Rockwell Automation

RSView32 to FactoryTalk View SE modernization

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FactoryTalk® View Site Edition (SE) supports the import and reuse of RSView®32 projects. The conversion process successfully retains most of the core RSView32 project, including graphic displays, animated objects, text, tags, alarms, expressions and macros.

Because RSView32 and FactoryTalk View Site Edition are designed using different underlying architectures, there are several differences in the way project elements work within the two products. This document explores those differences and the considerations that should be made in planning and executing the modernization of an RSView32 application to FactoryTalk View SE.

Application types and system components

FactoryTalk View SE supports two types of applications: standalone and distributed. The standalone version, called FactoryTalk® View SE Station, has characteristics in common with RSView32 runtime software. A distributed FactoryTalk View SE application includes one or more FactoryTalk View SE servers and some number of FactoryTalk View SE clients. The distributed version has many of the same capabilities as an RSView32 Active Display System.

Both standalone and distributed applications are developed using FactoryTalk View Studio Enterprise. Four types of applications can be created with FactoryTalk View Studio Enterprise:

- **Network Distributed** (FactoryTalk View SE) – multi-client, multi-server application with components running on different machines.

- **Network Station** (FactoryTalk View SE) – single-client application with all components running on one machine, but with the ability to connect to system components on remote machines.

- **Local Station** (FactoryTalk View SE) – single-client application with all components running on one machine.

- **FactoryTalk View Machine Edition** (ME) – application that runs on either a PanelView™ Plus terminal or on a personal computer (PC) running FactoryTalk View ME station.

Each component of an RSView32 system has a corresponding component in FactoryTalk View SE:

System component	RSView32	FactoryTalk View SE	Notes
Development environment	RSView32 Works	FactoryTalk View Studio Enterprise	RSView32 Works also includes one Runtime license. FactoryTalk View Studio is the main tool used to modernize RSView32 applications. FactoryTalk View Studio Enterprise supports development of both FactoryTalk View SE and ME applications.
Single station runtime system	RSView32 Runtime	FactoryTalk View SE station	FactoryTalk View SE station supports "Local" and "Network" versions.
Distributed runtime system	RSView32 Active Display Server™	FactoryTalk View SE Server and Client	With FactoryTalk View SE, a client file is created and then run on the client machine.
Web-based HMI	RSView32 Webserver	FactoryTalk ViewPoint	FactoryTalk ViewPoint is an Add-On to FactoryTalk View SE Station or Server/Client.

Licensing

RSView32 and FactoryTalk View SE are licensed differently. RSView32 Works (design environment) and RSView32 Runtime (runtime component) are both licensed by the total number of tags in an application. FactoryTalk View SE is licensed by the number of displays in the application.

Consider the specific application when determining modernization licensing needs.

HMI tags and direct-reference tags

In RSView32, tags are user-defined and stored in a central tag database. Tags can be imported from controllers, and changes to the controller tags must be updated manually in the HMI and synchronized. FactoryTalk View Site Edition still supports user-defined tags, and RSView32 tag databases do convert successfully to FactoryTalk View SE.

In addition to user-defined tags, FactoryTalk View SE also makes direct reference tags available. Direct reference tags are not stored in a central tag database but are stored in programmable logic controllers where they are created. FactoryTalk Directory, part of the underlying FactoryTalk platform, provides direct access to these tags in the controller by referencing them through a common "address book".

FactoryTalk Directory provides access to both offline and online controller tags through a tag browser. If the development environment is not connected to a controller, developers can work with offline tags. When working offline, the system reads data points directly from the controller's project file as defined in FactoryTalk Linx. Developers can build an entire application offline, without connecting to controllers, and then deploy the application to a runtime system later.

When the development environment is connected to controllers, access to online tags is also available. In this case, the system communicates directly with the processor itself and reads data points as they are defined in that controller.

With FactoryTalk Directory, tags need not be recreated or imported into a separate tag database. Changes to tag values and properties update automatically wherever they are used within FactoryTalk View Site Edition applications and throughout the FactoryTalk-enabled system.

With RSView32, tag properties like minimum and maximum had to be set using separate tags in the RSView32 tag database. With FactoryTalk View SE, you can now use the controller tag extended properties. This functionality requires FactoryTalk View version 9.00.00 or later and version 21 or later of Logix controllers.

You can use the following extended tag properties when a controller tag type can be referenced:

- .@Description: Description of the tag

- .@EngineeringUnit: A system of measurements of physical quantities

- .@Min: The minimum numeric value for the non-Boolean tag being measured

- .@Max: The maximum numeric value for the non-Boolean tag being measured

- .@State0: The false Boolean state of the tag

- .@State1: The true Boolean state of the tag

To read the values, use the format **TagName.@ExtendedProperty** where TagName is the path to the controller tag and ExtendedProperty is the extended tag property. For example:

[Shortcut]SodaCIPTanks.Water.Value.@Min

If the extended properties support multiple languages, the text strings dynamically switch between languages when you use the existing client language switching commands. As long as the same languages are added to both the controller application and HMI application, and the content is translated in the controller, when the HMI client switches languages at runtime, it will also retrieve the translated strings for the extended properties from the controller. This provides the benefit of having the languages translated in one location - in the controller.

Memory tags

Many RSView32 projects use memory tags to store the information to be shown on graphic displays. For example, memory tags might contain variable string or numeric values, such as the graphic display name, current username, or calculation results. When running RSView32 on a computer, memory tags act as local variables on that computer. In an RSView32 Active Display System, memory tags act as global variables and are shared across clients.

Memory tags are still available in FactoryTalk View SE and operate as global variables, just as they do in an RSView32 Active Display System. In a distributed FactoryTalk View SE system, a graphic display can be created once, stored on the server, and then accessed on any client. To use variables that are local, rather than global, and specific to each client that accesses a graphic display, use Microsoft Visual Basic for Applications (VBA) code, which runs independently on each client. Another option is to use the FactoryTalk View SE Local OPC Server. For further details, reference FactoryTalk View SE: Local OPC Tags for View SE Distributed Applications.

VBA and the FactoryTalk View SE Object Model

Microsoft Visual Basic for Applications (VBA) is a part of both RSView32 and FactoryTalk View Site Edition. However, how VBA is implemented, and the types of object models exposed, are different between the two products. Because of these differences, RSView32 VBA code does not completely modernize to FactoryTalk View SE, although VBA code that does not use the RSView32 object model can be copied and reused in FactoryTalk View SE.

RSView32 has a server-side object model. VBA code triggers actions that run on the server, and not on individual clients. The RSView32 object model supports creating, deleting, and modifying HMI tags, but does not offer any objects, properties, methods, or events for manipulating graphic displays.

FactoryTalk View Site Edition uses a different client-side object model. The purpose of the FactoryTalk View SE object model is to provide flexible access to graphic display objects and to make it easy to customize and manipulate graphic displays on individual client computers. VBA code, attached to an associated graphic display, triggers actions that run on the client computer and not on the HMI server. The FactoryTalk View SE object model supports reading and writing values from both direct reference tags and HMI tags. Starting with FactoryTalk View SE version 11, additional capabilities are now supported and are described later in this section.

When a graphic display opens on a FactoryTalk View SE client computer, the VBA code executes independently on that client. For example, suppose that the same graphic display is opened on two different client computers simultaneously. When an operator on the first computer clicks a button on the display, the action causes the VBA code to run. The same display, open on another client computer, does not execute the VBA code until an event on that client triggers it.

Use VBA code to customize the behavior of graphic displays on individual client computers. To allow for independent, local user interaction on each client, replace memory tags and event expressions used in RSView32 graphic displays with VBA code in FactoryTalk View SE displays.

For more information on modernizing an RSView32 application with VBA to FactoryTalk View SE, reference the following Knowledgebase document:

Sample VBA: Exercise in modernizing an RSView32 application with VBA to FactoryTalk View SE.

FactoryTalk View SE version 11 introduced a new VBA interface that allows interaction with the HMI tag database at runtime. The HMI tag editor functions such as creation, deletion and modification of HMI tags and folders are now exposed in VBA allowing the manipulation of the HMI tag database from any View SE client that executes project VBA code.

This new VBA interface will alleviate modernization of RSView32 projects by supporting the VBA functions for HMI tag database manipulation that exist in RSView32. This enhancement will allow for reusing more of the existing RSView32 VBA code with less effort.

With FactoryTalk View SE version 12 a new centralized scripting engine is available. This feature can be used to execute PowerShell scripts from events within the HMI server, SE Client or even FactoryTalk ViewPoint clients. Configuration is similar to RSView32 VBA, in that scripts will run on the HMI server that the resource calling the script is connected to. The PowerShell editor can be loaded directly from FactoryTalk View Studio. External scripts can also be run to perform tasks such as logging information to databases or performing customizations. Parameters can also be passed from FactoryTalk View SE into the external script. With the version 12 release, a video on PowerShell scripts will be available here: FactoryTalk View SE YouTube playlist.

Derived tags

As is true in RSView32, in FactoryTalk View Site Edition a derived tag is an analog, digital, or string tag whose value is determined through the evaluation of an expression. Derived tags set up in RSView32 projects convert successfully to FactoryTalk View SE. However, because FactoryTalk View SE is a distributed system, be sure to configure derived tags to start when the HMI server starts or when a process starts — and not when a client starts. This guarantees that the derived tags are available for any client that needs them.

Alarm logging and datal logging

Both RSView32 and FactoryTalk View Site Edition support logging to native log files and logging directly to an ODBC data source, such as Microsoft® SQL Server, Oracle®, or SyBase® software. The ODBC database format is the same, whether alarms and data are logged from RSView32 or from FactoryTalk View Site Edition.

While both products support logging to an ODBC database, RSView32 and FactoryTalk View Site Edition use different native log file formats. As a result, historical data from native RSView32 alarm log and datalog files do not convert to FactoryTalk View SE. You cannot open, view, or log to RSView32 historical log files in FactoryTalk View SE.

In FactoryTalk View SE, the data logs use an enhanced, proprietary .dat format rather than the standard .dbf format used in RSView32. The .dat format is faster and requires less disk space, but it is not compatible with the RSView32 .dbf format. To view log files in the .dat format, you must use FactoryTalk View SE viewers; the .dat format is not compatible with RSView32 or with third-party database tools. The FactoryTalk File Viewer utility is one such viewer. The TrendPro object can also be used to view data logs.

A new type of alarming called FactoryTalk Alarms and Events is also available. FactoryTalk Alarms and Events supports two types of alarm monitoring:

Tag-based: Alarming system similar to traditional HMI Tag Alarm Monitoring, but with an expanded feature set.

Device-based alarms of two types:

Logix instruction-based alarming uses pre-built alarm instructions (ALMA and ALMD) that are available only in the Logix family of controllers. To program these instructions, you must have RSLogix 5000® version 16.03 or later and at least the following firmware:

- Version 16.20 for ControlLogix® controllers, CompactLogix™ controllers and FlexLogix™ control system

- Version 16.42 for SoftLogix™ control system

Logix tag-based alarms associate alarm conditions with tags for Logix 5000™ controllers. Logix tag-based alarms monitor tag values to determine the alarm condition, but they are not part of the logic program and do not increase the scan time for a project. Logix tag-based alarms are supported only on Compact GuardLogix® 5380, CompactLogix 5380, CompactLogix 5480, ControlLogix 5580, and GuardLogix 5580 controllers.

With FactoryTalk View SE version 6 and later, redundancy is also supported for FactoryTalk Alarms and Events.

Trend charts

RSView32 offers two types of trend charts: a native trend object and a newer TrendX object. FactoryTalk View Site Edition does not support the RSView32 native trend object, but does support the TrendX object. Trend charts based on the TrendX object convert successfully from RSView32 to FactoryTalk View SE.

In addition, because FactoryTalk View SE attaches VBA code to graphic displays, it is now possible to use the TrendX object model to customize and manipulate trend charts displayed on individual client computers during runtime.

FactoryTalk View Site Edition TrendPro is a new trending object that provides modern trending capabilities with easy runtime configuration, intuitive drag-and-drop ad-hoc trending, and statistical and sampling calculations. You can plot data from live tag data (FactoryTalk Live Data), FactoryTalk View SE data logs, FactoryTalk Historian SE, an Enterprise OSI PI Server, FactoryTalk Alarms and Events, and FactoryTalk

AssetCentre. By using traces, you can display and compare multiple tags concurrently independent of the data source of the tags, and manipulate the data in a graph in various ways such as panning, zooming, and scaling. You can also easily capture the historical data to reference or analyze later. The plot area's background color can be configured to align with ISA-101 styles and it supports the use of tag values for the y-axis scale. TrendPro also supports saving trend configuration in sharable templates, and the SaveTemplate, DeleteTemplate, and ApplyTemplate methods allow management of these templates through VBA.

For a technical comparison of the trend objects available in FactoryTalk View SE, see the following Knowledgebase document: Trend Object Comparison.

Events

An Events component is available in both RSView32 and in FactoryTalk View Site Edition. In both products, an Event is made up of an expression and an action; when the expression evaluation is true, the action is triggered. RSView32 Event files convert successfully to FactoryTalk View SE Events files. In FactoryTalk View SE, however, Events are evaluated only on an HMI Server and executes only server-side commands, such as tag writes, DerivedOn, DataLogOn, and alarming commands. Events do not trigger and run on client computers.

To cause Events to trigger from graphic displays, use VBA code instead. For example, suppose that a project includes a graphic display that pops up with operator instructions when a tank reaches a certain fill level. In RSView32, the popup display might be driven by an expression defined in the Event file. In FactoryTalk View SE, create a numeric display object and write VBA code that executes when the numeric display changes. A numeric display shows tag values, but it can also include expressions, like those used in the RSView32 Event file.

See the following Knowledgebase document for information on how to trigger a command on an SE client:

FactoryTalk View SE Software: Trigger Commands on Client from HMI Server

Startup configuration

FactoryTalk View Site Edition does not convert the RSView32 startup configuration file. You must reconfigure startup preferences in FactoryTalk View SE.

See the FactoryTalk View SE YouTube playlist for a video on how to create and configure a FactoryTalk View SE client:

Creating a FactoryTalk View SE Client

Other modernization considerations

When planning to reuse an RSView32 project in a FactoryTalk View Site Edition application, keep these additional considerations in mind.

Communications options

RSView32 requires purchasing RSLinx® Professional or RSLinx® Gateway separately. FactoryTalk View Site Edition does not require a separate FactoryTalk Linx purchase; FactoryTalk Linx is included for no additional charge with FactoryTalk View SE Server and FactoryTalk View SE Station software. FactoryTalk Linx, however, does not allow connections to remote third-party clients. If you need that functionality, use either FactoryTalk Linx Professional or FactoryTalk Linx Gateway.

Both RSView32 and FactoryTalk View Site Edition support KEPServer for RSView® software, which provides serial and Ethernet OPC servers that allow communication between many third-party industrial devices and RSView32, FactoryTalk View Site Edition, and FactoryTalk View Machine Edition.

See the following Knowledgebase tech note for information on communications options with FactoryTalk View SE:

RSLinx Classic and FactoryTalk Linx Product Comparison

RSView32 extensions

RSView32 extensions are not currently supported in FactoryTalk View Site Edition. This includes RSView32 Messenger, RSView32 RecipePro, RSView® 32 SPC™, and RSView32 WebServer. Similar functionality can be achieved for these extensions; in some cases, this functionality is provided by integrated Encompass™ partner products.

The Encompass Partner Locator can help find information about each Encompass partner and their products.

RSView32 Messenger
RSView32 Messenger provided alarm notification functionality. While FactoryTalk View SE does not have built-in email, text, or VoIP alarm notification, Rockwell Automation Encompass partners, WIN-911 and SeQent, provide products designed to integrate with and provide this functionality for FactoryTalk View.

RSView32 Recipe Pro
RSView32 recipes are converted to Recipe Pro+ in FactoryTalk View SE during modernization of a project in FactoryTalk View Studio. RSView32 Recipe Units are imported directly into Recipe Pro+, and can be edited, downloaded, and uploaded using the Recipe Pro+ Editor. This editor is used in FactoryTalk View Studio and can also be launched at runtime. The RecipeProList command can also launch the list of recipes at runtime, providing an easier interface for operators to download/upload recipes.

See the following Knowledgebase document for information on modernization of RSView32 Recipe Pro to Recipe Pro+ in FactoryTalk View SE:

Can I import RSView32 RecipePro configuration into FactoryTalk View SE?

And refer to the FactoryTalk View SE YouTube playlist for videos on Recipe Pro+:

Introduction to FactoryTalk View SE Recipe Pro+

Converting RSView32 RecipePro to FactoryTalk View SE Recipe Pro+

RSView32 Statistical Process Control (SPC)

RSView32 SPC provides integrated, real-time statistical process control functionality. There is no comparable built-in SPC functionality in FactoryTalk View SE, however, one option is to use SPC functions provided by DreamReport, a product from Encompass partner Ocean Data Systems.

RSView32 WebServer

RSView32 WebServer allowed HMI users to view remote RSView32 projects via the Internet using a web browser. FactoryTalk ViewPoint is an add-on to FactoryTalk View that provides for a fully scalable, fully animated, and secured web-based HMI client with the ability to connect to the developed FactoryTalk View SE application. The web application consists of graphic displays selected from the FactoryTalk View SE application, converted for use in a web browser, and then published to a FactoryTalk ViewPoint server (web server). FactoryTalk ViewPoint applications can also provide content via an interface optimized for mobile devices.

See the following Knowledgebase document for information on FactoryTalk ViewPoint:

FactoryTalk ViewPoint Tips and Best Practices TOC

FactoryTalk View Site Edition advantages

FactoryTalk View Site Edition provides a number of advantages that are not available with RSView32 software. A few of these advantages are introduced below.

Shared editor and compatibility with FactoryTalk View Machine Edition

In addition to FactoryTalk View Site Edition, the FactoryTalk View Enterprise Series also includes FactoryTalk View Machine Edition, a machine-level HMI product for monitoring and controlling individual machines and small processes. FactoryTalk View ME applications typically run on PanelView Plus 7 terminals but can also run on a PC platform. FactoryTalk View Studio Enterprise provides a common development system used for creating both machine-level projects and site-level applications. With FactoryTalk View Studio, entire machine-level applications can be imported into site-level applications. It is even possible to drag-and-drop individual machine-level components right into FactoryTalk View Site Edition projects.

Edit applications online

FactoryTalk View Studio allows editing components of a project online, while the application is running. The FactoryTalk View Site Edition system inherits changes to the control system automatically, without having to shut down running processes or make separate configuration changes. For example, if a processor is moved or a tag structure is changed in FactoryTalk View Studio, the changes are immediately reflected in the FactoryTalk View SE runtime application. Runtime edits can be done for all components including tags and alarming.

Edit applications from remote locations

For distributed applications, FactoryTalk View Site Edition allows HMI engineers to create and deploy applications remotely, from any computer on the network. Multiple developers can access the application simultaneously, reducing overall development time.

Built-in redundancy, failure detection and recovery

FactoryTalk View Site Edition HMI servers, FactoryTalk Alarms and Events, FactoryTalk Linx, and other OPC Data Access 2.0 servers can all be configured to run in a redundant pair on both active and standby computers. Once configured, each redundant pair of servers is available to all FactoryTalk-enabled clients within the system. Adding additional clients does not require any additional configuration.

At runtime, if the connection to the active computer fails, FactoryTalk automatically switches all clients to the standby computer within 30 seconds and can automatically switch them back to the primary computer when the connection is restored — all without any custom programming, client configuration, or operator intervention.

Specific information on design considerations for a redundant FactoryTalk View SE system can be found in the following Knowledgebase document:

FactoryTalk View SE Distributed System Design Considerations

Audit trails, electronic signatures, and regulatory compliance

FactoryTalk View SE offers a number of features that make it easier to comply with government regulations, including the U.S. government's 21 CFR Part 11 specification.

Compliance with industry and government regulations often requires capturing and archiving operator actions and changes that occur to a running system. FactoryTalk Diagnostics enables this capability, not only for FactoryTalk View Site Edition applications, but also for all FactoryTalk-enabled products participating in an industrial automation system.

Some critical operations, such as set point changes, FactoryTalk View SE commands, and recipe downloads, require that an operator's identity be verified before proceeding. FactoryTalk View SE can require an operator, and an optional approver to enter a username and password before performing an operation. Operator activity and system changes are then logged through FactoryTalk Diagnostics.

The electronic signature button is an object that allows this functionality. Common objects such as button objects, string inputs, and numeric input objects also support the electronic signature feature.

See the Rockwell Automation Literature Library for more information on configuring FactoryTalk View SE in a 21 CFR Part 11 environment:

Guidelines for Applying FactoryTalk View SE v11 in a 21 CFR Part 11 Environment

Secure the system using Windows domain users and groups

With FactoryTalk View SE, production system security can be integrated with an existing IT infrastructure. This works by leveraging Windows authentication services and other security access procedures, such as enforcing unique passwords or automatically logging out accounts after unsuccessful logon attempts. Security administrators have the ability to further restrict access based on line-of-sight for operator actions.

Integration with ThinManager for management and delivery of content to devices, users, and locations

ThinManager® software is a Rockwell Automation platform that simplifies the delivery of centralized applications and information to virtually any device. It allows you to manage your thin clients, the applications that are delivered to them, and the users who have access to those applications.

FactoryTalk View SE provides a seamless connection to a ThinManager system via authentication pass-through – when the user logs in to a ThinManager managed terminal or device, their credentials are automatically passed through to FactoryTalk View SE; no second login is required.

The combination of FactoryTalk View SE with ThinManager (starting with v11 of both products) provides significant FactoryTalk View SE client licensing benefits. Licensing costs are minimized when using multiple FactoryTalk View SE clients on a ThinManager terminal or using a MultiSession™ or Failover configuration.

ThinManager can also be used as a key training component during modernization from RSView32 to FactoryTalk View SE; RSView32 applications can be run side by side with the new FactoryTalk View SE application to assist operators in learning and understanding the new operator interface.

See an overview of how a customer implemented ThinManager as part of their modernization from RSView32 to FactoryTalk View SE on the ThinManager website.

Learn more about ThinManager at the Rockwell Automation website.

Rockwell Automation Library of Process Objects

Modernizing to FactoryTalk View SE provides access to the Rockwell Automation Library of Process Objects, a predefined library of controller code (Add-On Instructions), display elements (FactoryTalk View SE global objects), and faceplates that let you quickly assemble large applications with proven strategies, rich functionality, and known performance. The Rockwell Automation Library of Process Objects enables configuration of a device from I/O to operator interface in a few mouse clicks.

RSView32 applications did not support the deep integration with the controller that FactoryTalk View SE has with the Logix-based controllers. The controller code, graphic objects, and faceplates provided in the Library allow for the presentation of information from the controller directly to the operator, enabling operators to trace the root cause of an issue and make decisions easier, faster, and more confidently.

See the Literature Library for more information on the Rockwell Automation Library of Process Objects.

The Rockwell Automation Library of Process Objects can be downloaded from the Product Compatibility and Download Center.

# Steps to convert an RSView32 project to FactoryTalk View SE distributed

FactoryTalk View Studio Enterprise is the primary tool used to modernize RSView32 applications to FactoryTalk View SE. The following steps illustrate how to modernize an application.

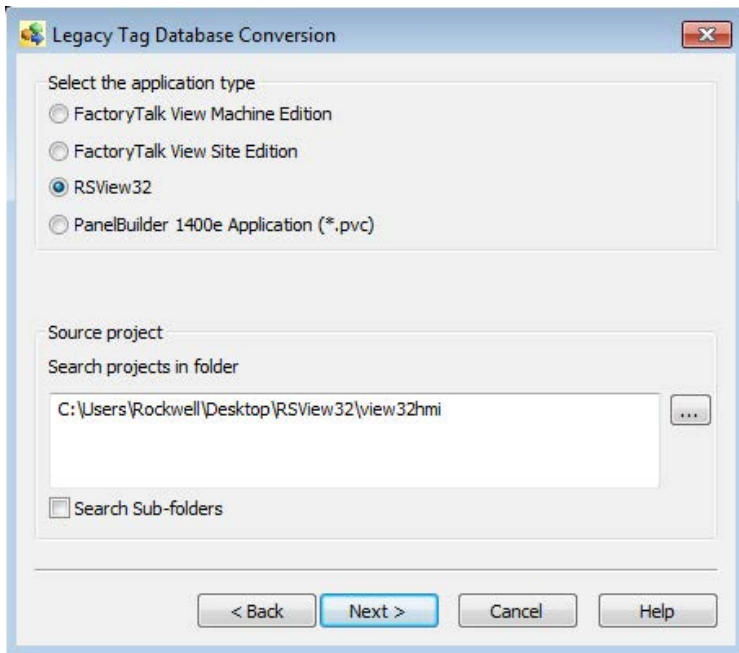## Convert the RSView32 project tag database for use on a 64-bit system

RSView32 is a 32-bit application that cannot run on a 64-bit system. To import an RSView32 application into FactoryTalk View SE, its tag database must first be converted to a format that will work on a 64-bit OS. The Legacy Tag Database Conversion Utility is used for this tag database conversion. The utility must be used twice; first on the 32-bit RSView32 system to export the tag database, and then again on the 64-bit FactoryTalk View SE system before importing the RSView32 project to FactoryTalk View SE.

The Legacy Tag Database Conversion Utility can be downloaded from the Knowledgebase here for use on the RSView32 PC. It will be installed with FactoryTalk View SE.

On the RSView32 system, start the Legacy Tag Database Conversion Utility from the Start menu and select "Export Legacy Tag Database".
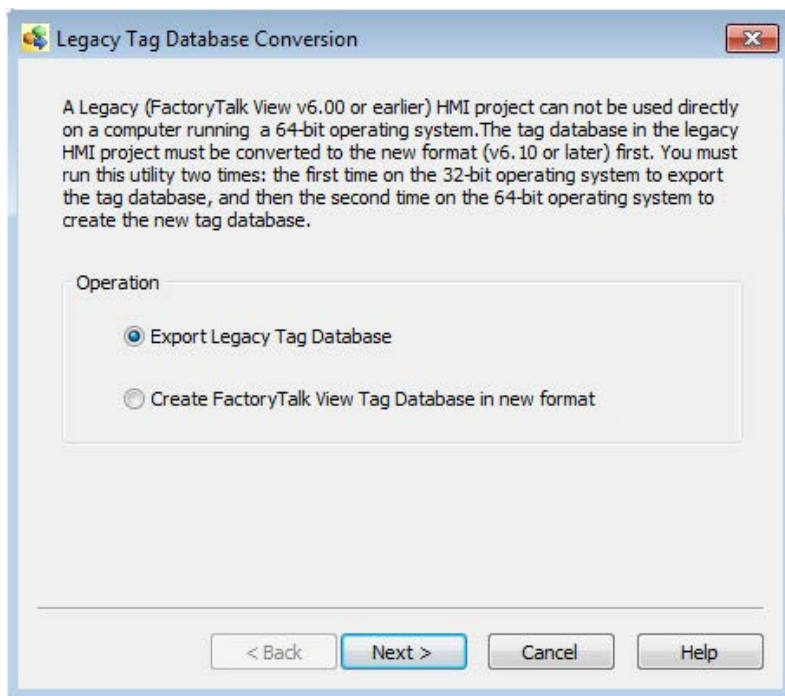
Select the "RSView32" application type and browse to the RSView32 project folder.

Click "Finish" to export the tag database.
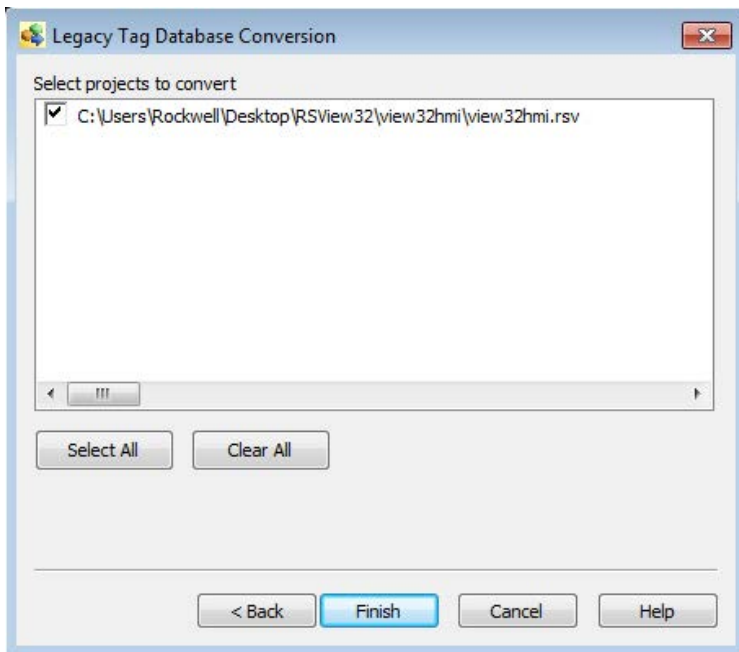
Any errors in the tag database export will be displayed in an export log. Two new .CSV files are created in the RSView32 project folder. Those files should be copied with the project to the 64-bit FactoryTalk View SE system.
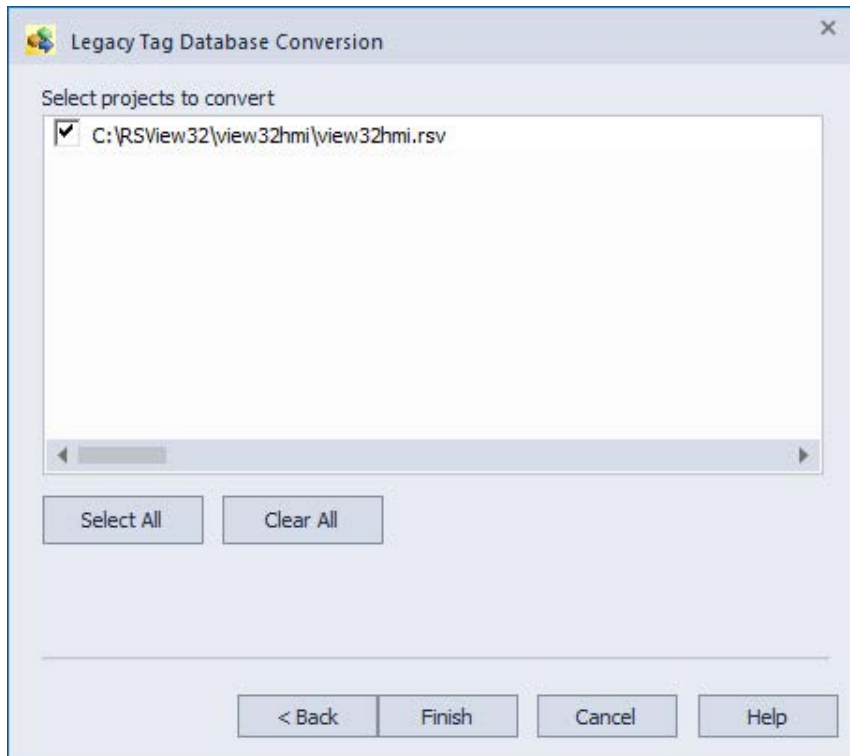
On the FactoryTalk View SE system, start the Legacy Tag Database Conversion utility and select "Create FactoryTalk View Tag Database in new format."
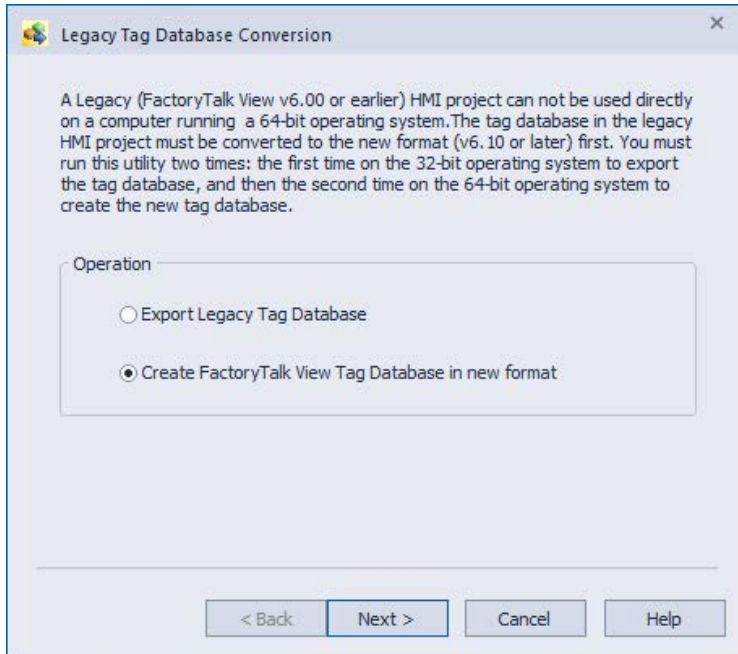
Select the "RSView32" application type and browse to the RSView32 project folder.
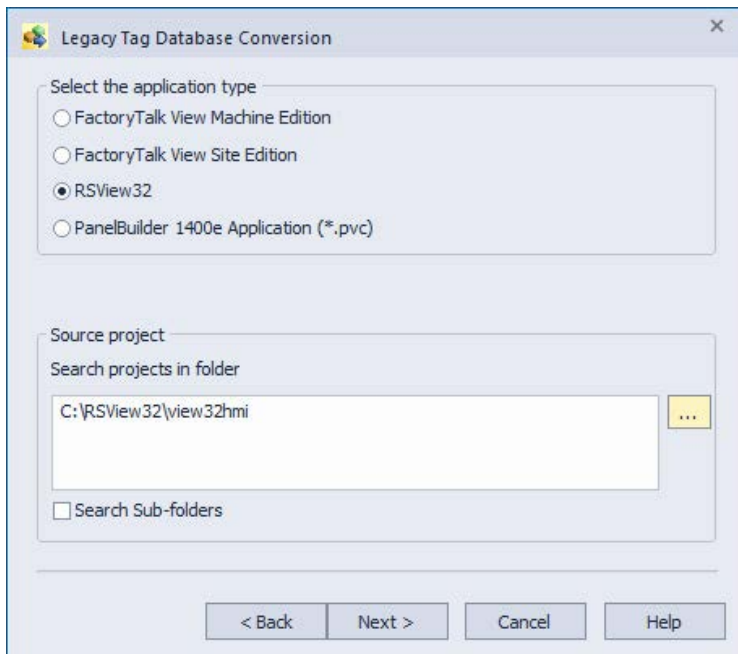
Click "Finish" to convert the tag database.

Any errors in the tag database conversion will be displayed in a conversion log.

You can now proceed to import the RSView32 project into FactoryTalk View SE on a 64-bit system.

Import the RSView32 project into FactoryTalk View SE

Create a new FactoryTalk View Site Edition (Network Distributed) application in FactoryTalk View SE. In this case, the application is called **RSView32Conversion.** Add an area **(Area1).**
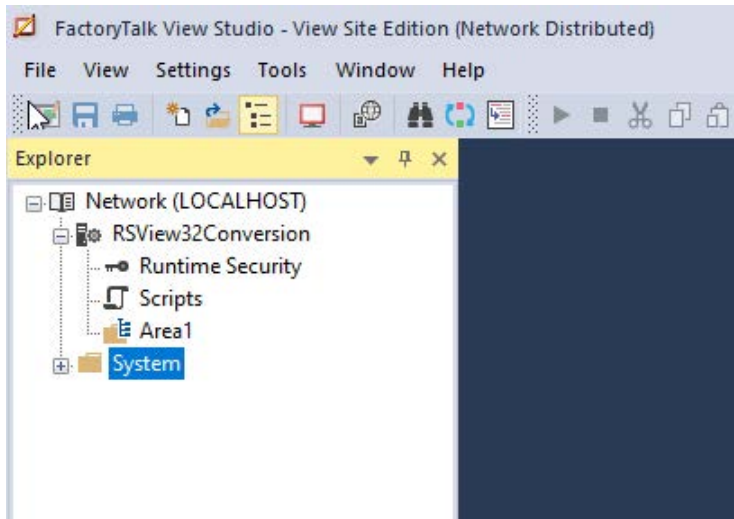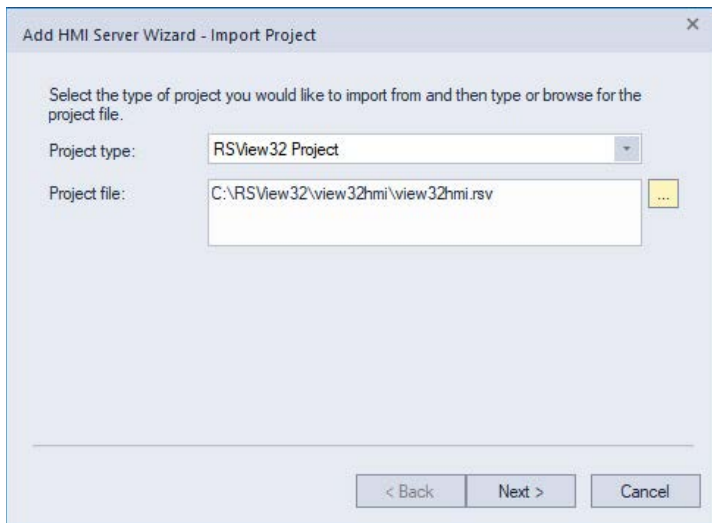
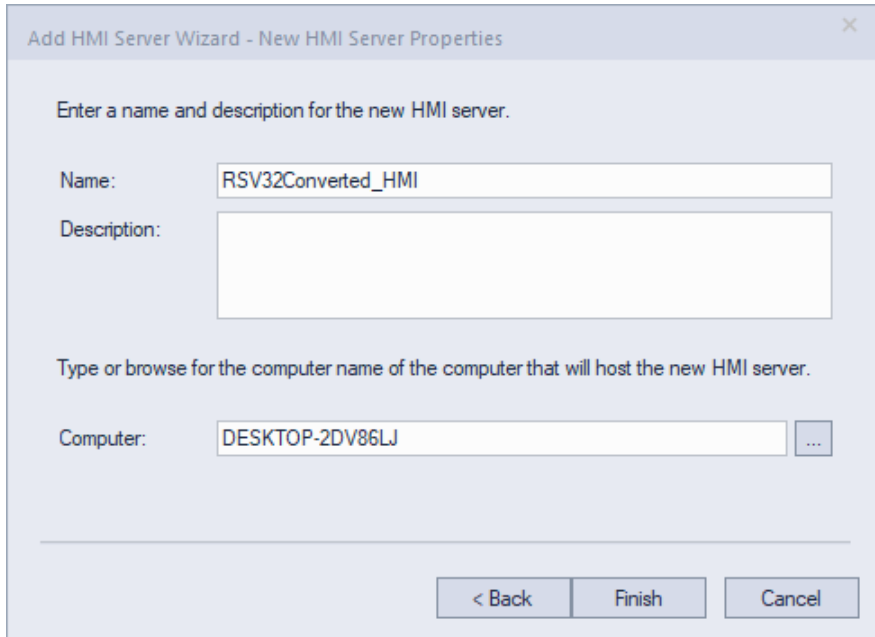

Add a new HMI server.
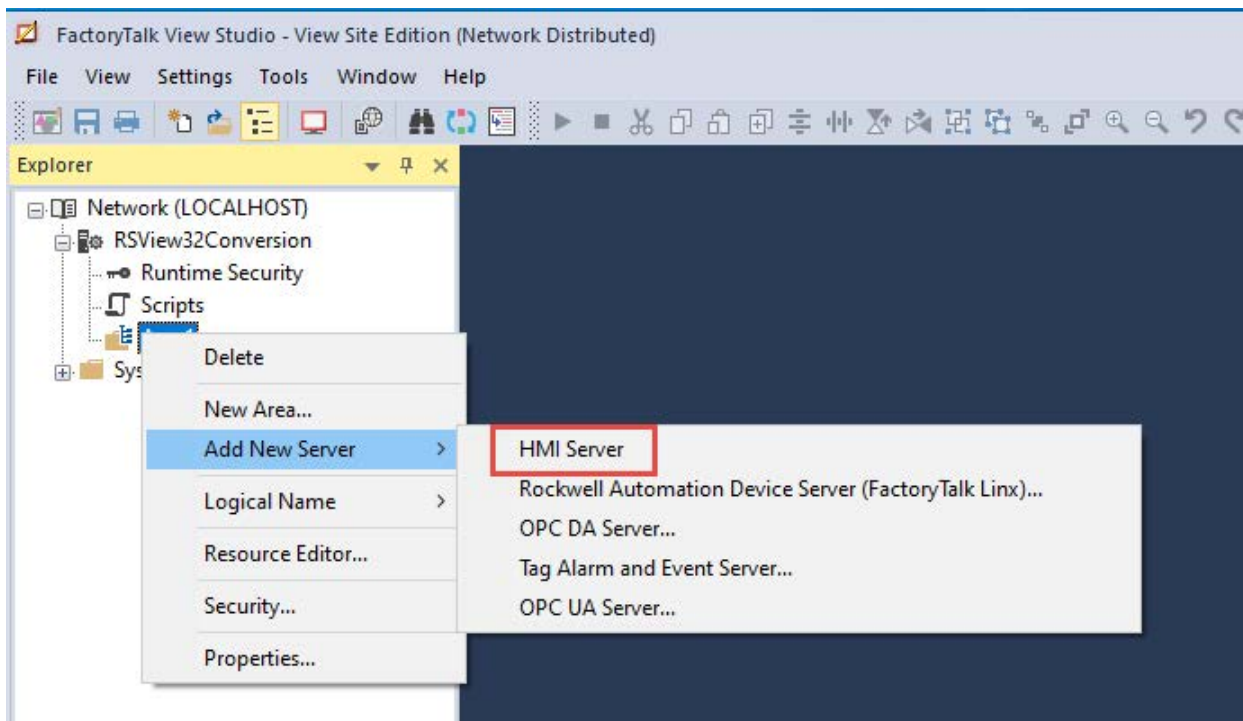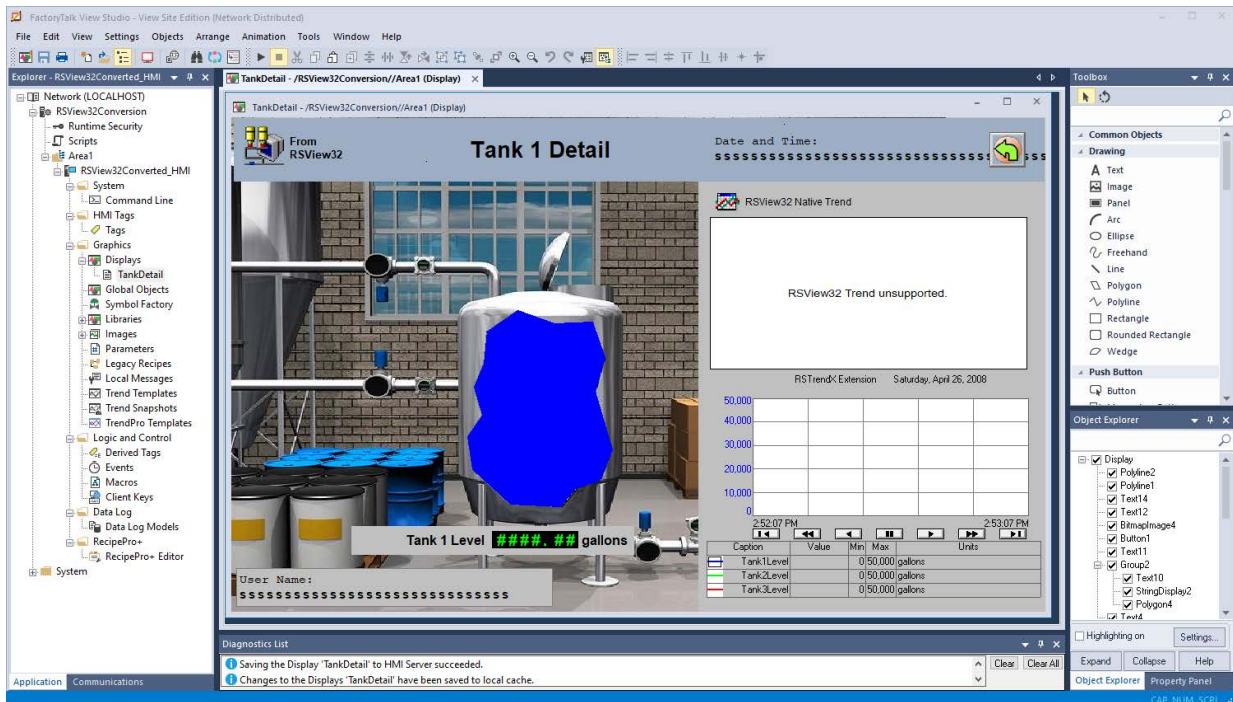
Select "Import a project."
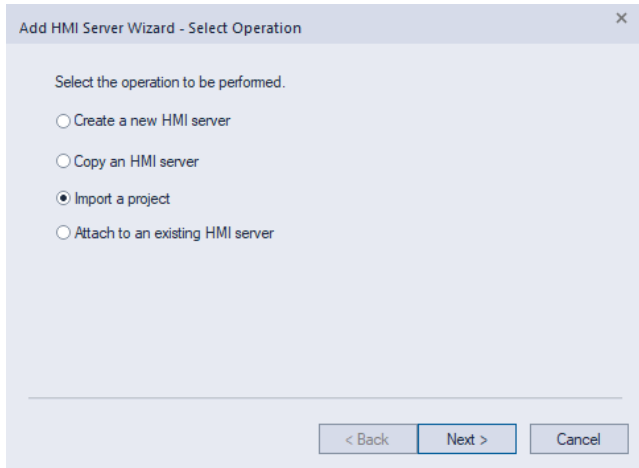
Click "OK."
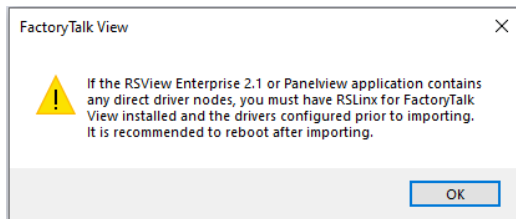
Select "RSView32 Project" for project type and select the RSView32 project file that is to be imported.

Provide a name for the new HMI Server and select the computer that will host the HMI Server. Click "Finish" to start the project import.
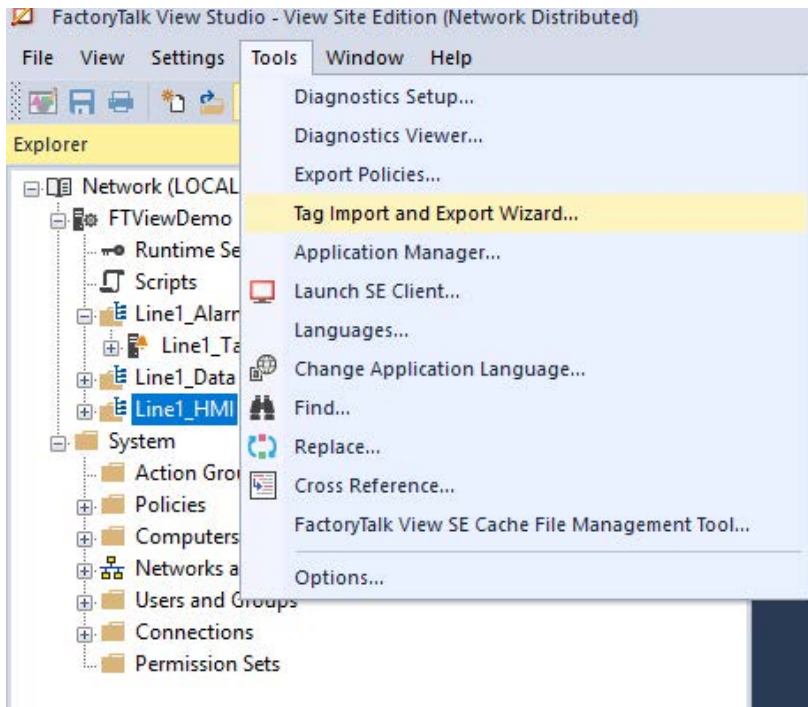

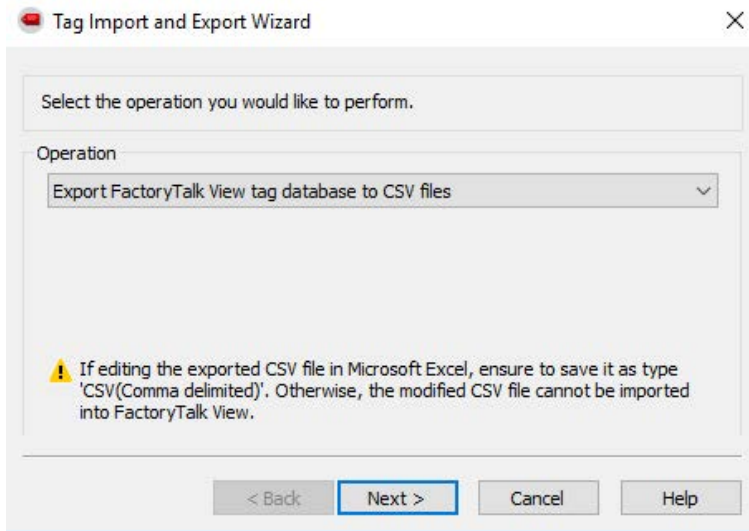The new HMI Server will be created and the RSView32 project imported.

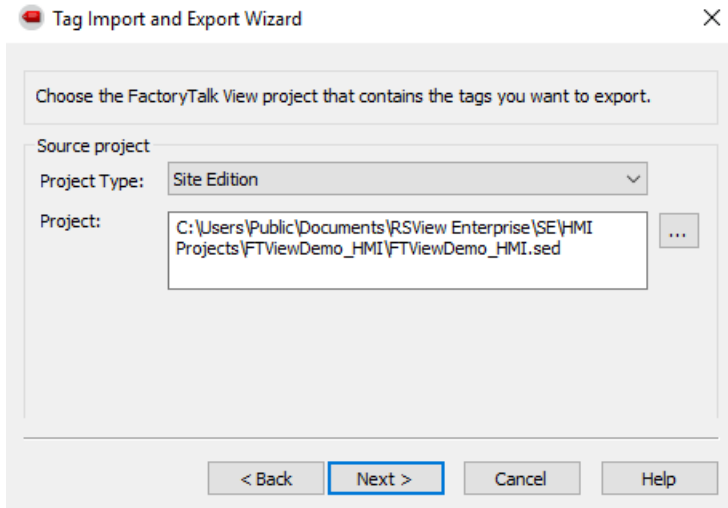## Converting alarms into FactoryTalk Alarm & Events

1. In FactoryTalk View Studio, from the "Tools" menu start the "Tag Import and Export Wizard".
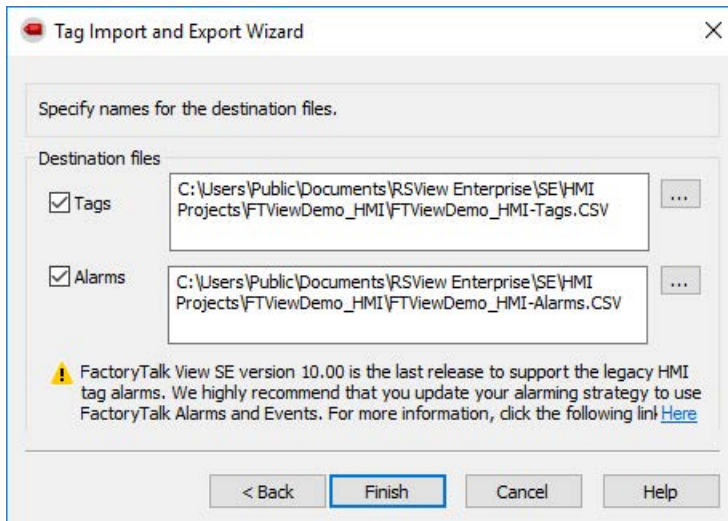

2. Select "Export FactoryTalk View tag database to CSV files" and click "Next".
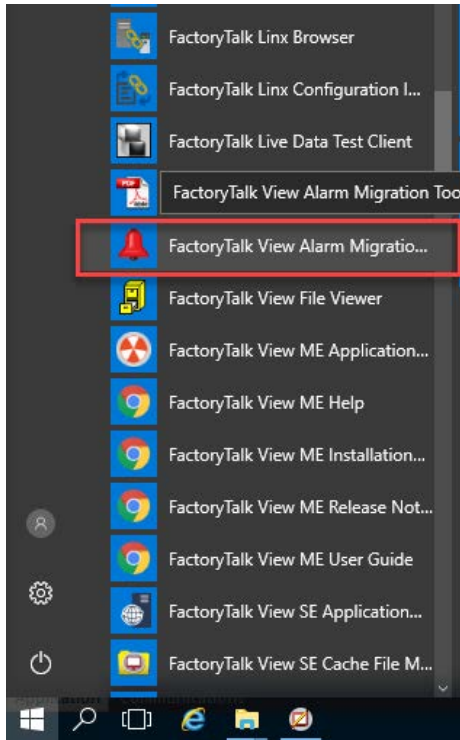
3. Select "Site Edition" and the path to the FactoryTalk View project that contains the tags to export and click "Next".
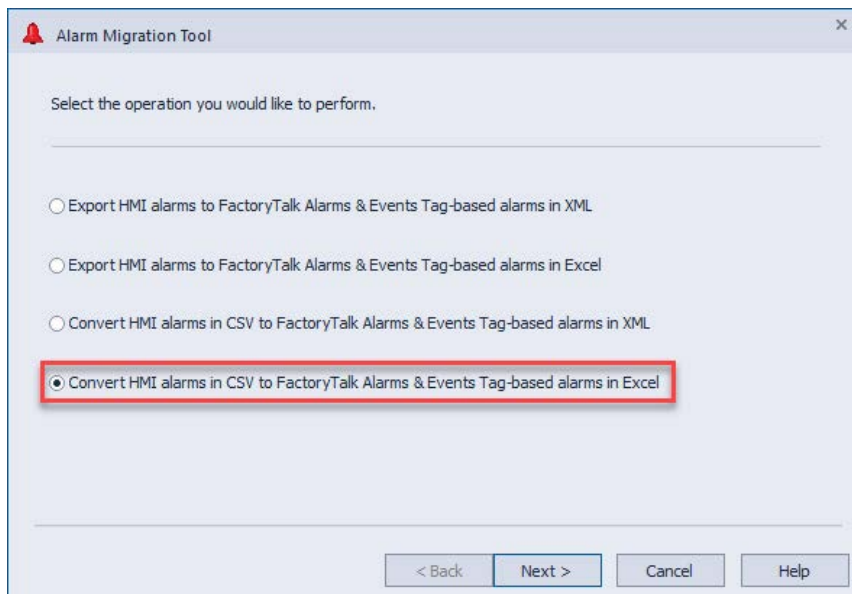

4. Specify the destination files for Tags and Alarms, click "Finish" and let the export complete.

5. Start the FactoryTalk View Alarm Migration Tool.

6. Select "Convert HMI alarms in CSV to FactoryTalk Alarms & Events Tag-based alarms in Excel" and click "Next".

7. Select the source files for HMI Tags and HMI Alarms that were created after using the Tag Import and Export Wizard (Step 4). Also select a destination file and click "Finish".
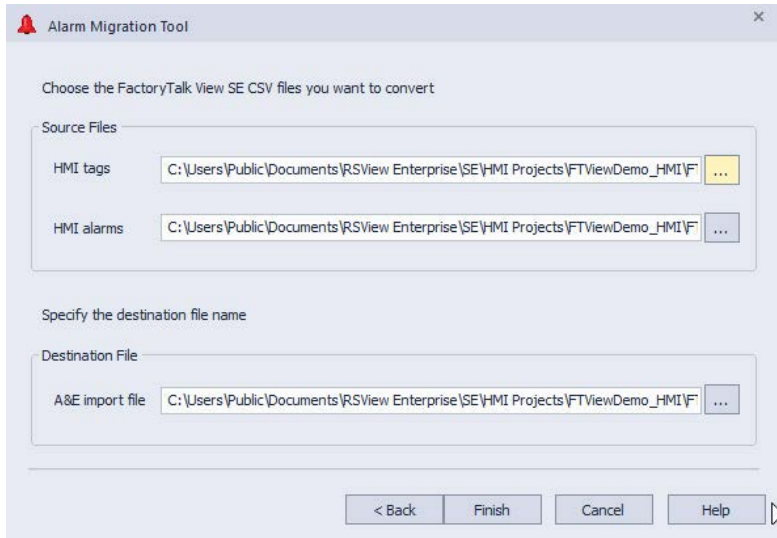
8. When the conversion is completed, select "No" when given the option to open the converted file.
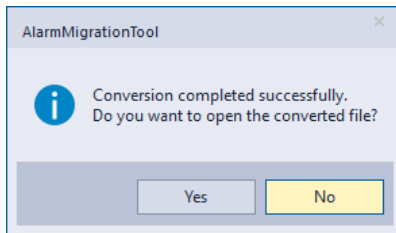
9. In FactoryTalk View Studio right mouse, click the FactoryTalk Alarm & Events server and select "Import and Export ...".
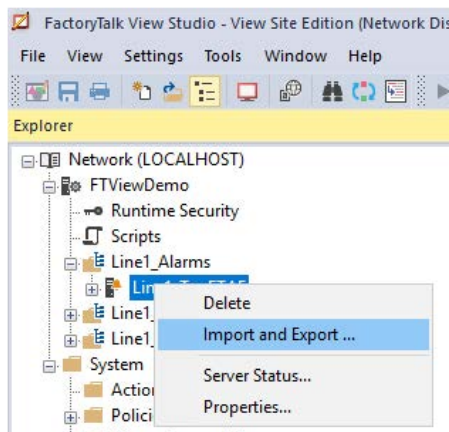
10. Select "Import alarm configuration from Excel file" and click "Next".
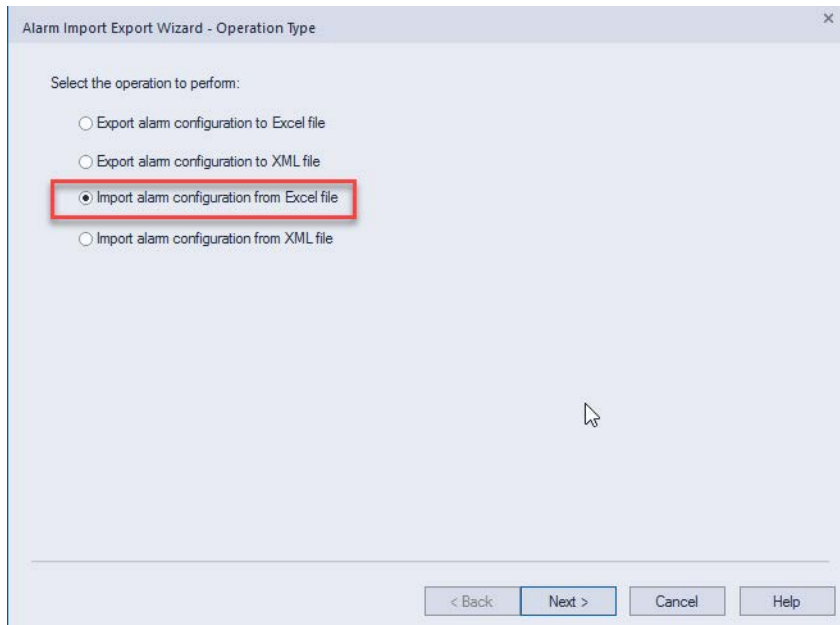
11. Specify the import file location and click "Next". This will be the converted file created by the FactoryTalk View Alarm Migration Tool (see step 8).
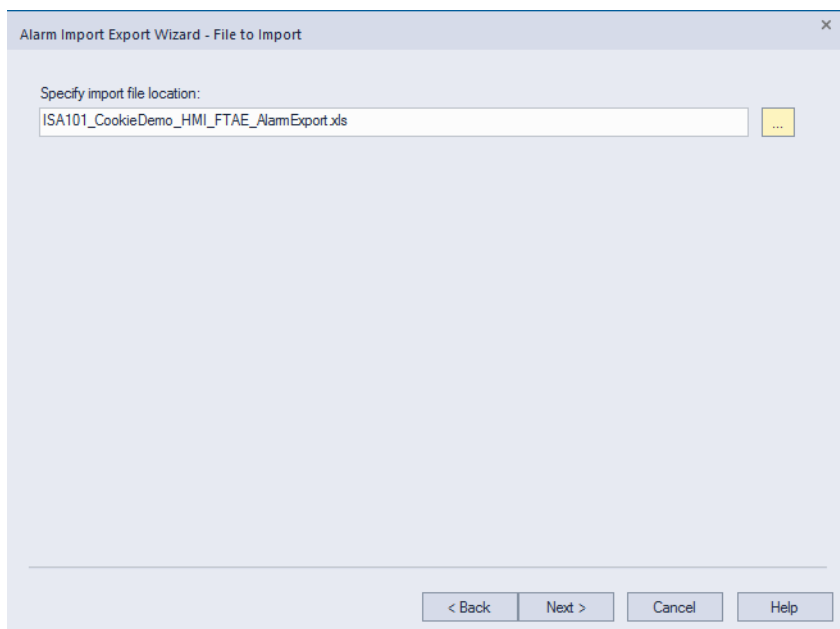
12. Select the import method "Update existing alarm definitions and create new alarm definitions from the import file" and click "Finish".
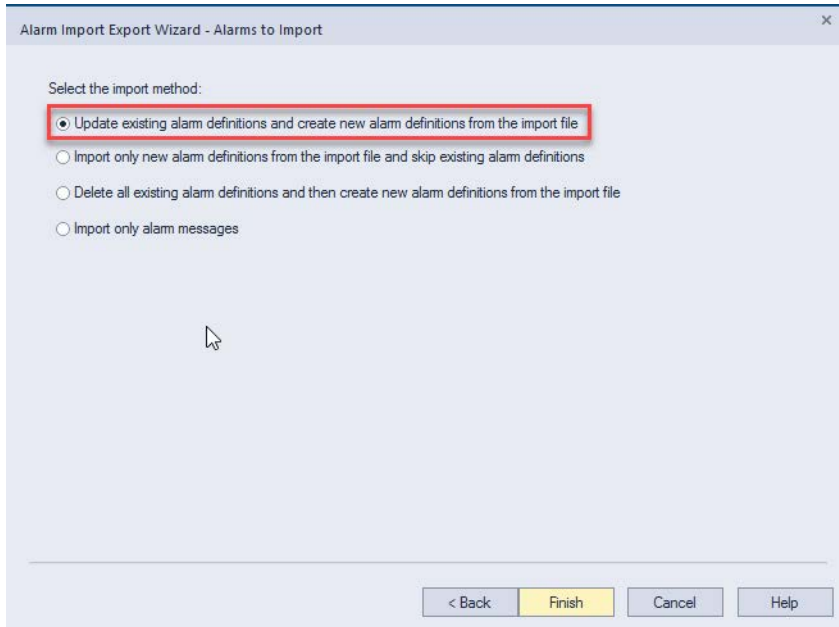
13. From FactoryTalk View Studio, open the "Alarm and Event Setup" editor.
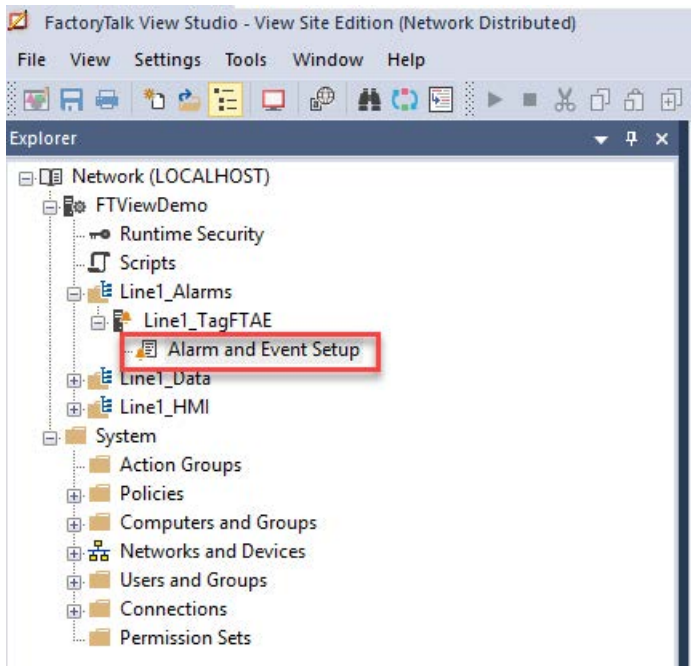
14. The FactoryTalk Alarm & Event tags can now be viewed in the "Alarm and Event Setup" editor.
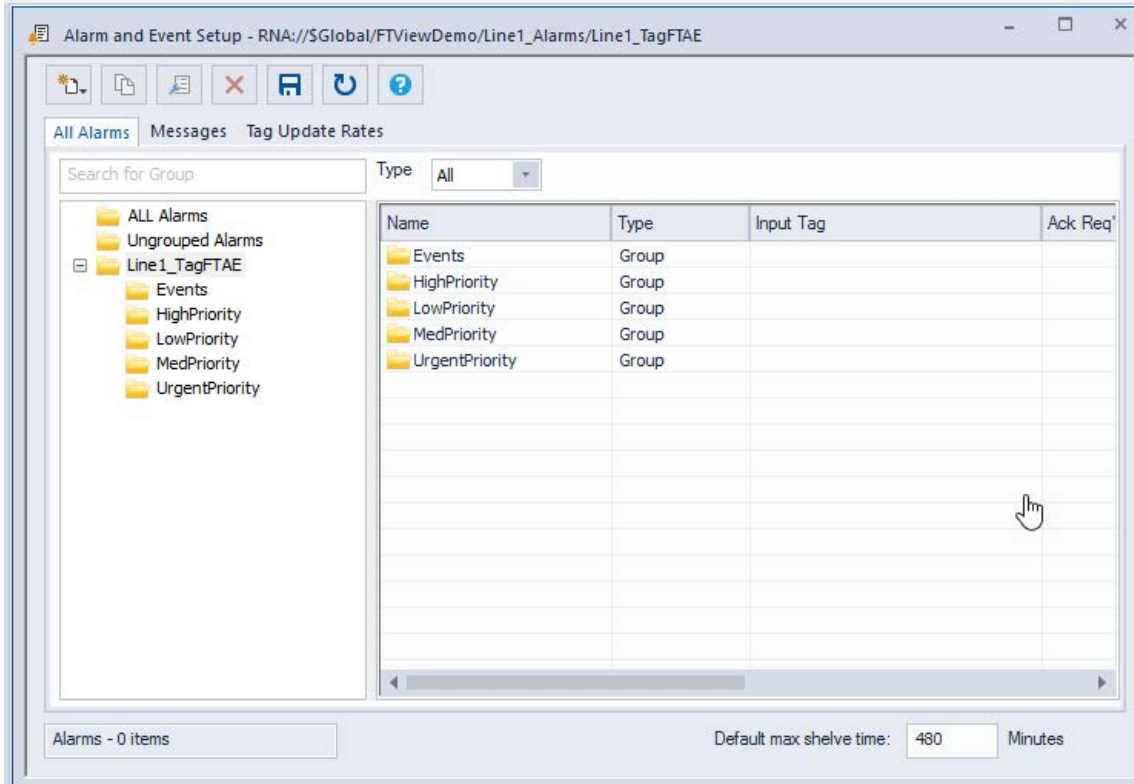
What <u>will</u> modernize from the RSView32 project to the FactoryTalk View SE HMI Server

The following components will modernize seamlessly from RSView32 to FactoryTalk View SE:

- Graphic displays
- Animated objects
- Text
- Tags
- Alarms

- Expressions
- Libraries
- Images
- Parameter files
- Recipes

- Derived tags
- Events
- Macros
- Global keys

What <u>will not</u> modernize from the RSView32 project to the FactoryTalk View SE HMI Server

The following remarks describe what will not modernize from RSView32 to FactoryTalk View SE. Information on how to rectify this is also provided where available.

- **VBA** — The RSView32 object model is server side, while the FactoryTalk View SE object model is client side. VBA code will have to be redone in line with the FactoryTalk View SE VBA object model and a client-side VBA engine. See the following Knowledgebase document for more information:

Sample VBA: Exercise in modernizing an RSView32 application with VBA to FactoryTalk View SE

For more detail, see Appendix C in the FactoryTalk View SE Users Guide.

- **Native trends** — New trend objects must be created in FactoryTalk View SE after the modernization of the RSView32 project.

- **Tag monitors** — The information displayed in the RSView32 Tag monitor will must be re-created using native FactoryTalk View SE objects like the numeric and string data display objects, or by using VBA.

- **Command lines embedded in graphics** — RSView32 allowed for the insertion of a command-line object in a graphic display. This allowed an operator to execute any valid RSView32 command. However, FactoryTalk View SE does not have the ability to embed a command-line object. A workaround using a String Input object is described below.

  Command-line workaround:

  1. Insert a String Input object into a graphic.

  2. Right-click on the String Input object and select VBA. This launches the VBA editor and inserts a "Change" event for the String Input.

  3. Since we do not want to execute a command every time the input changes, we will change the event from "Change" to "KeyPress." We can do this by clicking the drop-down box in the upper-right corner of the VBA editor and selecting "KeyPress."
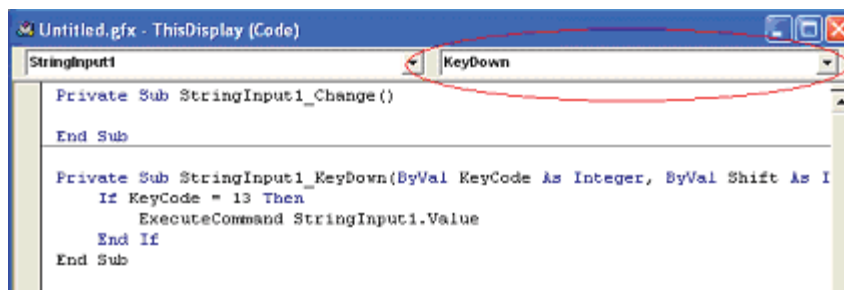
4. Enter the following VBA code. The example shows the default object name of "StringInput1"; modify this if it is different in your application.

    If KeyCode = 13 Then

    ExecuteCommand StringInput1.Value

    End If

    Now when the graphic is called from an SE client, the VBA code will attempt to execute whatever command is placed in the string tag. The command will only be executed when the Enter key is pressed (Keycode 13 = "Enter"). If desired, other keys could be defined to trigger the code.

- **External applications** that depend on RSView32 to be an OPC or DDE data server, e.g. FactoryTalk Linx Gateway.

- **Alarm summaries** — New alarm summaries must be created in FactoryTalk View SE after the modernization of the RSView32 project.

- **Modulus operations** no longer work, and expressions using the modulus operator will error out, because the conversion utility does not account for the different syntax required in FactoryTalk View SE.

  - In RSView32, the required modulus operation syntax appeared like this example: Timer%60

  - In FactoryTalk View SE, the user must manually change the syntax in all expressions using modulus operations, as in this example: Timer % 60

- The following **commands** cannot be executed from a FactoryTalk View SE event:

Abort	DisplayClientOpen	OpenRSLogix5000	RecipeSave
AE_Acknowledge	DisplayNavigationHistory	Pin	ScreenPrint
AE_ClearCount	DisplayNextScreen	Position	SendKeys
AE_Disable	DispalyPreviousScreen	PrevPosition	SetFocus
AE_Enable	Download	PrevWindow	Switchover
AE_Remark	DownloadAll	PrintDisplay	SuppressOff
AE_Reset	FlushCache	PullForward	SuppressOffAll
AE_Shelve	Help	PushBack	Undefine
AE_Suppress	Identify	RecipeProEdit	Unpin
AE_Unshelve	Invoke	RecipeProList	Upload
AE_UnsuppressDefine	Key	RecipeProRestore	UploadAll
Display	NextPosition	RecipeProSave	
DisplayClientClose	NextWindow	RecipeProPrint	

See the following Knowledgebase document for information on how to trigger a command on an SE client:

FactoryTalk View SE Software: Trigger Commands on Client from HMI Server

- While FactoryTalk View SE has a **"System/User"** tag, it is merely a carryover from RSView32 and is non-functional. Use the CurrentUserName() function instead.

- Certain **ActiveX controls** may not function as they did in RSView32. They must be evaluated on an individual basis. For example, the Recipe Pro ActiveX control interfaces directly with the RSView32 object model and therefore does not work with FactoryTalk View SE. However, other ActiveX controls that do not depend on the RSView32 object model may operate as expected in a FactoryTalk View SE graphic.

- RSView32 introduced a new function, **GetDayOfWeek()** in version 7.3. While there is no equivalent FactoryTalk View SE function, a simple workaround is to use the VBA function "Weekday." Refer to VBA help for more information on VBA's "Weekday" function.

- **Macros** being executed from a graphic display. When an RSView32 application is converted to FactoryTalk View SE, macros that are executed from a graphic display require the addition of quotes to work. For example, MyMacro will must be changed to "MyMacro."

RSView32 and FactoryTalk View SE command compatibility matrix

The following matrix documents all RSView32 and FactoryTalk View SE commands. Entries in red are commands that do not exist in the other product. The Notes column provides additional explanation and some workarounds.

FactoryTalk View SE Commands	RSView32 Commands	Notes
Abort	Abort	FactoryTalk View SE cannot issue abort from an event.
	Account	Launches User Account editor in RSView32.
Acknowledge	Acknowledge	
AcknowledgeAll	AcknowledgeAll	
	Activity	
	ActivityBarOff	
	ActivityBarOn	
	ActivityLogSendToOdbc	In FactoryTalk View SE go to the Tools menu and use Diagnostics Setup-> Destination Setup-> ODBC Database instead.
	ActivityOff	
	ActivityOn	
	ActivityPrintOff	
	ActivityPrintOn	
	ActivityViewer	
	Alarm	
AE_Acknowledge		
AE_ClearCount		
AE_Disable		
AE_Enable		
AE_Remark		
AE_Reset		
AE_Shelve		
AE_Suppress		
AE_Unshelve		
AE_Unsuppress		
AlarmAcceptEdits		Supports runtime alarm edits in FactoryTalk View SE.
AlarmEvent	AlarmEvent	
AlarmLogNewFile		
AlarmLogOff	AlarmLogOff	
AlarmLogOn	AlarmLogOn	
AlarmLogRemark	AlarmLogRemark	

FactoryTalk View SE Commands	RSView32 Commands	Notes
	AlarmLogSendToOdbcAlarmOff	AlarmOff
AlarmOn	AlarmOn	
AlarmPrintOff	AlarmPrintOff	
AlarmPrintOn	AlarmPrintOn	
	AlarmViewer	In FactoryTalk View SE use "AppStart AlarmViewer" instead of this internal RSView32 command.
AppAbort	AppAbort	
AppActivate	AppActivate	
AppStart	AppStart	
Beep	Beep	
	Channel	
	Class	
	Command Line	See the "Command Line Workaround".
	ComStatus	
	ComStatusOff	
	ComStatusOn	
	Database	
	DatabaseSync	
	DataLog	
DataLogChangeRate	DataLogChangeRate	
DataLogMergeToPrimary	DataLogMergeToPrimary	
DataLogNewFile	DataLogNewFile	
DataLogOff	DataLogOff	
DataLogOn	DataLogOn	
	DataLogPath	
DataLogRenameFile	DataLogRenameFile	
DataLogSnapshot	DataLogSnapshot	
DataLogSwitchBack	DataLogSwitchBack	
DDEExecute	DDEExecute	
	DDEPokeDisable	N/A; FactoryTalk View SE is not a DDE server.
	DDEPokeEnable	N/A; FactoryTalk View SE is not a DDE server.
	DDEServerOff	N/A; FactoryTalk View SE is not a DDE server.
	DDEServerOn	N/A; FactoryTalk View SE is not a DDE server.
Define	Define	
	Derived	Launches Derived Tag editor in RSView32. In FactoryTalk View SE, use Studio instead.
DerivedOff	DerivedOff	

FactoryTalk View SE Commands	RSView32 Commands	Notes
DerivedOn	DerivedOn	
Display	Display	
DisplayClientClose		
DisplayClientOpen		
DisplayNavigationHistory		
DisplayNextScreen		
DisplayPreviousScreen		
Download	Download	
DownloadAll	DownloadAll	
	DriverPrimary	No direct drivers in SE, no equivalent function; try using RSLinx alias topics instead.
	DriverSecondary	No direct drivers in SE, no equivalent.
	DriverToggle	No direct drivers in SE, no equivalent.
	EchoOff	Stops logging commands to the activity log file; no equivalent function in SE.
	EchoOn	Starts logging commands to the activity log file; no equivalent function in SE.
Equal (=) command	Equal (=) command	
	Event	Launches Event editor in RSView32. In FactoryTalk View SE, use Studio instead.
EventOff	EventOff	
EventOn	EventOn	
FlushCache	FlushCache	
	Graphic	Launches Graphics editor in RSView32. In FactoryTalk View SE, use Studio instead.
HandshakeOff	HandshakeOff	
HandshakeOn	HandshakeOn	
Help	Help	
Identify	Identify	
If		
Invoke	Invoke	
Key	Key	
	KeyEdit	Launches Global Key editor in RSView32. In FactoryTalk View SE, use Studio instead.
Language		Switches between defined languages.
	LInsertStringTag	Language switching command added in RSView32 version 7.3.
	LTagSubstitute	Language switching command added in RSView32 version 7.3.
Login	Login	
Logout	Logout	
	MacroEdit	Launches Macro editor in RSView32. In FactoryTalk View SE, use Studio instead.

FactoryTalk View SE Commands	RSView32 Commands	Notes
	Monitor	Launches RSView32 Tag Monitor; no equivalent native function in FactoryTalk View SE. Use Data display objects or use VBA to show same information. Additionally FactoryTalk Live Data Test Client can be used.
NextPosition	NextPosition	
NextWindow	NextWindow	
OpenRSLogix5000		
	Node	Launches Node editor in RSView32. In FactoryTalk View SE, use Studio instead.
	NodeDisable	FactoryTalk View SE has no nodes, no equivalent function.
	NodeEnable	FactoryTalk View SE has no nodes, no equivalent function.
	NodeSwitch	FactoryTalk View SE has no nodes, no equivalent function.
	Parameter	Launches Parameter editor in RSView32. In FactoryTalk View SE, use Studio instead.
Password	Password	Allows user to change password. Use Windows to change user passwords.
Pause	Pause	
Pin		
PlayWave	PlayWave	
Position	Position	
PrevPosition	PrevPosition	
PrevWindow	PrevWindow	
PrintDisplay	PrintDisplay	
	Project	This RSView32 command is no longer used but is still supported for compatibility.
	ProjectHide	Hides RSView32 Project Manager. In FactoryTalk View SE, use Studio instead.
	ProjectRun	Runs project in RSView32. SE projects either run when O/S starts or when a client demands them.
	ProjectShow	Shows RSView32 Project Manager. Use FactoryTalk View Studio instead.
	ProjectStop	Stops project in RSView32. Use FactoryTalk View Studio or SE Service Manager instead.
PullForward	PullForward	
PushBack	PushBack	
	Quit	Exits RSView32. Use FactoryTalk View Studio or SE Service Manager instead.
Ramp	Ramp	
	RecipeEdit	Launches Recipe Editor in RSView32. Use FactoryTalk View Studio to edit recipes instead.
RecipeProDownload		
RecipeProEdit		
RecipeProList		
RecipeRestore		
RecipeSave		

FactoryTalk View SE Commands	RSView32 Commands	Notes
RecipeProUpload		
RecipeRestore	RecipeRestore	
RecipeSave	RecipeSave	
Remark	Remark	
	RTDataServerOff	N/A; FactoryTalk View SE is not an OPC server.
	RTDataServerOn	N/A; FactoryTalk View SE is not an OPC server.
	RTDataWriteDisable	N/A; FactoryTalk View SE is not an OPC server.
	RTDataWriteEnable	N/A; FactoryTalk View SE is not an OPC server.
ScreenPrint	ScreenPrint	
	Security	Launches Security Editor in RSView32. Use FactoryTalk View Studio or Administration Console to edit security.
SendKeys	SendKeys	
Set	Set	
SetFocus	SetFocus	
Silence	Silence	
SilenceAll	SilenceAll	
	StartupConfig	Opens the Startup editor in RSView32. Use FactoryTalk View Studio instead.
	Summary	FactoryTalk View SE uses alarm summaries embedded in graphics so this command is not needed.
	Suppressed	Launches Suppressed List editor in RSView32. Use FactoryTalk View Studio instead.
SuppressOff	SuppressOff	
SuppressOffAll	SuppressOffAll	
SuppressOn	SuppressOn	
Switchover		
Toggle	Toggle	
Undefine	Undefine	
Unpin		
Upload	Upload	
UploadAll	UploadAll	
	VBAEdit	VBA exists only in FactoryTalk View SE graphics. Edit all code from the FactoryTalk View SE graphics editor.
	VBAExec	VBA exists only in FactoryTalk View SE graphics. Code can be called directly within an SE graphic.

Differences between RSView32, FactoryTalk View Site Edition Distributed, FactoryTalk View Site Edition Station, and FactoryTalk View Machine Edition

Feature	RSView32	FactoryTalk View SE Distributed	FactoryTalk View SE Station	FactoryTalk View ME
Latest Technology		X	X	X
Operating Systems See PCDC for most current OS support	32-bit only: Vista/2008/2003/ XP/2000/7	Windows7/8/10/Server 2008 R2 SP1/Server 2012/ Server 2012 R2/Server 2016/ Server 2019 Standard*	Windows7/8/10/Server 2008 R2 SP1/Server 2012/ Server 2012 R2/Server 2016/ Server 2019 Standard*	Windows7/8/10/Server 2008 R2 SP1/Server 2012/ Server 2012 R2/Server 2016/ Server 2019 Standard* CE 6.0 on PanelView Plus
Embedded Platforms				PanelView Plus MobileView™
Windows Domain Security	X	X	X	X
ActiveX	X	X	X	Platform considerations
OPC	Client/Server	Client	Client	Client
FactoryTalk	Server Only	Network Scope (Directory)	Local or Network Scope (Directory)	Local Scope (Directory)
Server-side VBA	X	X	X	
Client-side VBA		X	X	
Network Requirement		IIS		
Primary Application	Site level: single-station or single-server, or multiple-client	Site level: single-station or single-server, or multiple-client	Site level: single-station	Machine level: single-station
Tag-based HMI	X	X	X	X
Direct Referencing		X	X	X
Max Number of Servers/Clients	1 / 20	10 / 120		
Web Clients	X	FactoryTalk ViewPoint	FactoryTalk ViewPoint	FactoryTalk ViewPoint (PanelView Plus only)
Thin Clients (Terminal Services)	X	X		VNC server or Terminal Server Client
Multi-user Development		X		
Remote Configuration	Through 3rd-party RDP software	X	Through 3rd-party RDP software	Through 3rd-party RDP software
Redundancy - Data Server	X	X		
Redundancy - HMI Server	ADS	X		

*Server 2019 Standard supported in FactoryTalk View version 12

Feature	RSView32	FactoryTalk View SE Distributed	FactoryTalk View SE Station	FactoryTalk View ME
Animation (Visibility, color, fill, horizontal and vertical position, width, height, rotation, horizontal and vertical slider, ...)	and touch	and touch	and touch	no touch
Alarming	Tag-based: digital & analog; definable alarm severities, alarm log	Tag-based: digital & analog; definable alarm severities, alarm log. As of v5.0, FactoryTalk Alarms and Events are also available	Tag-based: digital & analog; definable alarm severities, alarm log	State-based (from controller); alarm log
Data Logging	20+ data log models; each with up to 10,000 tags; log to ODBC or dbf db	20+ data log models; each with up to 10,000 tags; log to ODBC or proprietary db	20+ datalog models; each with up to 10,000 tags; log to ODBC or proprietary db	1 datalog model; up to 100 tags; 300,000 records max; export to dbf
Trending	TrendX & native	TrendX & TrendPro	TrendX & TrendPro	Trend
Security	Security assigned to tags, graphic displays, macros, commands, OLE objects; local or Windows security	Security assigned to tags, graphic displays, macros, commands, OLE objects; Windows security	Security assigned to tags, graphic displays, macros, commands, OLE objects; Windows security	Display-based; local or Windows security
Runtime Language Switching	Available in version 7.30 or greater (available through VBA in older versions)	X	X	X
Development Environment	RSView32 Works	FactoryTalk View Studio	FactoryTalk View Studio	FactoryTalk View Studio
Additional Features	Test run; macros; parameter passing; derived tags; event detector	Test run; macros; parameter passing; derived tags; event detector	Test run; macros; parameter passing; derived tags; event detector	Test run; macros; parameter passing
Communications	RSLinx Classic, KEPServer Enterprise, RSLinx Enterprise (must have FactoryTalk Linx Gateway)	RSLinx Classic; RSLinx Enterprise; KEPServer Enterprise	RSLinx Classic; RSLinx Enterprise; KEPServer Enterprise	RSLinx Classic (desktop only); RSLinx Enterprise (including RIO); KEPServer Enterprise
Pricing Model	Tag-based pricing; multiple levels	Display-based pricing; multiple levels	Display-based pricing; multiple levels	Display-based pricing; multiple levels for Desktop OS. Included with PanelView Plus, VersaView® CE
Remote Messaging	Messenger	Via Encompass partners (WIN-911 or SeQent)	Via Encompass partners (WIN-911 or SeQent)	
Recipe	RecipePro & Native	RecipePro+ & Native	RecipePro+ & Native	RecipePlus
SPC	SPC	Via Encompass partner (Ocean Data Systems)	Via Encompass partner (Ocean Data Systems)	
RSLadder™ 5/500	X	X	X	X
Extensions	X			

Additional reading

White papers and manuals

- Designing for Mobility: Top 10 Design Tips for a Mobile HMI with FactoryTalk ViewPoint

- Rockwell Automation Process HMI Style Guide

- Guidelines for Applying FactoryTalk View SE in a 21 CFR Part 11 Environment

- FactoryTalk View SE Installation Guide

- FactoryTalk View SE User's Guide

- ThinManager and FactoryTalk View SE Deployment Guide

Knowledgebase documents

- FactoryTalk View Site Edition Tips and Best Practices TOC

- Sample VBA: Exercise in modernizing an RSView32 application with VBA to FactoryTalk View SE

- FactoryTalk View SE Software: Trigger Commands on Client from HMI Server

- FactoryTalk ViewPoint Tips and Best Practices TOC

- FactoryTalk View SE Server Redundancy Guidelines TOC

- Importing RSView32 or FactoryTalk View ME Projects in FactoryTalk View SE

- RSView32 to FactoryTalk View SE Conversion Guidelines

- RSView32 to FactoryTalk View Site Edition (SE) modernization Considerations

- FactoryTalk View SE: Local OPC Tags for View SE Distributed Applications.YouTube

YouTube

- FactoryTalkView SE YouTube playlist

About Rockwell Automation

Rockwell Automation, Inc. (NYSE: ROK), the world's largest company dedicated to industrial automation and information, makes its customers more productive and the world more sustainable. Headquartered in Milwaukee, Wis., Rockwell Automation employs about 20,000 people serving customers in more than 80 countries.

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