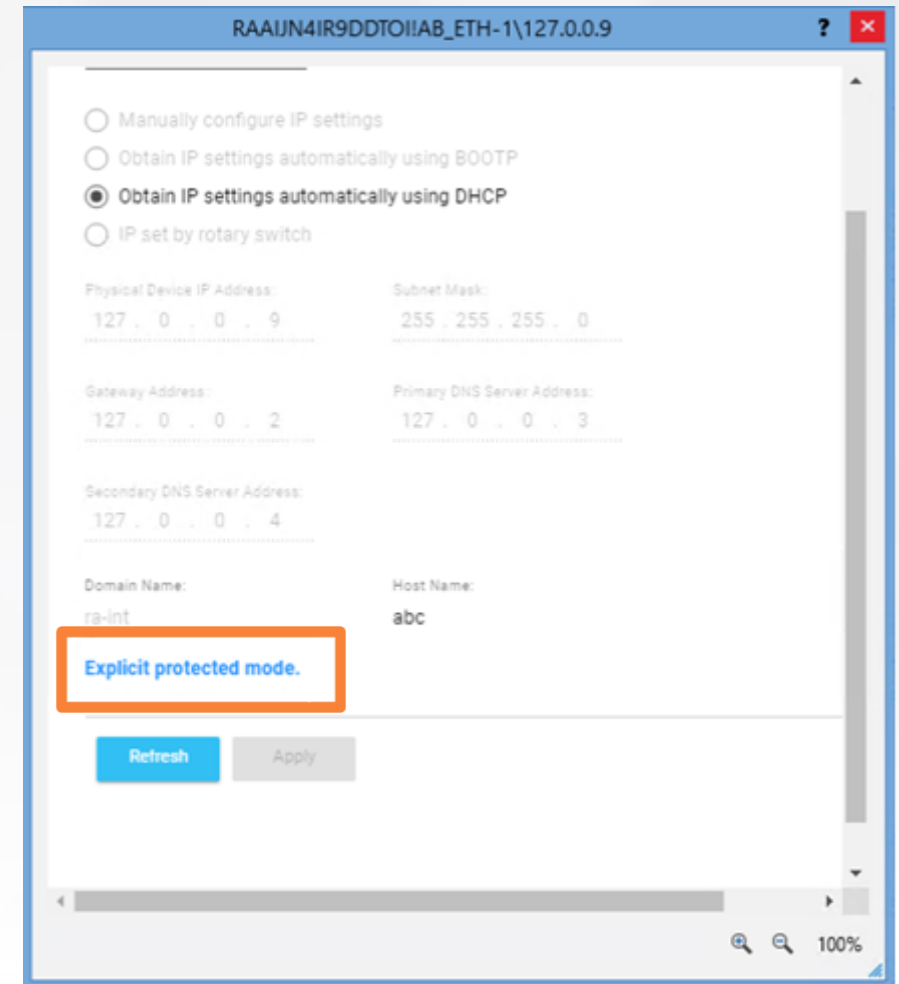
Improved system MTTR and OEE

- Previously, all EtherNet/IP devices from Rockwell Automation® used private subnet 192.168.1.x with rotary IP switches
- ODVA extended the EtherNet/IP specification to permit the private subnet to be changed
- With FactoryTalk® Linx v6.40, the device configuration dialog added the ability to change the subnet for devices that support it
 - Assign the device with switches to the desired subnet
 - Pre-configure the subnet and store for quicker device replacement
 - 5032 first platform to include this capability
 - V6.31 patch RAID: [1140448](#) released Sept 2023



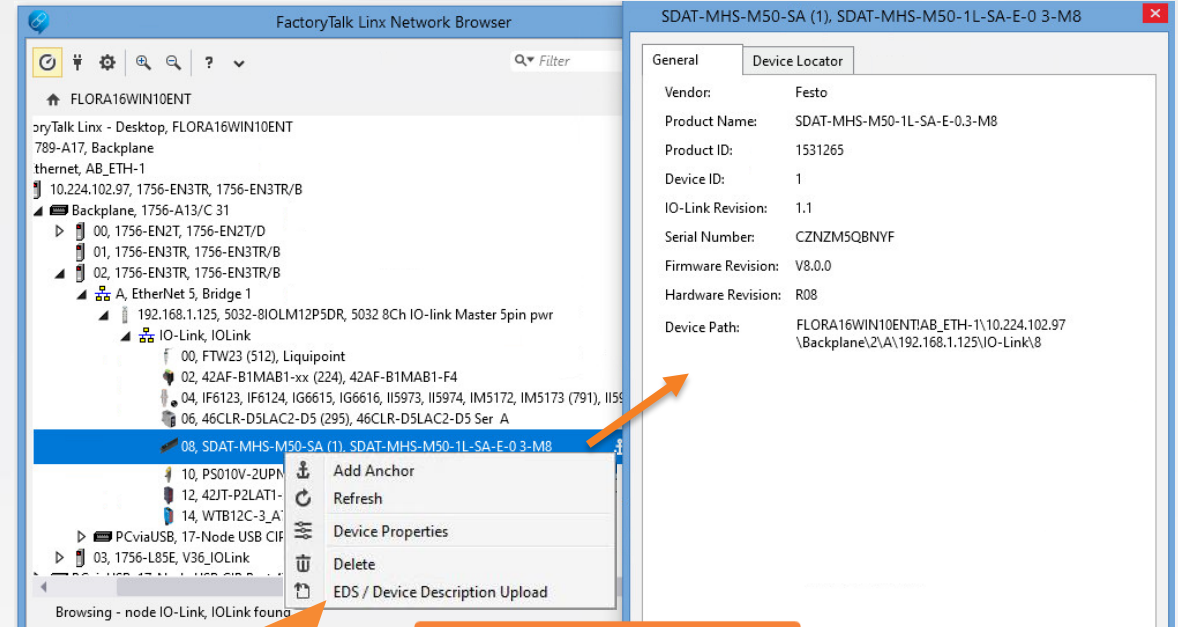
Improved productivity

- Previously, the FactoryTalk® Linx Network Browser device configuration dialog did not detect when devices were in “Explicit Protected” mode
 - Explicit Protection helps prevent changes to network address settings
 - Attempting to change settings will fail without context
- FactoryTalk® Linx v6.40 Network Browser’s device configuration dialog now confirms when Explicit Protection is enabled
 - Helps prevent configuration changes
 - List the state on the dialog
 - Avoids wasted time attempting to change settings

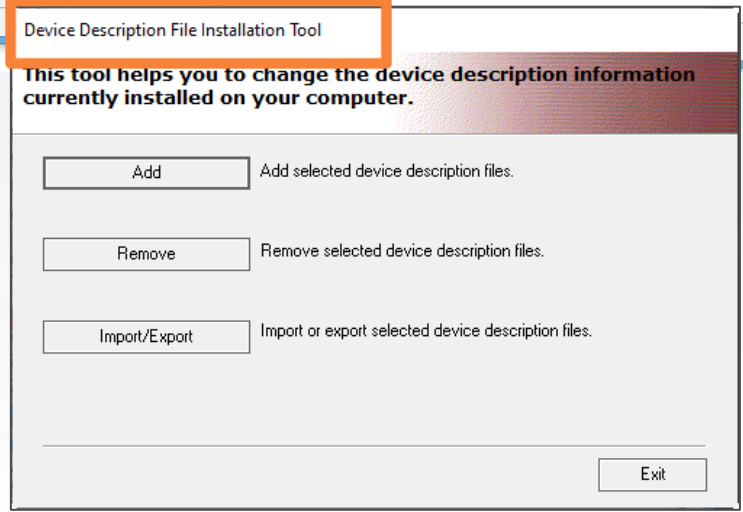


Enhanced device management productivity

- FactoryTalk® Linx v6.40 extends the network browser to support IO-Link connected devices
 - Intelligent discrete sensors displayed in the Network Browser under IO-Link capable modules
 - Device properties
 - Upload and register IO-Link Device Description (IODD) files to EDS subsystem (renamed Device Description Subsystem)



IODD Upload



 **IO-Link**
<https://io-link.com>

FT Linx Configuration Import/Export

Import/Export Drivers without a FactoryTalk® Application selected

FTL ≥ v6.40

Enhanced productivity when working with drivers for Network Browser

- FactoryTalk® Linx v6.21 included the Configuration Import/Export tool
 - Import/export driver and shortcut configuration
 - Required selection of FactoryTalk® Linx server with FactoryTalk® Application to specify the shortcuts to be processed
 - Resulted in unnecessary steps on computers just being used for Network Browsing
- FactoryTalk® Linx v6.40 permits Import/Export without selecting a FactoryTalk® Application for the Driver only operation
 - Reducing steps and complexity for driver import/export
 - Ideal when only using the Network Browser (no Shortcuts / Topics)
 - Simplifies migration from RSLinx® Classic to FactoryTalk® Linx

Selection of FactoryTalk® Linx in Application is now optional

FactoryTalk Linx Configuration Import Export Tool

Operation: Export

Target Server: Please select a server ...

Export File: C:\Users\n0451827\Desktop\myExportDriverOnly.csv

Both Shortcut & Driver Shortcut Only Driver Only

Export List:

Driver	Driver Name	Driver ID	Param Port	Param Address	Param Adapter	Param Type	Param CardID	P
<input checked="" type="checkbox"/>	AB_ETH-1	1				Point_to_Point		
<input checked="" type="checkbox"/>	AB_ETH-2	1				Point_to_Point		
<input checked="" type="checkbox"/>	AB_ETHIP-1	1				LocalBroadcast		
<input checked="" type="checkbox"/>	EmulateEthernet	1				Point_to_Point		
<input checked="" type="checkbox"/>	Ethernet	1				LocalBroadcast		

Status: 5 of 5 items were exported successfully!

FactoryTalk Linx Copyright (c) 2023 Rockwell Automation Technologies, Inc. All Rights Reserved. 6.40.00 Help

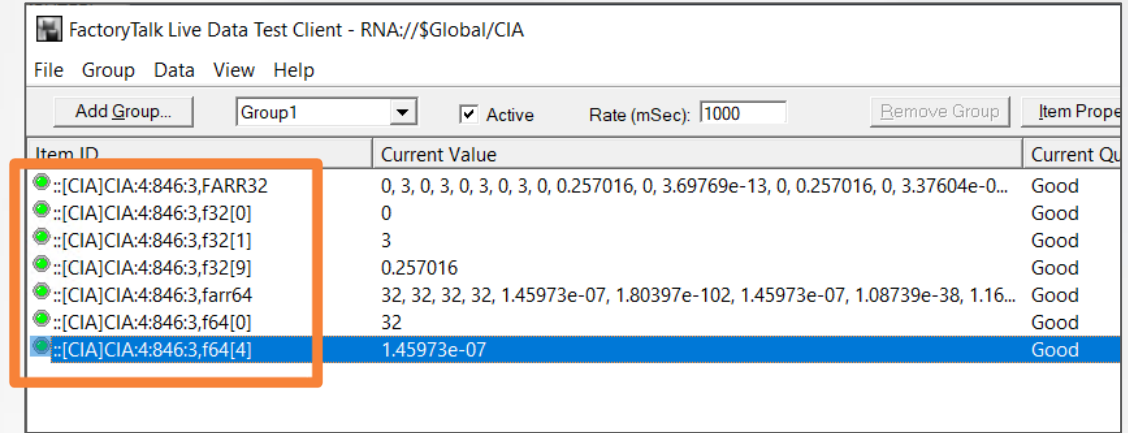


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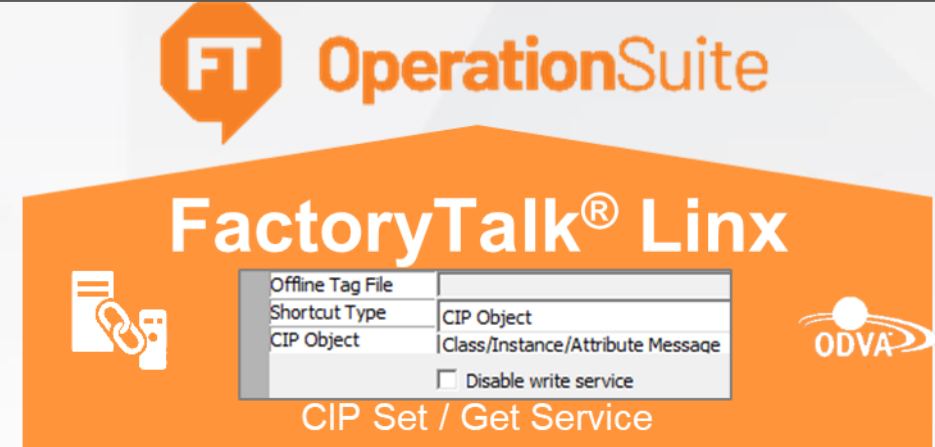
CIP Messaging to floating point data

Directly access more device information types

- FactoryTalk® Linx v6.20 added ODVA CIP Class/Instance/Attribute Messaging
 - Fully supported Boolean and Integer data types
- V6.40 extends the CIA messaging support to include floating point data
 - Scalar REAL (32bit) e.g. f32
 - LREAL (64Bit) e.g. F64
 - Arrays define as REAL / LREAL (e.g. FARR32, FARR64)
- Also released as a patch [1138461](#) for v6.31



Item ID	Current Value	Current Quality
::[CIA]CIA:4:846:3,FARR32	0, 3, 0, 3, 0, 3, 0, 3, 0, 0.257016, 0, 3.69769e-13, 0, 0.257016, 0, 3.37604e-0...	Good
::[CIA]CIA:4:846:3,f32[0]	0	Good
::[CIA]CIA:4:846:3,f32[1]	3	Good
::[CIA]CIA:4:846:3,f32[9]	0.257016	Good
::[CIA]CIA:4:846:3,farr64	32, 32, 32, 32, 1.45973e-07, 1.80397e-102, 1.45973e-07, 1.08739e-38, 1.16...	Good
::[CIA]CIA:4:846:3,f64[0]	32	Good
::[CIA]CIA:4:846:3,f64[4]	1.45973e-07	Good



FT OperationSuite

FactoryTalk® Linx

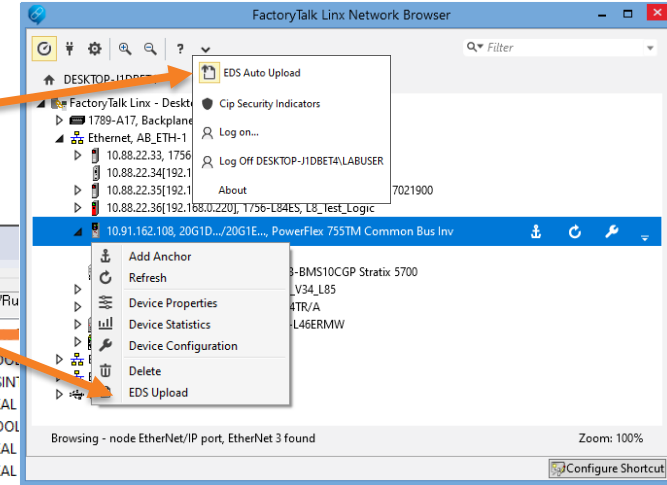
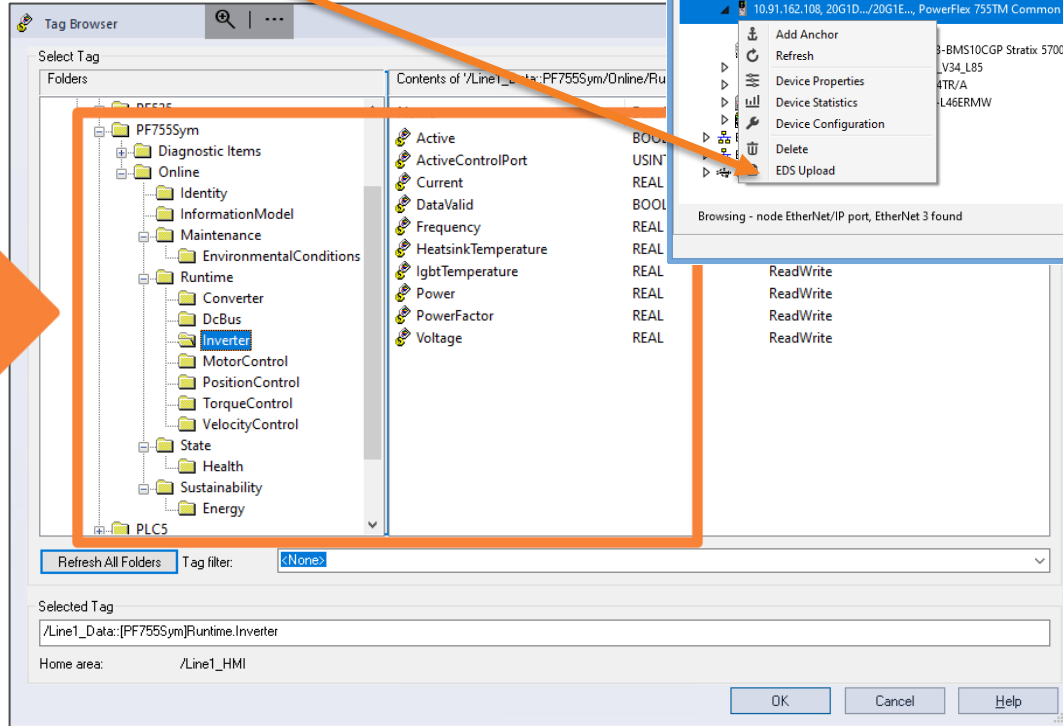
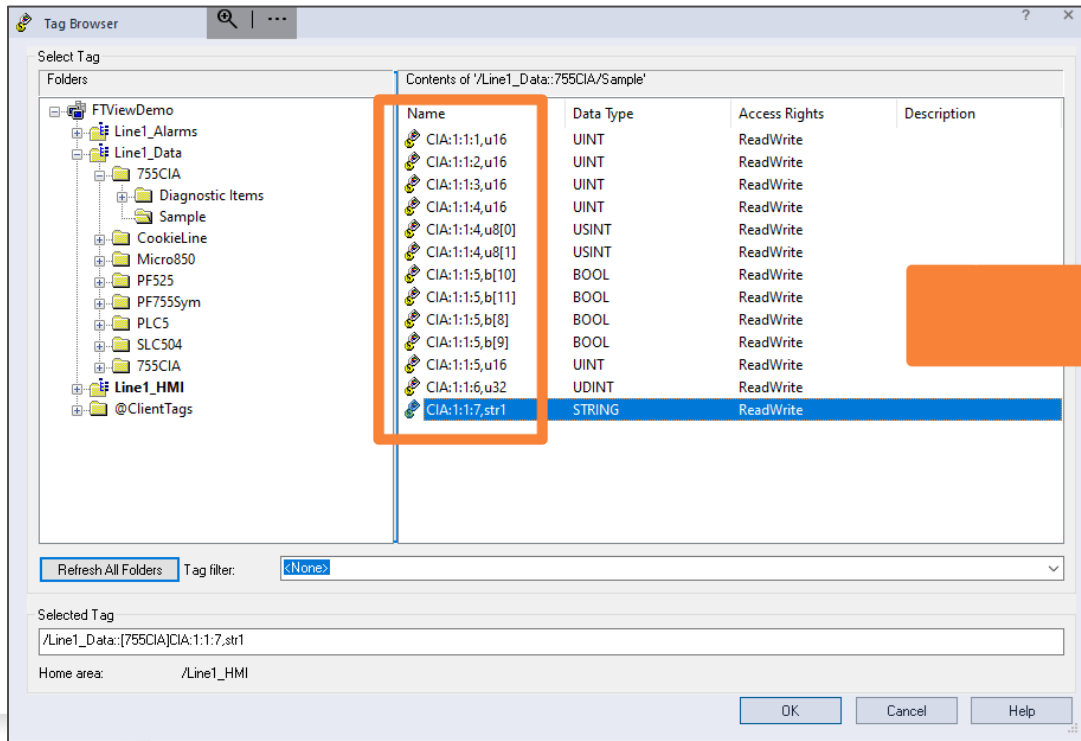
Offline Tag File: []
 Shortcut Type: CIP Object
 CIP Object: Class/Instance/Attribute Message
 Disable write service

CIP Set / Get Service



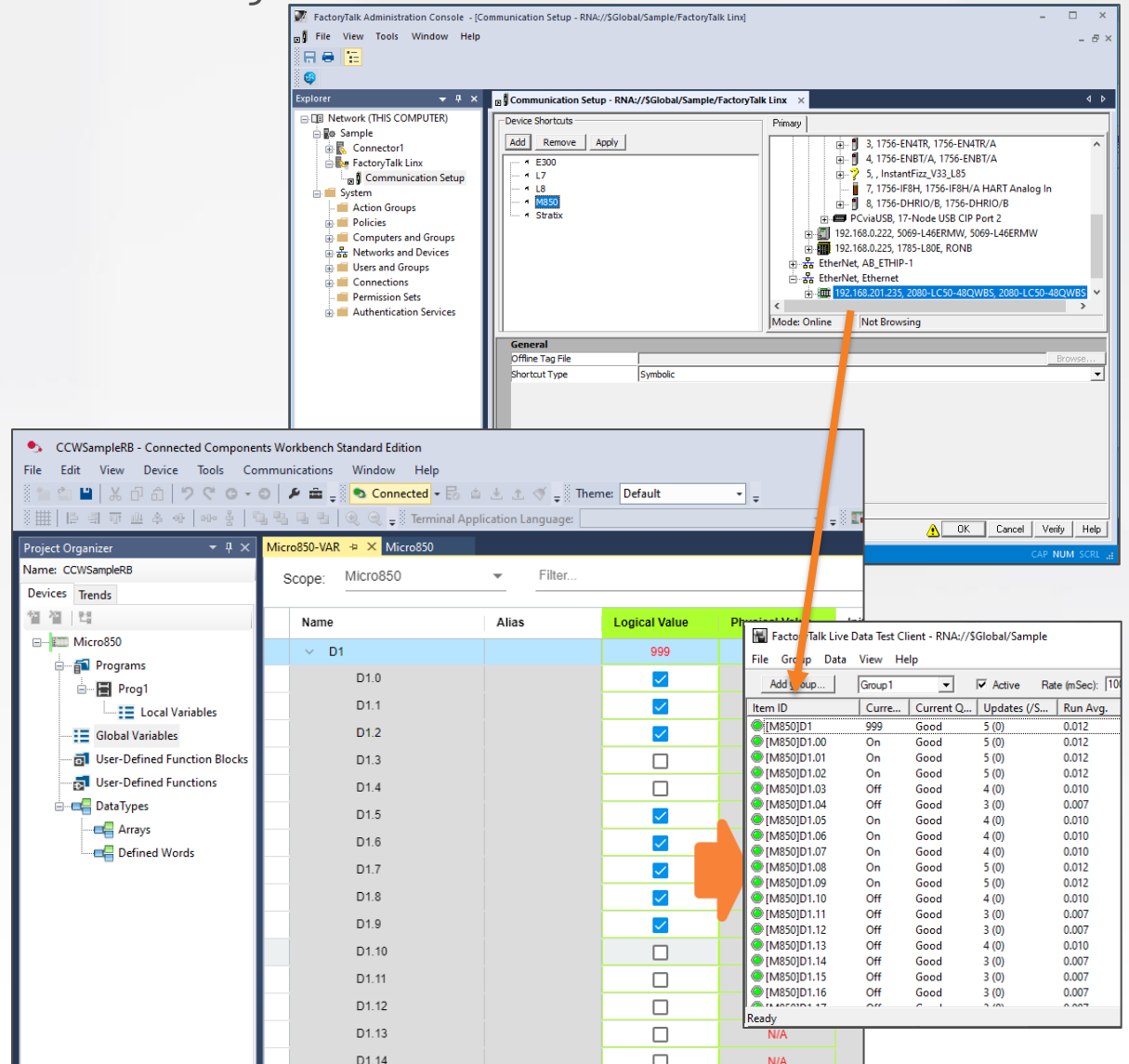
PowerFlex® adding structured data model with symbolic access

- The FactoryTalk® Linx Symbolic shortcut will now support direct communications to select PowerFlex® drives (Initially 755T platform w/ v12 firmware, others planned)
 - MUCH simpler than the CIP Class-Instance-Attribute messaging!
 - Upload EDS file from drive in FactoryTalk® Linx (auto or manual)



Improved development productivity

- FactoryTalk® Linx is able to communicate to Micro800™ controllers
 - Uses Symbolic shortcut type to provide full list of tags
- Previously FactoryTalk® Linx and the PanelView™ Plus were not able to directly access bits within numeric tags
 - Create alias references to permit access
- FactoryTalk® Linx v6.40 adds the ability to directly read/write bits within numeric tags
 - Simply append a period and the bit's number (e.g. Tag.3)
 - Reduce the number of alias tags needed



The top screenshot shows the FactoryTalk Administration Console with the 'Communication Setup' window open. The 'Device Shortcuts' list includes 'M850'. The 'General' tab shows 'Shortcut Type' set to 'Symbolic'.

The middle screenshot shows the CCWSampleRB - Connected Components Workbench Standard Edition. The 'Project Organizer' shows the 'Micro850' device. The 'Scope' is set to 'Micro850'. A table displays tag data:

Name	Alias	Logical Value	Physical Value
D1		999	
D1.0		<input checked="" type="checkbox"/>	
D1.1		<input checked="" type="checkbox"/>	
D1.2		<input checked="" type="checkbox"/>	
D1.3		<input type="checkbox"/>	
D1.4		<input type="checkbox"/>	
D1.5		<input checked="" type="checkbox"/>	
D1.6		<input checked="" type="checkbox"/>	
D1.7		<input checked="" type="checkbox"/>	
D1.8		<input checked="" type="checkbox"/>	
D1.9		<input checked="" type="checkbox"/>	
D1.10		<input type="checkbox"/>	
D1.11		<input type="checkbox"/>	
D1.12		<input type="checkbox"/>	
D1.13		<input type="checkbox"/>	
D1.14		<input type="checkbox"/>	

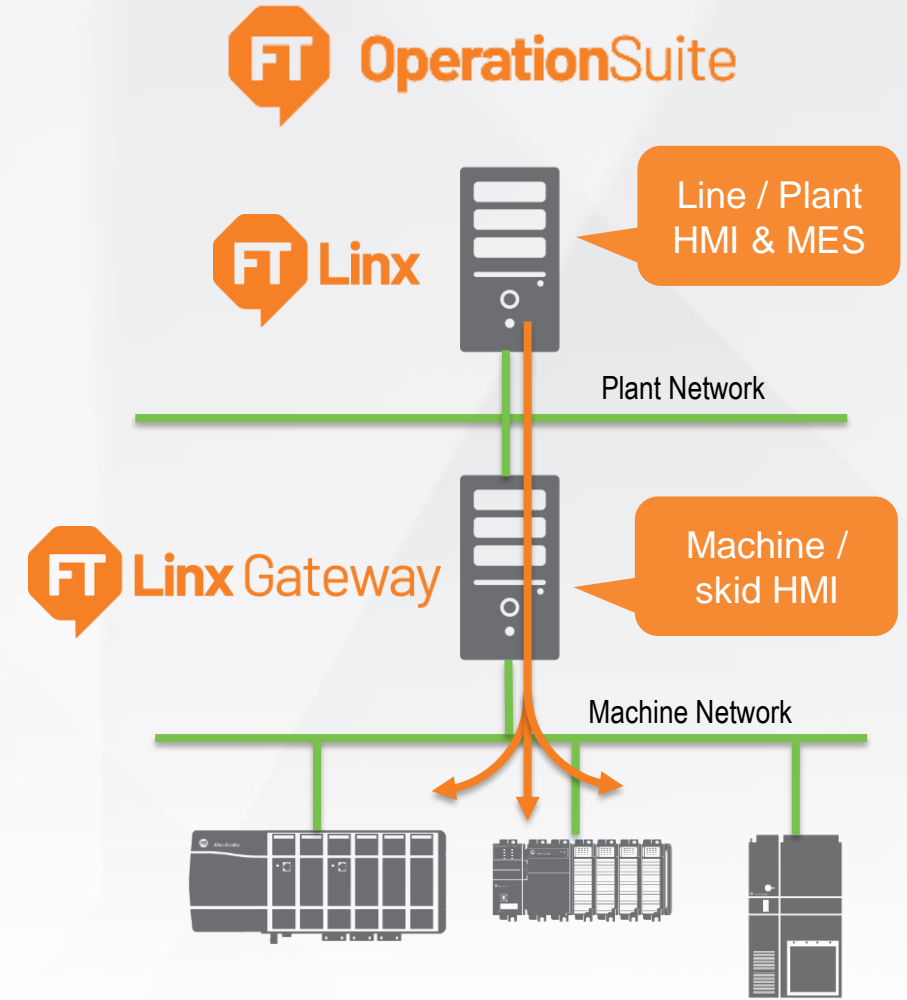
The bottom screenshot shows the 'FactoryTalk Live Data Test Client' window with a table of tag data:

Item ID	Current Value	Current Quality	Updates (/S...)	Run Avg.
[M850]D1	999	Good	5 (0)	0.012
[M850]D1.00	On	Good	5 (0)	0.012
[M850]D1.01	On	Good	5 (0)	0.012
[M850]D1.02	On	Good	5 (0)	0.012
[M850]D1.03	Off	Good	4 (0)	0.010
[M850]D1.04	Off	Good	3 (0)	0.007
[M850]D1.05	On	Good	4 (0)	0.010
[M850]D1.06	On	Good	4 (0)	0.010
[M850]D1.07	On	Good	4 (0)	0.010
[M850]D1.08	On	Good	5 (0)	0.012
[M850]D1.09	On	Good	5 (0)	0.012
[M850]D1.10	Off	Good	4 (0)	0.010
[M850]D1.11	Off	Good	3 (0)	0.007
[M850]D1.12	Off	Good	3 (0)	0.007
[M850]D1.13	Off	Good	4 (0)	0.010
[M850]D1.14	Off	Good	3 (0)	0.007
[M850]D1.15	Off	Good	3 (0)	0.007
[M850]D1.16	Off	Good	3 (0)	0.007
[M850]D1.17	Off	Good	3 (0)	0.007

Shortcuts routed through Remote Proxy

Secure communications between systems

- FactoryTalk® Linx Gateway v6.31 added the Remote Proxy Service
 - Enabled computers running design software from one network to bridge through FactoryTalk® Linx Gateway computer to an automation network
 - Reduces exposure and access to automation equipment
- FactoryTalk® Linx v6.40 extends shortcuts to be routed over the Proxy Service
 - Limited to CIP Communications (can use CIP Security)
 - Not using FactoryTalk® Live Data - clients and proxy can be in different FactoryTalk® Directories
 - Route communications between networks
 - Similar routing to Network Address Translation (NAT)
 - Each client establishes connection to end controller / devices
 - Easier - No need to manage public / private IP addresses
 - More Secure - Limited to CIP protocol



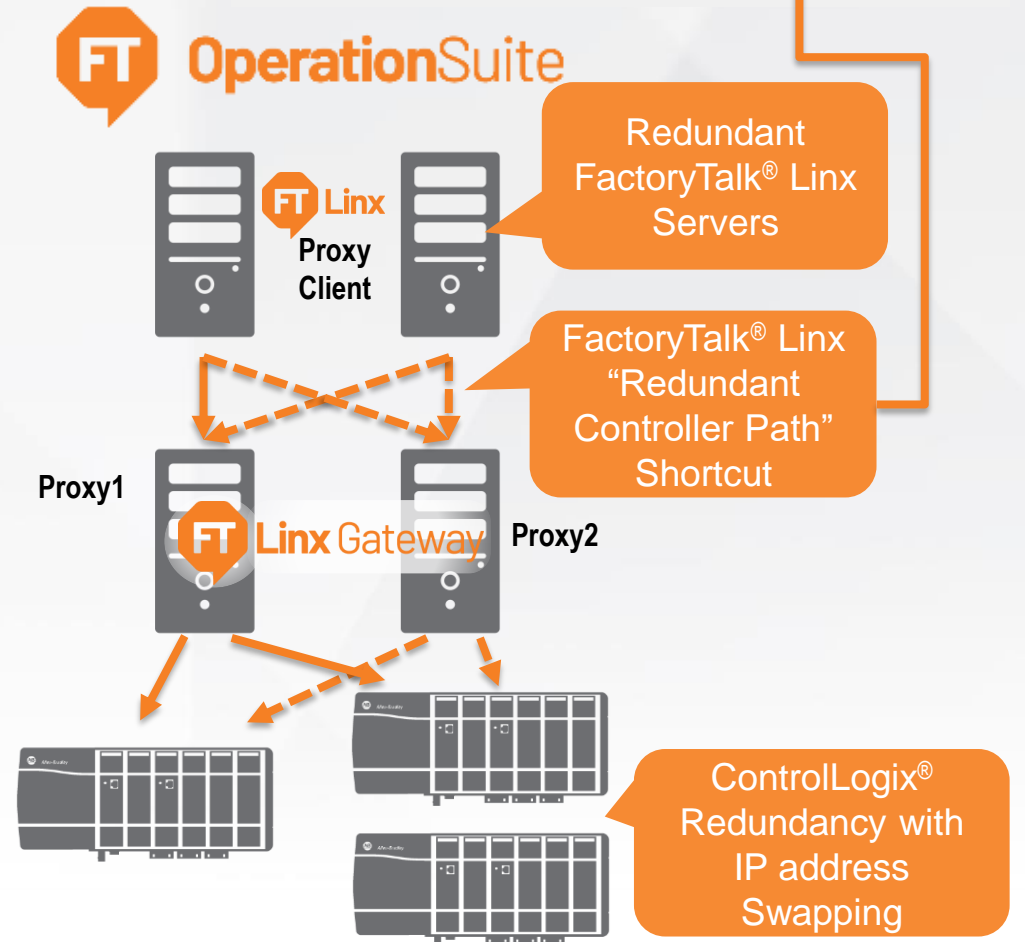
Using Remote Proxy service in high availability applications

Increased system uptime / resiliency

- FactoryTalk® Linx v6.20 added the “Redundant Controller Path” shortcut type
 - Provides two network paths to one controller
 - Simultaneous connection through both paths
 - Automatically switches to the active path
- With v6.40 FactoryTalk® Linx can configure a shortcut through two FactoryTalk® Linx Gateway Proxy computers for proxy computer redundancy
 - If one proxy computer shuts down or is disconnected, communications routed through the other proxy computer

General	
Offline Tag File	C:\Users\jabusar\Desktop_VM Misc\Proje
Shortcut Type	Processor
Connection Inactivity Timeout (sec.)	Processor
Logix Extended Tag Properties	
	EDS Parameter
	Symbolic
	Unsolicited Message
	CIP Object
	Redundant Controller Path
	Redundant ControlLogix Controller

Click Apply button to assign selected path to this shortcut.

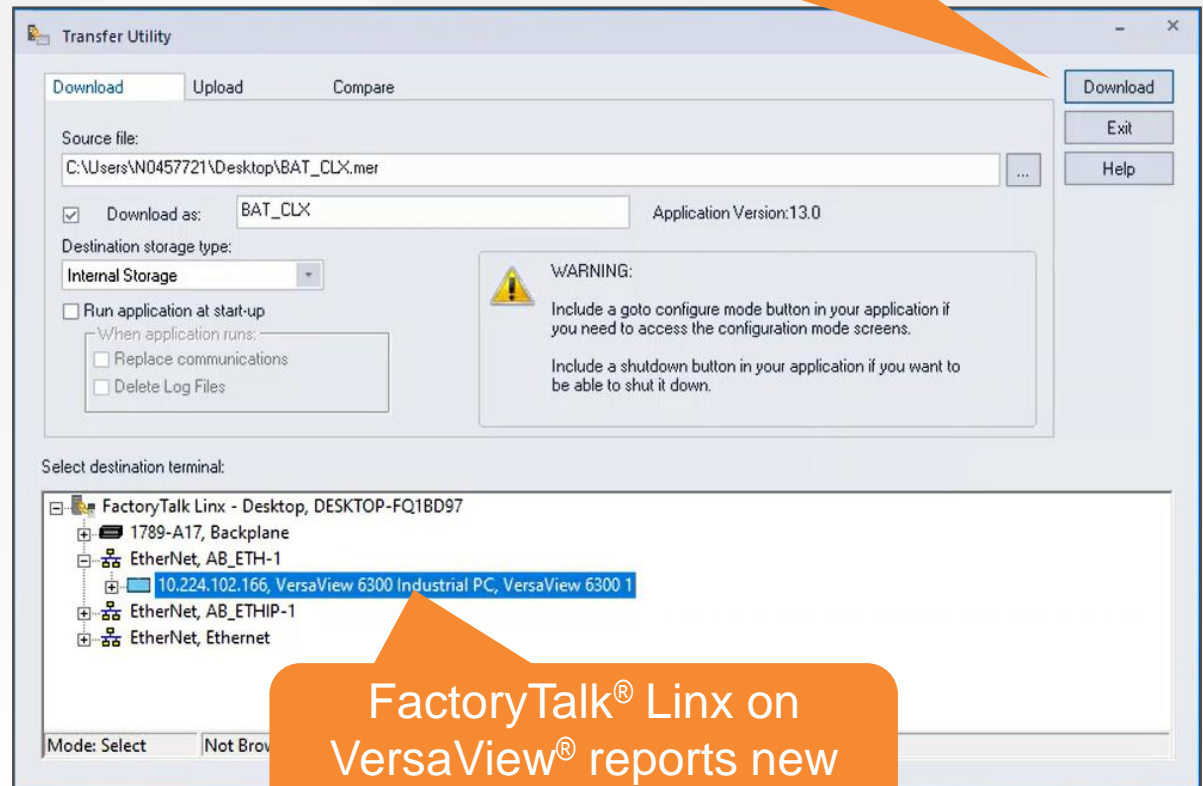


Using a VersaView® 6300 like a PanelView™ Plus

Enhanced usability and productivity

- VersaView® 6300 computers can run FactoryTalk® View ME
 - Provides an alternative hardware option capable of running other software
- Previously FactoryTalk® View ME projects were manually transferred
- FactoryTalk® Linx v6.40 simplifies this process
 - Recognizes the hardware and reports via a FactoryTalk® Linx Network Browse
 - The FactoryTalk® View ME v14 and the FactoryTalk® View ME Transfer Utility (METU) v13 can remotely deploy a project “.mer” files to the compute

METU updated to deploy to VersaView® 6300

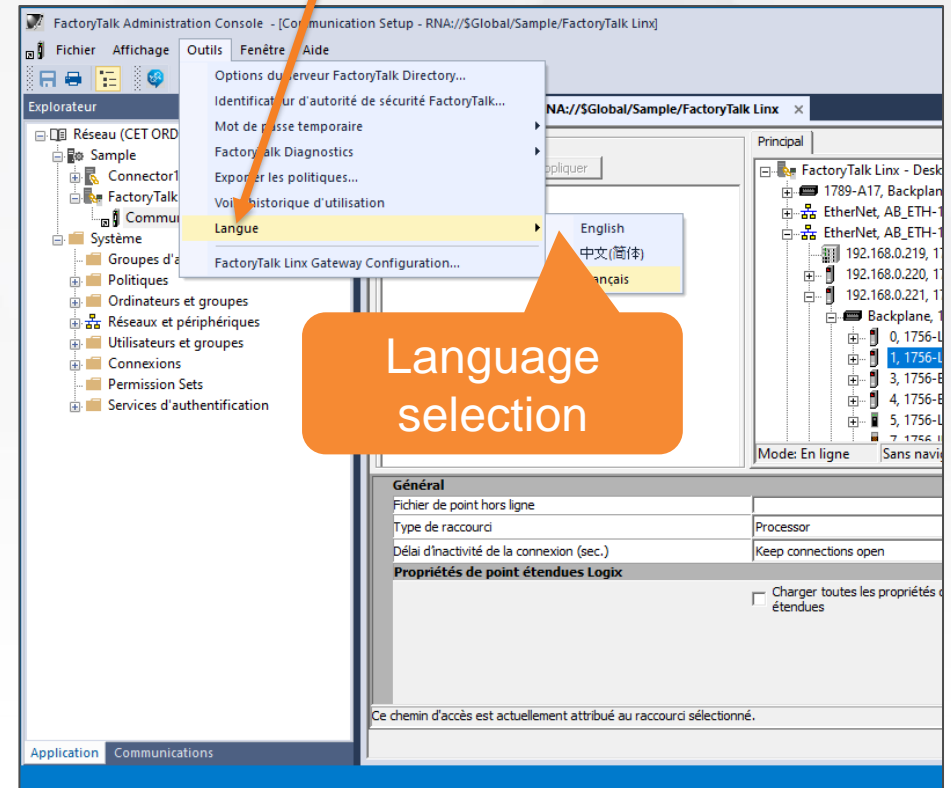
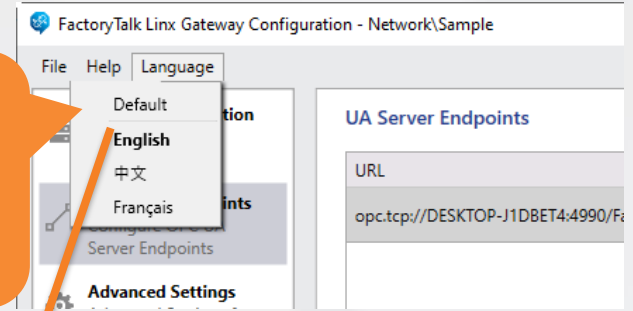


FactoryTalk® Linx on VersaView® reports new identity

Improved productivity by supporting multiple languages with one installation

- FactoryTalk® Linx and FactoryTalk® Linx Gateway provided localized builds
 - Chinese with v6.20 and French with v6.30
 - Each language delivered as a separate download / installation
 - Only one language could be used at a time
- V6.40 updated to deliver all languages in a single download/installation
 - FactoryTalk® Administration Console and FactoryTalk® Linx Gateway's user interface provides an option to choose the desired language (English, Chinese, French)
 - Restart user interface to see the selected language
- Other languages planned in the future

Default used
FactoryTalk
Administration
Console setting



Language
selection



Increase system development productivity

- FactoryTalk® Service Platform includes a tag browser to enable FactoryTalk View and other software to browse the namespace
 - FactoryTalk® Linx controller and device tag definitions
 - OPC-DA and the FactoryTalk® Linx OPC UA Connector Data definitions
- V6.40 incorporates a new / redesigned tag browser
 - Includes Logix extended tag properties
 - Expand integers to access bits
 - Adopted by FactoryTalk® View SE, FactoryTalk® Alarms & Events and FactoryTalk® Historian

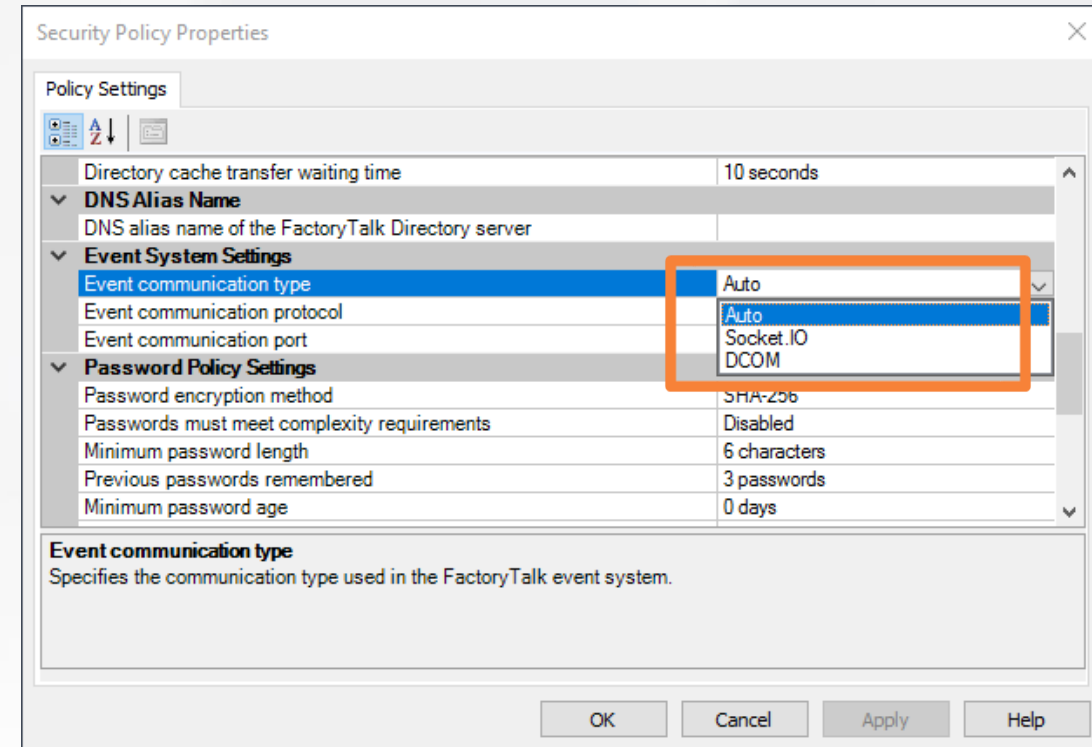
The screenshot shows the 'Select Tag - Web Tag Browser' window. The breadcrumb path is 'sample > FactoryTalk Linx > L8 > Online > _OPC_Incoming'. The left pane shows a tree view with 'FactoryTalk Linx' expanded to 'L8' > 'Online' > '_OPC_Incoming'. The main pane displays a table of tags under the selected path.

Tag Browsed	
Name	Data Type
Boolean	BOOL
Extended Properties	
ByteValue	UINT
Extended Properties	
Bits	
ByteValue.0	BOOL
ByteValue.1	BOOL
ByteValue.2	BOOL
ByteValue.3	BOOL
ByteValue.4	BOOL
ByteValue.5	BOOL

Below the table is a 'Tag Selected' section with columns for Name, Data T..., and Item ID. It currently shows 'No Rows To Show'. At the bottom, there are checkboxes for 'Tag Components' (checked) and 'Columns' (checked). Two sub-panels show 'Extended Properties' and 'Bits' checked under 'Tag Components', and 'Data Type', 'Description', and 'Access Right' checked under 'Columns'.

Improved system performance and resilience

- Socket.IO communication channel for FactoryTalk® Directory Sync and Eventing
 - All FactoryTalk® Directory operations support Socket.IO channel
- Socket.IO channel provides
 - Increased throughput
 - Scalability
- FactoryTalk® Directory Server uses **both** Socket.IO and DCOM events (default)
 - System is configurable to accept **only** Socket.IO or **only** DCOM
 - When set to **only** accept Socket.IO connections, older FactoryTalk® Directory clients will be unable to connect to the FactoryTalk® Directory
- Socket.IO-based communication offers an alternative to DCOM



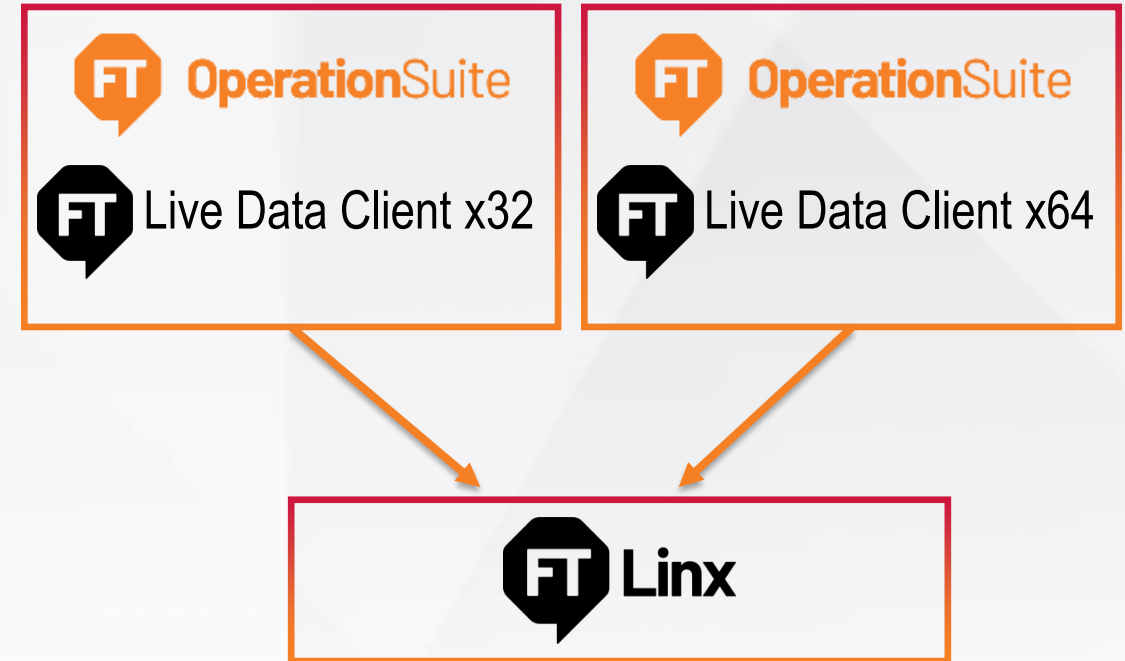
FT Live Data

64-bit Client toolkit

FTSP ≥ v6.40

Enables FactoryTalk® Software to operate more efficiently on 64-bit Windows

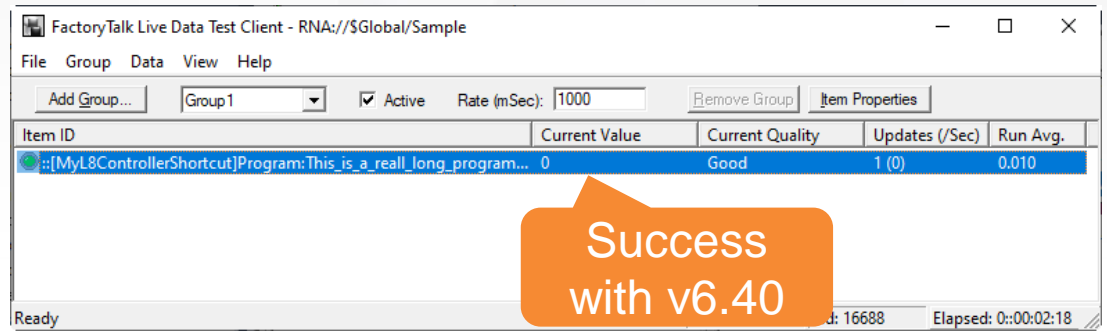
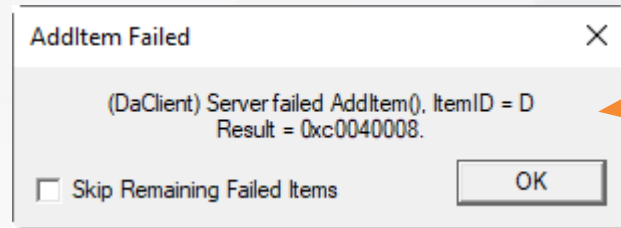
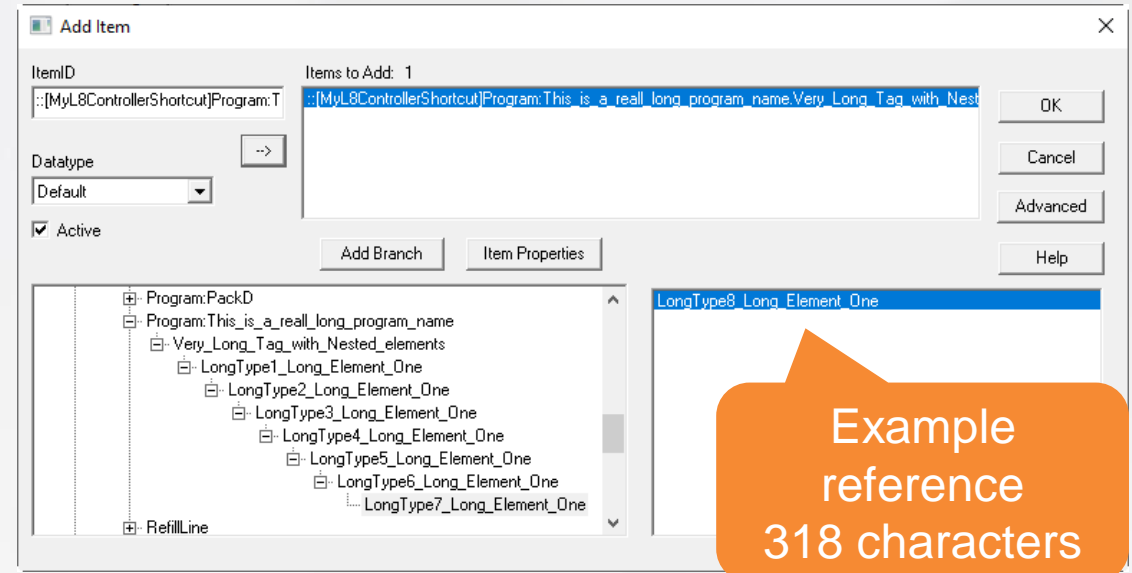
- Previously all FactoryTalk® software using FactoryTalk Live Data were built as 32-bit
 - Imposes memory limits (2 to 3.5GB)
 - 32-bit software can operate on both Windows x32 and windows x64 bit
- Microsoft stopped delivering 32bit Windows
- Most FactoryTalk® Software also stopped supporting 32-bit Windows
- Some FactoryTalk® Software is moving to 64 operation
 - 32-bit services are difficult to integrate with
- FactoryTalk® Live Data v6.40 adds a 64-bit interface
 - Expands memory capacity
 - 32-bit clients continue to be supported



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Improved productivity and data modeling

- Previously all FactoryTalk Live Data limited tag references to 260 characters
 - Prevented accessing complex / deeply nested Logix structures
 - Logix structures limited to about ~6 to 7 levels with long element names
- V6.40 increases the length to 1024
 - Permits more descriptive names
 - Increased structure depth / nesting (~25 levels)



URL Computer name and IP address Option

Simplify system configuration / setup

- Previous the URL string defaulted to the computer's name
 - Ideal when operating on the same subnet
 - Renaming the computer impacted the operation
 - IP address would function but not as obvious
- V6.40 added an option to choose computers IP address
 - Local / loopback
 - IP address for each Network Interface Connection (NIC)

Network Configuration

Name: FactoryTalkLinxGateway1

Port: 4990

URL: opc.tcp://DESKTOP-J1DBET4:4990/FactoryTalkLinxGateway1

Disable

≤ v6.31 URL used computer name

Network Configuration

Name: FactoryTalkLinxGateway1

Port: 4990

Address: 192.168.201.157

URL: opc.tcp://192.168.201.157:4990/FactoryTalkLinxGateway1

Disable

≥ v6.40 URL address option

≥ v6.40 URL with IP address



Access to bits within integers

Simplifies access to controller integer bits

- Previous releases had limited access to bits within integers
 - Bits can be accessed with integers with folder / scalar namespace
 - For the Tag list or Custom namespace bit tags must be defined in Logix (alias to bits in integers)
- V6.40 adds the ability to access integer bits for Tag List and custom namespace
 - OPC UA Client must include bit reference in the requested Node ID
 - Append period and bit number to integer tag reference in the OPC UA Client e.g. "...int_tag.1" (bits excluded from namespace)

The screenshot shows the FactoryTalk Linx Gateway Configuration interface. The 'UA Tag List' window displays a table of tags:

Item ID	Name	Data Type	Parent Path
Area02::[New_Shortcut]g...	g_dintArr	DINT [123]	RNA://\$Global/app1.Area...
Area02::[New_Shortcut]g...	g_int2	INT	RNA://\$Global/app1.Area...
Area02::[New_Shortcut]g...	g_myStruct	Area02::[New_Shortcut]m...	RNA://\$Global/app1.Area...

An orange arrow points from the 'g_dintArr' tag in the table to the 'Properties' window. The 'Properties' window shows the 'Monitored Items Properties' for 'g_dintArr[1].2', with the following details:

- Display Name: g_dintArr[1].2
- Item Id: 1400899615
- Node Id: ns=2;s=TagGroup01#Area02::[New_Shortcut]g_dintArr[1].2
- Attribute: Value
- Sampling Interval (ms): 1000
- Queue Size: 1
- Index Range: (empty)
- Discard Oldest:
- Sampling in Connected State:
- Log Values:
- Status: Reporting

The 'Filter' section shows:

- Data Change Trigger: StatusValue
- Deadband Type: None
- Deadband Value: 0

The 'Read/Write Node' table shows the following data:

Name	Value	Type
g_dintArr[1].2	True	Boolean
value	true	boolean
StatusCode	Good	StatusCode



Include folders in custom data model

Improved data organization and productivity

- Initially the FactoryTalk® Linx Gateway's custom data model supported structures and scalar items linked to system tags
- V6.40 adds ability to define folders
 - Embed tags and nest folders
 - Define your own order
 - Embed other tags in the folders (scalar, structures and arrays)
- Folders are simpler to be defined, navigate and access
- Combine with structure tags to improve data organization

The screenshot shows the 'FactoryTalk Linx Gateway Configuration - Network\AAA' interface. On the left, there are navigation options: 'Server Configuration', 'UA Server Endpoints', 'Advanced Settings', 'Custom UA Namespace', and 'Remote Proxy Service'. The main area is titled 'Custom UA Namespace' and shows a tree view under 'Namespace_01' containing a 'Tags' folder, which is expanded to show 'Folder01'. 'Folder01' contains 'SubFolder1' and 'SubFolder2'. Below the tree, a table lists the items:

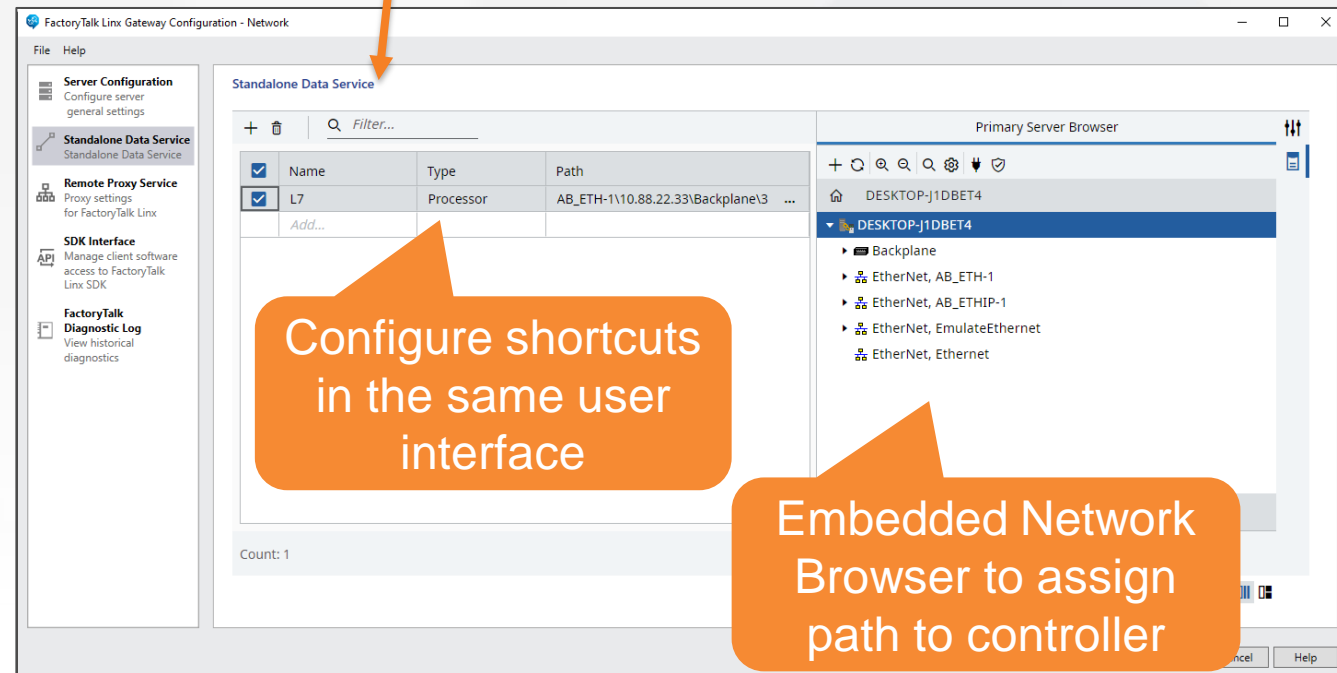
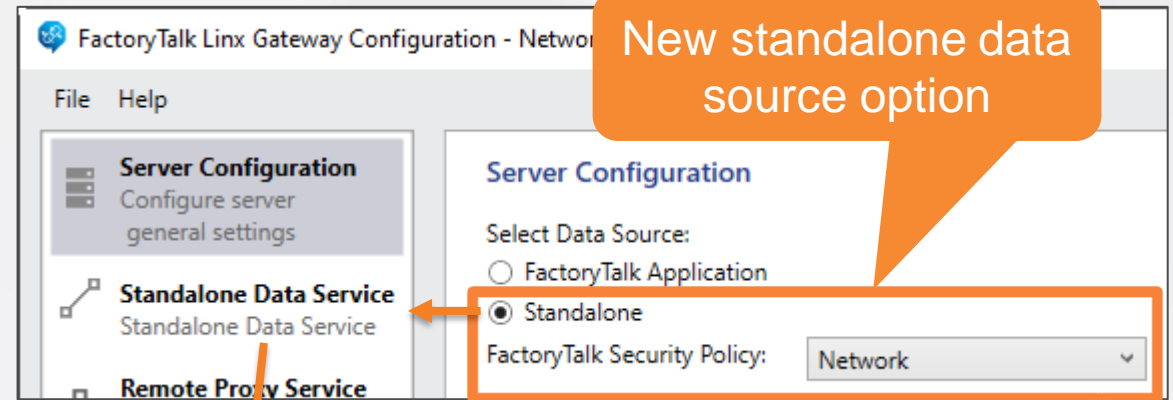
Name	Data Type
SubFolder1	Folder
SubFolder2	Folder
tag1	Int16

Below the table, there are 'Insert', 'Delete', and 'Order' buttons. An orange callout bubble points to the 'Order' button with the text 'User-defined order'. Another orange callout bubble points to 'Folder01' in the tree with the text 'Nested folders'. A third orange callout bubble points to the 'FactoryTalkLinxGateway' project in the 'Address Space' view of a 'UaExpert' client, with the text 'Namespace in UA Client'. The 'Address Space' view shows a hierarchy: Root > Objects > Aliases > FactoryTalkLinxGateway > Folder01 > SubFolder1, SubFolder2, tag1, tag2, Folder02, Folder03, Folder04, tag0.

Standalone Logix access from OPD DA and DDE clients

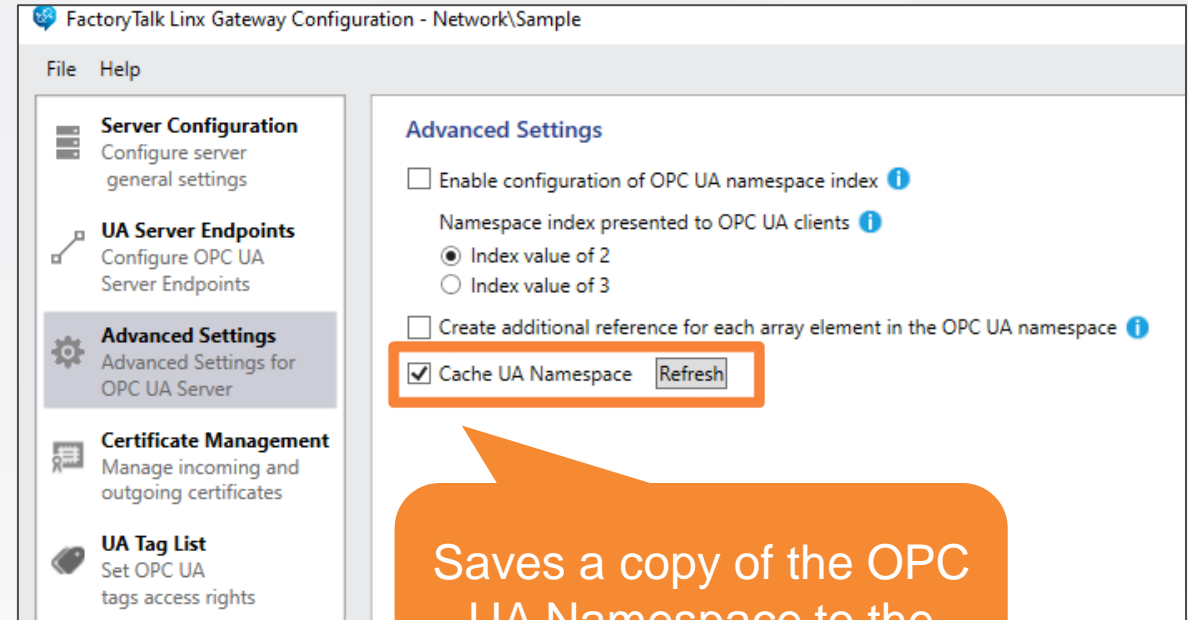
Greatly simplifies setup process for isolated OPC-DA and DDE clients

- Previously all FactoryTalk® Linx Gateway data was sourced from FactoryTalk Live Data servers
 - FactoryTalk® Linx, FactoryTalk® Linx OPC UA connector, and the FactoryTalk® Live Data OPC-DA interface
 - Ideal for large distributed and redundant operations
- V6.40 provides an option for standalone operation
 - Includes embedded / isolated FactoryTalk® Linx service (No FactoryTalk® Live Data services in this mode)
 - Simplifies configuration
 - Initially limited to OPC-DA and DDE interface access to Logix Controllers
 - Potentially faster speeds and data delivery consistency
 - Supports "Folders with Scalars" data-model
 - Simpler migration from RSLinx® Classic



Increased system availability and OEE

- The FactoryTalk® Linx Gateway must generate an OPC UA namespace before enabling OPC UA Clients to connect
 - This could take many minutes for tag list or custom configurations with a high number of tags and structures
- FactoryTalk® Linx Gateway v6.40 adds a new option to “Cache UA Namespace”
 - Once the namespace is generated, the contents are written into a file
 - On restart, the namespace is reloaded from the file instead of regenerating
 - Substantially reduces computer startup duration



Saves a copy of the OPC UA Namespace to the computer's drive

Option to control group updates

Enhanced system performance, flexibility and productivity

- Previously the FactoryTalk® Linx Data Bridge groups were all active together
- FactoryTalk® Linx Data Bridge v6.40 includes an option to enable / disable each group individually
 - Use different source data to a set of destination
 - Accommodate different machine states
 - Facilitates isolated testing portion(s) of a system
 - Reduce communications loading when data is not needed

Group settings separated tag pairs

Enable/disable group communications

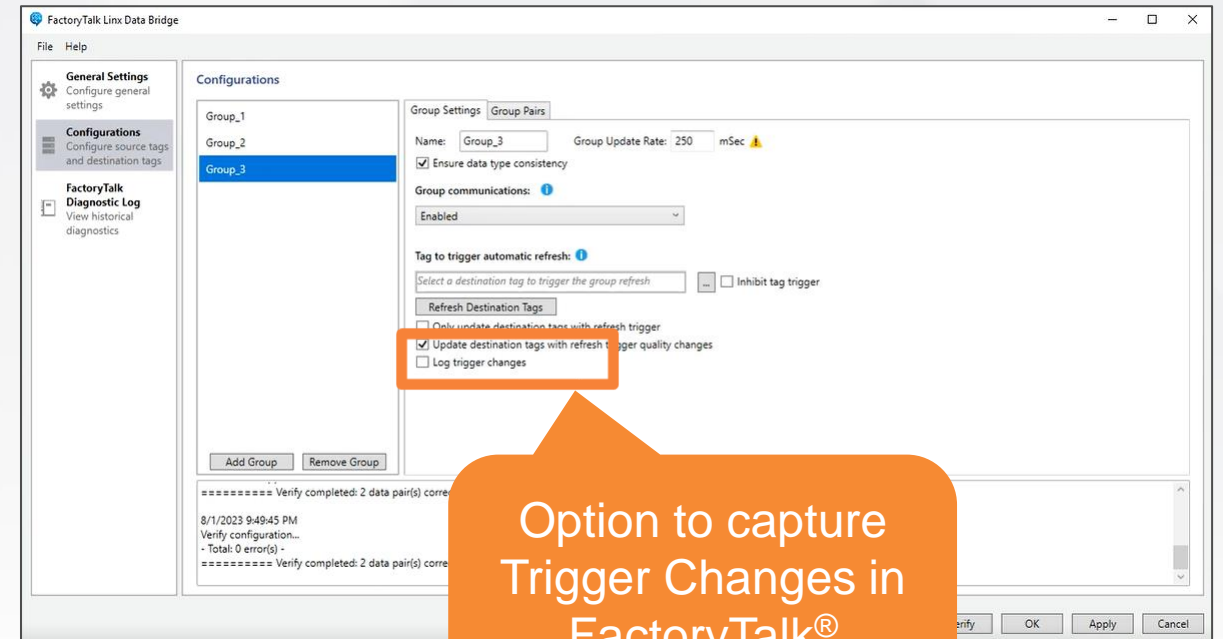
Linked tag to determine state

The screenshot displays the 'FactoryTalk Linx Data Bridge' configuration window. On the left, a sidebar contains 'General Settings', 'Configurations', and 'FactoryTalk Diagnostic Log'. The 'Configurations' section is active, showing a list with 'Group_1' selected. The main area is divided into 'Group Settings' and 'Group Pairs' tabs. The 'Group Settings' tab is active, showing fields for 'Name' (Group_1), 'Group Update Rate' (250 mSec), and a checked 'Ensure data type consistency' option. Under 'Group communications', there is a dropdown menu set to 'Enabled by tag' and a list of tag pairs, including '[107_46_3]bool1' which is currently 'Disabled'. Other options include 'Close existing tag subscriptions when disabled' (unchecked), 'Tag to trigger automatic refresh' (with a last refresh timestamp of 5/17/2023 8:37:59 AM), 'Refresh Destination Tags' button, 'Only update destination tags with refresh trigger' (unchecked), and 'Update destination tags with refresh trigger quality changes' (checked).



Reduced computer / system overhead

- The FactoryTalk® Linx Data Bridge group trigger option was added in v6.30
- Previously all tag group trigger value changes were logged to the FactoryTalk® Diagnostic Log
 - Frequent triggers could add impact system and generate a high volume of unwanted diagnostic records
- V6.40 adds an option to control the diagnostic logging
 - Disabled by default
 - Reduces the log records and system overhead
 - Enable when testing or diagnosing operation



Option to capture
Trigger Changes in
FactoryTalk®
Diagnostic Log


```
10/21/2023 9:16:47 AM
Verify configuration...
Error: group "Group_1": data pair "Data_Pair_1": Data type "DOUBLE" of source tag "/Data_Area/Connector1::[UAServer 01]BuildingAutomation\AirConditioner_1\Humidity" and data type "DINT" of destination tag "/Data_Area:[Home_L72]_OPC_Inb
- Total: 1 error(s) -
===== Verify completed: 0 data pair(s) correct, 1 data pair(s) incorrect =====
```

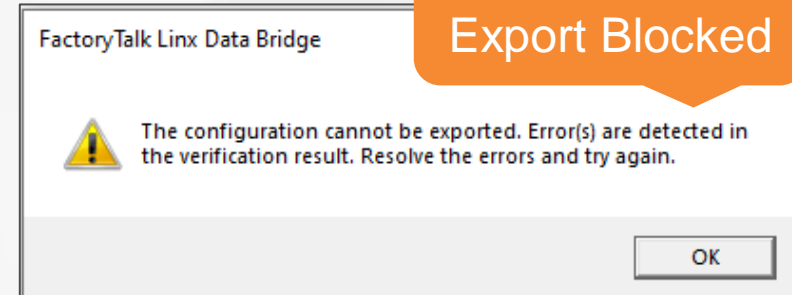
Example data
type mismatch
error

Enhanced development productivity

- Previously FactoryTalk® Linx Data Bridge would not permit an export if a configuration error was detected
 - Ideal when export used for configuration backup
 - Required extra effort to verify and correct errors
 - Made it difficult to manage system tag changes
- V6.40 relaxed this check
 - Expands the role of import / export to make configuration changes

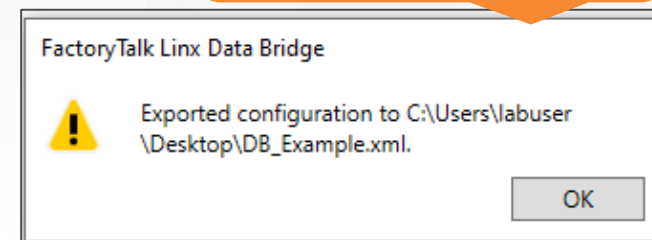
≤v6.31

Export Blocked



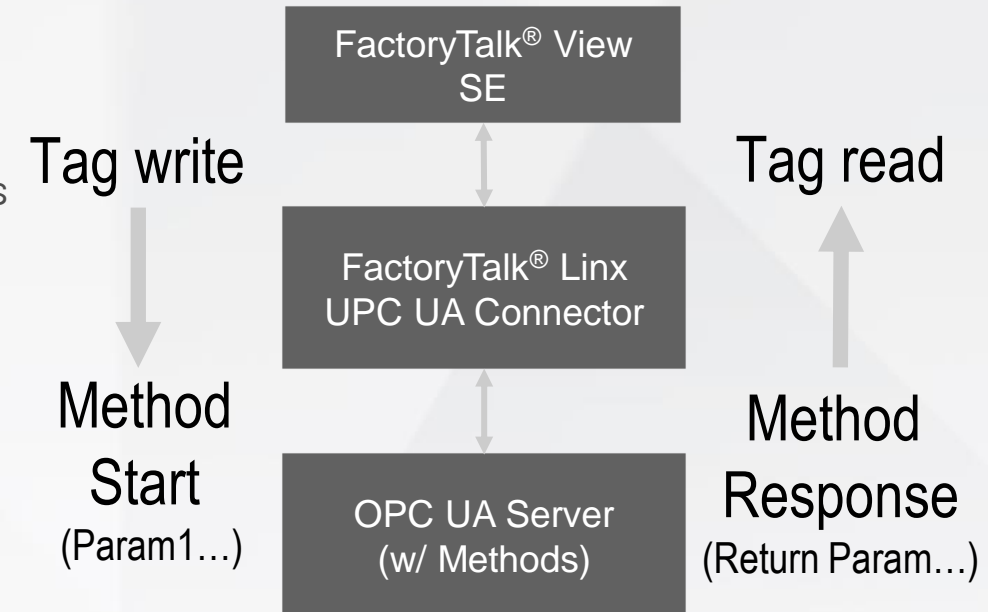
≥v6.40

Successful Export



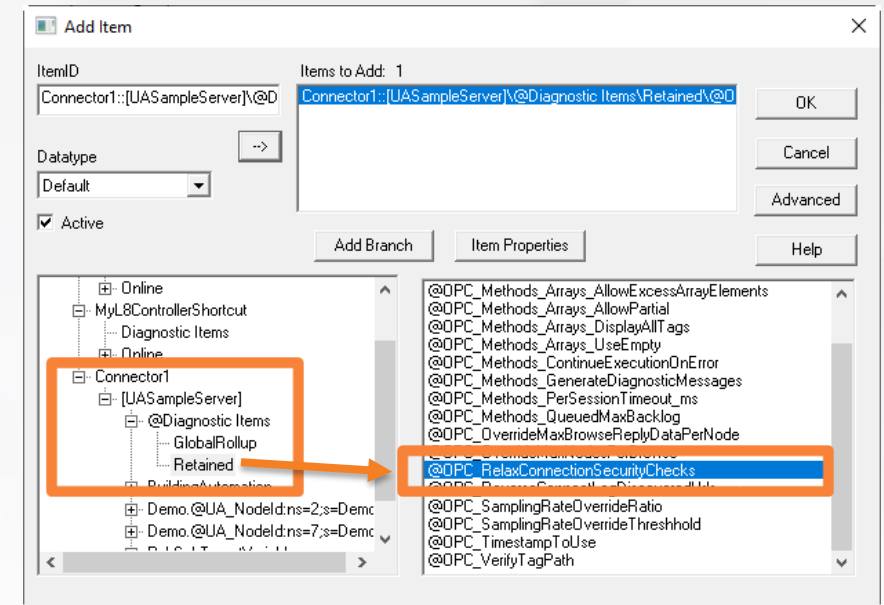
Use FactoryTalk® View SE to coordinate operations in OPC UA Servers defined using OPC companion specifications

- The FactoryTalk® Linx OPC UA Connector increased data access capabilities with each release
 - Scalar, arrays, tags-in-tags, subtypes, structures and alarms
- V6.31 added the ability to initiate simple methods in OPC UA Servers
 - Limited to methods without 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
- V6.40 extends Method support to include input and out arguments
 - Scalar, structure and array parameters



Enables communications to non-compliant servers

- The OPC Specification and the FactoryTalk® Linx OPC UA Connector expect a UA Server to deliver identical endpoint descriptions for both the discovery request and create session response
 - Some servers don't follow this requirement, helping prevent the FactoryTalk® Linx OPC UA connector from establishing communications
- V6.40 provides an option to relax this check to enable the FactoryTalk® Linx OPC UA Connector to skip this check
 - @Diagnostic Items\Retained\@OPC_RelaxConnectionSecurityChecks
 - Permits different endpoint descriptions and duplicate or missing nonce encryption value
- Limit use of this option and other precautions should be considered



FT Linx OPC UA Connector

Reverse Connection

FTLUAC ≥ v6.40

Enhanced security

- Previously the FactoryTalk® Linx OPC UA Connector would originate all connections to OPC UA Servers
- FactoryTalk® Linx Gateway v6.31 added Reverse Connection
- FactoryTalk® Linx OPC UA Connector v6.40 adds Reverse Connections
 - OPC UA Server initiates the connection
 - Once connected, the communicates FactoryTalk® Linx OPC UA Connector normally
 - Permits OPC UA server to operate behind a firewall with closed ports

Endpoint URL:
opc.tcp://DESKTOP-J1DBET4:4990/FactoryTalkLinxGateway1

● Communicating with server

Reverse Connect

Client Address
DESKTOP-J1DBET4

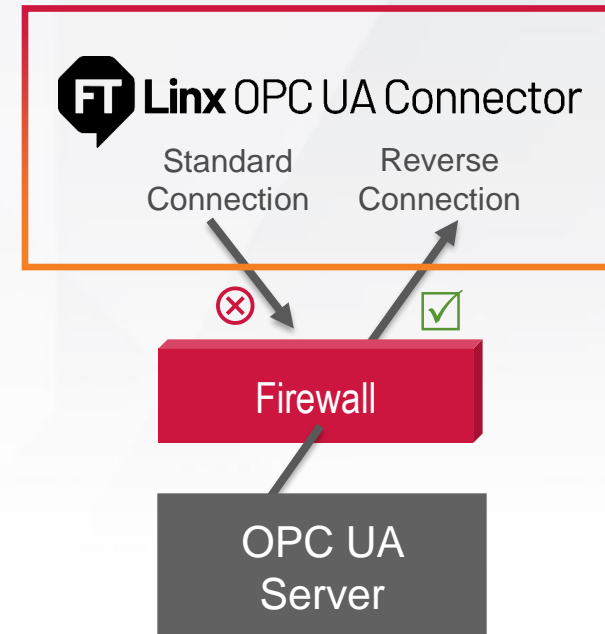
Client Port
49512

Client Endpoint URL:
opc.tcp://DESKTOP-J1DBET4:49512 Copy

Server URI:
urn:DESKTOP-J1DBET4:FactoryTalkLinxGatewayOPCUAServer

Log Reverse Connect Server Uri

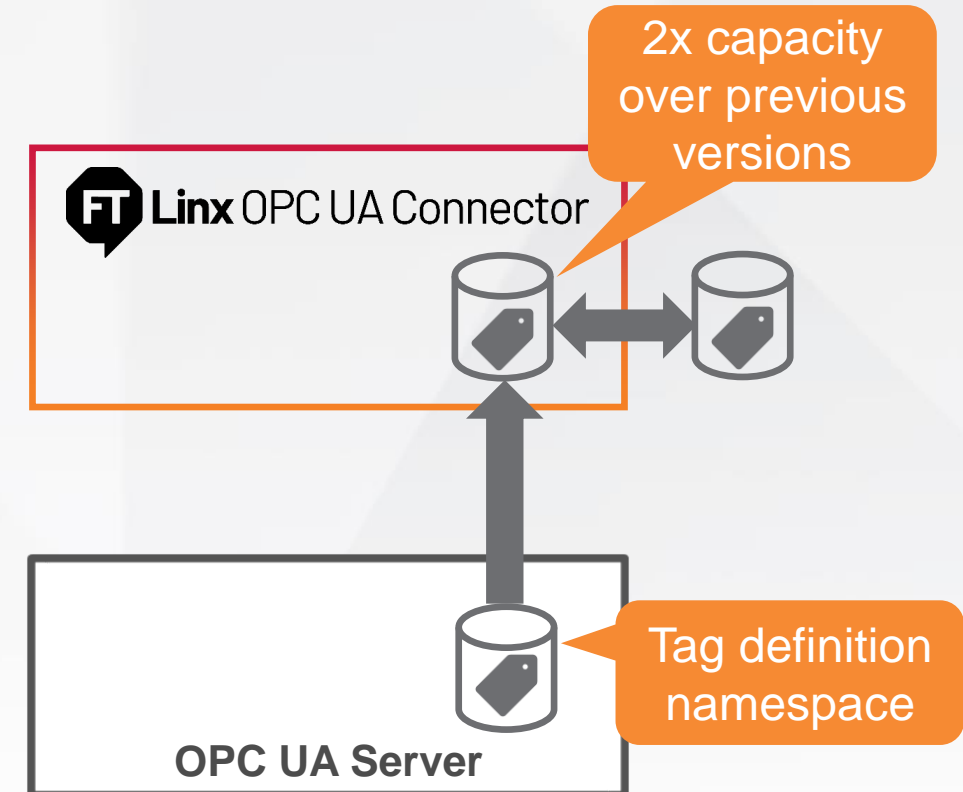
Connection URL for Server



PUBLIC

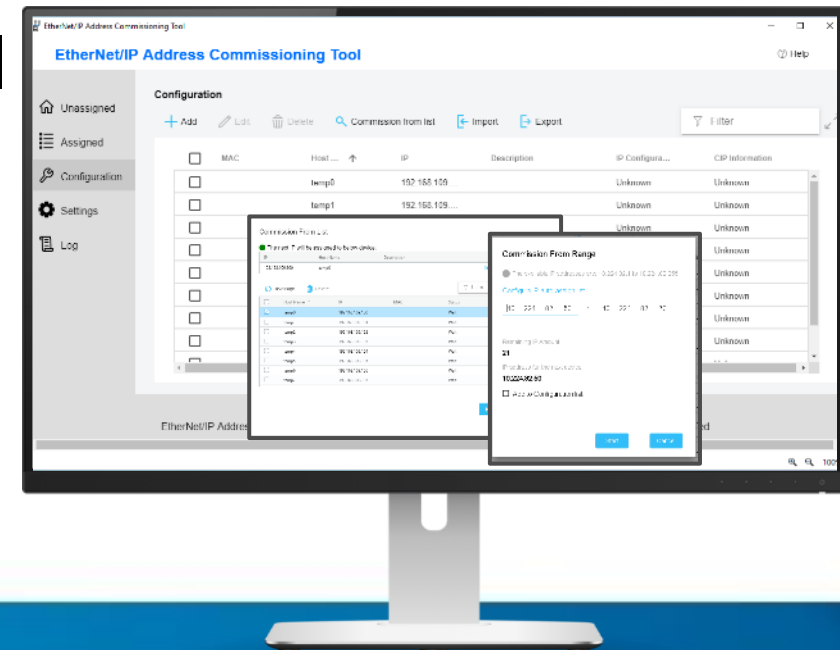
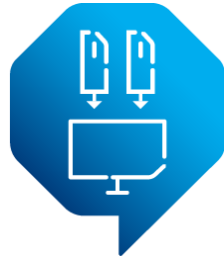
Support larger servers and fewer computers for large configurations

- The FactoryTalk® Linx OPC UA Connector uploads the entire namespace from each configured OPC Server endpoint
 - Required to support browsing for tags with FactoryTalk® software
 - Converts the namespace to align with FactoryTalk Live Data
 - Captures tag node-IDs needed for communications requests
 - Saved to disk for faster startup
 - Up to 20 endpoints / computer
- Previously the OPC UA Connector could accommodate around 200K elements in the namespace
 - Unable to communicate to OPC UA servers larger than this
 - More UA Connector computers needed
- V6.40 expanded the available memory to the service effectively doubling its capacity (~400K)



EtherNet/IP Address Commissioning Tool

More productive way to assign IP addresses for EtherNet/IP devices



New / enhanced tool

- Delivers Ethernet IP address assignments to devices making BOOTP / DHCP requests
- V1 Released 4/2021, v2 3/2022, v3 2023
- Free download on
- Replaces BOOTP tool

Enhanced Operation

- CSV import / export for IP / MAC / host name config and logs
- User option to switch CIP devices to static mode
- Run in background from tray
- PC port and firewall conflict verification
- V3 adds option to block MACs from receiving IP address, system tray operation

Multiple IP address assignment modes

- Pre-defined / Manually Entered (similar to old BOOTP tool)
- Merge MAC to configuration item
- Range (x.x.x.x to y.y.y.y)
- Commission from list (prompt to start, capture MAC and send IP)



PUBLIC

EIPACT ≥ v3.00

EtherNet/IP Address Commissioning Tool

MAC address Blocking

Avoids rework by ensuring desired IP addresses go to correct device

- Originally the EtherNet/IP Address Commissioning Tool responded to the BootP/DHCP request from any device
 - In some cases a random unconfigured device or VM session would be give an IP address that was intended for a specific automation device
- V3.0 adds an optional MAC address blocking capability
 - Once enabled you can add a device MAC address to the Blocked MAC list so their request won't be processed
 - Options to move a MAC address from unassigned and Configuration tabs
 - Import / export list from CSV file

The image displays two screenshots of the EtherNet/IP Address Commissioning Tool interface. The top screenshot shows the 'Blocked MAC Addresses' section, which includes a table with columns for 'MAC' and 'Description'. A callout box points to this section with the text 'Blocked MAC address list'. The bottom screenshot shows the 'Settings' page, where the 'Enable MAC address blocking' checkbox is checked and highlighted with an orange box. A dialog box titled 'Block MAC address' is also visible, asking 'Do you want to enable the MAC address blocking?' with 'OK' and 'Cancel' buttons.

MAC	Description
<input type="checkbox"/>	added manually from the list

Settings

Network Information

Local Server IP: 10 . 224 . 83 . 232

Subnet Mask: 255 . 255 . 255 . 0

Gateway: 10 . 224 . 83 . 1

Primary DNS Server: 10 . 126 . 25 . 100

Secondary DNS Server: 10 . 126 . . .

Network Setting

Network Interface Card: (10.224.83.232)

Enable the background service

Validate IP before assignment ⓘ

Do not show network interface card selection

Enable MAC address blocking

Block MAC address

Do you want to enable the MAC address blocking?

OK Cancel

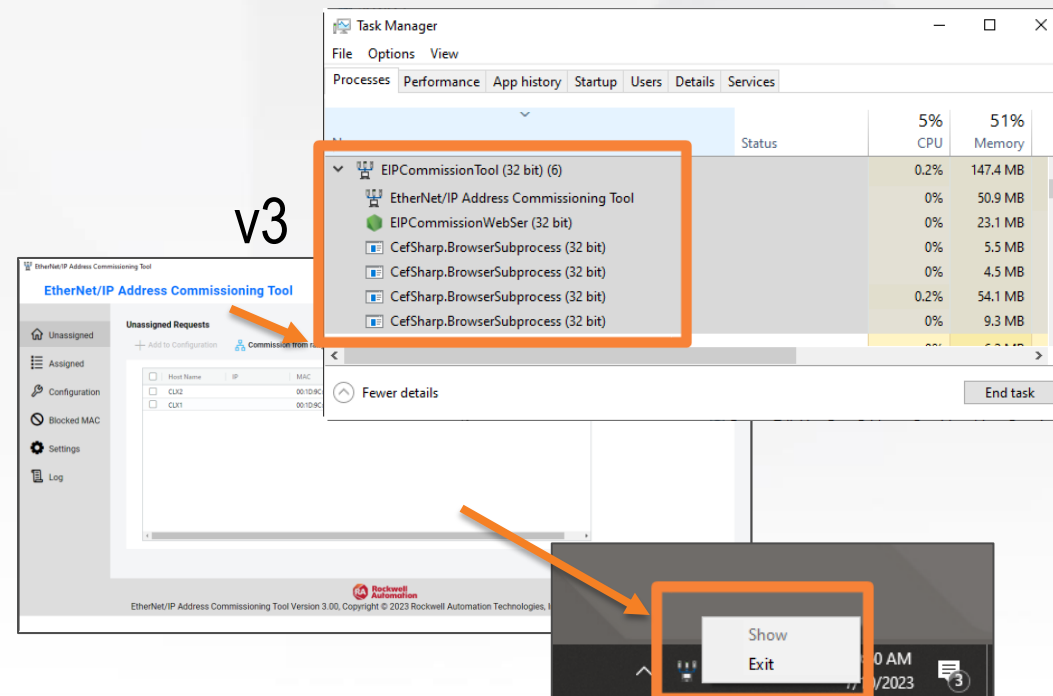
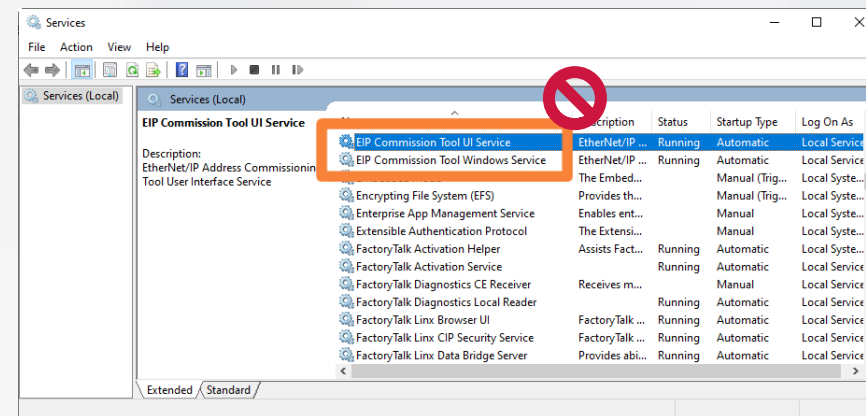


EtherNet/IP Address Commissioning Tool v2

Refactored to single executable

Single application with system tray simplifies management

- Previously the tool was designed with a background service and separate user interface
 - Service must operate continually (numerous support cases)
- V3 of the tool changes to one executable
 - Listed from Windows Task Manager (instead of services)
 - The tool can operate from the Windows system tray
 - Free up resources when the tool is closed



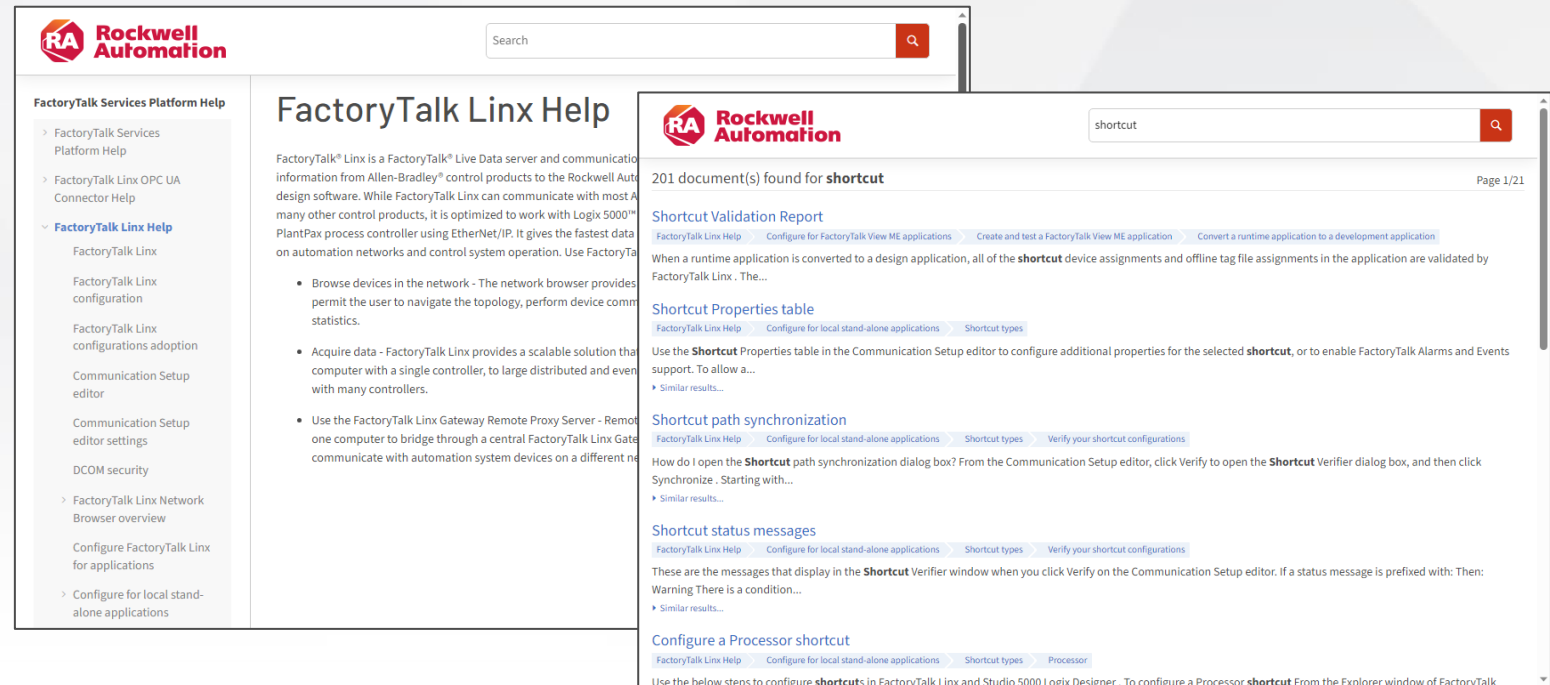
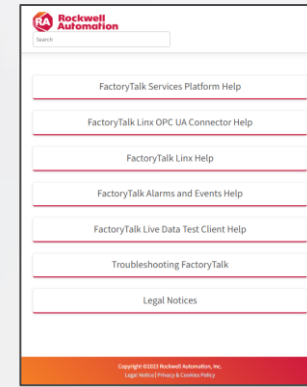
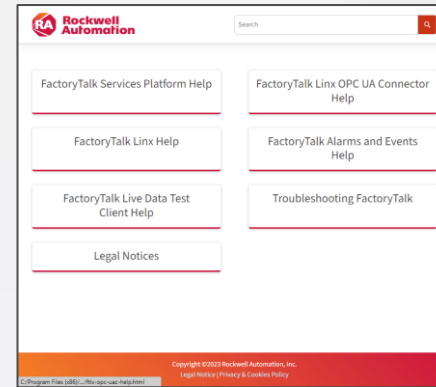


Service Platform and Communications Software

HTML Help and Release Notes redesign

Improved productivity

- FactoryTalk® Service Platform and FactoryTalk® Linx communications v6.00 software moved to HTML help
- V6.40 redesigns
 - New appearance / navigation
 - Responsive user interface
 - Improved search results with topic breadcrumbs



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