

FactoryTalk® Optix™ v1.8

Technical Overview

October 2026





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FactoryTalk® Optix™ Customer-Driven Capability Themes

The customer needs shaping our roadmap – and why each one matters



General / Customer Features

Comprehensive hardware and software offerings to meet your application demands

Continued prioritization of your requests



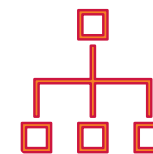
Regulatory Compliance

- Machine Regulations
- Cyber Resiliency Act (CRA)
- OPC UA Certification
- Cybersecurity Certifications



Gen AI / Co-Pilot Assistance

Helping you benefit from the power of AI with smarter design and operations assistance



Expanded Architectures

Helping you make sense of all the data in your system

Managing and securing systems with many assets

Supporting larger systems

Why?

Because your success is the foundation of ours. Thank you!

Why?

So that your systems meet global safety and cybersecurity standards with uninterrupted market access.

Why?

So that you can create better applications faster and keep your machines running longer more efficiently.

Why?

As technology evolves, we want to be the OT company that your IT department wants to work with.



FactoryTalk® Optix™ Development Priorities

The four pillars we build against — how the themes become engineering priorities



Core Capabilities

- Core product capabilities that create a **strong** and **sustainable** platform for core automation **visualization** and **edge applications**.



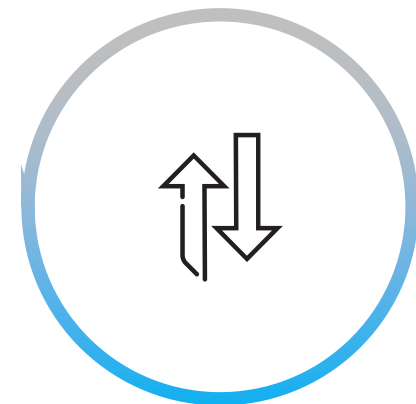
Expanded Architectures

- Support for **integrated hardware**, larger distributed **architectures**, process **systems**, remote control, and **cloud-based operations**.



Digital Design Experience

- **FactoryTalk® Hub™** integrated workflows for a cohesive customer experience when building a system using **SaaS-based design tools**.



Data Connectivity

- Robust **edge connectivity** and application platform to enable data and **analytics** with core **operations data**.



| FactoryTalk® Optix™ v1.8 – Focus Areas Delivered

What ships in v1.8 against each development focus area



Core Capabilities

- Retentivity Backup & Restore
- Download and Upload files from the Web
- Report DataGrid Word Wrap
- RA EtherNet/IP API for design-time tag browsing and import
- Recipe Schema APIs for design-time configuration



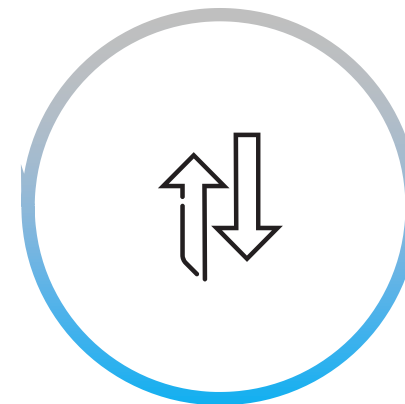
Expanded Architectures

- High Availability Runtime cluster
- Workstation Client
- ThinManager® user SSO into Optix application
- New Runtime Licensing - Base + Extended



Digital Design Experience

- AI Design Assistance
- FactoryTalk® Design Studio™ integration
- Offline tag import



Data Connectivity

- MQTT Enhancements
- Complex datatypes support
- Event log publishing
- RA Device Driver for direct connectivity to PowerFlex® drives



Core Capabilities

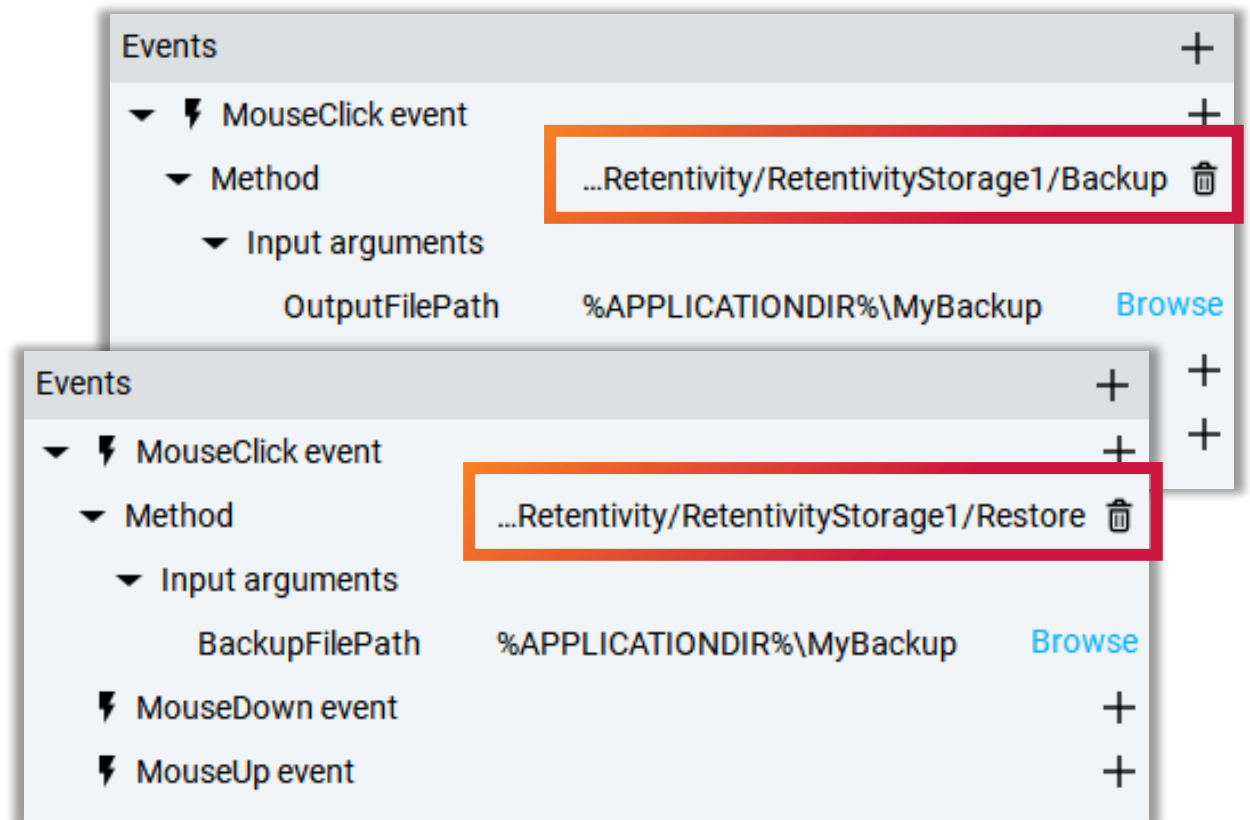


Retentivity Backup and Restore

Core Capabilities

The **Retentivity Storage** now provides **Backup** and **Restore** methods:

- **Save** the current retentive data state to a **backup file**
- **Restore** retentive data from an existing backup





| Download and Upload from Web

Core Capabilities

Added **Download** and **Upload** methods to the UI Session:

- **Download files** from the Runtime to the **client device**
- **Upload files** from the client device to the **Runtime**

The image displays two overlapping screenshots of the Rockwell Automation software interface, specifically the 'Events' configuration panel. The top screenshot shows the configuration for the 'MouseDown event' method, where the 'Method' is set to '{Session}/DownloadFile'. The bottom screenshot shows the configuration for the 'MouseDown event' method, where the 'Method' is set to '{Session}/UploadFile'. Both screenshots show the 'Input arguments' section with fields for 'FilePath' and 'FileName' (or 'OutputPath' in the bottom screenshot) and a 'Browse' button. The 'DownloadFile' method in the top screenshot has 'FilePath' set to '%PROJECTDIR%\report.pdf' and 'FileName' set to 'MyReport'. The 'UploadFile' method in the bottom screenshot has 'OutputPath' set to '%PROJECTDIR%\MyFolder\'.

Event	Method	Input arguments
MouseDown event	{Session}/DownloadFile	FilePath: %PROJECTDIR%\report.pdf, FileName: MyReport
MouseDown event	{Session}/UploadFile	OutputPath: %PROJECTDIR%\MyFolder\

RA | Readable Reports for Long-form Data

Core Capabilities

New **word wrap** control in the Report DataGrid:

- **Present** long-form entries such as timestamps, batch records, audit logs, and operator notes **in full**
- Give report authors **direct control** over how cell content flows across **multiple lines**

The diagram illustrates the 'word wrap' capability by comparing two versions of a 'Datalogger Report' table. An orange arrow points from the 'Expanded row display' (bottom) to the 'Standard row display' (top).

Standard row display (Top): Shows a table with 8 columns: Timestamp, LocalTimestamp, Variable1, Variable2, Variable3, Variable4, Variable5, and Variable6. The first two columns contain long, multi-line timestamps (e.g., 'Jul 14, 2026, 2:59:02 PM') that are truncated in the standard view. The other variables contain numerical values.

Expanded row display (Bottom): Shows the same table structure, but the first two columns are expanded to display the full, multi-line timestamps across multiple rows. This demonstrates how the 'word wrap' control allows long-form data to be presented in full across multiple lines.

7/14/26, 4:58 PM

▼ Standard row display Datalogger Report

Timestamp	LocalTimestamp	Variable1	Variable2	Variable3	Variable4	Variable5	Variable6
Jul 14, 2026, 2:59:02 PM	Jul 14, 2026, 4:59:02 PM	810,324	75,479	215,296	695,102	35,179	376,976
Jul 14, 2026, 2:59:01 PM	Jul 14, 2026, 4:59:01 PM	630,252	88,419	161,472	540,635	41,209	282,732
Jul 14, 2026, 2:59:00 PM	Jul 14, 2026, 4:59:00 PM	438,926	99,201	107,648	376,514	46,235	188,488
Jul 14, 2026, 2:58:59 PM	Jul 14, 2026, 4:58:59 PM	225,090	105,671	53,824	193,084	49,250	94,244

7/14/26, 4:59 PM

Datalogger Report

Timestamp	LocalTimestamp	Variable1	Variable2	Variable3	Variable4	Variable5	Variable6
Jul 14, 2026, 2:59:02 PM	Jul 14, 2026, 4:59:02 PM	804,669	-40,974	524,784	897,841	-19,097	918,879
Jul 14, 2026, 2:59:01 PM	Jul 14, 2026, 4:59:01 PM	2102,941	-19,409	470,960	946,112	-9,046	824,635
Jul 14, 2026, 2:59:00 PM	Jul 14, 2026, 4:59:00 PM	3125,450	2,157	417,136	965,420	1,005	730,391
Jul 14, 2026, 2:58:59 PM	Jul 14, 2026, 4:58:59 PM	4102,941	23,722	363,312	946,112	11,056	636,147
Jul 14, 2026, 2:58:58 PM	Jul 14, 2026, 4:58:58 PM	5046,669	38,818	322,944	897,841	18,092	565,464

▲ Expanded row display in v1.8



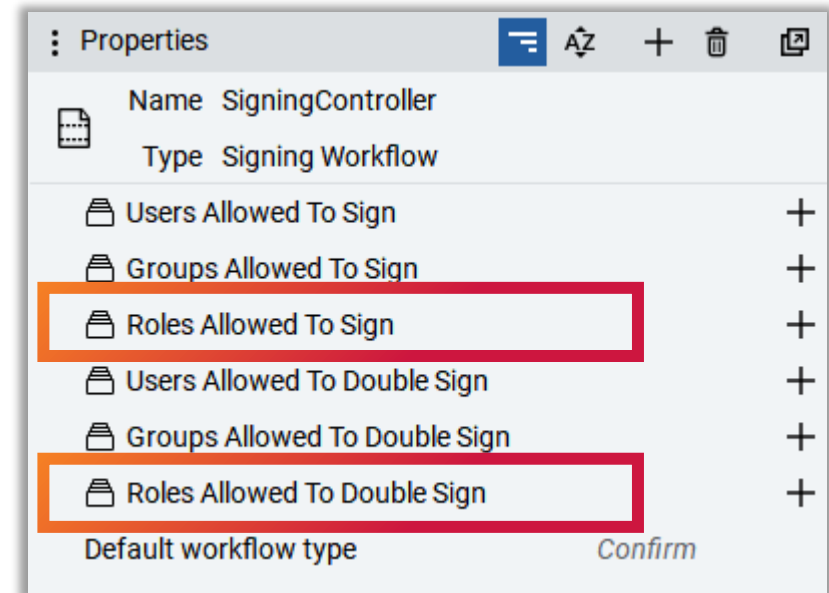
Signing Workflow with Role-Based Signatures

Core Capabilities

The **Signing Workflow** now supports **Roles**.

From the **Signing Controller** you can now define:

- **Roles Allowed to Sign:** grant signing rights to one or more roles, such as Operator or Supervisor
- **Roles Allowed to Double Sign:** require a second, independent approval from a different role for critical actions





| New C# APIs

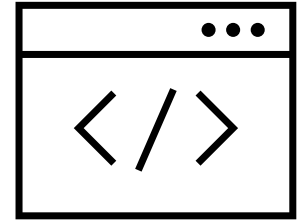
Core Capabilities

1- Added an RA EtherNet/IP API for design-time tag **browsing** and **import**:

- **Browse** controller tags programmatically
- **Import** tags at design time using NetLogic

2- Added APIs for design-time **Recipe Schema** configuration:

- **Create** and **modify** Recipe Schemas using NetLogic
- **Automate** recipe setup and maintenance

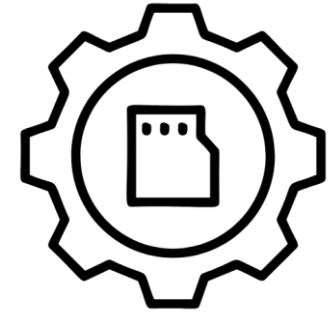




| Memory Optimization: Copy-On-Write (CoW)

Core Capabilities

Copy-on-Write reduces unnecessary duplication of frequently used identifiers. This **lowers memory consumption** and makes large FactoryTalk® Optix™ applications more efficient, particularly on memory-constrained devices.



How it works

- CoW Copies share the same data, increasing only a reference counter
- New memory is allocated only when a shared value is modified

Measured benefits

- Up to 16% lower memory usage on large projects
Example: 7.35 GB → 6.15 GB with 3 million nodes
- 49–71% faster copies,
with per-copy overhead reduced from 32–40 bytes to 8–16 bytes



Expanded Architectures



Workstation Clients

Expanded Architectures

Run FactoryTalk® Optix™ applications as **workstation clients**. This delivers several immediate benefits:

- **Simple project enablement.** Configure the maximum number of workstation client connections.
- **Easy installation** through a supported browser.
- **Convenient desktop launch** experience using familiar application shortcuts.
- **Consistent user experience** across web and workstation clients, reducing deployment complexity.
- **Support for kiosk-style deployments**, enabling dedicated operator stations with a full-screen experience when used with supported browser and operating system configurations.

The screenshot shows a web browser window displaying a FactoryTalk Optix application. The browser's address bar shows the URL 127.0.0.1:8443. An "Install app" dialog box is overlaid on the application, with the text "FactoryTalk Optix Runtime - 127.0.0.1 - 8443" and "127.0.0.1:8443". The dialog has "Install" and "Cancel" buttons. A red arrow points from the "Install" button to the "Maximum number of workstation connections" property in the Properties panel below. The Properties panel shows the following information:

Properties	
Name	WebPresentationEngine
Type	Web presentation engine
Maximum number of web connections	1
Maximum number of workstation connections	1



FactoryTalk[®] Optix[™] High Availability (HA) Overview

What is High Availability

- High Availability is the ability of a FactoryTalk Optix application to remain operational and accessible for a long period.
- It is achieved by deploying an application to a three-node high availability runtime cluster, ensuring that if the primary node fails, a standby node immediately takes over to prevent downtime and keep the application running.

Core concepts of High Availability

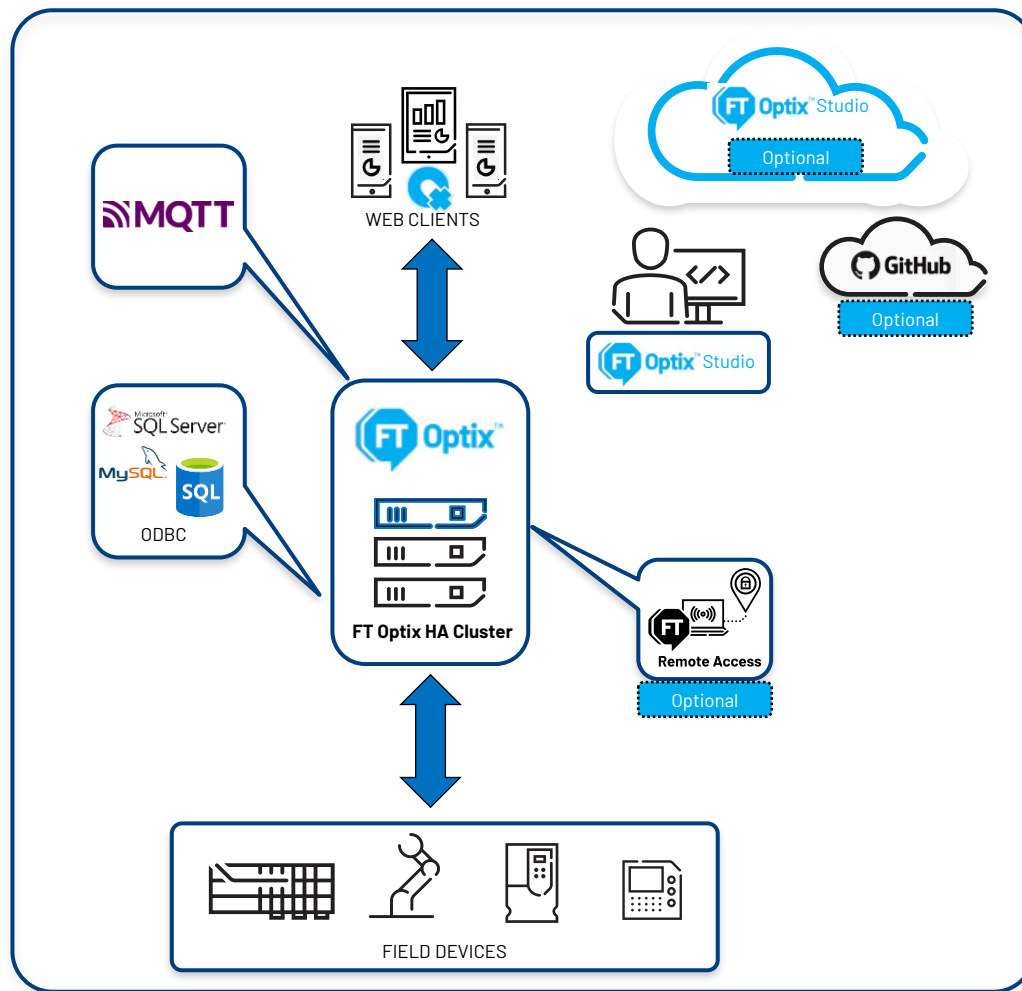
- Three-node High Availability Runtime Cluster: A group of three interconnected servers (nodes) that run the FactoryTalk Optix application with synchronized data.
- Automated Failover: The process of automatically switching to a standby node if the primary node fails or goes offline.
- Fault Tolerance: The ability for the application to continue functioning when a node or software component fails.

Why High Availability Matters

- Ensures the FactoryTalk Optix application remains continuously operational and accessible.
- Guarantees stakeholders have reliable, real-time access to critical insights.
- Helps meet system uptime percentages over a designated period - referred to as "nines" (99.99%).



FactoryTalk[®] Optix[™] High Availability Runtime Cluster

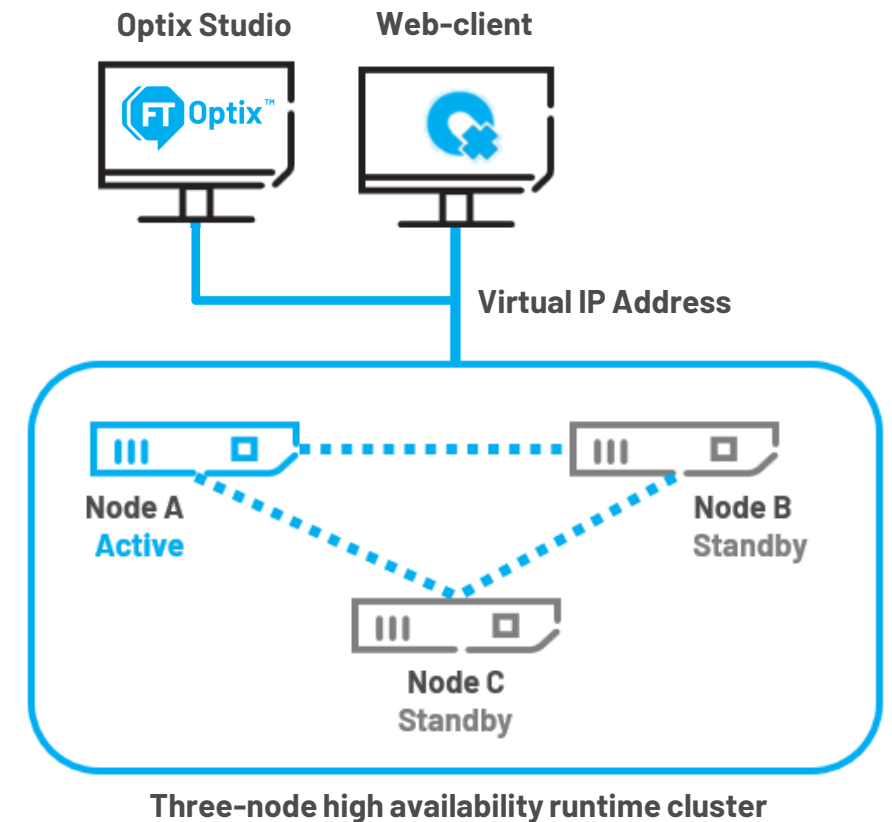




| Three-node Highly Available Runtime Cluster

FactoryTalk® Optix™ runtime data synchronization and failover to standby server

- Runtime application is deployed to a three-node high availability cluster
- One active node runs the application, with two standby nodes ready for automatic failover
- Data is replicated across three separate nodes to ensure availability
- System can tolerate a node failure without losing access to data or services
- Each node holds a full copy of critical data, allowing seamless failover from active to standby node
- Automatic resynchronization occurs when a failed node comes back online
- Clients connect via a virtual IP and automatically reconnect to the active node during failover





| Key Benefits of a 3-node Highly Available Cluster

Recommended for maximum reliability and uptime



Maximize uptime by design

Continued reliable operation even after one node is unavailable.



Minimize split-brain risk

A clear primary runtime is always maintained across the cluster.



Industry standard for modern architecture

Best practice and recommended solution providing superior reliability and maximizes uptime



Ready to scale

Supports load balancing as Optix grows to larger architectures (planned).

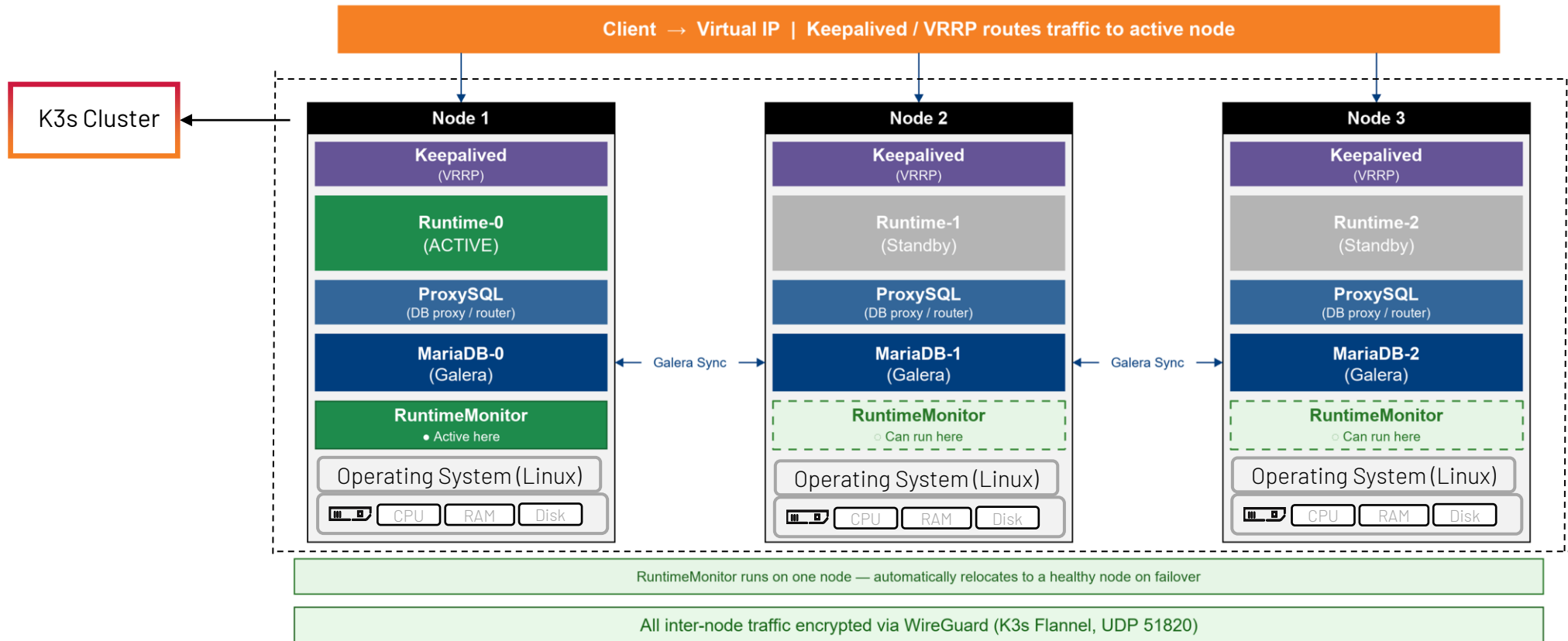


“FactoryTalk Optix High Availability is built to keep systems running smoothly through failures, maintenance, and growth.”



High Availability Architecture

Always available. Always synchronized. Always ready.



Additional capabilities may be added to each release as priorities are refined.



Kubernetes Overview



Kubernetes is an open-source platform that automates deploying, scaling, and managing containerized applications

CORE CAPABILITIES

Load balancing

Spreads network traffic evenly so no single part of the app gets overloaded

Self-healing

Automatically restarts dead or failing containers and replaces unhealthy ones

Auto-scaling

Grows or shrinks the number of running app copies based on how much work or traffic there is

K3s A fully certified, lightweight, easy-to-install Kubernetes distribution for resource-constrained environments. The Optix high availability solution is designed to support any Kubernetes compliant cluster with version 1.34.6 or later.

KEY CONCEPTS

Cluster A group of physical or virtual machines working together to run applications

Node An individual computer (worker machine) inside the cluster

Pod The smallest group of containers running your app together on a node

Control Plane The central brain that watches the system and decides where pods should run

Industry standard A well-proven, *de facto* platform for container orchestration



FactoryTalk[®] Optix[™] High Availability Manager

A high availability cluster install and management tool

1

Pre-requisites

- Three physical PCs to form the cluster
- Install Linux OS (native or virtual)
- Network / IP address configuration
- Obtain virtual IP address

2

Install cluster package – complete delivery bundle of container images and charts

- Keepalive for virtual IP management
- K3s Lightweight Kubernetes for container orchestration
- FactoryTalk Optix Installable Runtime
- RuntimeMonitor and UpdateServer for health, status and coordinated updates
- MariaDB Galera cluster for synchronized, fault-tolerant data replication

3

Port configuration

- MQTT, OPC-UA and Web presentation engine ports

4

Manage entitlements

- Base and extended licenses

Node name	IP address	User name	Password (optional)
Node1	10.0.0.71	haadmin	Password
Node2	10.0.0.72	haadmin	Password
Node3	10.0.0.73	haadmin	Password

Buttons: Exit, Back, Next, Validate nodes

Port name	Port #
MQTT broker	8883
OPC-UA server	59100
Web presentation engine (http)	80
Web presentation engine (https)	443

Buttons: Exit, Back, Install, Delete, + Add port



FactoryTalk® Optix™ v1.8 High Availability

Without High Availability

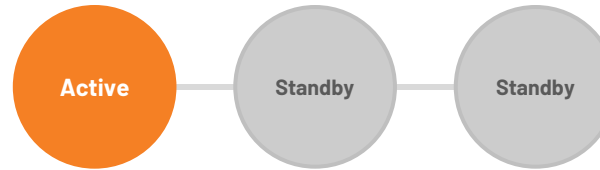
- ✗ Server down means the application and all clients are down
- ✗ Recovery can take multiple hours to days
- ✗ Days of lost visibility and data
- ✗ Replicating server is costly (2 x Optix Runtime entitlement)

With High Availability

- ✓ Application and clients switch automatically to the next active node
- ✓ Recovery in seconds or minutes
- ✓ Minimal visibility and data loss
- ✓ Cost effective (1 x Optix Runtime entitlement)

How it will be implemented

Three-node cluster



- A new deployment option for Optix Runtime.
- Enable high availability in the Optix project.
- Deploy to a three-node cluster with the Optix HA Manager.
- One active node, two standby nodes for automatic failover.
- Application replicated across all three nodes.
- Tolerates a node failure with minimal loss of service.
- Clients reconnect automatically during failover.

Takeaways

- Built to keep systems running through failures, maintenance, and growth.
- Proven off-the-shelf technology (Kubernetes, containerized deployment) with simple configuration.
- Existing single-server runtimes upgrade easily to an HA deployment using extended feature tokens.
- Reach out to your local Rockwell Automation or distributor contact with any other questions.



ThinManager® 14.2 + FactoryTalk® Optix™ 1.8



| Containerized Applications Managed by ThinManager®

Docker container technology to run and visualize applications

OT-friendly
ThinManager® tools
make containers easy to
use and visualize

Remove maintenance of
and investment in
server-based resources
all together by running
ThinManager® on an IPC
and applications in
containers

Web-browser container

- Firefox, Chrome, Citrix StoreFront
- Access web applications without requiring RDS-hosted browsers
- Patch browsers quickly and easily through ThinManager



FactoryTalk® Optix™ runtime container

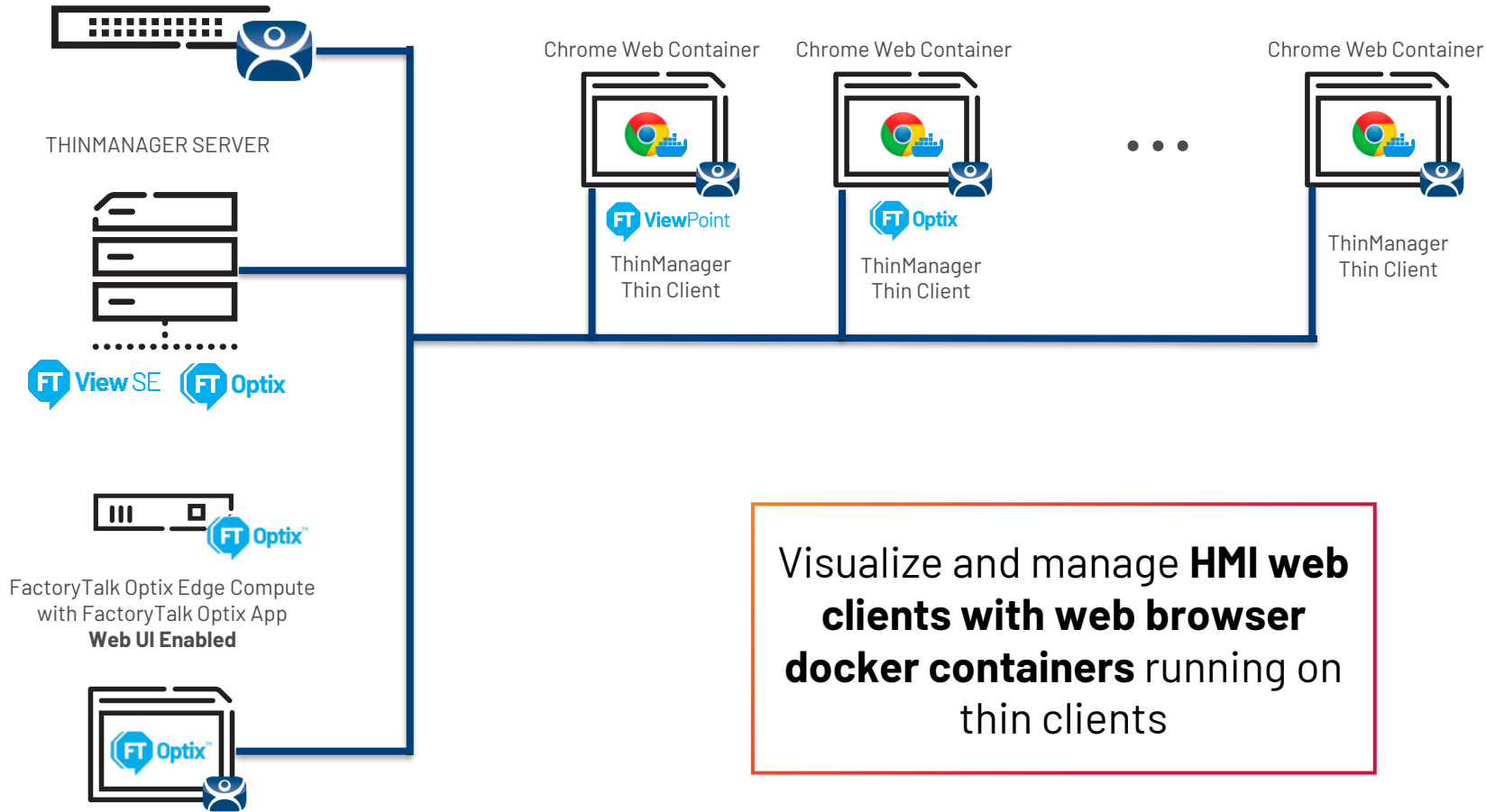
- Export application from Optix Studio and utilize Native Presentation Engine to run container on thin client
- Deploy, manage and scale FT Optix applications through ThinManager





Managed Web Clients

Utilize ThinManager® Chrome or Firefox docker container to connect to web-based software

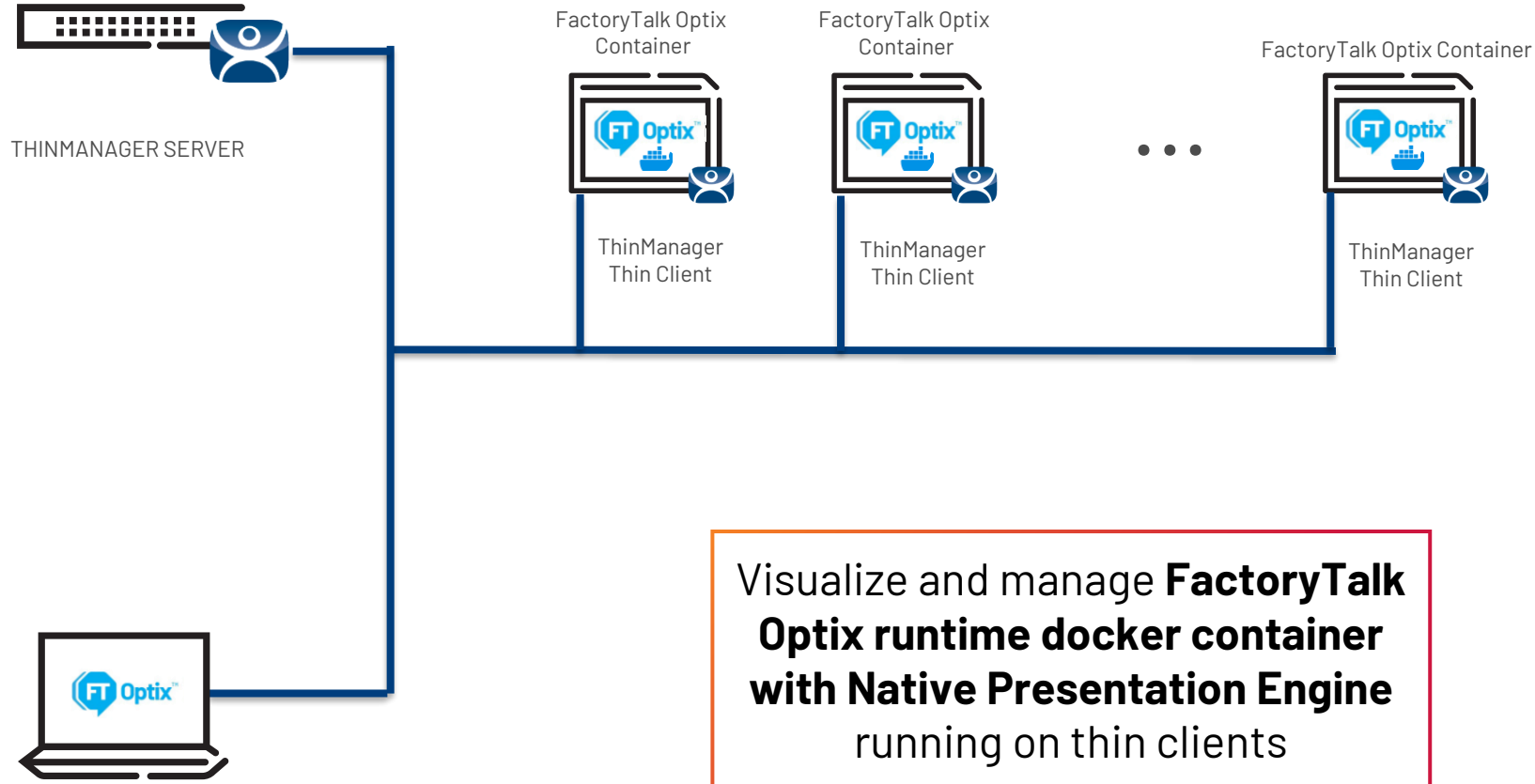


Visualize and manage **HMI web clients with web browser docker containers** running on thin clients



| Managed Runtime Containers

Utilize FactoryTalk® Optix™ Native Presentation Engine in ThinManager® docker container



Visualize and manage **FactoryTalk Optix runtime docker container with Native Presentation Engine** running on thin clients

Laptop with FactoryTalk Optix Studio
Export .ZIP file to ThinManager Server



Value of Managing FactoryTalk® Optix™ with ThinManager®

- **SSO functionality** requires Optix 1.8 and installation of the FactoryTalk Optix ThinManager extension into Optix Studio (available on ThinManager.com following Optix 1.8 release)
- **Choose hardware** with FactoryTalk® Hub™ for Optix Runtime and Device Sizing Tool
- **Properly license** each terminal with an Optix Container Display Client that will require unique Optix entitlement key
- **Connect thin clients to the internet** as Optix 1.6+ and ThinManager 14.2 only supports online entitlements for Docker Container deployments
- **Utilize the FactoryTalk Optix Native Presentation Engine** from the ThinManager-hosted Optix docker container

Key considerations

- Finish development and **deploy final version** of Optix HMI application
- **Store and manage multiple versions** of your Optix application in ThinManager
- **Scale** your solution and **deploy** applications to visualize on **multiple ThinManager terminals**
- **Speed up boot times** with ThinManager + ASEM local storage option BootAssist™ to cache container image and Optix application on thin client

Key benefits

Managing FactoryTalk® Optix™ with ThinManager

For customers who want secure, centrally managed FactoryTalk® Optix™ applications

Increased Security

Reduce cybersecurity footprint with **zero clients** running docker containers utilizing local device memory

Double-insulated web browser **isolated** within a Docker Container hosted on **closed** Linux firmware

Reduce IT Management

Simplify firmware **updates** and patch **management** of browsers and applications

Reduce Device Management

Replace failed thin clients in **under 2 minutes**

Reduce time to **commission** and **configure** FactoryTalk Optix applications

Scalable Visualization

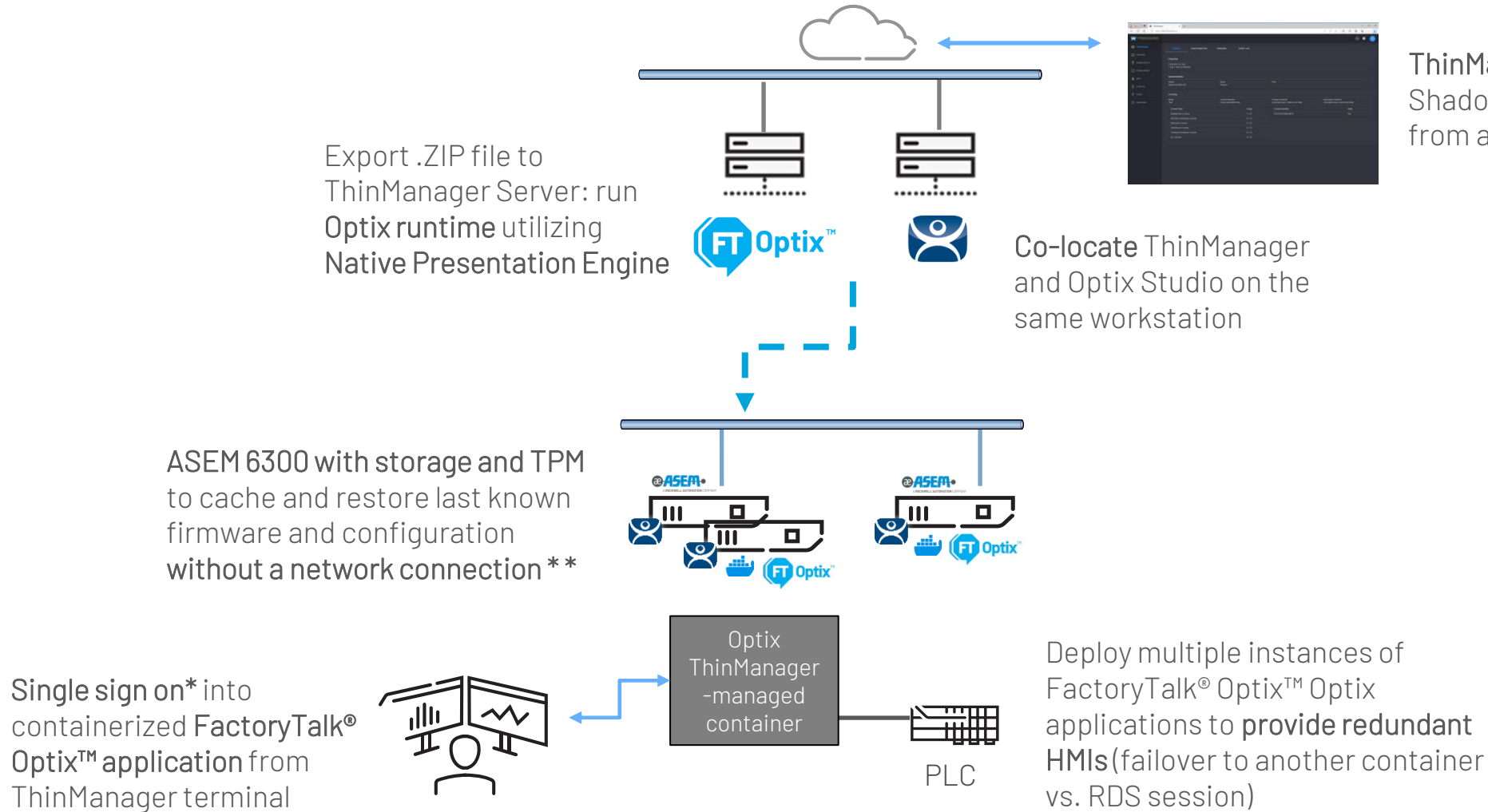
Promote HMI and terminal **configuration consistency** by configuring once, deploying to many

Deliver **other content** sources (Windows applications, IP cameras, VNC servers and more) with your ThinManager-managed FactoryTalk® Optix™ applications





Proposed Architecture: ThinManager® v14.2 + FactoryTalk® Optix™ v1.8 + ASEM™ 6300 (Simplified)



*SSO requires ThinManager 14.2, Optix 1.6, and installed extension into Optix Studio

**Booting of container image still requires ThinManager Server connection with v14.2

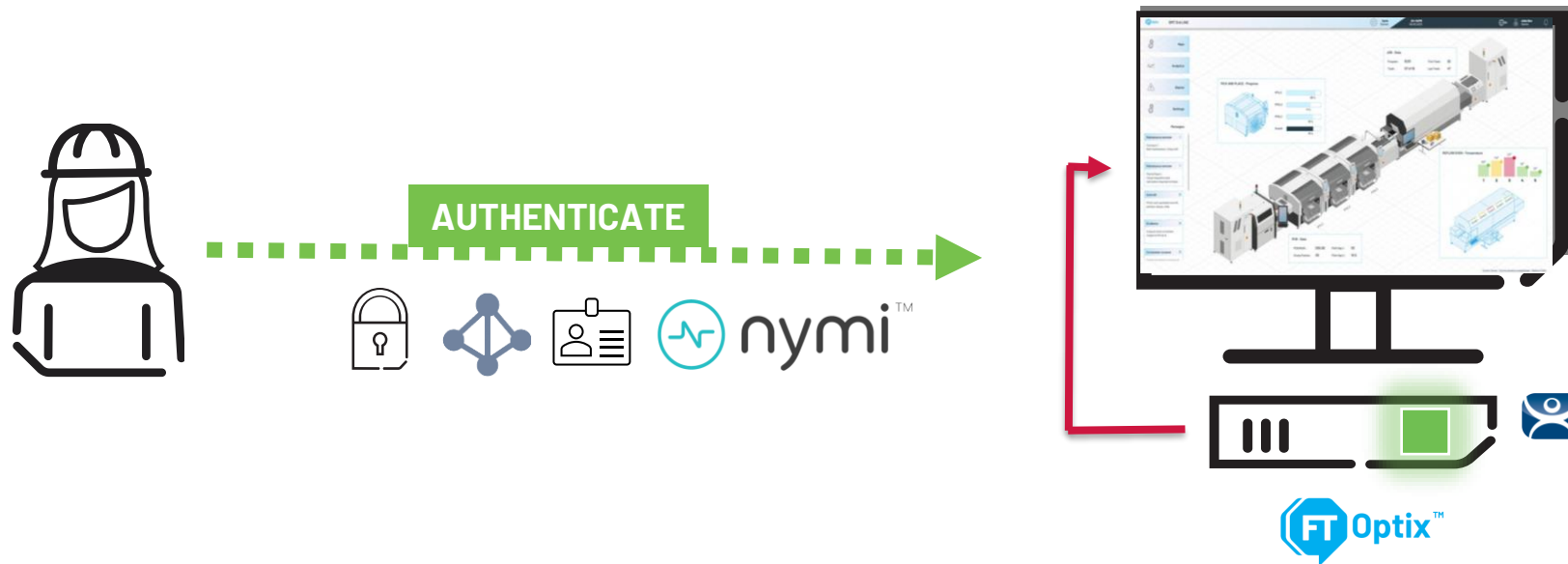
Coming soon!

Disconnected license support for Optix running in ThinManager container (Optix 1.8 and ThinManager 14.3)



ThinManager® User SSO into FactoryTalk® Optix™ Application

Pass ThinManager authentication through to FactoryTalk Optix applications running in a ThinManager container*



Increase operator productivity by **eliminating multiple login prompts** into both ThinManager and Optix separately

Leverage traditional ThinManager user authentication methods to **secure access to workstations and applications**

*Available with the release of FactoryTalk Optix 1.8. Requires **installation** of the FactoryTalk Optix ThinManager extension into Optix Studio (will be available on ThinManager.com following Optix 1.8 release)



Digital Design Experience



AI Design-Time Assistant Your Product Documentation Expert

documentation-grounded guidance, reviewed by the user



Onboard

Get structured guidance from day one instead of starting from a blank canvas.

Reduces time to first project



Configure

Ask how-to questions and get answers grounded in official and improved Optix documentation.

No manual hunting required



Learn

Build knowledge for Optix concepts without switching to external resources.

Stay in Studio, stay in your flow

Embedded in FactoryTalk® Optix Studio™ • Powered by approved documentation • Guided by you



| How it Works

Your product documentation expert

1

Ask in natural language

Type in the AI chatbot panel inside Studio. Ask like you'd ask a colleague: *"How do I configure an OPC UA connection?"*

2

Optix docs are searched

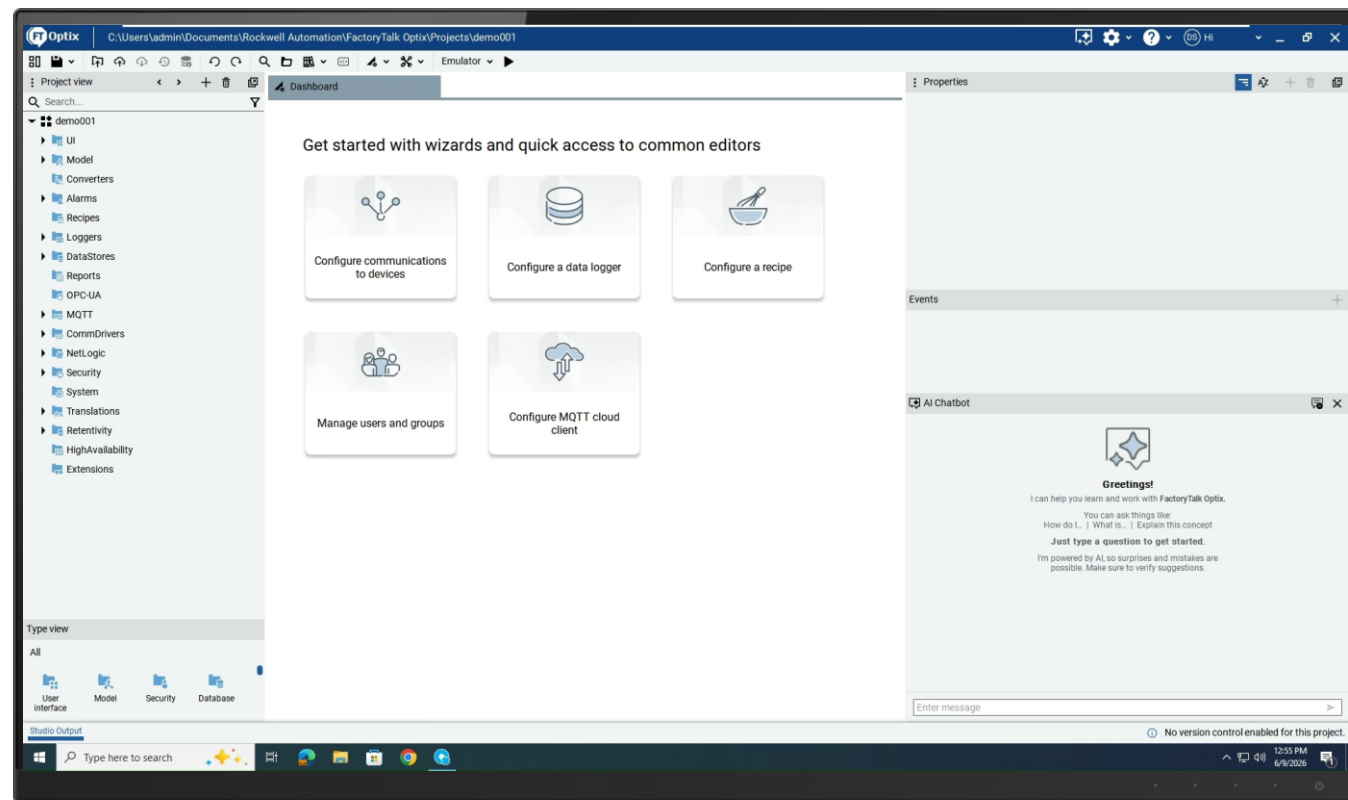
Semantic search finds the most relevant content across official Optix documentation, understanding intent beyond keywords.

3

Answer appears in Optix Studio

A formatted response returns in the chat panel, structured steps, code blocks, and links to source documentation.

AI-generated answer based on Optix documentation. Verify critical steps before applying.



Project files stays local

The assistant sends the user's question + relevant documentation context to the LLM for inference.



| AI Design-Time Assistant: What's Included in Optix 1.8?

What you can do today with your product documentation expert



Integrated AI Assistant

Toolbar button opens a persistent right-side chat panel embedded in Optix Studio



Semantic Search

Understands your intent beyond keyword matching, surfacing related concepts and examples



Grounded in Approved Sources

Answers drawn from official Optix documentation only



Source Links

Jump directly to the source documentation behind any answer for full context



Copy & Reuse

Extract answers, steps, or code blocks straight into your project work



Session Context

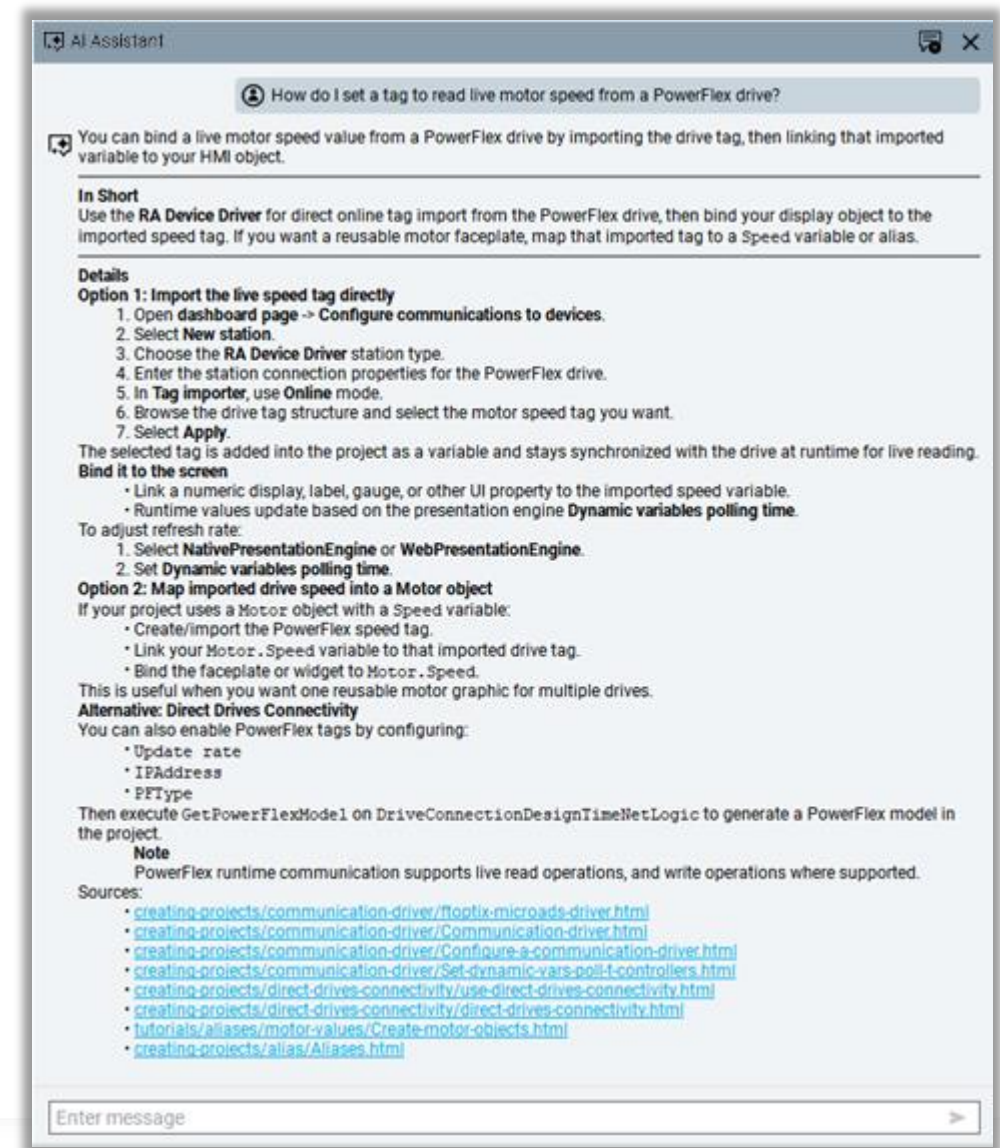
Carry context across follow-up questions within your session



| AI Design-Time Assistant: What It Does

What It Does

- ✓ Answers how-to, what-is, and concept questions about FT Optix
 - *User guide, installation guide, release notes, NetLogic cheat sheet*
- ✓ Grounds every response in approved Optix documentation
 - *Headings, code blocks, bold text*
- ✓ Guided procedures with markdown formatting step-by-step answers
 - *100 Q&A pair session memory*
- ✓ Carries conversation context within your project
 - *100 Q&A pair session memory*
- ✓ Links you to source documentation for any answer
- ✓ User stays in control by reviewing and verifying before acting





Getting Started with the AI Design-Time Assistant

BEFORE YOU BEGIN



Desktop version of FT Optix Studio 1.8

installed and running



Pro subscription

active on your FT Hub organization



Connection to FT Hub

required to validate entitlement and reach the AI cloud model

The FT Optix application does not require a separate internet access connection

YOUR FIRST SESSION

1

Open FT Optix Studio (desktop version)

Login to FT Hub, and Open the AI assistant chat panel

2

Ask a question in natural language

For example:

"How do I...?"

"What is...?"

"Explain this concept..."

3

Review the AI-generated response

Use provided guidance

Open referenced source content

Ask follow-up questions

Copy and reuse responses

In 1.8, only the user's question and relevant docs are sent to the LLM.



| Responsible AI by Design

Trusted guidance, protected data, and clear operational boundaries

Trusted Answers

- Grounded in approved FT Optix documentation
- Includes links to supporting sources

User Stays in Control

- Advisory guidance only
- Users review and apply recommendations

IP & Data Protection

- Customer data is not used to train AI models
- Project files remain in FT Optix Studio
- Azure OpenAI provides inference services

Defined Boundaries

- No PLC writes
- No runtime control
- No autonomous project modifications

Built using Rockwell AI governance and Responsible AI practices.



| AI Design-Time Assistant Use Cases Examples

Scenarios where in-context guidance accelerates project development

ONBOARDING

Navigation + Screen Setup

“ What’s a good starter screen and navigation structure for a machine HMI?

CORE CONCEPTS

Types vs. Instances

“ When should I create a custom type in Optix instead of copying objects?

SETUP GUIDANCE

Tag Binding + Connectivity

“ What’s the best practice to connect controller tags and bind them to widgets?

BEST PRACTICES

Data Logging + Trends

“ How many data logs can I configure, and what’s the recommended approach for trends in a typical machine application?

TROUBLESHOOTING

Configuration Symptoms

“ My alarms aren’t updating as expected, what should I check first in my project configuration?

RA | User Scenario: MQTT Configuration

Advanced how-to guidance helps experienced engineers configure faster



How do I customize the MQTT payload in Optix, and where is that configured?

Pain Points:

- **Documentation hunting**

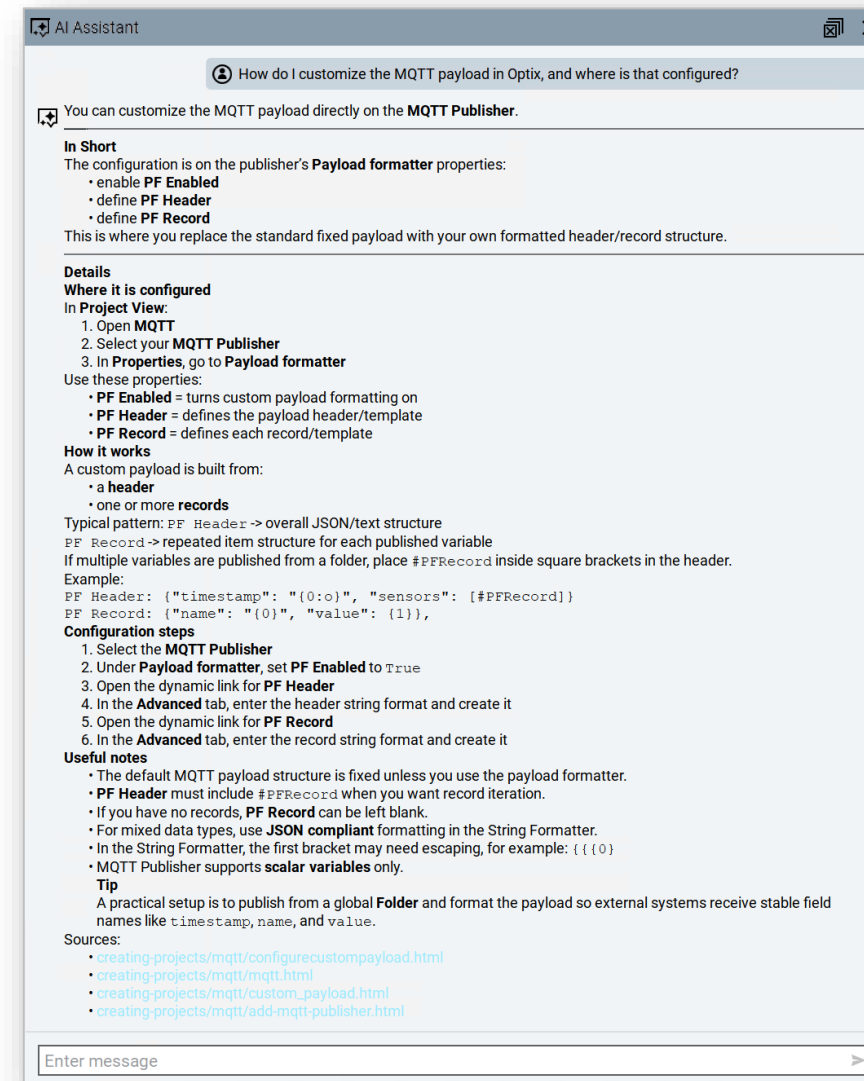
Losing time searching documentation for specific configuration steps

- **Trial and error configuration**

Without clear guidance on advanced settings, users spend time guessing and troubleshooting

- **Context-switching overhead**

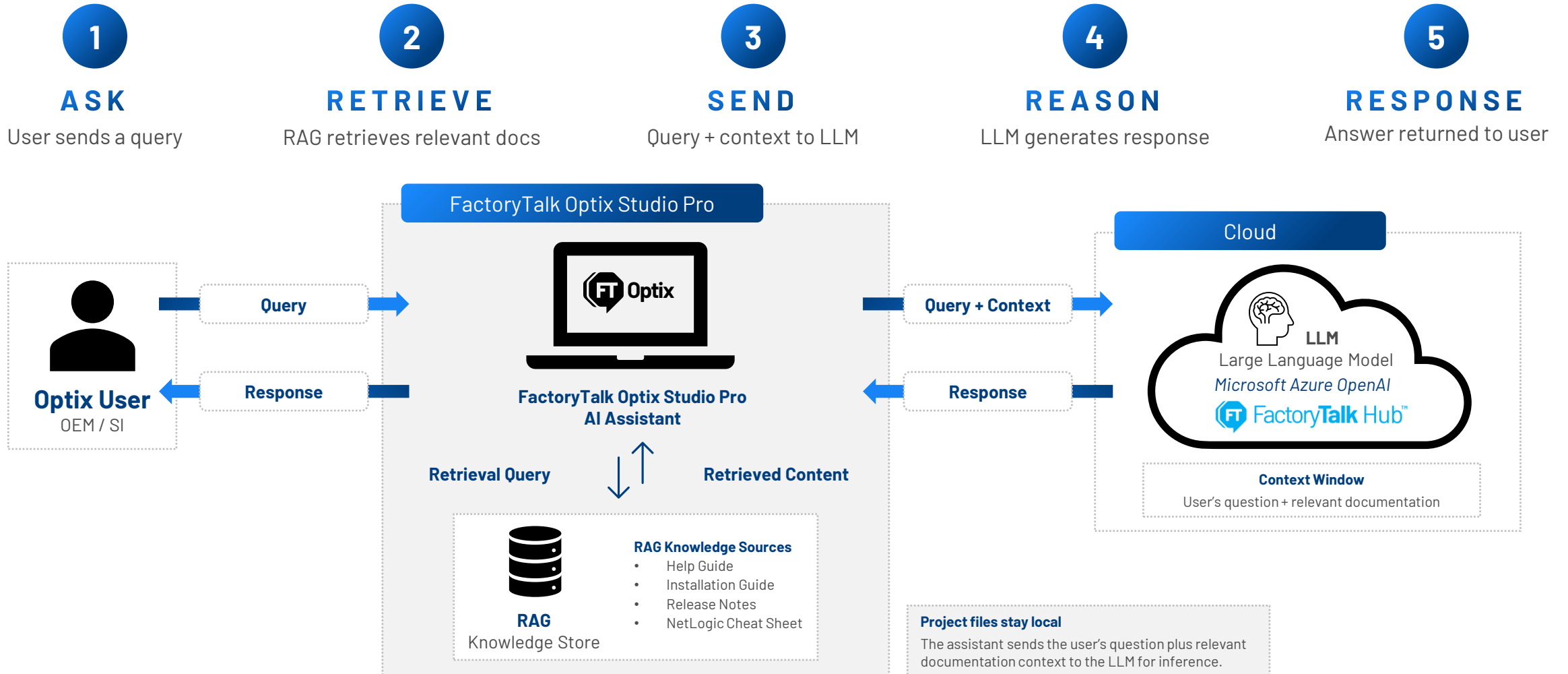
Switching between Studio and external docs breaks flow and slows down configuration tasks





How FactoryTalk® Optix Studio™ Pro v1.8 Turns Questions into Grounded Answers

AI Design-Time Assistant: How It Works



FactoryTalk Optix AI Design Assistance

AI Design-Time Assistant: Foundational Release 1.8

Available in Optix 1.8

Create project content and find help through conversational text



Generate screens from images

Figma, photo, hand-drawn sketch

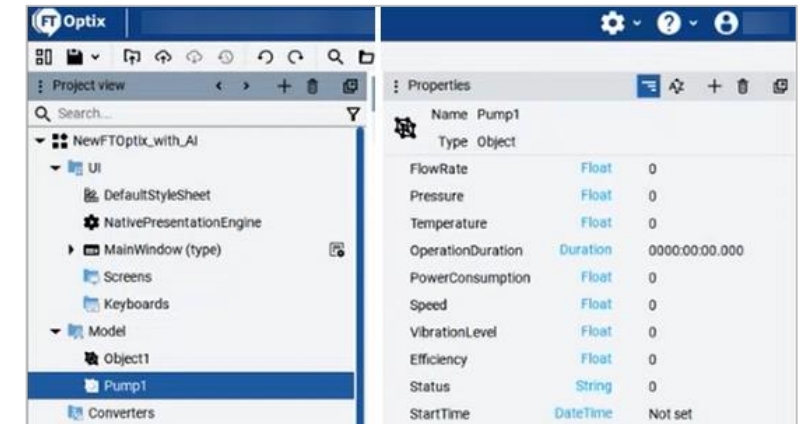
Initial release planned in v1.9



Planned Future Direction

Auto-generation of models, properties, & backend connectivity

Initial release planned in v2.0



FactoryTalk Optix Studio Pro entitlement required for all AI Design Assistance features

Uncompromised IP Protection

Guarantees data security by ensuring customer information is never shared with third-parties or used to train AI models.

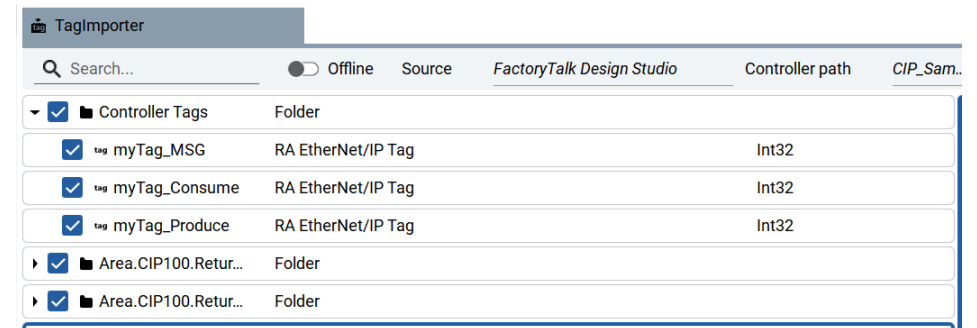
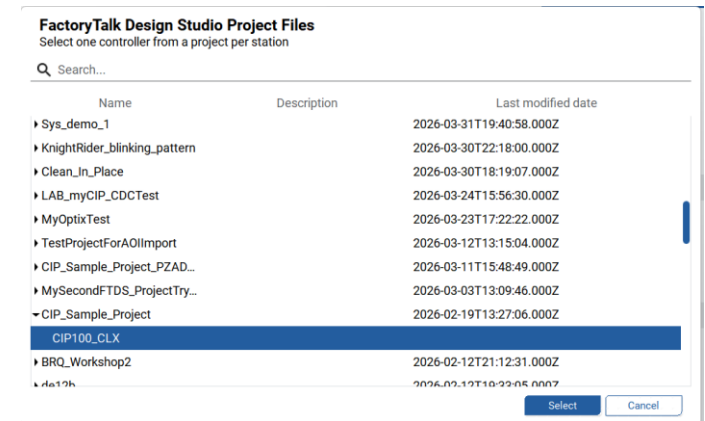
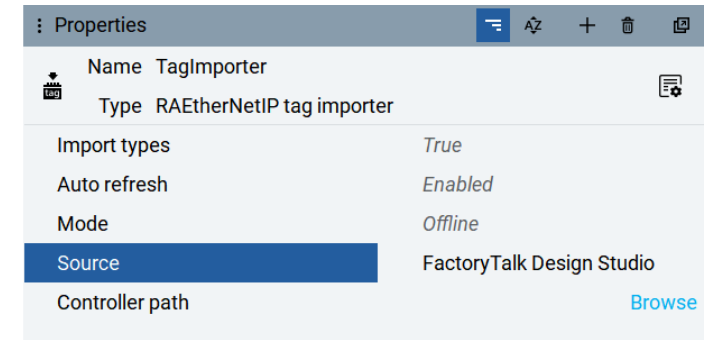
- Azure OpenAI is our generative AI service provider
- No data is shared with Azure OpenAI per their [SLA](#)
- No customer data is used to train Azure OpenAI or Rockwell models

Notice: Learn more about our [Software and Cloud Services Agreement](#)

FactoryTalk Design Studio Support

Offline tag import

- Import tags offline from a Logix controller configured in an FactoryTalk Design Studio project
- Enables the ability to import tags prior to deploying the FactoryTalk Design Studio application to a Logix controller
- Utilizes new offline tag import process for FactoryTalk Design Studio projects:
 1. Choose Offline mode
 2. Select FactoryTalk Design Studio source
 3. Browse to FactoryTalk Design Studio project and select a controller
 4. Import the required tags
- Support for FTDS device names and routine-scoped tags





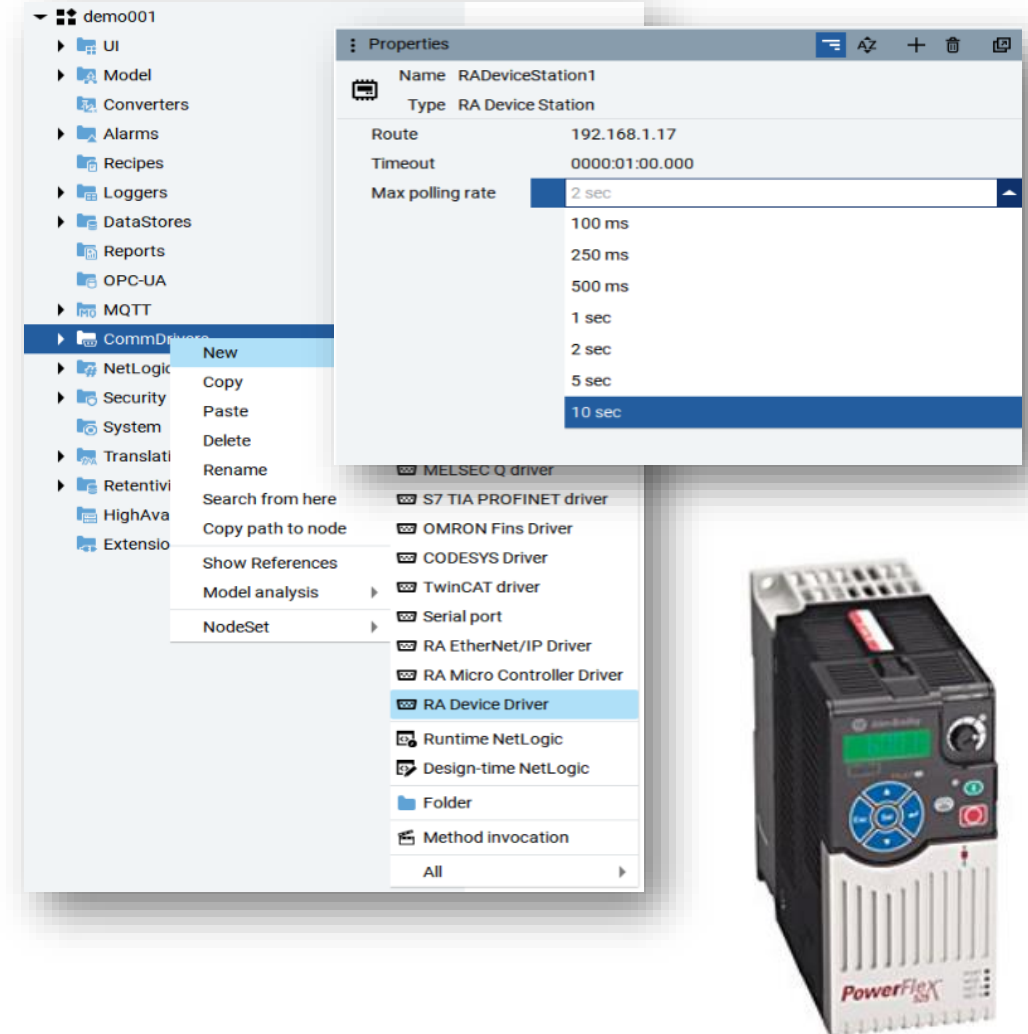
Data Connectivity



RA Device Driver

Direct connectivity to PowerFlex drives

- Enables direct communication with PowerFlex® drives over EtherNet/IP
- Provides DPI Port 0 parameter access
- Validated with:
 - *PowerFlex 525 (PF525)*
 - *PowerFlex 755 (PF755), including these variants:*
 - PF755TS
 - PF755TR
 - PF755TL
 - PF755 TM Bus Supply
 - PF755 TM-CBI
 - *PowerFlex 6000T (PF6000T)*
 - *PowerFlex 7000 (PF7000)*



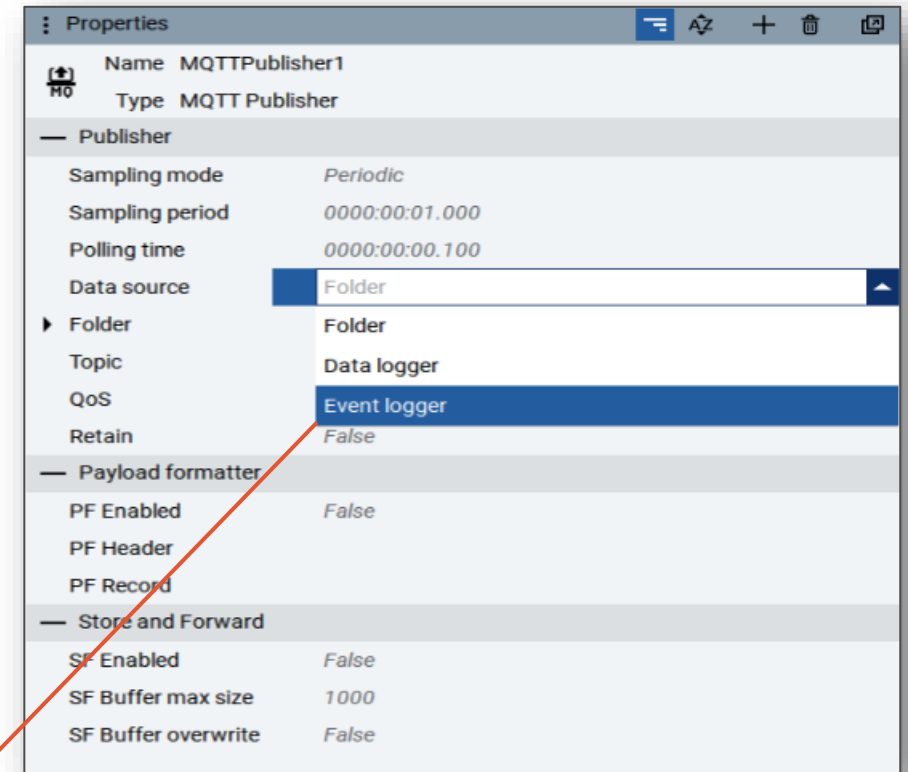


| Publish Event Logger Data Directly to an MQTT Broker

Data connectivity

Publish Event Logger data through the MQTT Client by mapping an existing, user-defined Event Logger to an MQTT Publisher.

- Users can now stream runtime event data to an MQTT broker so external systems, supervisory applications, or cloud tools can consume event information.
 - Publish and monitor events across a network.
 - Bridge local system monitoring with cloud or remote analytics.
 - Reduce reliance on manual data extraction or custom middleware.



- Enable real-time remote monitoring
- Simplify integration with cloud analytics
- Leverage existing Event Logger configurations

RA | MQTT Client: Complex Data Types

Data connectivity

With FT Optix 1.8 MQTT communication is no longer limited to simple atomic values. The MQTT Client module (both Publisher & Subscriber) now supports:

- Folders and subfolders
- Objects and nested objects
- Variables and sub-variables
- Properties
- Arrays
- Complex structures

This enhancement allows entire data models to be exchanged through MQTT, reducing engineering effort and improving scalability for Industrial IoT and edge applications.

This enables richer data exchange, simplified project configuration, and seamless integration with modern Industrial IoT architectures.

The screenshot displays the MQTT Client configuration interface. On the left, a tree view shows the data model structure:

- Model
 - var Variable1
 - var Variable2
 - Folder1
 - var Variable1
 - var Variable2
 - var AnalogVariable1
 - Object1
 - Object1

On the right, the 'Properties' panel for the selected 'Object1' is shown:

Name	Type	Value
Variable1	Int32	0
Variable2	Int32[5]	0;0;0;0;0
Variable3	Structure	Structured value
AnalogVariable1	Float	0
Range		
Low limit		0
High limit		0
Constrain		False



Extended Runtime Licensing



| What Extended Licensing Means for Customers

Extended Runtime Licensing gives customers flexibility today and confidence their Optix application can scale tomorrow

Pay Only for What You Need

Select only the runtime features you actually use. Feature Tokens scale with your application needs without counting tags, alarms or screens.

Scale from Simple to Advanced

The same licensing model supports basic applications through advanced applications. You can start with a Base Runtime package and add an Extended Runtime package later.

Clear Path to High Availability

Enable multi-node High Availability in FactoryTalk Optix 1.8 on any existing installable Optix Runtime software. Add one Extended Runtime Package to support a full 3-node HA cluster, not three separate runtime licenses.

Transparent, Predictable Sizing

Runtime size is driven by the features you use. The Runtime Sizing Calculator aligns licensing directly to your application requirements.

Future-Ready Investment

Extended Licensing aligns with the “pay as you grow” model. Designed to evolve as your applications expand or adopt more advanced runtime capabilities.

Flexibility today, confidence to scale tomorrow



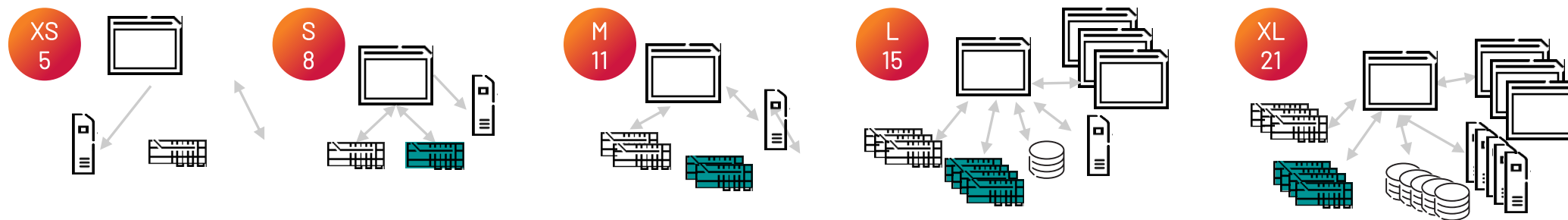
| Today – FactoryTalk[®] Optix[™] Base Runtime Licensing

Scalable runtime licenses aligned to an application's specific requirements

Smaller applications with focus on device data management or simple feature set

Medium-sized applications with more connections, richer features

Larger, feature-rich applications



Pay only for what you need



FactoryTalk[®] Optix[™] Base + Extended Runtime Licensing

Available with FactoryTalk Optix v1.8

Base Feature Token Packages	XS	S	M	L	XL
Base Feature Tokens	5	8	11	15	21

1
Start with a Base Token Package

Extended Feature Token Packages	XXS	XS	S
Extended Feature Tokens	3	5	10

2
Add Extended Token Package when needed

Pay only for what you need



Summary of features requiring Base Runtime Tokens

Please check the runtime sizing tool for a complete list of features and capabilities

General Features	Base Feature Tokens
Native Presentation Engine	1
Web Clients – 1 session	1
Web Clients – up to 3 sessions	2
Web Clients – up to 5 sessions	3
Alarms + Alarm Retentivity + Alarm Event Logging	1
Recipe	1
Active Directory Authentication	1
Basic Reporting	1
Audit Signature	1
Runtime Retentivity	1
Event Logger	1
Data logger	1

Database & Controller Connectivity	Base Feature Tokens
External Database – 1 connection ¹	1
External Database – up to 3 connections ¹	2
External Database – up to 5 connections ¹	3
Store and Forward	1
Embedded InfluxDB Database	1
Embedded SQLite Database	0
Single controller Connection ¹	1
Multiple Controller Connections ¹	2
Runtime tag upload ¹	1
Rockwell Hardware ¹	-1

Interoperability Features	Base Feature Tokens
OPC UA client – Single	1
OPC UA client – Multiple	2
OPC UA server – 1 connection	1
OPC UA server – up to 3 connections	2
OPC UA server – up to 5 connections	3
MQTT Broker – up to 25 clients	1
MQTT Client (Subscriber) ²	1 per third-party broker connection
MQTT Client (Publisher) ²	1 per third-party broker connection

¹ For more details, check the runtime sizing tool

² Optix embedded MQTT broker connections do not require tokens



| Features requiring Extended Runtime Tokens

Introduced with FactoryTalk® Optix™ v1.8

Advanced Features	Extended Feature Tokens
Three-Node High Available Cluster	3
Workstation Clients – 1 session	1
Workstation Clients – up to 3 sessions	2
Workstation Clients – up to 5 sessions	3
Workstation Clients – up to 10 sessions	5



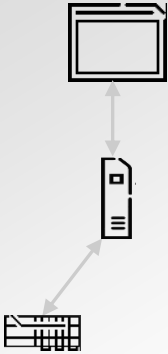
Optix Runtime with Base Runtime Package

Example: Optix Runtime with Base Runtime package (XS)

This example architecture has the following

- Built-in touch screen is not required
- Communicates with a Rockwell Automation controller
- Acts as an OPC UA server
- Logs data to an internal database
- One web client

System architecture - Extra Small



Runtime package options

- Optix Base Runtime package (XS)
- or Optix Base Runtime package (S) for future expansion of basic features

Deployment options

- Hardware with Optix Embedded
- Embedded Edge Compute
 - OptixEdge™ Standard
- Installable Optix Runtime software
- Optix Runtime Base Package (XS)
 - Consider bundling with ASEM™ 6300 PCs

Notes

- XS Base Runtime includes 5 base tokens; S Base Runtime includes 8 base tokens.
- There is no need for an extended package.
- Use the Device Sizing tool to select the best deployment option for your application.

Runtime Sizing Calculator

	Base Tokens	Extended Tokens
Clients Web HMI Client - 1 connection	1	
Features Runtime retentivity Data logger Embedded Database	1 1 0	
Controller Connections RA EtherNet/IP - 1 connection	1	
Interoperability OPC UA Server - 1 connection	1	
High Availability None	-	
Total	5	-



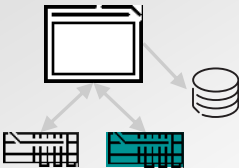
Optix Runtime with Base Token Package

Example: Optix Runtime with Base Runtime package (S)

This example architecture has the following

- Single HMI runtime with a touch screen at least 10 inches (wide screen)
- Typical HMI functionality
- Communicates with a Rockwell Automation controller and a third-party controller
- Logs data to an internal database
- Requires event logging, alarming, and recipe

System architecture - Small



Runtime package options

- Optix Base Runtime package (S)
- or Optix Base Runtime package (M) for future expansion; leaves 3 base feature tokens available for future use of basic features.

Deployment options

- Hardware with Optix Embedded
 - OptixPanel™ Standard
- Installable Optix Runtime software
 - Optix Runtime Base Package (S)
 - Consider bundling with ASEM™ 6300 Panel PCs

Notes

- S Base Runtime includes 8 base tokens.
- There is no need for an extended package.
- Base Runtime (M) includes 11 base tokens. 3 base feature tokens will be available for future use of basic features.
- Use the Device Sizing tool to select the best deployment option for your application.

Runtime Sizing Calculator

	Base Tokens	Extended Tokens
Clients		
Native HMI Client	1	
Features		
Alarms	1	
Recipe	1	
Runtime retentivity	1	
Event Logger	1	
Data logger	1	
Embedded Database	0	
Controller Connections		
RA EtherNet/IP - 1 connection	1	
Third-party drivers - 1 connection	1	
Interoperability		
None		
High Availability		
None		
Total	8	-



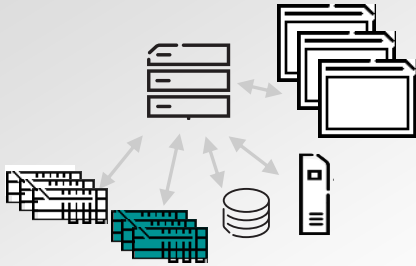
Optix Runtime with Base & Extended Token Packages

Example: Optix Runtime with Base Runtime package (L) and Extended Runtime package (XXS)

This example architecture has the following

- An HMI application with typical HMI functionality with five web clients
- High Availability (HA)
- Communicates with multiple Rockwell Automation controllers and multiple third-party controllers
- Acts as a client to other OPC UA servers
- Logs data to an external database
- Requires event logging, alarming, recipe, and basic PDF reporting

System architecture – Large w/High Availability



Runtime package options

- Optix Base Runtime package (L) + Extended Runtime package (XXS)
- Or Optix Base Runtime package (XL) + Extended Runtime package (XS) for future expansion of basic and advanced features.

Deployment options

- Installable Optix Runtime software
- Optix Base Runtime package (L) + Extended Runtime package (XXS)
- consider bundling with ASEM™ 6300 PCs

Notes

- Base Runtime (L) includes 15 base tokens.
- Extended Runtime package (XXS) includes 3 extended tokens.
- Extended Runtime package (XS) includes 5 extended tokens.
- Use the Device Sizing tool to select the best deployment option for your application.

Runtime Sizing Calculator

	Base Tokens	Extended Tokens
Clients Web HMI Clients - 5 connections	3	
Features Alarms Recipe Data logger Basic Reporting Event Logger Runtime retentivity External Database	1 1 1 1 1 1 1	
Controller Connections RA EtherNet/IP - 4 connections Third-party drivers - 2 connections	2 2	
Interoperability OPC UA Client - 1 connection	1	
High Availability Three-node HA Cluster		3
Total	15	3



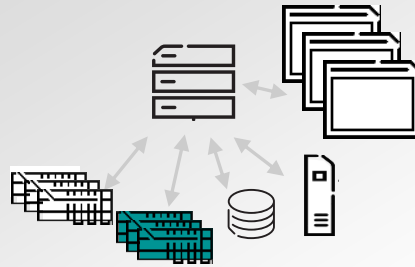
Optix Runtime with Base & Extended Token Packages

Example: Optix Runtime with Base Runtime package (XL) and Extended Runtime package (S)

This example architecture has the following

- An HMI application with typical HMI functionality
- Ten workstation clients and five web clients
- High Availability (HA)
- Communicates with multiple Rockwell Automation controllers and multiple third-party controllers
- Acts as a client to other OPC UA servers

System architecture – HA & Workstation Clients



- Logs data to an external database

Runtime packages

- Requires event logging, alarming, recipe, and basic PDF reporting
- Optix Runtime Base Package (XL) + Extended Package (S)
- 3 base feature tokens and 2 extended feature tokens are available for future use.

Deployment Options

- Installable Optix Runtime software
- Optix Runtime Base Package (L) + Extended Package (S)
- Consider bundling with ASEM™ 6300 PCs

Notes

- Base package (XL) includes 21 base tokens.
- Extended package (S) includes 10 extended tokens.
- In this example, 3 base feature tokens and 2 extended feature tokens are available for future use.
- Use the Device Sizing tool to select the best deployment option for your application

Runtime Sizing Calculator

	Base Tokens	Extended Tokens
Clients Web HMI Clients - 5 connections Workstation Clients - 10 connections	3	5
Features Alarms Recipe Active Directory Authentication Event Logger Data logger Basic Reporting Audit signature capture Runtime retentivity External Database	1 1 1 1 1 1 1 1 1 1	
Controller Connections RA EtherNet/IP - 4 connections Third-party drivers - 2 connections	2 2	
Interoperability OPC UA Client - 2 connections	2	
High Availability Three-node HA Cluster		3
Total	18	8



| Tools and content to help with runtime licensing

Determining what license is required for your application

- Updated Runtime Sizing Calculator will include new OptixEdge™ upgrades and Extended Runtime catalogs
- FactoryTalk® Optix Studio™ will tell you what size license the current application requires, including Extended Runtime licenses
- FactoryTalk® Optix™ Ordering Guide updated to cover Extended Runtime licenses
- Updated Device Sizing Tool also coming soon



Firmware 7.0.0.x for Optix-based devices



Software Components Included

Firmware 7.0.0.x

Software Stack

The 7.0.0.x firmware for OptixPanels, OptixEdge™ and Embedded Edge Compute includes:

- FactoryTalk® Optix™ 1.8 (minimum version)
- FactoryTalk® Remote Access™ 14.3.2
- System Manager 1.8
- Linux Yocto Scarthgap with Kernel 6.12

FT Optix

FT Remote Access

System Manager

OS



Local Web-based Remote Desktop

Firmware 7.0.0.x

Feature

It is now possible to access the HMI screen directly using a Web Browser over the local network allowing to view and mirror the HMI screen on smartphones, tablets, and Linux PCs. Local Connection option must be enabled in System Manager.

Benefits

- Enables local, on-demand access without installing FactoryTalk® Remote Access™ Tools.
- Greater flexibility for operations and maintenance across OptixPanel™.





| Access to USB Memory and SD Card via File Transfer

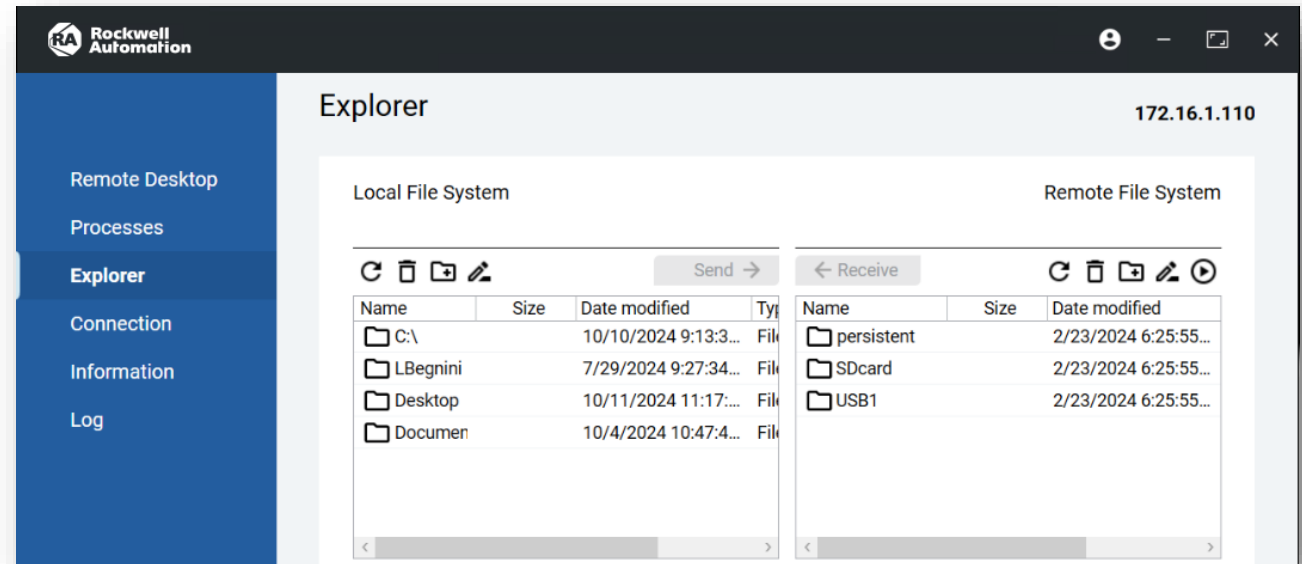
Firmware 7.0.0.x

Feature

It is now possible to remotely access USB memory devices and SD cards plugged into the device through the File Transfer feature available in the FactoryTalk® Remote Access™ Tools.

Benefits

Enabling remote file management on external storage media for OptixPanel™, OptixEdge™, Embedded Edge Compute and Stratix® 4300.





| Show Remote Access info in System Manager

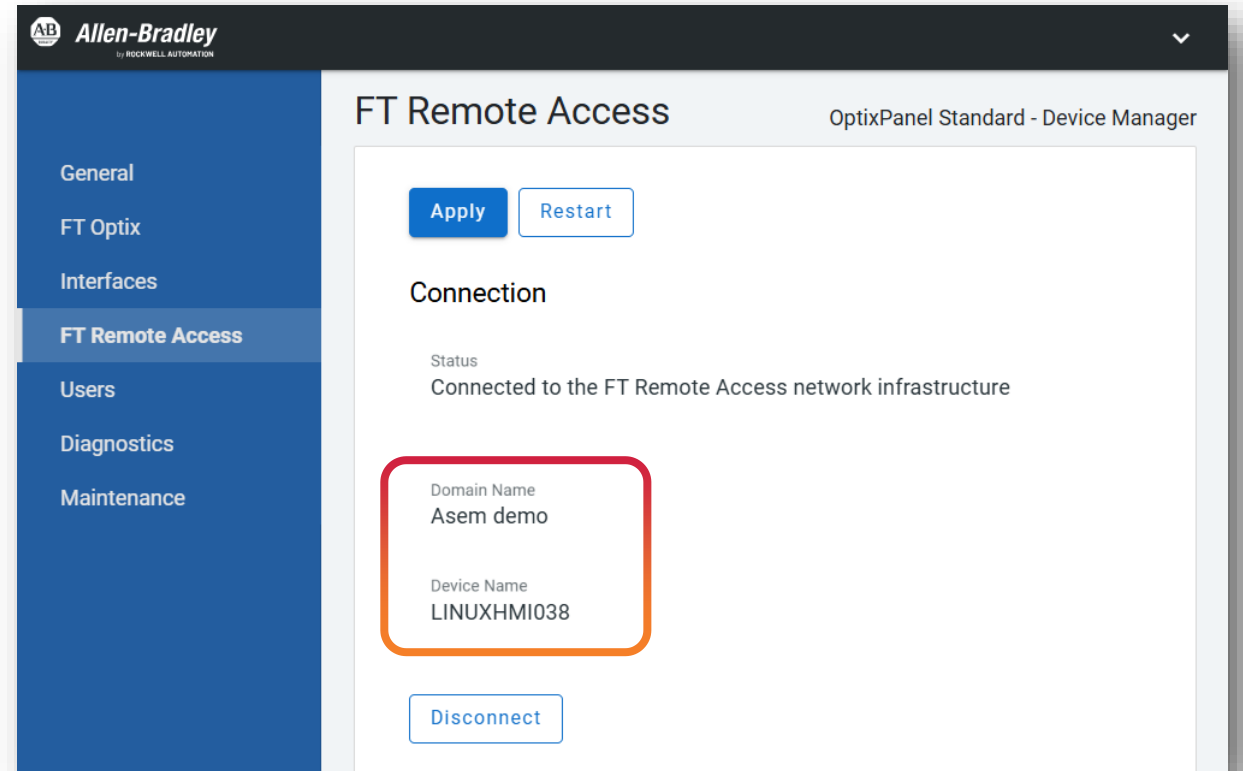
Firmware 7.0.0.x

Feature

System Manager now displays the domain name and the device name assigned in the FactoryTalk® Remote Access™ domain. This information is available under the FT Remote Access section.

Benefits

Improving device/domain identification for OptixPanel™, OptixEdge™, Embedded Edge Compute and Stratix® 4300





| Bundle Image Support

Firmware 7.0.0.x

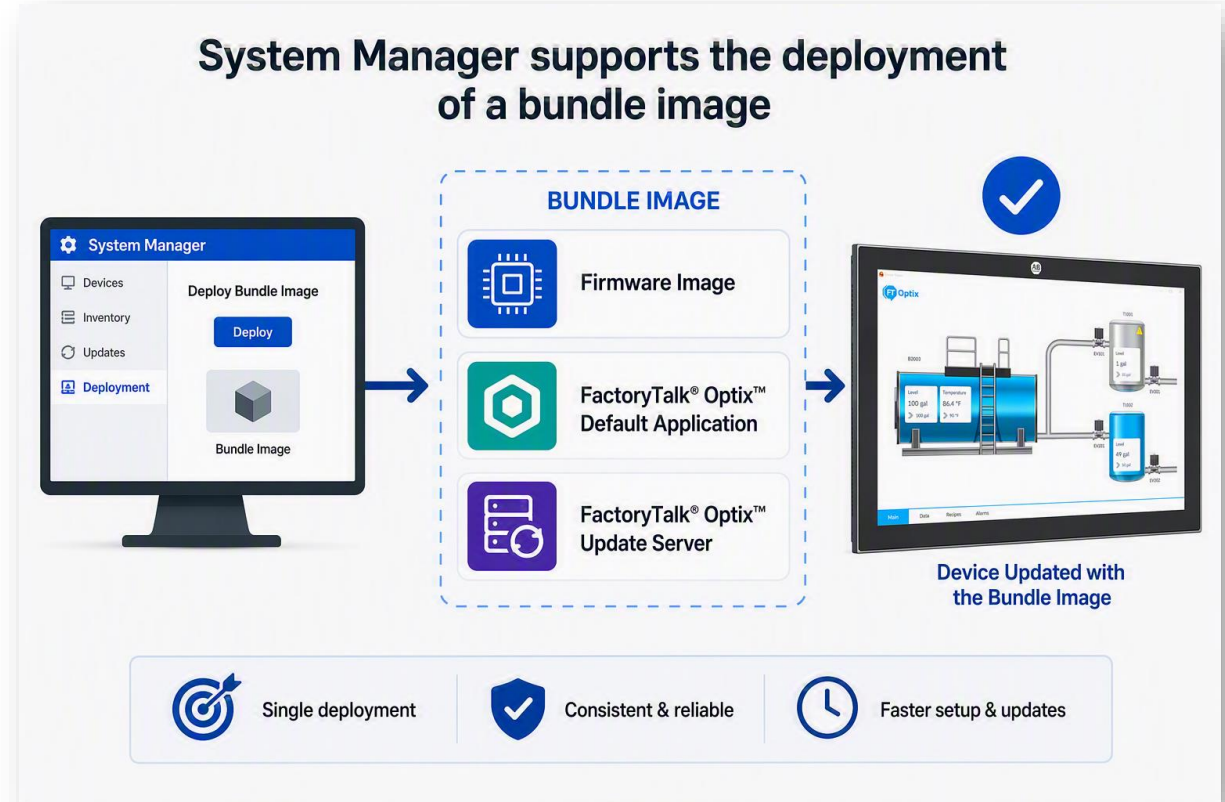
Feature

System Manager now supports the deployment of a bundle image that includes the Firmware image, the FactoryTalk® Optix™ Update Server and the Default Application.

Available for OptixPanel™, OptixEdge™ and Embedded Edge Compute.

Benefits

- Possibility to upgrade* the entire software stack of the device
- Possibility to perform downgrades*, which is useful for customers who need to run previous software versions on newly delivered devices that ship with the latest packages.



* The upgrade/downgrade with bundle image overrides the FT Optix application deployed on the device.



| Device Backup and Restore

Firmware 7.0.0.x

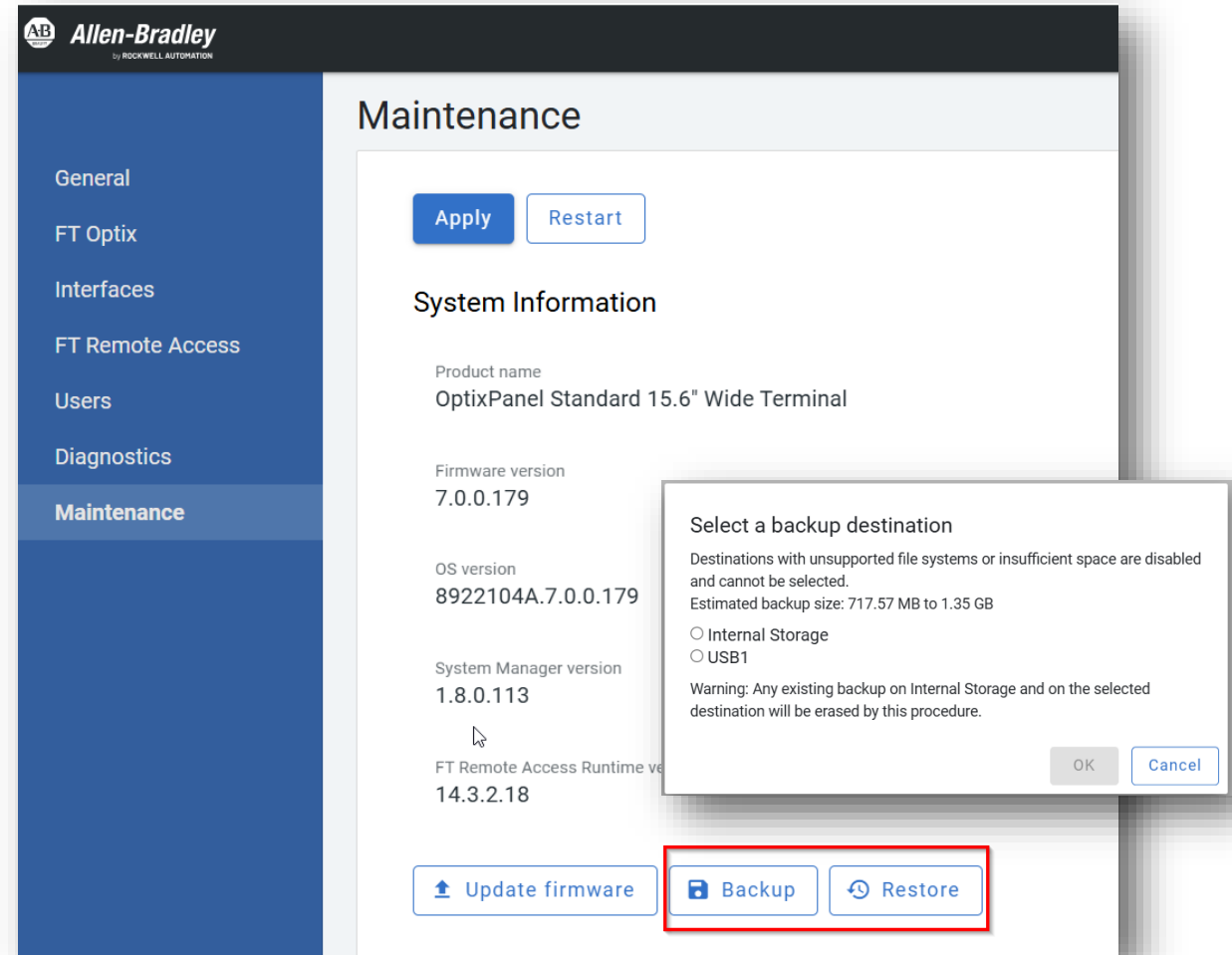
Feature

System Manager now includes a Backup and Restore feature that provides a mechanism to capture and reuse the state of a device.

Available for OptixPanel, OptixEdge™ and Embedded Edge Compute.

Benefits

- The backup can be used to restore the same device to a previous known state
- Or to apply the same system configuration to another device of the same type when the original device is no longer recoverable.



| OptixEdge™ Advanced Networking

Firmware 7.0.0.x

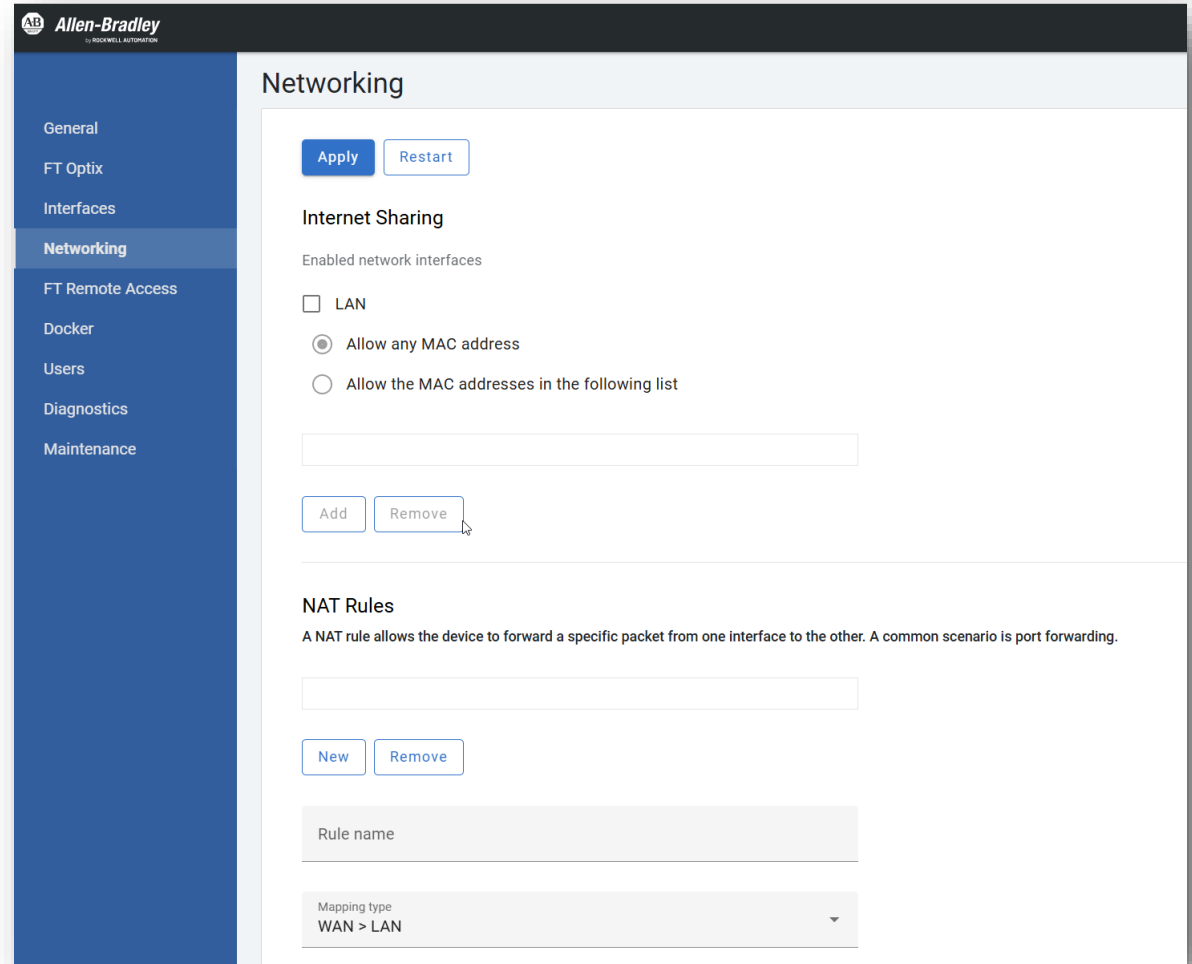
Feature

OptixEdge™ now includes the same advanced networking capabilities available on Stratix® 4300, including Internet Sharing, NAT Rules and Routing Rules that can be configured via System Manager web interface.

Benefits

This enables the device:

- to share Internet connectivity with automation subnetworks,
- define NAT mappings between WAN and LAN interfaces,
- configure static Routing rules for communication across different networks



The screenshot displays the Allen-Bradley System Manager web interface. The left sidebar contains a navigation menu with the following items: General, FT Optix, Interfaces, **Networking** (highlighted), FT Remote Access, Docker, Users, Diagnostics, and Maintenance. The main content area is titled "Networking" and includes "Apply" and "Restart" buttons at the top. Below this, the "Internet Sharing" section is active, showing "Enabled network interfaces" with a checkbox for "LAN" and two radio button options: "Allow any MAC address" (selected) and "Allow the MAC addresses in the following list" (with an empty text input field below it). "Add" and "Remove" buttons are present. The "NAT Rules" section follows, with a descriptive text: "A NAT rule allows the device to forward a specific packet from one interface to the other. A common scenario is port forwarding." It includes a "New" button, a "Remove" button, a "Rule name" text input field, and a "Mapping type" dropdown menu currently set to "WAN > LAN".



| USB Device Configurator

Firmware 7.0.0.x

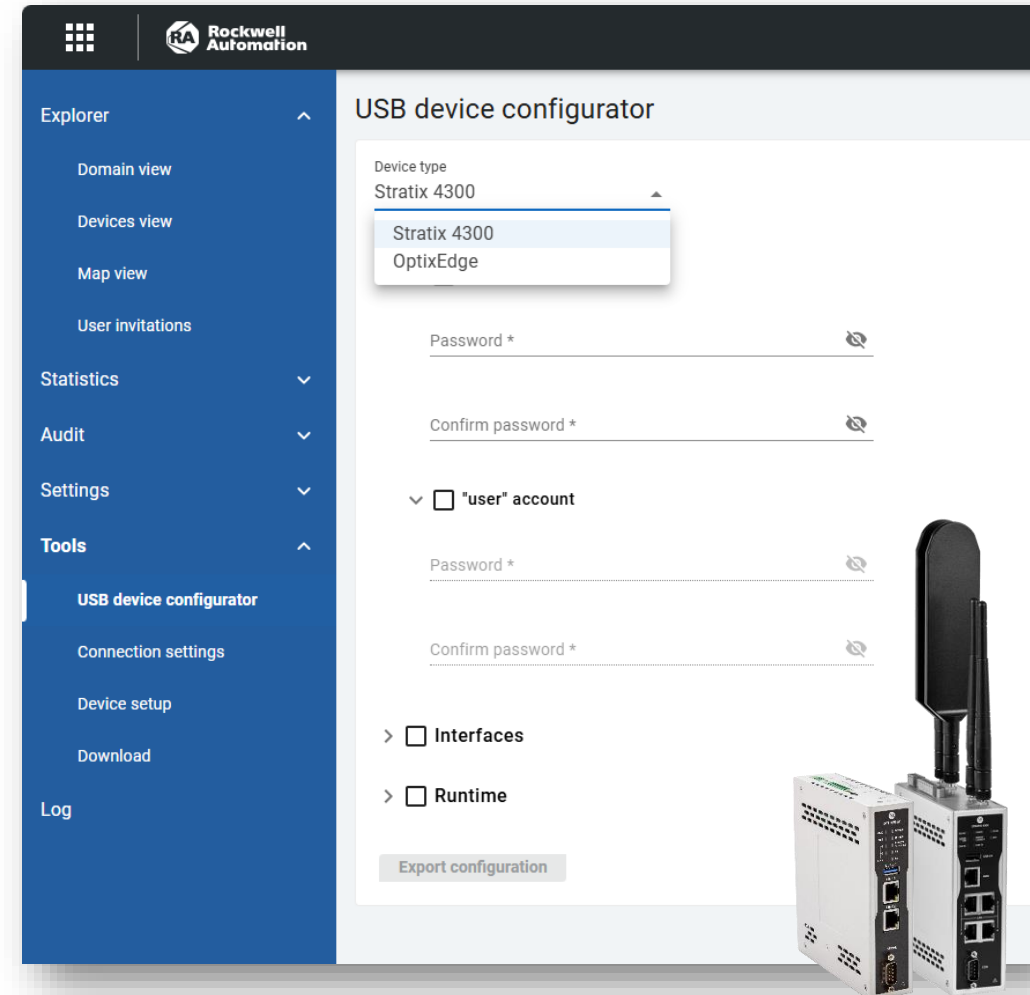
Feature

Enable device configuration and registration to FactoryTalk® Remote Access™ domain through USB stick via JSON configuration file that can be created by FactoryTalk® Remote Access™ Manager.

Supported Devices: Stratix® 4300 and OptixEdge™

Benefits

- Consistent, repeatable configuration using a standardized JSON file
- Reduced setup errors and effort for field and commissioning teams





2026 FactoryTalk® Optix™ webinar series



| 2026 Webinar Series: *Visualization Deep Dive*

Live and on-demand to fit your schedule

[Register](#) online for the series



Visualization Deep Dive Series: HMI with modern architectures and AI

A three-part series exploring modern, scalable SCADA architectures using FactoryTalk® Optix™, including multi-node and high-availability deployments leveraging purpose-built hardware platforms. The series concludes with how AI-driven visualization with FactoryTalk® View and FactoryTalk® Optix™ helps teams deliver smarter operator experiences.



August 6, 2026 - 10:00 AM CST

Resilient OT operations with IT technology

Learn how FactoryTalk Optix enables resilient operations with 3-node high availability, leveraging modern technology with containers and Kubernetes.

September 15, 2026 - 10:00 AM CST

FactoryTalk Optix Multi-Node Architectures: Integrated Hardware and Software

FactoryTalk Optix works together with Rockwell Automation HMI hardware to provide a purpose-built edge deployment foundation.

October 28, 2026 - 10:00 AM CST

Smarter Visualization: Introducing AI Assistants with FactoryTalk Optix and FactoryTalk View

See how FactoryTalk Optix and FactoryTalk View integrate AI assistants into visualization design and runtime workflows, through real OEM and SI use cases.

All webinars will be available on demand following the live session



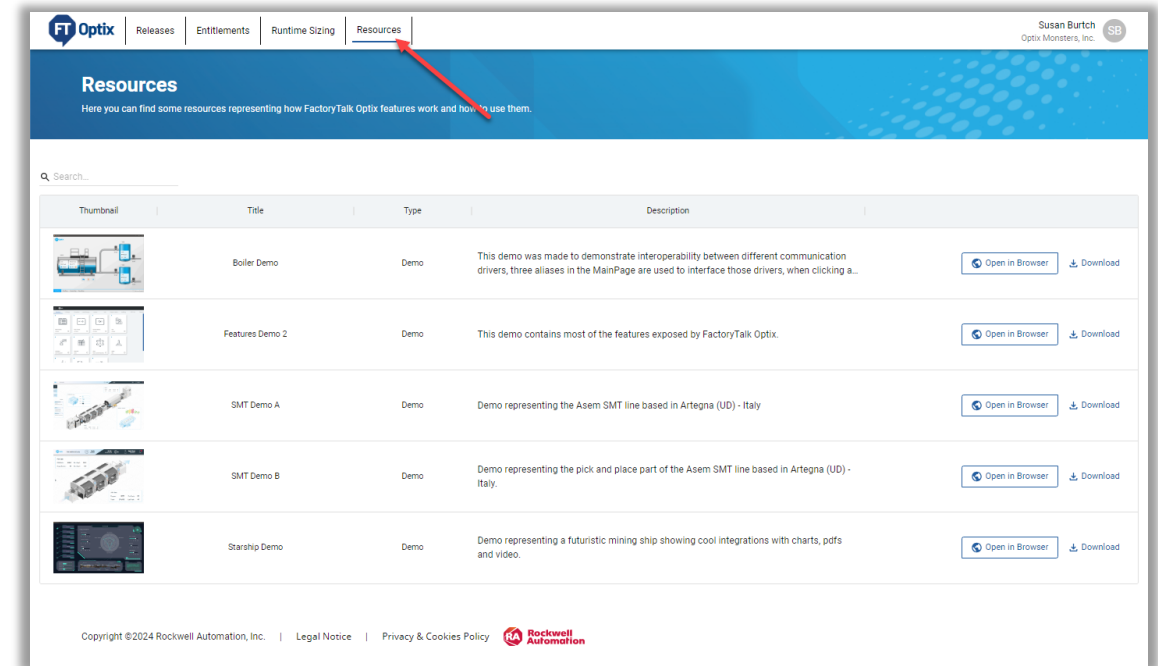
Online Demos



FactoryTalk[®] Optix[™] Instant Online Customer Demos!

Online demos

- Resources tab provides access to many FactoryTalk Optix demo applications
 - These demo applications can be viewed using your browser
 - A description for each demo is also available
 - Use the Search bar to look for a specific demo
- Available to anyone with a FactoryTalk Hub account, including customers!
- Click **Open in Browser** to run each demo application in your web browser
 - Boiler demo
 - Features demo
 - ASEM factory machines demo
 - Trade show and event demo applications
 - More coming soon!



Now available: Preview demo application in browser, then download demo application files from GitHub on the Resources tab



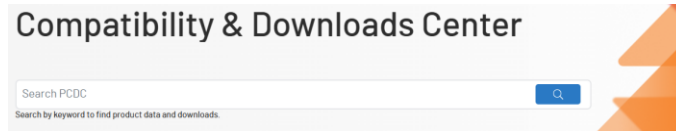
PCDC Release Notifications



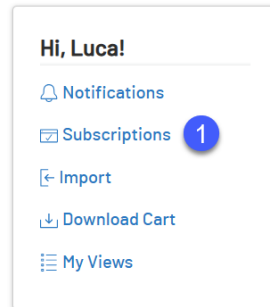
| How to Get Notification of a New Release on PCDC

PCDC allows you to subscribe to new releases

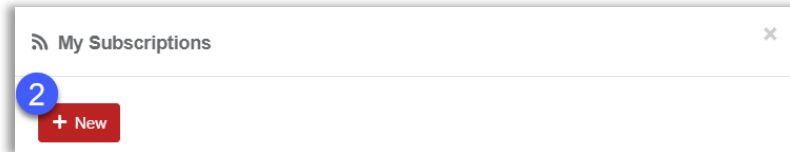
1. Log in to [PCDC](#)



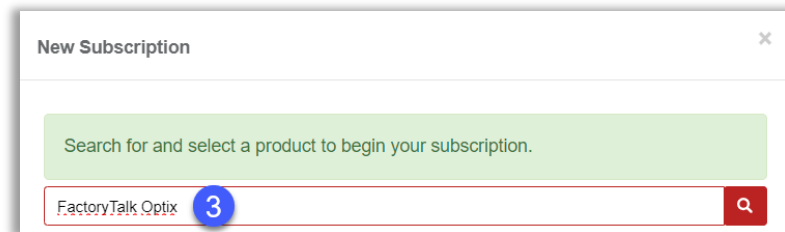
and on the right pane
select "Subscriptions"



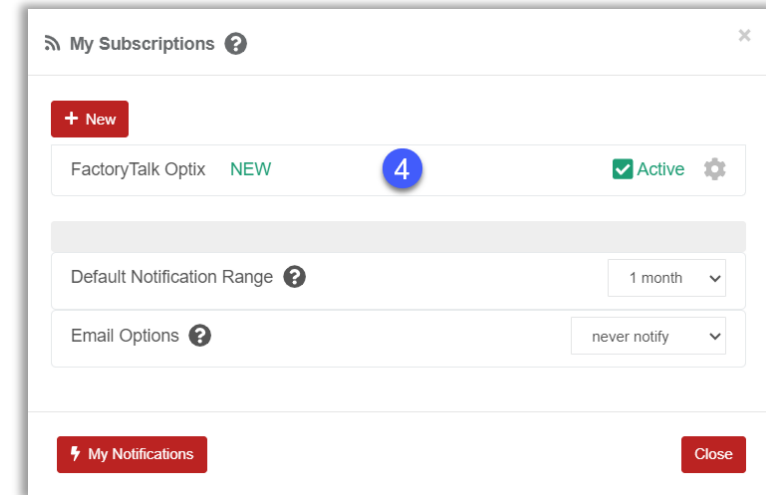
2. Click on **+ New** button



3. Search for "FactoryTalk Optix" and select it



4. FactoryTalk Optix
is added to your subscription list



5. With the settings button  you can select the notification types that interest you, and with the Email Options you can be notified via email when you have new notifications



Thank you

www.rockwellautomation.com

