

# Migrating PanelView Standard Applications



## Important User Information

Solid-state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (publication [SGL-1.1](#) available from your local Rockwell Automation sales office or online at <http://www.rockwellautomation.com/literature/>) describes some important differences between solid-state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid-state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.



**WARNING:** Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.



**ATTENTION:** Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence



**SHOCK HAZARD:** Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.



**BURN HAZARD:** Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

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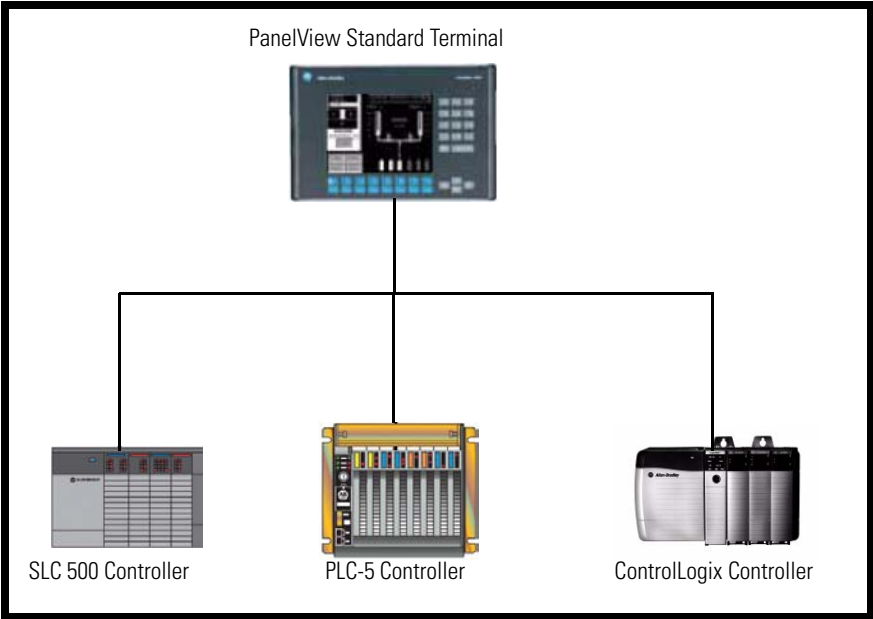
**IMPORTANT** Identifies information that is critical for successful application and understanding of the product.

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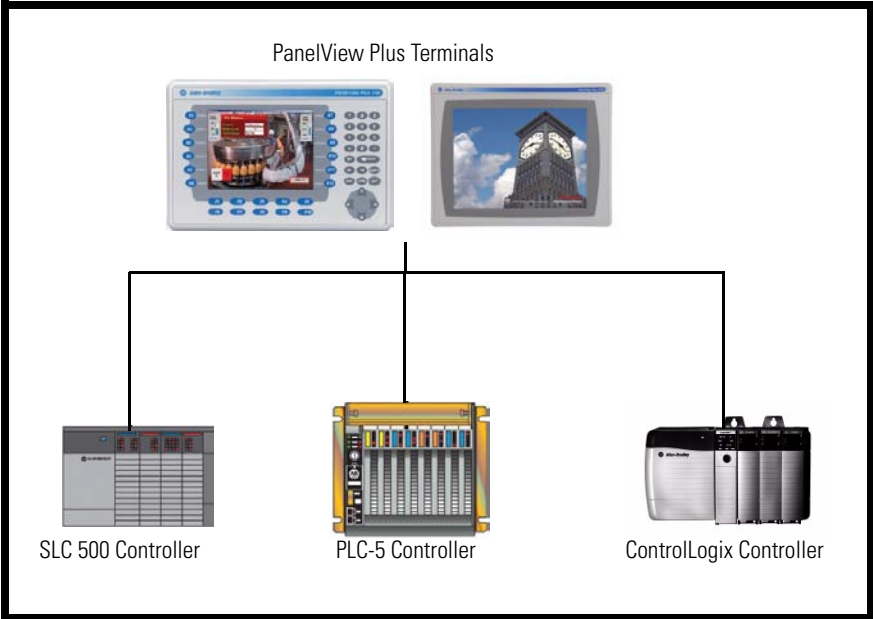
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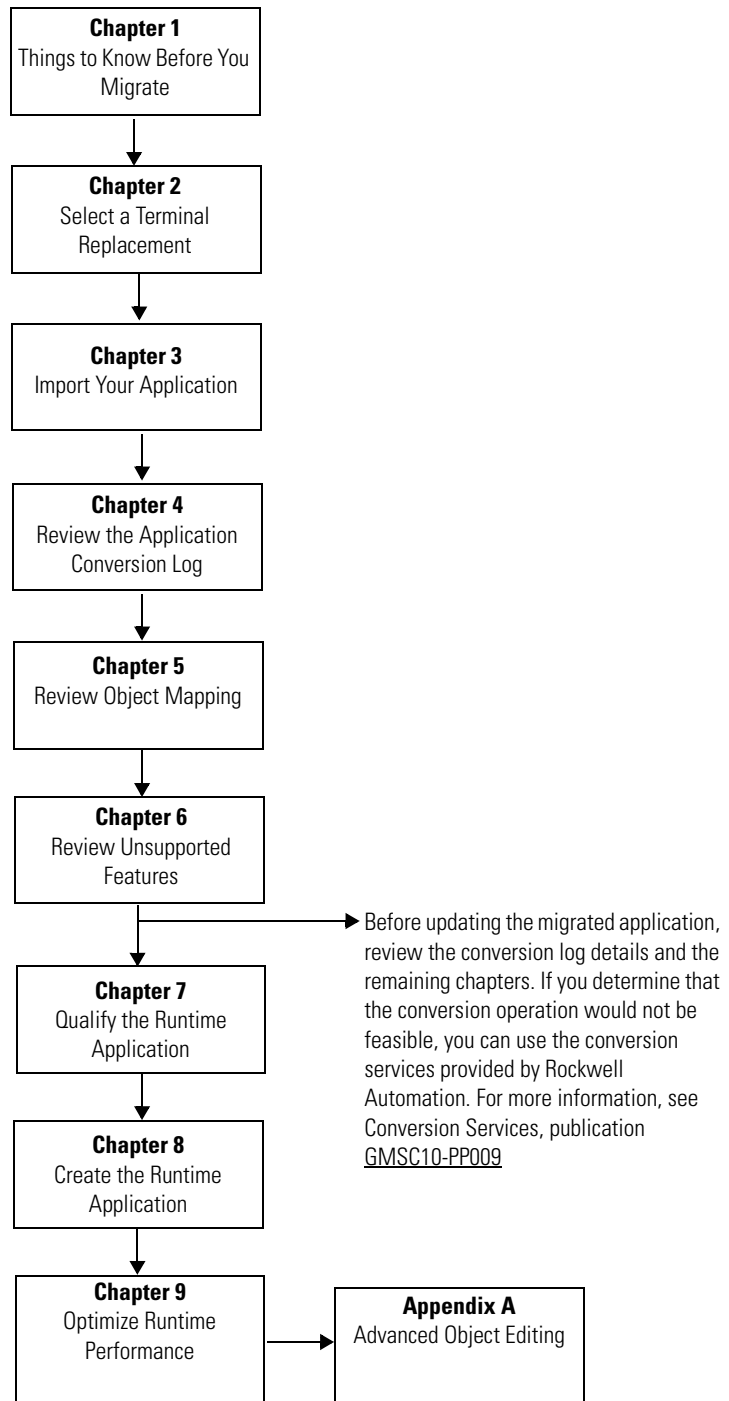
**We Can Get You from Here...**



**...to Here**



Follow this path to migrate your PanelView Standard terminal and application to the PanelView Plus terminal platform.



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### Introduction

This document provides guidelines and procedures for migrating a PanelView Standard terminal application to the PanelView Plus terminal platform. The procedures and guidelines cover the following:

- Selecting and optionally installing a PanelView Plus terminal replacement
- Importing your PanelView Standard application into the FactoryTalk View Machine Edition software
- Updating the imported application and ladder logic, as necessary, for compatibility with FactoryTalk View Machine Edition software
- Reviewing unsupported features
- Verifying the correct operation of the imported application on the PanelView Plus terminal
- Measuring and improving performance of the migrated application

The procedures and guidelines are designed to make the migration process as easy as possible.

The beginning of most chapters contains the following information. Read these sections carefully before beginning work in each chapter.

- **Before You Begin** - This section lists the steps that must be completed and decisions that must be made before starting the chapter. The chapters in this quick start must be completed or reviewed in the order in which they appear.
- **What You Need** - This section lists the items that are required to complete the steps in the current chapter. This includes, but is not limited to, hardware and software.
- **Follow These Steps** - This section illustrates the path or steps in the current chapter.

Also note that the electronic version of this publication contains links to other publications for easier navigation and reference.

## Audience

This quick start was created to assist a user familiar with Rockwell Automation HMI products on how to convert existing PanelView Standard applications to FactoryTalk View Machine Edition applications that run on PanelView Plus terminals.

## Required Software

The table lists the software required to convert a PanelView Standard application to a PanelView Plus application.

| Software   | Terminal Type                  | Software Version |
|--|--------------------------------|------------------|
| FactoryTalk View Studio, which includes: <ul style="list-style-type: none"> <li>• FactoryTalk View Machine Edition</li> <li>• RSLinx Enterprise</li> </ul> | PanelView Plus 400 or 600      | 4.0 or later     |
|  | PanelView Plus 700 to 1500     | 5.1 or earlier   |
|  | PanelView Plus 6 (700 to 1500) | 6.0 or later     |
| PanelBuilder32   | —                              | 3.83 or earlier  |

## Migration Services

| This migration service            | Includes  | For more information   |
|-----------------------------------|---|--|
| Step Forward program              | Provides a credit for returned product <ul style="list-style-type: none"> <li>• PanelView Standard to PanelView Plus</li> </ul>   | Consult your local distributor for details   |
| PanelView Standard migration kits | PanelView Plus terminal and adapter plate at a reduced price  | Consult your local distributor for details   |
| PanelView Plus starter kits       | PanelView Plus terminal and associated software at a reduced price to help you get started with a new product family  | Consult your local distributor for details   |
| Bundled migration services        | <ul style="list-style-type: none"> <li>• PanelView Standard to PanelView Plus terminal hardware conversion</li> <li>• PanelView Standard to PanelView Plus application file conversion</li> <li>• Turnkey service including any ladder logic changes required</li> <li>• Delivered onsite by Rockwell Automation service engineers</li> <li>• Project supervision and conversion engineering services</li> <li>• Standardized service bundle</li> <li>• Fixed price proposal</li> </ul> | For more information on services, go to: <a href="http://www.rockwellautomation.com/services/onsite">http://www.rockwellautomation.com/services/onsite</a> |

## Additional Resources

The table lists resources available for the PanelView Plus terminals.

| Resource  | Description   |
|---|---|
| Cutout Adapter Kit for PanelView Plus 400 Keypad, Keypad/Touch, and 600 Touch Terminals, Installation Instructions, publication <a href="#">2711P-IN020</a> | Provides details on how to use the cutout adapter kit, catalog number 2711P-RAK4, to mount a PanelView Plus 400 keypad, keypad/touch, or 600 touch terminal into the existing panel cutout of a PanelView Standard 550 keypad and keypad/touch terminal.  |
| Cutout Adapter Kit for PanelView Plus 600 Keypad and Keypad/Touch Terminals, Installation Instructions, publication <a href="#">2711P-IN020</a>             | Provides details on how to use the cutout adapter kit, catalog number 2711P-RAK6, to mount a PanelView Plus 600 keypad or keypad/touch terminal into the existing panel cutout of a PanelView Standard 600 keypad or keypad/touch terminal.   |
| Adapter Kit for PanelView Standard Terminal Cutouts Installation Instructions, publication <a href="#">2711P-IN010</a>                                      | Provides details on how to use the following cutout adapters to mount PanelView Plus terminals into the panel cutouts of PanelView Standard terminals: <ul style="list-style-type: none"> <li>• Use catalog number 2711P-RAK7 to mount a PanelView Plus 700 keypad or keypad/touch terminal into the panel cutout of a PanelView Standard 900 keypad terminal.</li> <li>• Use catalog number 2711P-RAT7 to mount a PanelView Plus 700 touch terminal into the panel cutout of a PanelView Standard 900 touch terminal.</li> <li>• Use catalog number 2711P-RAK10 to mount a PanelView Plus 1000 keypad or keypad/touch terminal into the panel cutout of a PanelView Standard 1000 keypad terminal.</li> <li>• Use catalog number 2711P-RAT10 to mount a PanelView Plus 1000 touch terminal into the panel cutout of a PanelView Standard 1000 touch terminal.</li> <li>• Use catalog number 2711P-RAK12S to mount a PanelView Plus 1250 keypad or keypad/touch terminal into the panel cutout of a PanelView Standard 1400 keypad terminal.</li> <li>• Use catalog number 2711P-RAT12S to mount a PanelView Plus 1250 touch terminal into the panel cutout of a PanelView Standard 1400 touch terminal.</li> </ul> |
| PanelView Plus 6 Terminals User Manual, publication <a href="#">2711P-UM006</a>   | Provides information on how to install, operate, configure, and troubleshoot PanelView Plus 6 terminals (700, 1000, 1250, 1500).  |
| PanelView Plus Terminals User Manual, publication <a href="#">2711P-UM001</a>   | Provides information on how to install, operate, configure, and troubleshoot PanelView Plus 700, 1000, 1250, and 1500 terminals running FactoryTalk View Machine Edition software version 5.1 or earlier.   |
| PanelView Plus Terminals User Manual, publication <a href="#">2711PC-UM001</a>  | Provides information on how to install, operate, configure, and troubleshoot PanelView Plus Compact 400, 600, and 1000 terminals.   |
| Visualization Solutions Selection Guide, publication <a href="#">VIEW-SG001</a>   | Provides an overview of visualization products including PanelView Plus 6 terminals.  |
| FactoryTalk View Studio online help   | Provides information and procedures for creating FactoryTalk View Machine Edition applications and supported features.  |

You can view or download publications at <http://www.rockwellautomation.com/literature>.

To order paper copies of technical documentation, contact your local Rockwell Automation distributor or sales representative.



## Things to Know Before You Migrate

### Introduction

This chapter covers important considerations and helpful things to know before migrating a PanelView Standard application to a PanelView Plus platform.

The table covers important considerations when migrating an application.

**Table 1 - Migration Considerations**

| Migration Consideration       | Explanation   | For More Information  |
|-------------------------------|---|---|
| Application reuse?            | <p>Do you need to reuse your PanelView Standard application and PLC ladder logic? If so, you can convert your application for use with a PanelView Plus terminal using FactoryTalk View Machine Edition (ME) software. The application and PLC ladder logic may require updates because some objects or features may not directly migrate to FactoryTalk View ME software.</p> <p>If you want to create a new FactoryTalk View ME application instead of reusing your current application, stop here.</p>   | <p>Refer to <a href="#">Reviewing Object Mapping on page 40</a></p> <p>Refer to <a href="#">Reviewing Unsupported Features on page 45</a></p> |
| Require enhanced features?    | <p>Does your application require enhanced features? If so, you can take advantage of the advanced features offered by the PanelView Plus 6 terminals:</p> <ul style="list-style-type: none"> <li>• <b>Functions:</b> trending, data logging, alarming, information and local messages, expressions, security, language switching, recipes, global objects, multiversion support, faceplates, graphic libraries, parameter files, rich graphics, and animation.</li> <li>• <b>Communication:</b> Ethernet, ControlNet, DHPlus, and third-party connectivity to additional protocols. Ethernet is the preferred communication.</li> <li>• <b>Hardware:</b> 8-wire analog resistive touchscreen, x86 1 GHz processor, 512 MB RAM and 512 MB nonvolatile memory, USB and Secure Digital (SD) media support, modular display, communication, and logic components. Other advantages include a high-bright display, conformal-coated, and marine-certified components to meet more stringent environmental conditions.</li> <li>• <b>Remote connectivity:</b> FTP server, web server, VNC client/server, ActiveX controls, PDF reader, and FactoryTalk ViewPoint remote access is available on all PanelView Plus 6 terminals (700 to 1500), catalog numbers 2711P-xxxx8, 2711P-xxxx9.</li> <li>• <b>Extended features:</b> PanelView Plus 6 terminals with extended features, catalog numbers 2711P-I9, include a Web browser, remote desktop connection, Microsoft Office file viewers, and WordPad text editor.</li> </ul> |   |
| Terminal replacement options? | The terminal replacement for the PanelView Standard platform is the PanelView Plus platform.  | Refer to <a href="#">Selecting a Terminal Replacement on page 20</a>  |

## External Fonts

Before importing a PanelBuilder32 application that uses external fonts, make sure the external font file is in this directory:

C:\Program Files\Allen-Bradley\PBEX\Fonts

If the conversion utility does not find the external font in this location, the conversion will stop without reporting an error.

## Retain Last States on Startup

PanelBuilder32 software lets you choose to retain the last states on startup for all objects. FactoryTalk View Machine Edition (ME) software does not have this feature.

## Unsupported Characters in Tag Names and Addresses

PanelBuilder32 software supports semicolons (;) in tag addresses; FactoryTalk View ME software does not. Before importing your application into FactoryTalk View ME software, change the semicolons (;) to colons (:) in the PanelBuilder32 tag editor.

PanelBuilder32 software supports dashes (-) in tag names, FactoryTalk View ME software does not. Before importing your application to FactoryTalk View ME software, search the PanelBuilder32 tag editor for tag names with dashes and duplicate the tags. Rename the tags to eliminate the dash, or replace the dash with an underscore (\_). Use the tag search function to find graphic objects using the original tag names. Edit the objects to update the tag names.

## Bit Array Tags

You can monitor bit arrays for alarm conditions in FactoryTalk View applications but you can't assign bit arrays to graphic objects, or write to bit arrays. This means all bit array tags in your PanelBuilder32 application will be converted to memory tags in the FactoryTalk View ME application.

## String Tags

At runtime, FactoryTalk View ME applications support a maximum length of 82 characters. Because PanelBuilder32 protocols support longer strings, some alarm messages may be truncated after conversion.

## Alarm Trigger Tags

Bit arrays with the Bit or LBit trigger types are used to trigger alarm messages in a FactoryTalk View ME application. Assigning alarm triggers to elements in a bit array, instead of bit addresses, frees up tags in the database for other uses. When an element of an array changes from 0 to 1, it can generate an alarm message if a message has been set up for that bit position. With the Bit trigger type, you can generate simultaneous alarm messages, one for each element. With the LSB trigger type, only the lowest bit position triggers an alarm:

- In a PanelBuilder32 application, the trigger value for the bit data type ranges from 0...31.
- In a FactoryTalk View ME application, the trigger value for the bit data type ranges from 1...32.

The number of bits in the array depends on the data type of the tag. Integer data types, for example, return 16 bits per element, while Bit data types return 8 bits per element.

To trigger a digital alarm based on an array of controller bits, you must use a direct reference and the syntax:

tagname,Larraylength (for example, [PLC5]N7:0,L5

**TIP** Don't leave a space between the tag address and the length. For example, the address {[SLC]BlockWrite1, L8}, where BlockWrite is the equivalent of N7:0, will not work. {[SLC]BlockWrite1,L8} will work.

## Bit Position Triggers

Follow these steps in the FactoryTalk View ME application to trigger alarms by using bit positions.

1. In the Trigger tab of the Alarm Setup editor, create a Bit type alarm trigger.
2. In the Trigger dialog box, click Browse in the Tag column and browse to the first element of an array.

For example, in a Logix5000 controller called CLGX1, select AAIm[0]. This is an integer tag type.

3. Click OK to insert the tag address into your trigger tag.

This address {[CLGX1]AAIm[0]} will be the starting element in your array tag. [CLGX1] is the direct reference or the RSLinx Enterprise device shortcut name.

4. Double-click the address and append a comma and the letter L to the address, then type the number of elements you want to include in your array tag.

To add 64 elements to the example address, modify it to read {[CLGX1]AAIm[0],L64}. This syntax will return (64 x 16 =) 1024 bits. Do not leave a space between the tag address and the length.

5. In the Messages tab, assign trigger values and alarm messages to as many of the elements in the array tag as you like.

Each trigger value corresponds to a bit position, not a bit address.

In the Trigger Value column, enter a number for the element that will trigger the message, then create the message in the Message column. When that element in the array changes value, it will trigger the alarm and display the message.

| Bit Position | Trigger Value | Message                      |
|--------------|---------------|------------------------------|
| 1            | 1             | Line 1: Conveyor has stopped |
| 2            | 2             | Line 1: Power failure        |
| 3            | 3             | Line 2: Conveyor has stopped |
| 4            | 4             | Line 2: Power failure        |
| ...          | ...           | ...                          |
| 1024         | 1024          | Line 6: Oven door open       |

### Least Significant Bit Triggers

Follow these steps to trigger alarms using Least Significant Bit positions.

1. In the Trigger tab of the Alarm Setup editor, create an LSBit type alarm trigger.
2. In the Trigger dialog box, click Browse in the Tag column and browse to the first element of an array.

For example, in a PLC-5 controller, select an integer tag N7:61. For this example, only the first three bit positions are used, so there's no need to specify a length (L) for the array. To also monitor bits in N7:62, add L2 to the address: ::[PLC5]N7:61,L2.

3. Specify these trigger values and alarm messages for the alarm trigger.

| Bit in Array | Bit position | Trigger Value | Message                        |
|--------------|--------------|---------------|--------------------------------|
| 00           | 1            | 1             | Motor has lost power           |
| 01           | 2            | 2             | Motor has stopped              |
| 02           | 3            | 3             | Overload switch has lost power |

If the motor loses power at runtime, all three bit values change from 0 to 1. Only the first alarm message is generated, because bit 00 is the least significant or the lowest bit. If the operator acknowledges the first alarm and power is not yet restored, the second alarm is generated, and so on.



## Alarm Messages

Both PanelBuilder32 and Machine Edition applications perform the same three steps when an alarm is triggered.

1. Send the alarm message to the Data Tag connection.
2. Set the Notification Tag connection to 1.
3. Reset the Notification Tag connection to 0 when the Handshake tag changes to a nonzero value.

The PanelBuilder32 application performs additional steps that are not required by the ME application.

4. Send Null (00) to the Data Tag, overwriting the alarm message.
5. Set the Notification Tag to 1.
6. Reset the Notification Tag to 0 when the Handshake tag changes to a new nonzero value.

The Data tag is now ready to accept a new alarm message.

## Tags Assigned to Message Connections

Some PanelBuilder32 tags are assigned to Message connections in the converted Machine Edition application.

| This Tag in PanelBuilder32     | Is Assigned to This Connection in ME |
|--------------------------------|--------------------------------------|
| Remote Device Data tag         | Message connection                   |
| Remote Device Notification tag | Message Notification connection      |
| Remote Device Handshake tag    | Message Handshake connection         |

**Notes:**

# Select a Terminal Replacement

## Introduction

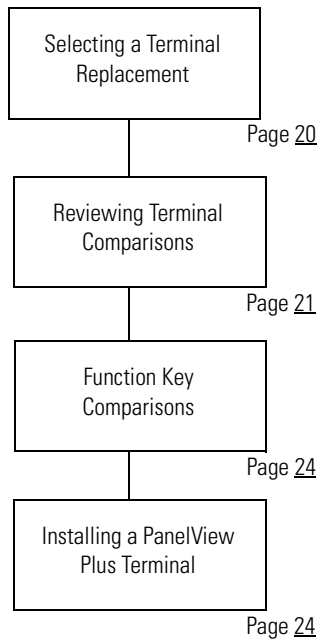
In this chapter, you will select and optionally install a PanelView Plus terminal replacement for your PanelView Standard terminal.

## Before You Begin

Review the migration considerations table (chapter 1).

## Follow These Steps

Follow these steps to select a PanelView Plus terminal as a replacement for your PanelView Standard terminal.



## Selecting a Terminal Replacement

Replacement options for the PanelView Standard terminals include the following platforms:

- PanelView Plus 6 (700 to 1500) terminals
- PanelView Plus 700 to 1500 terminals running FactoryTalk View Machine Edition software version 5.1 or earlier
- PanelView Plus 400 and 600 terminals
- PanelView Plus Compact 400, 600, and 1000 terminals

Some of the PanelView Plus terminals fit directly into the existing panel cutouts of the PanelView Standard terminals; others require an adapter plate.

None of the PanelView Plus terminals fit into the panel cutouts of the PanelView Standard 300 or 300 Micro terminals.

- TIP**
- References to PanelView Plus 700, 1000, 1250, or 1500 terminal apply to both the PanelView Plus 6 (700 to 1500) and PanelView Plus 700 to 1500 platforms.
  - PanelView Plus Compact terminals use the same cutouts and adapter plates as the corresponding PanelView Plus 400, 600, and 1000 models.

**Table 2 - PanelView Plus Replacement Terminals**

| PanelView Standard Terminal                        | PanelView Plus Replacement Terminal                                   | Adapter Plate Required | Adapter Plate Cat. No. |
|--|---|------------------------|------------------------|
| PanelView Standard 300 or 300 Micro                | None <sup>(1)</sup>   | —                      | —                      |
| PanelView 550 or 600 touch                         | PanelView Plus 400 keypad or keypad/touch<br>PanelView Plus 600 touch | No                     | —                      |
| PanelView 550 keypad<br>PanelView 550 keypad/touch | PanelView Plus 600 keypad or keypad/touch                             | No                     | —                      |
|  | PanelView Plus 400 keypad or keypad/touch<br>PanelView Plus 600 touch | Yes                    | 2711P-RAK4             |
| PanelView 600 keypad<br>PanelView 600 keypad/touch | PanelView Plus 600 keypad or keypad/touch                             | Yes                    | 2711P-RAK6             |
|  | PanelView Plus 700 keypad or keypad/touch                             | No                     | —                      |
| PanelView 900 keypad                               | PanelView Plus 700 keypad or keypad/touch                             | Yes                    | 2711P-RAK7             |
|  | PanelView Plus 1000 keypad or keypad/touch                            | No                     | —                      |
| PanelView 900 touch                                | PanelView Plus 700 touch  | Yes                    | 2711P-RAT7             |
|  | PanelView Plus 1000 touch   | No                     | —                      |
| PanelView 1000 keypad                              | PanelView Plus 1000 keypad or keypad/touch                            | Yes                    | 2711P-RAK10            |
|  | PanelView Plus 1250 keypad or keypad/touch                            | No                     | —                      |
| PanelView 1000 touch                               | PanelView Plus 1000 touch   | Yes                    | 2711P-RAT10            |
|  | PanelView Plus 1250 touch   | No                     | —                      |
| PanelView 1400 keypad                              | PanelView Plus 1250 keypad or keypad/touch                            | Yes                    | 2711P-RAK12S           |
|  | PanelView Plus 1500 keypad or keypad/touch                            | No                     | —                      |
| PanelView 1400 touch                               | PanelView Plus 1250 touch   | Yes                    | 2711P-RAT12S           |
|  | PanelView Plus 1500 touch   | No                     | —                      |

(1) You can replace the PanelView Standard 300 or 300 Micro with a PanelView Plus 400 keypad terminal by increasing the size of the current panel cutout.

## Reviewing Terminal Comparisons

Review dimensions and other pertinent information to compare the PanelView Standard terminals with the equivalent PanelView Plus terminals.

For specifications and catalog numbers of the PanelView Standard and PanelView Plus terminals, go to <http://www.ab.com/catalogs/>

**Table 3 - PanelView Standard 550 or 600 Touch Terminal Comparisons - No Adapter**

| Attribute                        | Standard 550 Touch                | Standard 600 Touch               | Plus 600 Touch                  | Plus 400 Keypad                   | Plus 400 Keypad, Key/Touch      |
|----------------------------------|-----------------------------------|----------------------------------|---------------------------------|-----------------------------------|---------------------------------|
| Cutout dimensions H x W, approx. | 125 x 158 mm<br>4.91 x 6.20 in.   | 125 x 158 mm<br>4.91 x 6.20 in.  | 123 x 156 mm<br>4.86 x 6.15 in. | 123 x 156 mm<br>4.86 x 6.15 in.   | 123 x 156 mm<br>4.86 x 6.15 in. |
| Depth, approx.                   | 82 mm (3.20 in.)                  | 96 mm (3.80 in.)                 | 98 mm (3.86 in.)                | 90 mm (3.54 in.)                  | 90 mm (3.54 in.)                |
| Display size                     | 4.75 in. monochrome LCD blue mode | 4.54 in. color active matrix TFT | 5.5 in. color active matrix TFT | 3.8 in. monochrome passive matrix | 3.5 in. color active matrix TFT |

**Table 4 - PanelView Standard 550 Keypad or Keypad/Touch Terminal Comparisons - No Adapter**

| Attribute                        | Standard 550 Keypad, Key/Touch    | Plus 600 Keypad, Key/Touch                                   |
|----------------------------------|-----------------------------------|--|
| Cutout dimensions H x W, approx. | 144 x 243 mm<br>5.66 x 9.55 in.   | 142 x 241 mm<br>5.61 x 9.50 in.                              |
| Depth, approx.                   | 106 mm (4.20 in.)                 | 98 mm (3.86 in.)   |
| Display size                     | 4.75 in. monochrome LCD blue mode | 5.5 in. color active matrix TFT or monochrome passive matrix |

**Table 5 - PanelView Standard 550 Keypad or Key/Touch Terminal Comparisons - Cat. No. 2711P-RAK4 Adapter Required**

| Attribute                        | Standard 550 Keypad, Key/Touch    | Plus 400 Keypad                   | Plus 400 Keypad, Key/Touch      | Plus 600 Touch                  |
|----------------------------------|-----------------------------------|-----------------------------------|---------------------------------|---------------------------------|
| Cutout dimensions H x W, approx. | 144 x 243 mm<br>5.66 x 9.55 in.   | 123 x 156 mm<br>4.86 x 6.15 in.   | 123 x 156 mm<br>4.86 x 6.15 in. | 123 x 156 mm<br>4.86 x 6.15 in. |
| Depth, approx.                   | 106 mm (4.20 in.)                 | 90 mm (3.54 in.)                  | 90 mm (3.54 in.)                | 98 mm (3.86 in.)                |
| Display size                     | 4.75 in. monochrome LCD blue mode | 3.8 in. monochrome passive matrix | 3.5 in. color active matrix TFT | 5.5 in. color active matrix TFT |

**Table 6 - PanelView Standard 600 Keypad or Key/Touch Terminal Comparisons - No Adapter**

| Attribute                        | Standard 600 Keypad, Key/Touch   | Plus 700 Keypad, Key/Touch       |
|----------------------------------|----------------------------------|----------------------------------|
| Cutout dimensions H x W, approx. | 167 x 264 mm<br>6.57 x 10.39 in. | 167 x 264 mm<br>6.57 x 10.39 in. |
| Depth, approx.                   | 116 mm (4.57 in.)                | 55 mm (2.18 in.) <sup>(1)</sup>  |
| Display size                     | 4.54 in. color active matrix TFT | 6.5 in. color active matrix TFT  |

(1) Optional add-on communication module will increase depth of the product.

**Table 7 - PanelView Standard 600 Keypad or Key/Touch Terminal Comparisons - Cat. No. 2711P-RAK6 Adapter Required**

| Attribute                        | Standard 600 Keypad, Key/Touch   | Plus 600 Keypad, Key/Touch                                   |
|----------------------------------|----------------------------------|--|
| Cutout dimensions H x W, approx. | 167 x 264 mm<br>6.57 x 10.39 in. | 142 x 241 mm<br>5.61 x 9.50 in.                              |
| Depth, approx.                   | 116 mm (4.57 in.)                | 98 mm (3.86 in.)   |
| Display size                     | 4.54 in. color active matrix TFT | 5.5 in. color active matrix TFT or monochrome passive matrix |

**Table 8 - PanelView Standard 1000 Keypad or Key/Touch Terminal Comparisons - No Adapter**

| Attribute                        | Standard 1000 Keypad                          | Plus 1250 Keypad, Key/Touch       | Standard 1000 Touch                           | Plus 1250 Touch                   |
|----------------------------------|---|-----------------------------------|---|-----------------------------------|
| Cutout dimensions H x W, approx. | 257 x 390 mm<br>10.11 x 15.35 in.             | 257 x 390 mm<br>10.11 x 15.35 in. | 257 x 338 mm<br>10.11 x 13.29 in.             | 257 x 338 mm<br>10.11 x 13.29 in. |
| Depth, approx.                   | 112 mm (4.40 in.)                             | 55 mm (2.18 in.) <sup>(1)</sup>   | 112 mm (4.40 in.)                             | 55 mm (2.18 in.) <sup>(1)</sup>   |
| Display size                     | 8.3 in. color active matrix TFT or monochrome | 12.1 in. color active matrix TFT  | 8.3 in. color active matrix TFT or monochrome | 12.1 in. color active matrix TFT  |

(1) Optional add-on communication module will increase depth of the product.

**Table 9 - PanelView Standard 1000 Touch or Key/Touch Terminal Comparisons - Adapter Required**

| Attribute                        | Standard 1000 Keypad                          | Plus 1000 Keypad, Key/Touch      | Standard 1000 Touch                           | Plus 1000 Touch                  |
|----------------------------------|---|----------------------------------|---|----------------------------------|
| Adapter                          | Cat. No. 2711P-RAK10                          |                                  | Cat. No. 2711P-RAT10                          |                                  |
| Cutout dimensions H x W, approx. | 257 x 390 mm<br>10.11 x 15.35 in.             | 224 x 375 mm<br>8.8 x 14.75 in.  | 257 x 338 mm<br>10.11 x 13.29 in.             | 224 x 305 mm<br>8.8 x 12.0 in.   |
| Depth, approx.                   | 112 mm (4.40 in.)                             | 55 mm (2.18 in.) <sup>(1)</sup>  | 112 mm (4.40 in.)                             | 55 mm (2.18 in.) <sup>(1)</sup>  |
| Display size                     | 8.3 in. color active matrix TFT or monochrome | 10.4 in. color active matrix TFT | 8.3 in. color active matrix TFT or monochrome | 10.4 in. color active matrix TFT |

(1) Optional add-on communication module will increase depth of the product.

**Table 10 - PanelView Standard 900 Keypad or Key/Touch Terminal Comparisons - No Adapter**

| Attribute                        | Standard 900 Keypad                                  | Plus 1000 Keypad, Key/Touch      | Standard 900 Touch                                   | Plus 1000 Touch                  |
|----------------------------------|--|----------------------------------|--|----------------------------------|
| Cutout dimensions H x W, approx. | 224 x 375 mm<br>8.8 x 14.75 in.                      | 224 x 375 mm<br>8.8 x 14.75 in.  | 224 x 305 mm<br>8.8 x 12.00 in.                      | 224 x 305 mm<br>8.8 x 12.0 in.   |
| Depth, approx.                   | 112 mm (4.40 in.)                                    | 55 mm (2.18 in.) <sup>(1)</sup>  | 112 mm (4.40 in.)                                    | 55 mm (2.18 in.) <sup>(1)</sup>  |
| Display size                     | 8.3 in. color active matrix TFT or monochrome plasma | 10.4 in. color active matrix TFT | 8.3 in. color active matrix TFT or monochrome plasma | 10.4 in. color active matrix TFT |

(1) Optional add-on communication module will increase depth of the product.

**Table 11 - PanelView Standard 900 Touch Terminal Comparisons - Adapter Required**

| Attribute                        | Standard 900 Keypad                                  | Plus 700 Keypad, Key/Touch       | Standard 900 Touch                                   | Plus 700 Touch                  |
|----------------------------------|--|----------------------------------|--|---------------------------------|
| Adapter                          | Cat. No. 2711P-RAK7                                  |                                  | Cat. No. 2711P-RAT7                                  |                                 |
| Cutout dimensions H x W, approx. | 224 x 375 mm<br>8.8 x 14.75 in.                      | 167 x 264 mm<br>6.57 x 10.39 in. | 224 x 305 mm<br>8.8 x 12.00 in.                      | 154 x 220 mm<br>6.08 x 8.67 in. |
| Depth, approx.                   | 112 mm (4.40 in.)                                    | 55 mm (2.18 in.) <sup>(1)</sup>  | 112 mm (4.40 in.)                                    | 55 mm (2.18 in.) <sup>(1)</sup> |
| Display size                     | 8.3 in. color active matrix TFT or monochrome plasma | 6.5 in. color active matrix TFT  | 8.3 in. color active matrix TFT or monochrome plasma | 6.5 in. color active matrix TFT |

(1) Optional add-on communication module will increase depth of the product.

**Table 12 - PanelView Standard 1400 Touch Terminal Comparisons - No Adapter Required**

| Attribute                        | Standard 1400 Keypad             | Plus 1500 Keypad, Key/Touch      | Standard 1400 Touch              | Plus 1500 Touch                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Cutout dimensions H x W, approx. | 305 x 419 mm<br>12.0 x 16.50 in. | 305 x 419 mm<br>12.0 x 16.50 in. | 305 x 391 mm<br>12.0 x 15.40 in. | 305 x 391 mm<br>12.0 x 15.40 in. |
| Depth, approx.                   | 394 mm (15.53 in.)               | 65 mm (2.55 in.) <sup>(1)</sup>  | 394 mm (15.53 in.)               | 65 mm (2.55 in.) <sup>(1)</sup>  |
| Display size                     | 10.0 in. color CRT               | 15 in. color active matrix TFT   | 10.0 in. color CRT               | 15 in. color active matrix TFT   |

(1) Optional add-on communication module will increase depth of the product.

**Table 13 - PanelView Standard 1400 Keypad or Touch Terminal Comparisons - Adapter Required**

| Attribute                        | Standard 1400 Keypad             | Plus 1250 Keypad, Key/Touch       | Standard 1400 Touch                  | Plus 1250 Touch                   |
|----------------------------------|----------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|
| Adapter                          | Cat. No. 2711P-RAK12S            |                                   | Cat. No. 2711P-RAT12S                |                                   |
| Cutout dimensions H x W, approx. | 419 x 390 mm<br>16.50 x 12.0 in. | 257 x 390 mm<br>10.11 x 15.35 in. | 305 x 391 mm<br>12.0 in. x 15.40 in. | 257 x 338 mm<br>10.11 x 13.29 in. |
| Depth, approx.                   | 394 mm (15.53 in.)               | 55 mm (2.18 in.) <sup>(1)</sup>   | 394 mm (15.53 in.)                   | 55 mm (2.18 in.) <sup>(1)</sup>   |
| Display size                     | 10.0 in. color CRT               | 12.1 in. color active matrix TFT  | 10.0 in. color CRT                   | 12.1 in. color active matrix TFT  |

(1) Optional add-on communication module will increase depth of the product.

## Function Key Comparisons

The table provides a comparison of function keys between the PanelView Standard and PanelView Plus terminals.

**Table 14 - Function Key Comparisons Between Terminal Platforms**

| PanelView Standard Keypad or Keypad/Touch | PanelView Standard Function Keys | PanelView Plus Function Keys | PanelView Plus Terminal Keypad or Keypad/Touch |
|---|----------------------------------|------------------------------|--|
| 300M keypad                               | F1...F4                          |                              |  |
| 300 keypad                                | F1...F8                          | F1...F8                      | 400 keypad or keypad/touch                     |
| 550 keypad or keypad/touch                | F1...F10                         | F1...F10                     | 600 keypad or keypad/touch                     |
| 600 keypad or keypad/touch                | F1...F10                         | F1...F10, K1...K12           | 700 keypad or keypad/touch                     |
| 900 keypad                                | F1...F16                         | F1...F16, K1...K16           | 1000 keypad or keypad/touch                    |
| 1000 keypad                               | F1...F16                         | F1...F20, K1...K20           | 1250 keypad or keypad/touch                    |
| 1400 keypad                               | F1...F16, F17...F21              | F1...F20, K1...K20           | 1500 keypad                                    |

## Installing a PanelView Plus Terminal

Optionally install the selected PanelView Plus terminal into the existing PanelView Standard panel cutout. You may need an adapter plate depending on your terminal selection.

**TIP** You can install the terminal after converting and testing your application.

Refer to [Additional Resources on page 11](#) for a list of applicable documentation for your terminal replacement and adapter plate, if required.



## Import Your Application

### Introduction

In this chapter, you will import your existing PanelBuilder32 application into FactoryTalk View Machine Edition (ME) software.

Different software is used by the PanelView Standard and PanelView Plus platforms to develop applications.

- PanelView Standard terminals run applications created with PanelBuilder32 software.
- PanelView Plus terminals run applications created with FactoryTalk View ME software.

### Before You Begin

- Review the migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal replacement (Chapter 2). You can install the terminal after migrating and testing your application.

### What You Need

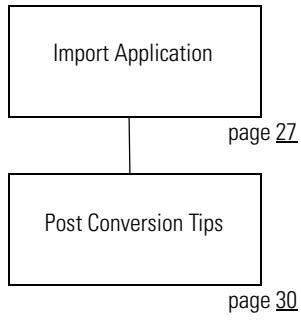
- FactoryTalk View Studio for Machine Edition software with correct version for your PanelView Plus terminal. Refer to [Required Software on page 10](#) for details.
- PanelBuilder32 .pba application file.

The application file can reside on your local hard drive or external storage media:

- Secure Digital (SD) card or USB flash drive for PanelView Plus 6 terminals
- USB flash drive for PanelView Plus 6 or PanelView Plus terminals
- CompactFlash cards for PanelView Plus 400, 600, 700 to 1500 terminals, running FactoryTalk View ME software version 5.1 or earlier

## Follow These Steps

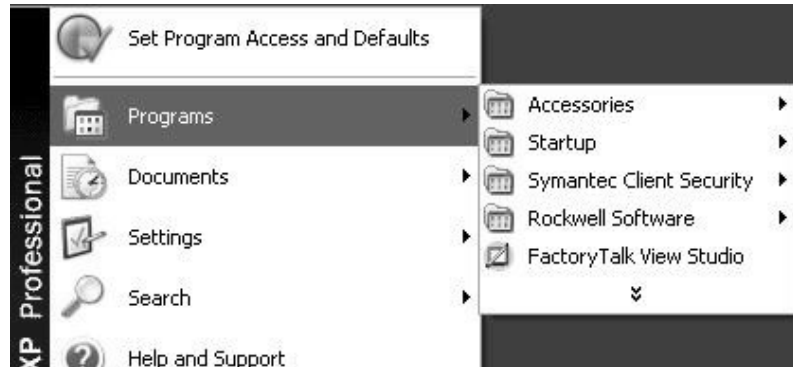
Follow these steps to import your PanelBuilder32 application into FactoryTalk View Machine Edition software.



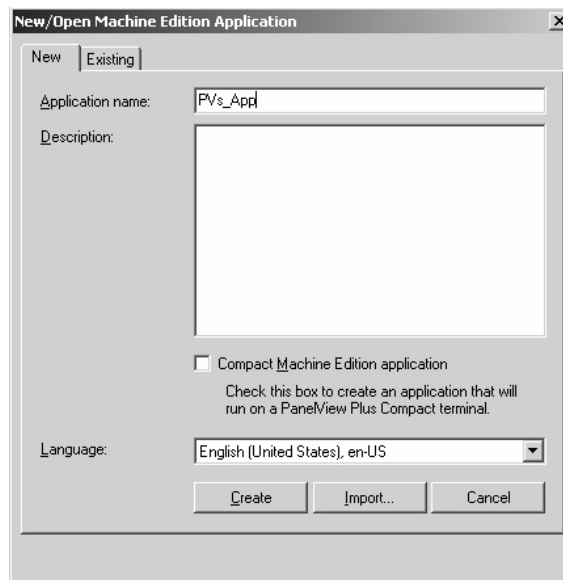
## Import Application

Follow these to import a PanelBuilder32 application into FactoryTalk View Machine Edition software.

1. Launch the FactoryTalk View Studio software.

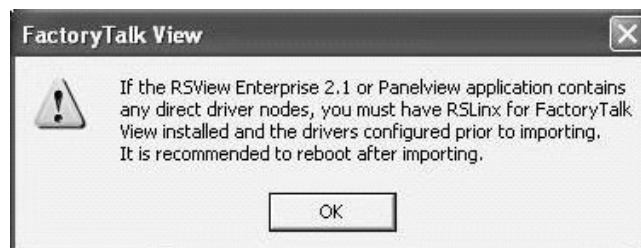


2. Click the New tab.
3. Enter an Application name and click Import.



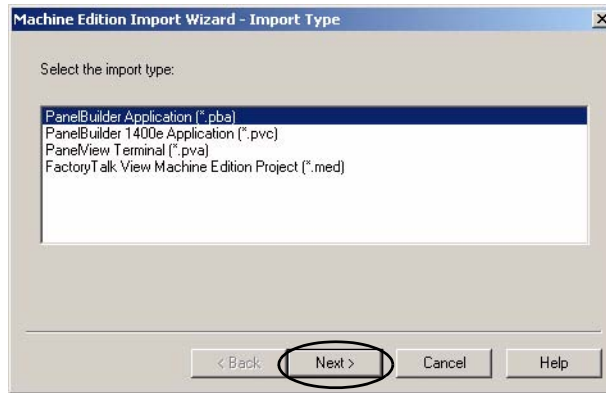
4. Read the FactoryTalk View dialog box and click OK.

RSLinx Enterprise software for FactoryTalk View doesn't need to be installed before you import your PanelBuilder32 application.



- 5. Select PanelBuilder Application (\*.pba) and click Next.

Select PanelView Terminal (\*.pva) if you don't have the corresponding .pba file.

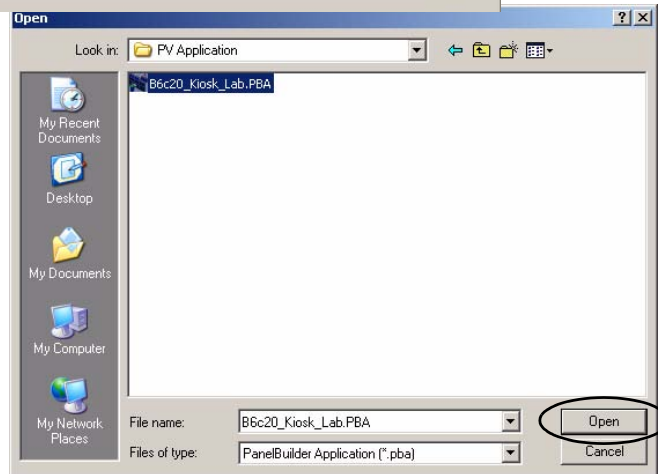


- 6. Click the ... button.

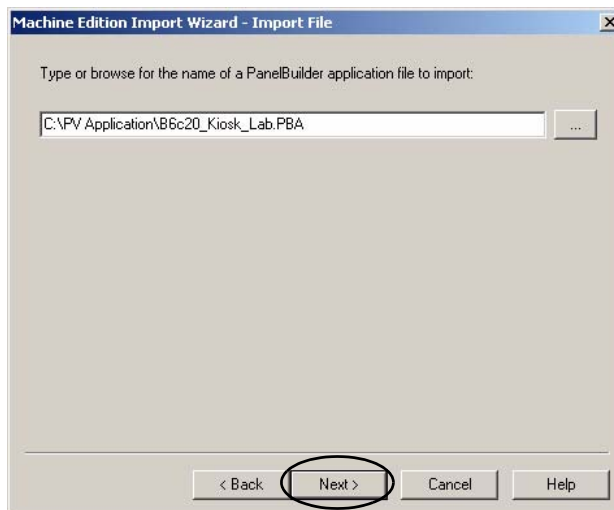


- 7. Browse to and select your PanelBuilder32 .pba application and click Open.

The .pba or .pva file can reside on your local hard drive or external storage appropriate to your terminal.



- 8. Click Next.



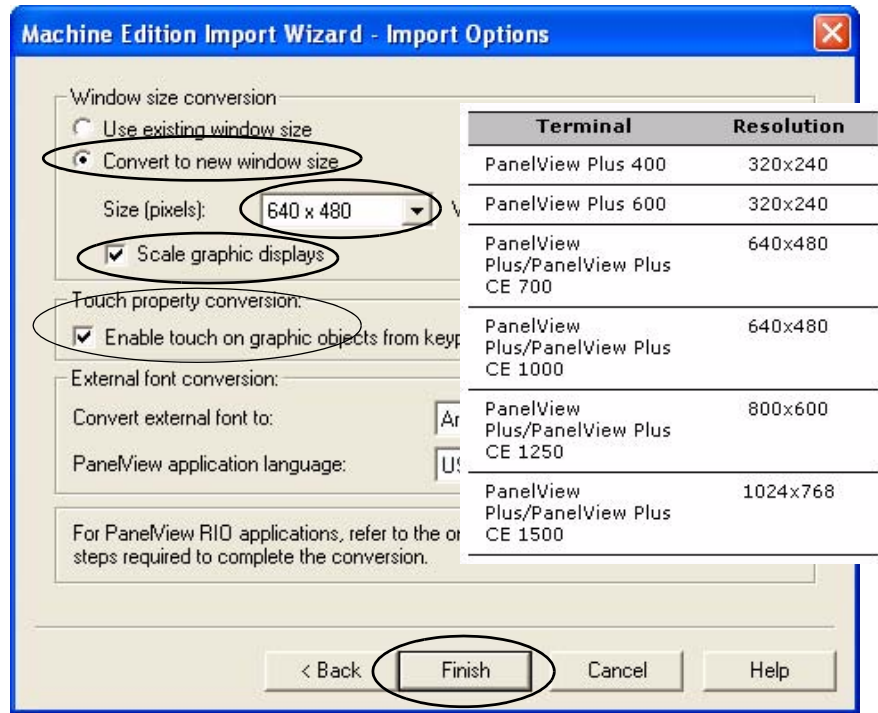
9. Configure the import options based on your replacement terminal.

Click Help at any time for clarification of each option.

- a. Check the Convert to new window size checkbox.
- b. Select the size (in pixels) of your PanelView Plus terminal display as shown in chart.
- c. Check Scale graphic displays.

When checked, this setting rescales all displays.

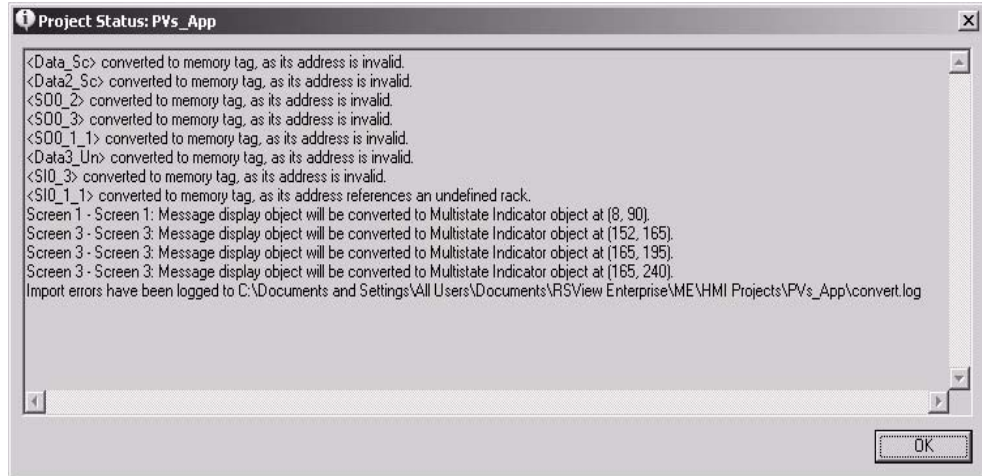
- d. If your original PanelView Standard terminal had a touch screen, or a both a touch screen and keypad, check the box under Touch property conversion.
- e. Click the Help button to read the differences between the caption alignment options, then select an option for your new application.
- f. Click Finish.



The Importing Project dialog box shows the conversion status. This process may take a while, depending on the size of your application. When done, you will see the Project Status dialog box in the next step.



10. Review the Project Status dialog box and click OK.



11. Repeat steps 1...10 for each PanelBuilder32 application you want to import into FactoryTalk View ME software.

## Post Conversion Tips

This table lists topics to consider after importing an application.

**Table 15 - Post Conversion Tips**

| Software Feature   | Description  | What You Need To Do  |
|--------------------|--|--|
| Logout button      | A Logout button assigned to a function key in a PanelBuilder32 project will not convert properly in the Machine Edition application.               | Reassign the function key manually.  |
| Device shortcuts   | After importing a PanelBuilder32 .pba project, you may not see the newly created device shortcuts in the Tag Browser.                              | Restart FactoryTalk View Studio software.<br>When you re-open the imported application, the shortcuts will display correctly.  |
| Screens            | When you import PanelBuilder32 projects, all screens will be minimized.  | Nothing  |
| Multistate objects | The first state value of PanelBuilder32 multistate objects is 1.<br>In Machine Edition software, the first state value of multistate objects is 0. | If the imported application contains any of these multistate objects, verify the state values: <ul style="list-style-type: none"> <li>• Control list selector</li> <li>• List indicator</li> <li>• Multistate indicator</li> <li>• Latched push button</li> <li>• Maintained push button</li> <li>• Momentary push button</li> <li>• Multistate push button</li> <li>• Symbol indicator</li> </ul> |

## Review the Application Conversion Log

### Introduction

In this chapter, you will review the conversion log generated by FactoryTalk View Machine Edition (ME) software for your imported application. The results of this log will help you to determine what updates are required in your converted application.

### Before You Begin

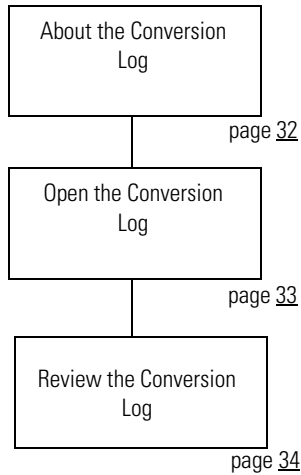
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Install the PanelView Plus terminal in the existing PanelView Standard panel cutout (Chapter 2).
- Import your PanelBuilder32 .pba application into FactoryTalk View ME software (Chapter 3).

### What You Need

- The new name of the application that was imported into FactoryTalk View ME software. This was done in Chapter 3.
- Conversion log, `convert.log`, generated by the FactoryTalk View ME import wizard.

## Follow These Steps

Follow this path to review changes that are required to your FactoryTalk View ME application.



## About the Conversion Log

The application conversion log, `convert.log`, is generated by the import wizard when you import your PanelBuilder32 application into FactoryTalk View ME software. This log provides detailed information about objects or features that did not convert directly from your PanelBuilder32 application. Use this log as a guide to update your application accordingly. Modifications to the application are required to verify that the application will operate correctly in FactoryTalk View ME software.

---

**IMPORTANT**

It is important that you review each object and feature in the converted application to verify that each will function as expected. Because PanelBuilder32 objects or features may not map directly into FactoryTalk View ME software, you may need to update your ladder logic to achieve the same operational results.

---



## Open the Conversion Log

The conversion log, convert.log, is stored with the new application that was imported into FactoryTalk View ME software.

Follow these steps to locate the conversion log on your computer.

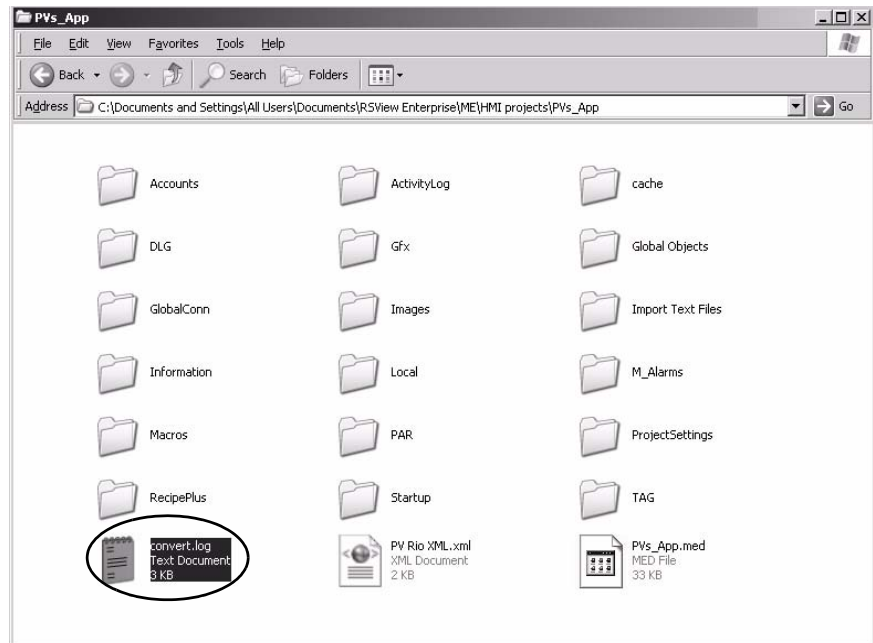
1. Navigate to this folder.

C:\Documents and Settings\All Users\Documents\RSView Enterprise\ME\HMI projects\

**TIP** All of your FactoryTalk View ME applications will be located in this folder. This includes new or imported applications.

2. Double-click the HMI project folder that contains the new application name you created.

You entered this name in the import wizard when importing your PanelBuilder32 application into FactoryTalk View ME software.



3. Double-click the convert.log file generated by the import wizard.

Your convert.log file will vary from the example shown.

```

convert.log - Notepad
File Edit Format View Help
<Data2_sc> converted to memory tag, as its address is invalid.
<Data2_sc> converted to memory tag, as its address is invalid.
<SO0_2> converted to memory tag, as its address is invalid.
<SO0_3> converted to memory tag, as its address is invalid.
<SO0_1_1> converted to memory tag, as its address is invalid.
<Data3_un> converted to memory tag, as its address is invalid.
<SI0_3> converted to memory tag, as its address is invalid.
<SI0_1_1> converted to memory tag, as its address references an undefined rack.
Screen 1 - Screen 1: Message display object will be converted to Multistate Indicator object at (8, 90).
Screen 3 - Screen 3: Message display object will be converted to Multistate Indicator object at (152, 165).
Screen 3 - Screen 3: Message display object will be converted to Multistate Indicator object at (165, 195).
Screen 3 - Screen 3: Message display object will be converted to Multistate Indicator object at (165, 240).
Import errors have been logged to C:\Documents and Settings\All Users\Documents\RSView Enterprise\ME\HMI
Projects\PVs_App\convert.log
  
```

## Review the Conversion Log

The conversion log file, `convert.log`, contains a list of messages including warnings, errors, and unsupported features or objects in the converted application. You can compare these messages to those in the tables for information on why the message was logged. For your convenience, the message tables are categorized into these groups:

- RSLinx software
- Tags
- Objects and screens
- Alarms

When resolving conversion log messages, refer to your original PanelBuilder32 application to review how the objects and tags were used.

During conversion, all PanelBuilder32 tag names and addresses are converted to HMI tags in the FactoryTalk View ME tag database.

---

**IMPORTANT** Some features or objects are no longer supported in FactoryTalk View ME software. However, new features or objects are available providing the same or enhanced functionality.

---

## Conversion Messages You Can Ignore

Some error messages appear consistently when importing PanelBuilder32 projects and can be ignored.

**Table 16 - Conversion Messages: To Be Ignored**

| Error Type     | Ignore this Error  |
|----------------|--|
| Startup editor | The initial screen does not exist in the graphics list.  |
| Startup editor | Failed to get startup information.   |
| Format error   | File c:\documents and settings\all users\documents\rsview enterprise\me\hmi project\app1\import text files\almsg.txt, section/key 'main' |
| Tags           | Tags with a bit data type and a scale value of 0 are incorrectly logged during the import.   |
| Scale errors   | Tag scale errors are logged only for analog tags.  |

## RSLinx Messages

This table lists RSLinx messages that may appear in the convert.log file.

**Table 17 - Conversion Log Messages: RSLinx Software**

| Message   | Description  |
|---|--|
| RSLinx Topic Converter log file created on <date> at <time>.<br><br>RSLinx2X topics to RSLinx Enterprise shortcuts conversion failed. User will have to manually convert topics to shortcuts. | Review the HMI tags in FactoryTalk View ME software and note the shortcut name. It is the same as the controller name in the PanelBuilder32 application. You must use this name when creating the shortcut in FactoryTalk View ME software.<br>For information on creating shortcuts, refer to: <ul style="list-style-type: none"> <li>FactoryTalk View Machine Edition User Guide, Volume 1, publication <a href="#">ViewME-UM004</a>, for details on creating shortcuts.</li> <li>Videos at <a href="http://www.rockwellautomation.com/solutions/integratedarchitecture/resources4.html">http://www.rockwellautomation.com/solutions/integratedarchitecture/resources4.html</a></li> </ul> |
| RSLinx is not installed. Please install the latest RSLinx software for proper import. Cannot create instance of RSLinx. Topic generation will not succeed.                                    | In FactoryTalk View ME software, set up communication and create a shortcut.   |

## Screen and Object Conversion Messages

Table 19 lists screen and object messages that may appear in the convert.log file. Most of the messages identify these attributes for a FactoryTalk View ME object:

- Screen number and name
- Location (x,y) of the object
- New graphic object name

Use this information to locate the object and make required modifications. The description for a message may reference a workaround in this document.

Here are some general notes on object conversions:

- Numeric display objects in PanelBuilder32 software are converted to Text objects with embedded variables in FactoryTalk View ME software.
- A Numeric Input Enable button in FactoryTalk View ME software does not have a separate display tag. The display value is converted to an embedded variable on the Label Tab.
- The Numeric Input Cursor object in FactoryTalk View ME software has a separate indicator tag and does not have a Label tab for text.

**Table 18 - Conversion Log Messages: Screens and Objects**

| Message  | Description   |
|--|---|
| Message display object will be converted to Multistate Indicator object at <location>.   | A message display in PanelBuilder32 software is the same as a multistate indicator in FactoryTalk View ME software.   |
| Verify password button at <location> not supported.  | The Verify Password button is not supported in FactoryTalk View ME software.  |
| Select Operator button at <location> not supported.  | The Select Operator button is not supported in FactoryTalk View ME software.  |
| Screen security settings not converted.  | Security settings are not converted in FactoryTalk View ME software. You must reconfigure all security settings.  |
| String pop up will be invoked with blank scratchpad on <location>.   | Verify operation in FactoryTalk View ME software.   |
| Cannot find block write start tag for pilot list selector at <location>. The visible state connection will be unassigned.  | The Piloted Control List Selector in PanelBuilder32 software does not have a block write tag assigned.<br>Assign a block write tag in FactoryTalk View ME software if you want a visible state connection.  |
| For LSB support, refer to online help for correct syntax of Multistate Indicator's Value control at <location>.  | FactoryTalk View ME software does support Least Significant Bit (LSB) on multistate and list indicators. Check the object and make sure the syntax is correct for the value.<br>The L parameter is used only for message addresses that are more than one word in length. Refer to the FactoryTalk View online help for information on the L parameter.   |
| Blinking color images are not supported.   | FactoryTalk View ME software does not support blinking color images.  |
| Print Only objects not supported.  | FactoryTalk View ME software does not support Print Only objects.   |
| Line at <location> could not have property set: Width.   | In FactoryTalk View ME software, lines have a line width that is separate from the object location.   |
| Line at <location> could not have property set: Height.  | In FactoryTalk View ME software, lines have a line height that is separate from the object location.  |
| Numeric entry enable button at <location> could not have property set: Minimum Value.<br><br>Numeric entry enable button at <location> could not have property set: Maximum Value. | The Numeric Entry Enable button is converted to a Numeric Input Enable button in FactoryTalk View ME software. <ul style="list-style-type: none"> <li>In PanelBuilder32 software, the input and display floating point tags shared the same name and address. The min/max values were out of range and could not be set in the FactoryTalk View ME object.</li> <li>In FactoryTalk View ME software, set the default min and max for floating point. The display value is an embedded variable on the Label tab.</li> </ul> |

## Tag Conversion Messages

This table lists tag messages that may appear in the convert.log file.

**Table 19 - Conversion Log Messages: Tags**

| Message  | Description  |
|--|--|
| Invalid characters not supported. Tag has been converted to <name>.  | FactoryTalk View ME software does not support periods in tag names. The periods are converted to underscores.  |
| Already exists in the tag database.  | The converted tag already exists in the FactoryTalk View ME HMI tag database or the conversion created it.   |
| Could not be added to the tag database.  | Verify that all the tag names exist in the FactoryTalk View HMI tag database after the conversion.   |
| The minimum value for this tag was invalid and has been set to the minimum value based on the tag's data type.       | The minimum value for the tag in the PanelBuilder32 application is not valid in the FactoryTalk View ME application. This discrepancy was corrected. The minimum value for the tag was set according to the tag's data type. Verify that the tag data type and minimum value are correct.  |
| The maximum value for this tag was invalid and has been set to the minimum valid value based on the tag's data type. | The maximum value for the tag in the PanelBuilder32 application is not valid in the FactoryTalk View ME application. This discrepancy was corrected. The maximum value for the tag was set according to the tag's data type. Verify that the tag data type and maximum value are correct.  |
| The scale for this tag was invalid and has been set to its default value.  | Verify that the scale for the tag data type is correct.  |
| Tag converted to memory tag, as its addressing syntax is not supported.  | For this specific instance, an RIO bit array data type with a length of 2 is using output O:xxx address.<br>In the converted application, FactoryTalk View ME software does not support bit arrays. Bit arrays are converted to memory tags.   |
| Tag converted to memory tag, as its address is blank.  | The tag was converted to a memory tag because the tag address was blank in the PanelBuilder32 software.  |
| The array size for this tag was invalid and has been set to the maximum supported size.                              | The character array size was converted to the maximum string length of 82 in the FactoryTalk View ME application.  |
| Bit array tags are not supported. Tag will be converted as a memory tag.   | FactoryTalk View ME software does not support the bit array data type. Typically, bit arrays were used in PanelBuilder32 software for addresses less than one word in length.<br>In FactoryTalk View ME software, change the tag address to a full word address. When using non-Remote I/O addresses these conversions take place: <ul style="list-style-type: none"> <li>• Bit array is converted to an analog, default type Device tag with a word length as opposed to a memory tag.</li> <li>• BOOL is converted to a bit tag.</li> <li>• DINT is converted to an analog, long integer tag.</li> </ul> |

## Alarm Conversion Messages

This table lists alarm messages that may appear in the convert.log file.

For optimal performance, convert PanelBuilder32 alarm tags to direct reference tags in FactoryTalk View ME software. Use the L parameter for the length in 16 bit words. The alarm trigger type can be bit.

Refer to the FactoryTalk View online help for information on the word length L parameter.

**Table 20 - Conversion Log Messages: Alarms**

| Message   | Description  |
|---|--|
| Bit and LSBit triggered alarms that used a trigger tag with a bit data type will only be able to trigger a single alarm after import. | Refer to <a href="#">Alarm Trigger Tags</a> on <a href="#">page 15</a> for details on alarm tag data types.  |
| Alarm message Ack option not supported.   | In PanelBuilder32 software, the alarm ACK is on an individual message. FactoryTalk View ME software does not support individual acknowledgement of alarms. The alarm Ack is on the triggers.   |
| Alarm List at <location> will display all alarms.   | This message describes the type of alarm list.   |
| Alarm List at <location> will display all active alarms.  | This message describes the type of alarm list.   |
| Alarm List at <location> will display all alarms that have come out of alarm.   | This message describes the type of alarm list.   |
| Alarm List at <location> does not support displaying alarms that do not require acknowledgement.                                      | This message describes the type of alarm list.   |
| “Remote Clear All Alarm Tag” alarm control not supported.   | FactoryTalk View ME software does not support this alarm tag.  |
| “Remote Clear All Alarm Handshake Tag” alarm control not supported.   | FactoryTalk View ME software does not support this alarm tag.  |
| Tag converted to memory tag, as its address is blank.   | The tag was converted to a memory tag because the tag address was blank in PanelBuilder32 software.  |
| The array size for this tag was invalid and has been set to the maximum supported size.   | The character array size was converted to the maximum string length of 82.   |
| Bit array tags are not supported. Tag will be converted as a memory tag.  | <p>FactoryTalk View ME software does not support the bit array data type. Typically, bit arrays were used in PanelBuilder32 software for addresses less than one word in length.</p> <p>In FactoryTalk View ME software, change the tag address to a full word address. When using non-Remote I/O addresses, these conversions take place:</p> <ul style="list-style-type: none"> <li>• Bit array is converted to an analog, default type device tag with a word length as opposed to a memory tag.</li> <li>• BOOL is converted to a bit tag.</li> <li>• DINT is converted to an analog, long integer tag.</li> </ul> |

## Review Object Mapping

### Introduction

In this chapter, you will review how objects and alarms from PanelBuilder32 software map to FactoryTalk View Machine Edition (ME) software.

### Before You Begin

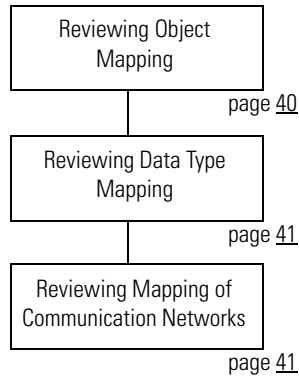
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal in the existing PanelView Standard panel cutout (Chapter 2).
- Import your PanelBuilder32 .pba application into FactoryTalk View ME software (Chapter 3).
- Review the conversion log for your imported application (Chapter 4).

### What You Need

Conversion log generated by the FactoryTalk View ME Import Wizard for the imported application.

## Follow These Steps

Follow these steps to review how PanelBuilder32 objects and alarms map to FactoryTalk View ME software. This information will help you correct application errors listed in the conversion log.



## Reviewing Object Mapping

This table identifies how some PanelBuilder32 graphic objects migrate into a FactoryTalk View ME application.

**IMPORTANT** It is important that you verify the function of all objects after importing your application to FactoryTalk View ME software. New objects may not function as expected.

**Table 21 - Object Mapping**

| This PanelBuilder32 object        | Maps to this FactoryTalk View ME object   |
|-----------------------------------|---|
| Message Display                   | Multistate Indicator  |
| Numeric Entry Cursor Point        | Numeric Input Enable  |
| Increment/Decrement Entry         | Numeric Input Enable  |
| ASCII Entry Cursor Point          | String Input Enable   |
| Numeric Display                   | Text object with numeric embedded variable  |
| Connected Line                    | Polyline  |
| Circle                            | Ellipse   |
| Freeform                          | Freehand  |
| Bar Graph and Gauge Inner Text    | Bar Graph with separate Text object   |
| Bar Graph and Gauge Inner Graphic | Bar Graph with separate Image object  |
| Gauge Needle                      | Separate Gauge object.<br><br>For example, in PanelBuilder32 software, a Gauge object is configured with two needles. This object is converted to two separate Gauge objects in Machine Edition software. |



## Reviewing Data Type Mapping

This table shows how data types map between PanelBuilder32 and Machine Edition software.

**Table 22 - Data Type Mapping**

| PanelBuilder32 Data Types | Machine Edition Data Types |
|---------------------------|----------------------------|
| Bit                       | Digital                    |
| Bool                      | Digital                    |
| Char array                | String (82 character max)  |
| Unsigned integer          | Unsigned                   |
| Signed integer            | Int                        |
| IEEE                      | Floating Point (FP)        |
| 4BCD                      | 4BCD                       |
| none                      | 3BCD                       |
| none                      | Byte (unsigned 0...255)    |
| Bit array                 | None                       |
| DINT                      | Long Int (signed 32 bit)   |
| SINT (8 bit signed)       | None                       |

## Reviewing Mapping of Communication Networks

This table shows communication protocols supported by PanelBuilder32 and FactoryTalk View ME applications.

**Table 23 - Mapping of Communication Networks**

| PanelBuilder32 Communication Protocols   | FactoryTalk View ME Communication Protocols   |
|--|---|
| RS-232 (DF1)   | RS-232 (DF1)  |
| RS-232 (DH-485)  | RS-232 (DH-485)   |
| DH-485   | DH-485  |
| DH+  | DH+<br>Does not support nodes that use the AutoMax node type  |
| EtherNet/IP <ul style="list-style-type: none"> <li>- EtherNet/IP controller address</li> <li>- EtherNet/IP CIP</li> <li>- Assembly object</li> </ul> | EtherNet/IP <ul style="list-style-type: none"> <li>- Supported</li> <li>- Not supported</li> <li>- Not supported</li> </ul> |
| RIO  | RIO <sup>(1)</sup>  |
| DeviceNet  | Not supported <sup>(1)</sup>  |
| ControlNet   | ControlNet  |
|  | KEPWare communication drivers for third-party controllers   |

(1) Remote I/O and DeviceNet communication modules are not available for PanelView Plus 6 terminals.

**Notes:**

## Review Unsupported Features

### Introduction

In this chapter, you will review unsupported features in FactoryTalk View Machine Edition (ME) software. This will help you to resolve errors in the imported application.

### Before You Begin

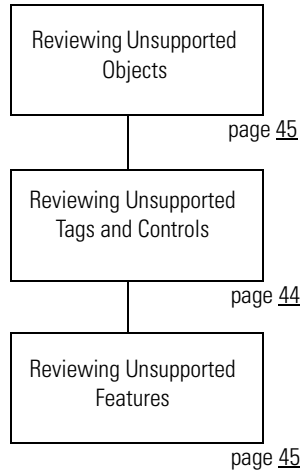
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal in the existing PanelView Standard panel cutout (Chapter 2).
- Import your PanelBuilder32 .pba application into FactoryTalk View ME software (Chapter 3).
- Review the conversion log for your migrated application (Chapter 4).
- Review object mapping (Chapter 5).

### What You Need

Conversion log generated by the FactoryTalk View ME import wizard for the imported application.

## Follow These Steps

Follow this path to review unsupported features in FactoryTalk View ME software.



## Reviewing Unsupported Objects

These PanelBuilder32 objects are not supported in FactoryTalk View ME software:

- Print Only
- Circular Scale
- Scrolling Text
- Print Alarm Button
- Horn Silence Button and Lamp/Horn Test Button
- Select Operator Button
- Enable/Disable Security Button
- New Password Button
- Verify Password Button

## Reviewing Unsupported Tags and Controls

These PanelBuilder32 controls are not supported in Factory Talk View ME software:

- Remote Ack All Handshake tag
- Remote Clear All Alarm tag
- Remote Clear All Alarm Handshake tag
- Message to Remote Device Notification tag
- Message to Remote Device Handshake tag
- Ack setting for alarms
- Bit alarm acknowledgement
- Handshaking for alarms sent to a remote device

## Reviewing Unsupported Features

Some PanelBuilder32 features are not supported in FactoryTalk View Machine Edition software. Compare the conversion log with the information on unsupported features to assist with updates to your imported application. Additional information is provided where possible to achieve the same functionality using another option or workaround in your imported application.

**Table 24 - Unsupported Features in FactoryTalk View Machine Edition**

| Unsupported Feature                                     | Object  | Additional Information   |
|---|---|--|
| Blink   | Text<br>Arc Ellipse<br>Line<br>Panel<br>Rectangle<br>Wedge                                  | In FactoryTalk View ME software, all of the list objects use color animation to blink.   |
|   | Image   | Color images do not blink.<br>Monochrome images use the Blink property to enable blinking.   |
| Allow Home/End<br>Allow Wrap<br>Ramping by Coarse Steps | Increment/Decrement Entry Button<br>(Converted to Numeric Input Enable Button)              | The Increment/Decrement Entry button is converted to a Numeric Input Enable button in FactoryTalk View ME software.  |
| Print Setting   | Multistate Indicator<br>Message Display   |  |
| Printing  | Print Only Object   | This object is not supported in FactoryTalk View ME software.  |
| Initial State Values                                    | Maintained Push button<br>Multistate Push button<br>Standard Control List Selector          | To set the states of these objects on application startup, create a macro to set the appropriate tag values for the object's controls. Assign the Macro in the Startup editor of FactoryTalk View ME software. |
| Least Significant Bit data format                       | Multistate Indicator<br>Message Display<br>List Indicator<br>Standard Control List Selector | Bit triggered states are not supported in FactoryTalk View ME software. Modify the state values and the read tag, or assign an expression to return the value of the Least Significant Bit.                    |
| Inner Text and Inner Graphic                            | Bar Graph<br>Gauge  | In FactoryTalk View ME software, the Inner Text is converted to a separate Text object. The Inner Graphic is converted to a separate Image object.   |
| Scale Clipping  | Gauge   | If the scale doesn't fit within the height or width of the gauge, it is not clipped. Check the position of the scale to make sure it doesn't overlap other objects.  |
| Needle  | Gauge   | In FactoryTalk View ME software, each needle is converted to a separate Gauge object.  |
| No Acknowledgement                                      | Alarm List  | In FactoryTalk View ME software, all alarms can be acknowledged.   |
| Ack Setting   | Alarm messages  | In FactoryTalk View ME software, all alarms can be acknowledged.   |
| Turn Object View On property                            | All objects   | If this property is set to False, the converted object does not appear.  |
| Embedded Variable                                       | Numeric Display   | Numeric Display objects are converted to Text objects with embedded variables.   |

**Table 24 - Unsupported Features in FactoryTalk View Machine Edition**

| Unsupported Feature                                      | Object   | Additional Information  |
|--|--|---|
| Foreground and background colors                         | All objects  | <p>The foreground and background colors of PanelBuilder32 objects are used to set the Selection Fore and Selection Back color for FactoryTalk View ME objects.</p> <p>If the foreground and background colors are the same, the Selection Fore and Back colors are also the same. This means the selected state will be invisible, because the foreground color (text) and the background color are the same.</p> <p>To make the selected state visible, edit the object to change either the Selection Fore or Selection Back color.</p> |
| Selected state visibility during design time and runtime | List Indicator<br>Display List Selector<br>Control List Selector<br>Piloted Control List Selector<br>Alarm List Selector | If the original Foreground Color (text) and Background Color of the object are the same, the selected state will be invisible. To make the selected state visible, edit the object to change either the Selection Fore or Selection Back color.   |
| Caption and image placement                              | All objects  | <p>FactoryTalk View ME software supports one, three, or nine positions for captions and images, depending on the type of object. On conversion, captions and images are positioned using the closest match. Some captions might do the following:</p> <ul style="list-style-type: none"> <li>• Overlap images</li> <li>• Get truncated</li> <li>• Get clipped to fit the object</li> </ul> <p>Realign or resize objects for best fit.</p>   |
| Goto Configure Mode Button                               | Object not converted   |   |
| Security   | Enable/Disable Security Button<br>New Password Button<br>Verify Password Button  | In the PanelBuilder32 software, user passwords are set up in the Configuration mode screens. FactoryTalk View ME software requires the Change Password button on a display.   |
|  | Security Settings  | <p>FactoryTalk View ME software uses a different method to assign security to graphic displays.</p> <p>You must reconfigure security. Once logged on, the operator does not need to re-enter the password until manually logged off, or optionally after an idle time.</p>  |

## Qualify the Runtime Application

### Introduction

In this chapter, you will qualify the integrity of your converted application before downloading and running it in your production environment. Because you are using different software with new features and functionality, it is important to validate the application for proper operation.

### Before You Begin

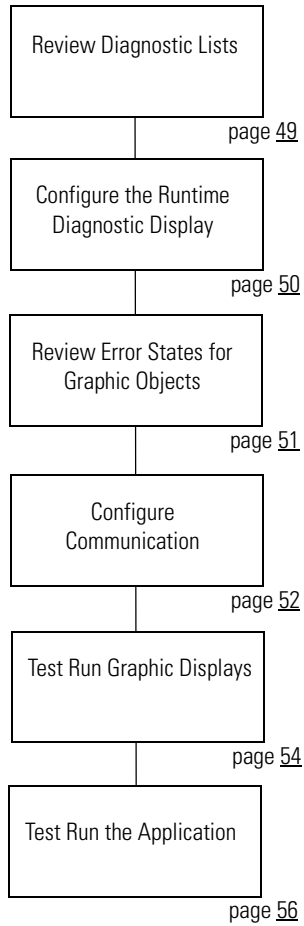
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal in the existing PanelView Standard panel cutout (Chapter 2).
- Import your PanelBuilder32 .pba application into FactoryTalk View ME software (Chapter 3).
- Review the conversion log for your migrated application (Chapter 4).
- Review object mapping (Chapter 5).
- Review unsupported features (Chapter 6).

### What You Need

Converted FactoryTalk ME application.

## Follow These Steps

Follow these steps to configure diagnostics, validate, test run, configure global memory connections, download, and run your converted application on a PanelView Plus terminal.





## Review Diagnostic Lists

On your development computer, FactoryTalk View ME software features a diagnostic list at the bottom of the application window. You can configure FactoryTalk diagnostics to display information, warnings, and errors during application development and runtime.

When you test run your application, the diagnostic list displays messages and errors logged by the application. Use this list to identify the graphic objects or features that generated the messages or errors. Correct these errors during the validation process.

The diagnostic lists lets you clear one or all messages in the list:

- Click the Clear button to delete the message that is displayed.  
If you resize the list to display more than one message, select a message and then click Clear.
- Click the Clear All button to delete all messages in the list.



To view this diagnostic information during runtime, use either of the following:

- Default [DIAGNOSTICS] graphic display
- Diagnostic list object in a customized graphic display

**TIP** The [DIAGNOSTICS] display is in the Libraries editor of the application Explorer window if not already included in your application displays. Import the [DIAGNOSTIC] display if you are going to use it.

## Configure the Runtime Diagnostic Display

Follows these steps to configure the default [DIAGNOSTICS] display to log errors or warnings generated during runtime operation.

1. Launch FactoryTalk View ME software if not open.
2. Open your converted application.
3. Expand the System folder in your application Explorer window.
4. Double-click Diagnostic List Setup.



5. Under Runtime display, verify that [DIAGNOSTICS] is the Display name.

This is the default diagnostic display that pops up during runtime when configured events occur.

6. Check the boxes next to the messages that you want to appear in the display when events occur during runtime.

It is recommended that you always log errors and warnings during runtime.

For information on how each dialog option is designed to function during runtime, click Help.

7. Click OK.



## Review Error States for Graphic Objects

In FactoryTalk View ME software, error conditions for visible objects may be different than those in PanelBuilder32 software. The table clarifies what happens when errors occur for objects when tags are unavailable or communication is lost.

For additional information on objects, refer to the FactoryTalk View Machine Edition online help.

**Table 25 - Error Modes for Objects**

| Graphic Object  | Visible Error Mode  |
|---|---|
| <ul style="list-style-type: none"> <li>• Momentary Push Button</li> <li>• Maintained Push Button</li> <li>• Latched Push Button</li> <li>• Multistate Push Button</li> </ul>  | The caption displays 'default error message' for the error state.   |
| <ul style="list-style-type: none"> <li>• Interlock Push Button</li> <li>• Ramp Push Button</li> </ul>   | No visible error message or error condition is displayed.<br>When you click on these objects, an error message is generated and logged to the diagnostic list object.       |
| <ul style="list-style-type: none"> <li>• Numeric Display</li> <li>• Numeric Input Cursor</li> </ul>   | These objects display asterisks, *****.   |
| <ul style="list-style-type: none"> <li>• Numeric Input Enable</li> <li>• String Input Enable</li> <li>• String Display</li> </ul>   | No visible error message or error condition is displayed.<br>When you click on these objects, an error message is generated and logged to the diagnostic list object.       |
| <ul style="list-style-type: none"> <li>• Goto Display Button</li> <li>• Return To Display Button</li> <li>• Display List Selector</li> <li>• Close Display Button</li> </ul>  | No visible error message or error condition is displayed.<br>If communication to the PLC controller is lost, these buttons still let you navigate through your application. |
| Multistate Indicator  | The caption displays Error for the error state.   |
| Symbol Properties   | The object shows the image color defined in the error state.  |
| List Indicator  | No visible error message or error condition is displayed.   |
| Bar Graph Gauge   | This object shows a transparent wireframe box.  |
| Scale   | No visible error message or error condition is displayed.   |
| Local Message Display   | This object displays question marks, ??????, in the error state.  |
| <ul style="list-style-type: none"> <li>• Backspace</li> <li>• End</li> <li>• Enter</li> <li>• Home</li> <li>• Move Left</li> <li>• Move Right</li> <li>• Move Down</li> <li>• Page Up</li> <li>• Page Down</li> </ul> | No visible error message or error condition is displayed.   |
| <ul style="list-style-type: none"> <li>• Sort Alarm</li> <li>• Reset Alarm</li> <li>• Alarm Banner</li> <li>• Alarm Status List</li> </ul>  | No visible error message or error condition is displayed.   |

**Table 25 - Error Modes for Objects**

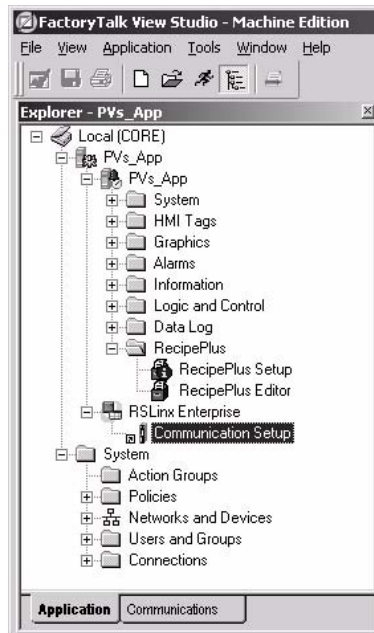
| Graphic Object | Visible Error Mode  |
|----------------|---|
| Display Print  | No visible error message or error condition is displayed.                         |
| Trend          | This object appears not to have any pens and does not perform real-time trending. |
| Time and Date  | No visible error message or error condition is displayed.                         |

## Configure Communication

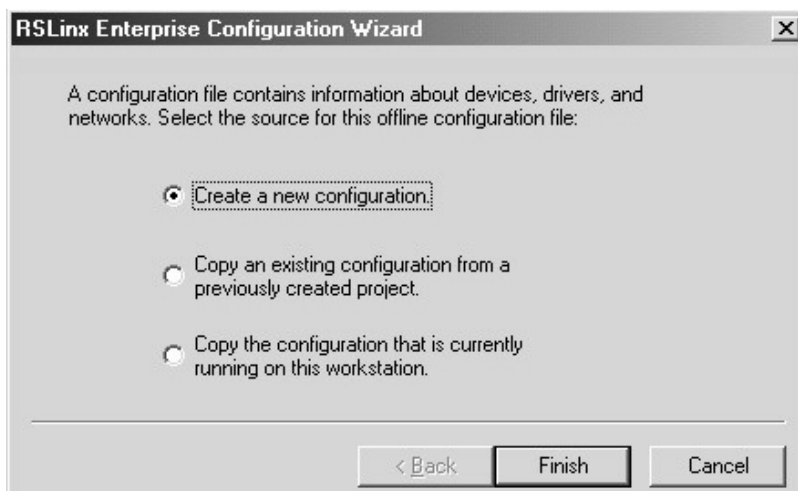
You are now ready to configure communication for your imported application. Because this is a new application, a communication configuration does not exist. The configuration will vary depending on the communication protocol you use.

Follow these steps to configure communication for your application.

1. In the Explorer window, expand RSLinx Enterprise and double-click Communication Setup.

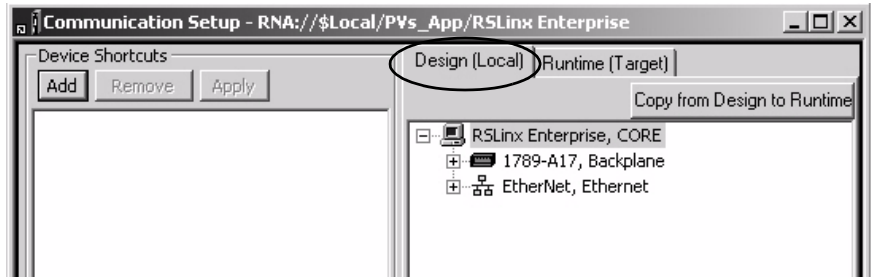


2. Select Create a New Configuration and click Finish.



3. In the Communication Setup dialog box, select the Local tab.

This communication path will be used for testing individual displays and Test Application.

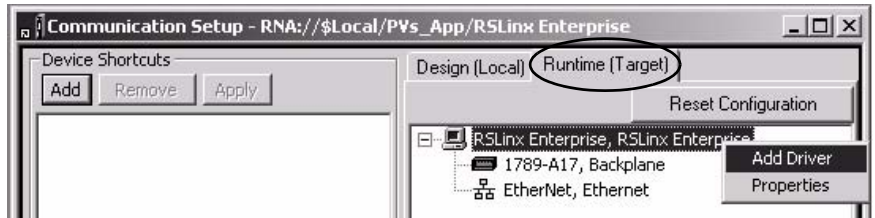


4. Select the driver you are using in your design environment to test communication.

Browse to the controller device and configure local communication.

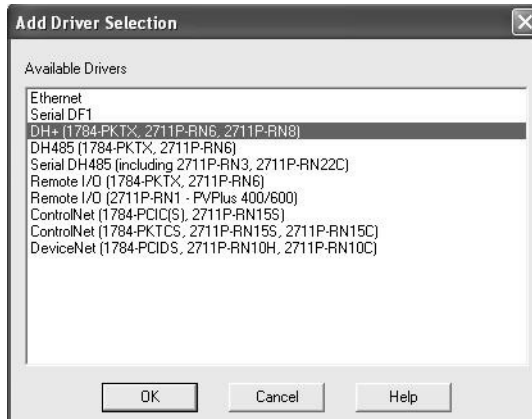
5. Select the Target tab.

This communication path will be used on the PanelView Plus to communicate to the controller in your runtime application in Chapter 8.



6. Right-click RSLinx Enterprise and select Add Driver.
7. Select the appropriate driver and click OK.

8. Configure the driver properties.



**TIP** Remote I/O and DeviceNet communication modules are not supported by the PanelView Plus 6 terminals.

PanelView Plus Compact 400, 600, and 1000 terminals are fixed hardware configurations that do not support communication modules.

| For        | On This Terminal                              | + | Communication Module        | Select   |
|------------|---|---|-----------------------------|--|
| DH+        | PanelView Plus 6 (700 to 1500) <sup>(1)</sup> | + | 2711P-RN6 or 2711P-RN6K     | DH+ (1784-PKTX, 2711P-RN6, 2711P-RN8)  |
|            | PanelView Plus 400 or 600                     | + | 2711P-RN8                   | DH+ (1784-PKTX, 2711P-RN6, 2711P-RN8)  |
| DH-485     | PanelView Plus 6 (700 to 1500) <sup>(1)</sup> | + | 2711P-RN6 or 2711P-RN6K     | DH485 (1784-PKTX, 2711P-RN6)   |
|            | PanelView Plus 400 or 600                     | + | 2711P-RN3                   | Serial DH485 (including 2711P-RN3, 2711P-RN22C)  |
| ControlNet | PanelView Plus 6 (700 to 1500) <sup>(1)</sup> | + | 2711P-RN15S or 2711P-RN15SK | ControlNet (1784-PCIC, 1784-PCICS, 2711P-RN15S) or ControlNet (1784-PKTCS, 2711P-RN15S, 2711P-RN15C) |
|            | PanelView Plus 400 or 600                     | + | 2711P-RN15C                 | ControlNet (1784-PKTCS, 2711P-RN15S, 2711P-RN15C)  |

(1) Also applies to PanelView Plus 700 to 1500 terminals running FactoryTalk View Machine Edition Firmware Revision 5.1 or earlier.

## ControlNet Communication

Refer to ControlNet Communication for PanelView Plus Terminals user manual, publication, [2711P-UM003](#), for step-by-step details on how to configure ControlNet Scheduled and Unscheduled communication with FactoryTalk View ME software.

## Test Run Graphic Displays

FactoryTalk View ME software provides a Test Display mode to test the animation and assigned tags connected to objects in a graphic display. Any information, warning, or errors are logged to the diagnostic list for your review.

Test Display mode tests all objects in a display:

- Button objects
- Numeric and string objects to verify that correct values are displayed
- Objects that require user input
- Objects that use animation

---

**IMPORTANT** You must be connected to the controller and online before test running the display or all objects will show their error states.

---

For each object tested, review and correct any errors and warnings logged to the diagnostic list. Retest the display object before proceeding to the next object.

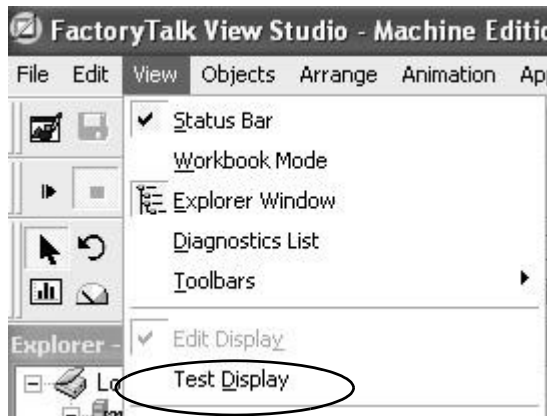
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**IMPORTANT** In Test Display mode, objects in the display are activated and connected to assigned tags. Only tags connected to objects in the display will work. Links to other displays or alarms, including data logging, macros, global connections, and information messages will not work.

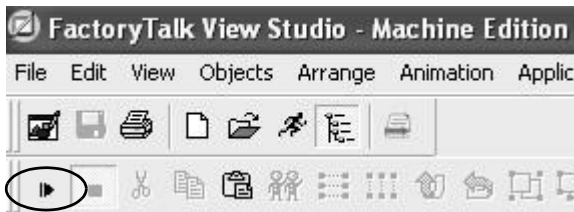
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Follow these steps to activate Test Display mode for a display and then return to Edit mode. Running Test Display mode and correcting logged errors in Edit mode is an iterative process.

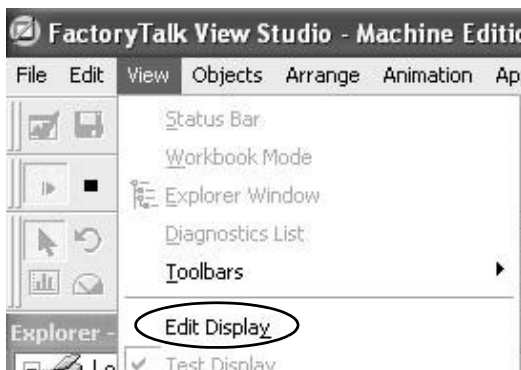
1. Open the display you want to test.
2. Access Test Display mode in one of two ways.
  - Choose Test Display from the View menu.



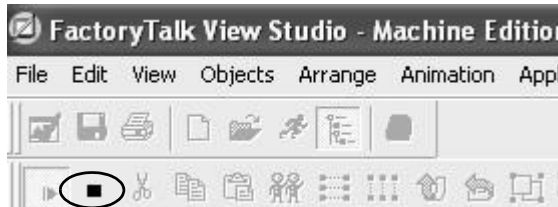
- Click the Test Display button on the toolbar.



3. Return to Edit mode in one of two ways.
  - Choose Edit Display from the View menu.



- Click the Edit Display button on the toolbar.



## Test Run the Application

After testing and verifying that each graphic display is error free, you are ready to test run the entire application. Application Test mode lets you navigate through the entire application to validate functions not tested in Display Test mode. Some of these features include alarming, data logging, information messages, global connections, and macros.

As you navigate through displays in Application Test mode, the Diagnostic List logs warnings and errors as they occur. Correct all logged errors and then retest the application to validate error correction.

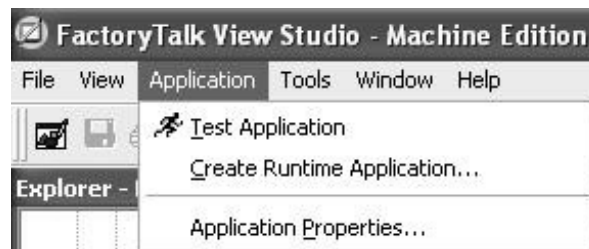
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**IMPORTANT** You must be connected to the controller and online before testing the application for accuracy.

---

Follow these steps to test run an application.

1. Open your converted application in FactoryTalk View ME software.
2. Test the application in one of two ways.
  - Choose Test Application from the Application menu.



- Click the Test Application icon on the toolbar.



The emulator opens on your computer and runs the application. There is a two hour limit for using the runtime emulator.

3. Press x on your keyboard to exit the emulator.

**TIP** Local messages and graphic objects configured for multiple languages will display in the application's current language while in Test Application mode.

**TIP** The emulator window requires focus when pressing the x key to exit the emulator.



## Create the Runtime Application

### Introduction

In this chapter, you will create, download, and run the converted application with all modifications on the PanelView Plus terminal.

### Before You Begin

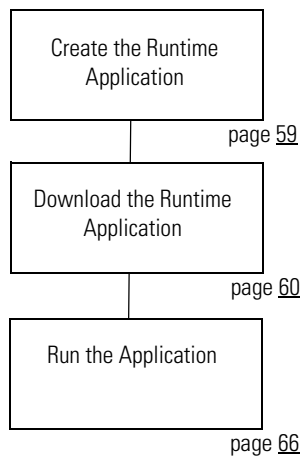
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal in the existing PanelView Standard panel cutout (Chapter 2).
- Import your PanelBuilder32 .pba application into FactoryTalk View ME software (Chapter 3).
- Review the conversion log for your migrated application (Chapter 4).
- Review object mapping (Chapter 5).
- Review unsupported features (Chapter 6).
- Qualify the runtime application (Chapter 7).

### What You Need

- Converted FactoryTalk View ME application.
- Qualified runtime application.

## Follow These Steps

Follow these steps to create a runtime application, download, and run the application on the PanelView Plus terminal.



## Create the Runtime Application

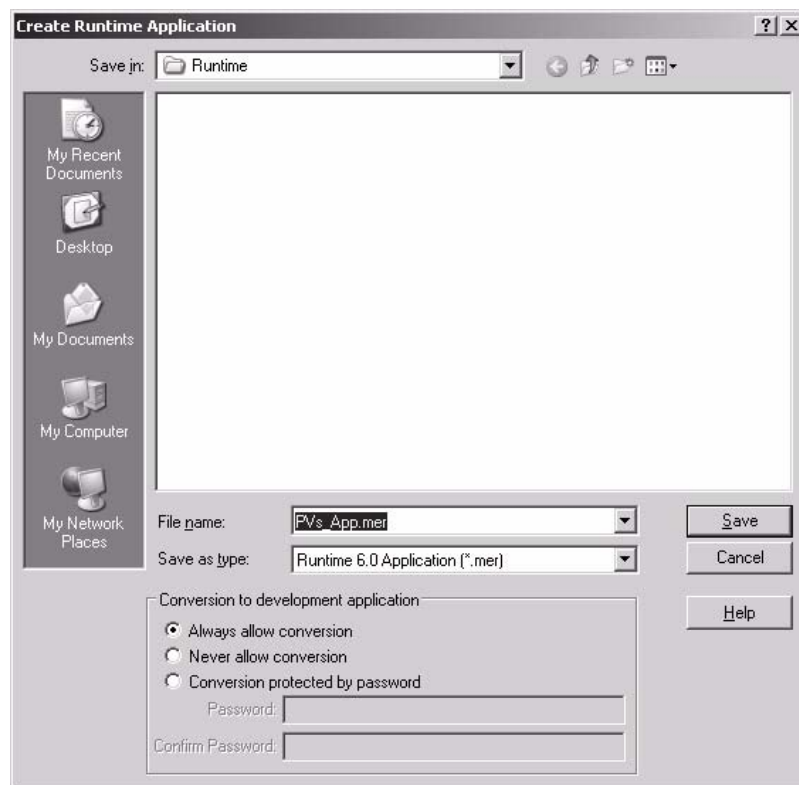
Follow these steps to create a runtime application file from your converted Machine Edition .mer file.

1. Open your converted application in FactoryTalk View ME software.
2. Choose Create Runtime Application from the Application menu.

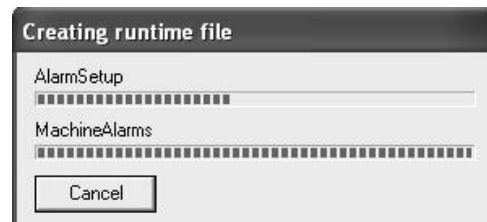


3. Enter a name for your runtime application or accept the default name.
4. Click Save to create the runtime file.

The file is saved to the default runtime location.



A dialog box shows the status of the runtime file creation. When the process completes, the dialog box automatically closes.



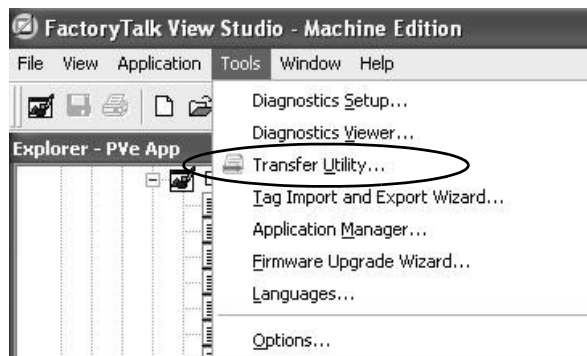
## Download the Runtime Application

You can download your runtime .mer application to a PanelView Plus terminal using an Ethernet connection or external storage device that is supported by your terminal.

### Download Application Using Ethernet Connection

Follow these steps to download your runtime application to the PanelView Plus terminal using an Ethernet connection.

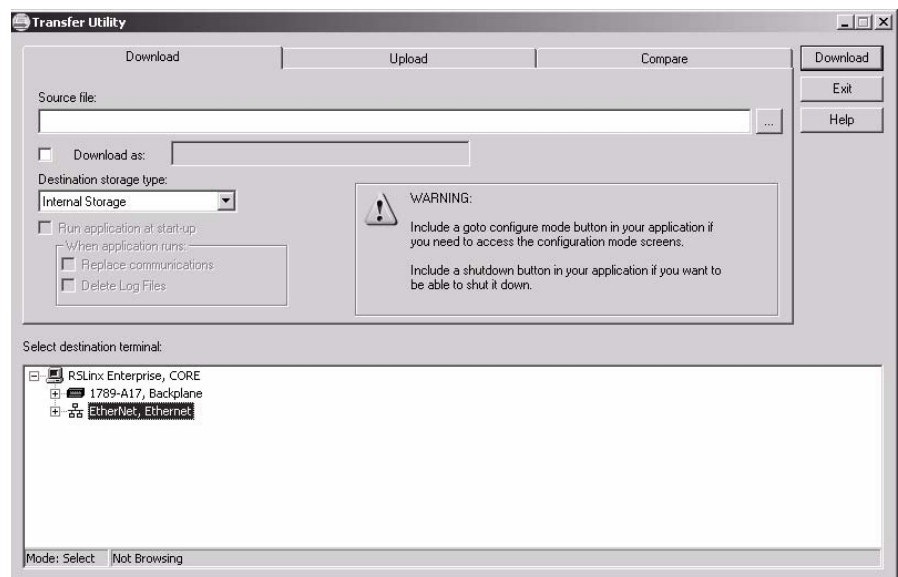
1. Establish an Ethernet connection between your computer and the terminal.
2. Launch the transfer utility in one of two ways.
  - a. Choose Transfer Utility from the Tools menu.



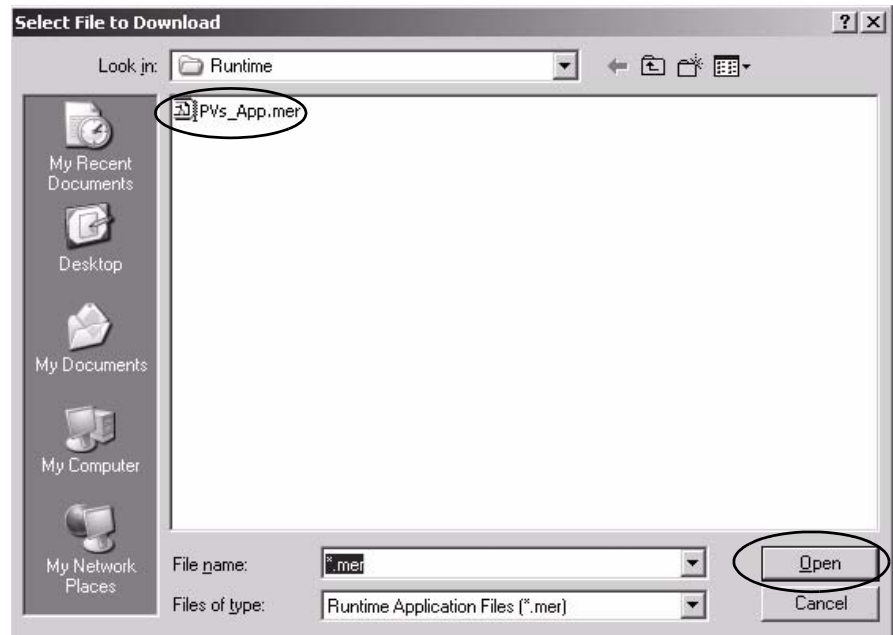
- b. Click the appropriate tool on the toolbar.



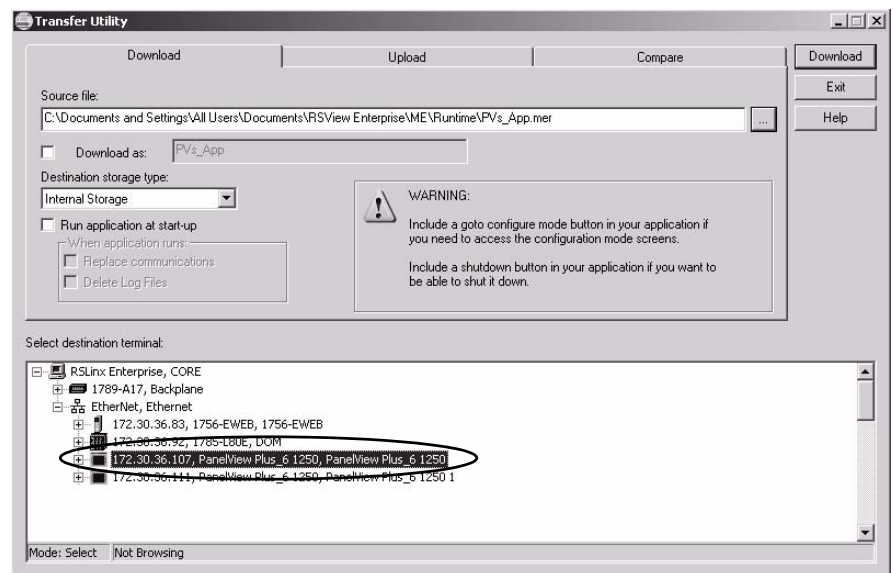
3. Click the ... button to browse for the runtime file you just created.



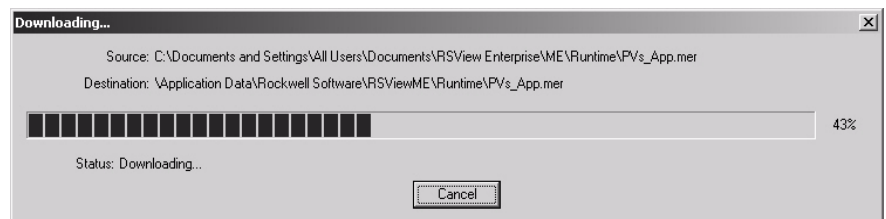
4. Select the runtime file you just created and click Open.



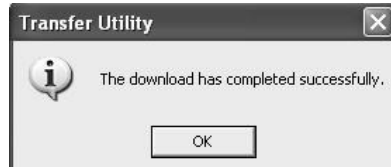
5. Under Select destination terminal, expand the Ethernet driver.
6. Browse for and select your PanelView Plus terminal.
7. Click Download to download the runtime file to the PanelView Plus terminal.



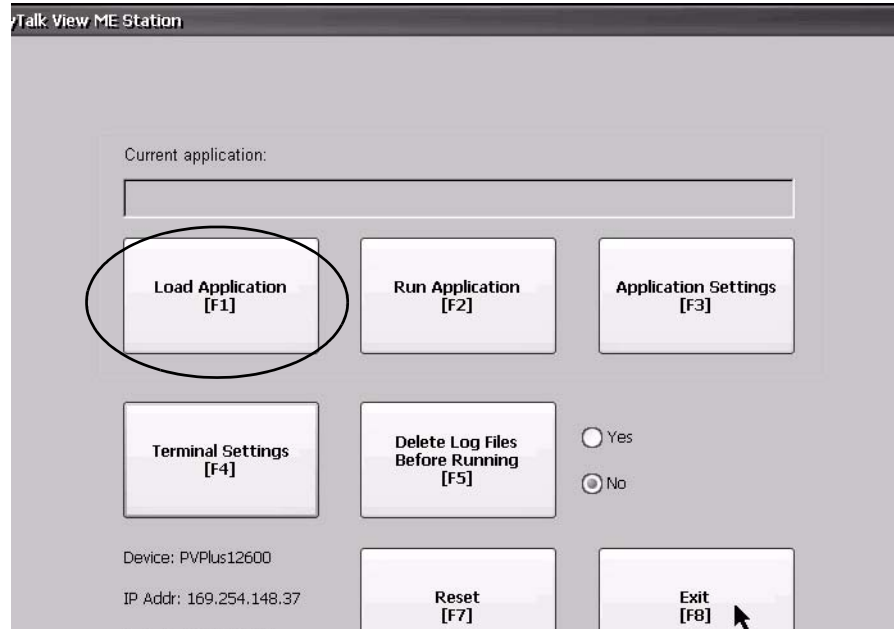
A progress bar shows the status of the download.



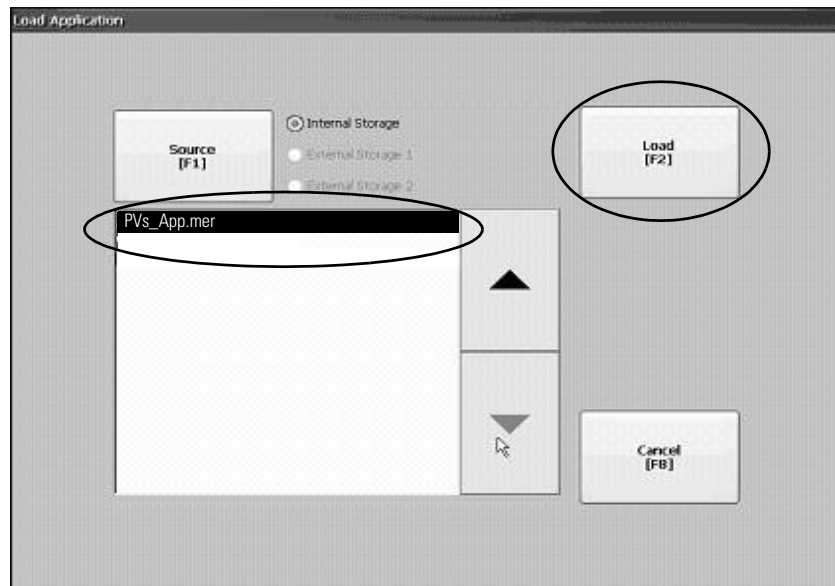
- 8. Click OK when the download has completed successfully.



- 9. On the PanelView Plus terminal, load the application by pressing the Load Application button or pressing the [F1] function key.

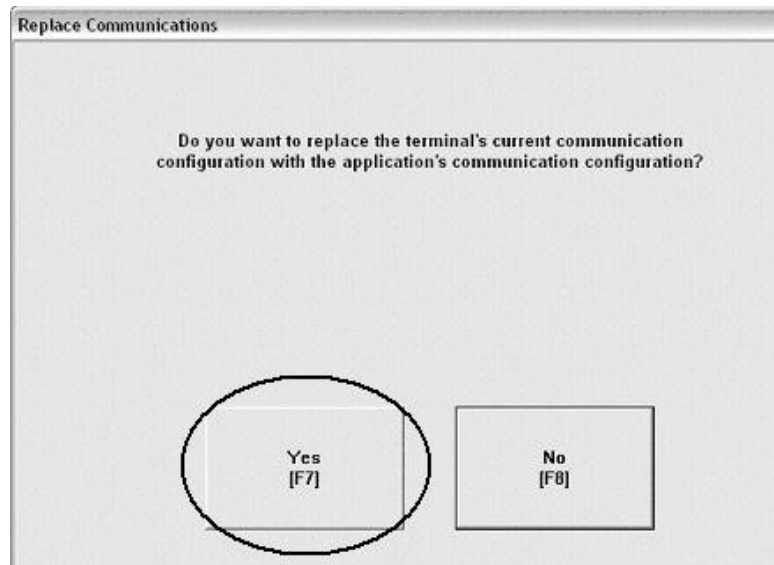


- 10. Select your runtime application.
  - a. Press the up or down cursor to select the application if more than one exists.
  - b. Press the Load button or the [F2] function key on terminal.



11. Press Yes or the [F7] function key on terminal to replace the communication settings in the terminal with those in your runtime application.

You are now ready to run the application on the terminal. Skip to page [66](#).



## Download Application Using External Storage

Follow these steps to load the runtime application on the PanelView Plus terminal using an external storage card.

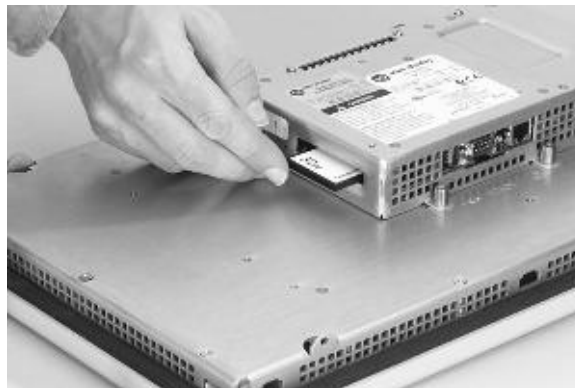
**Table 26 - External Storage Media**

| This Terminal Platform         | Supports This External Storage              |
|--------------------------------|---|
| PanelView Plus 6 (700 to 1500) | Secure Digital (SD) card, cat. no. 1784-SDx |
|                                | USB flash drive on USB host ports           |
| PanelView Plus 700 to 1500     | CompactFlash cards, cat. no. 2711P-RCx      |
|                                | USB flash drive on USB host ports           |
| PanelView Plus 400 and 600     | CompactFlash cards, cat. no. 2711P-RCx      |
| PanelView Plus Compact         | CompactFlash cards, cat. no. 2711P-RCx      |

1. On your computer, copy the runtime application file to the runtime folder on a storage card supported by the terminal.
2. Turn off power to the terminal.
3. Load the storage card into the card slot of the terminal.

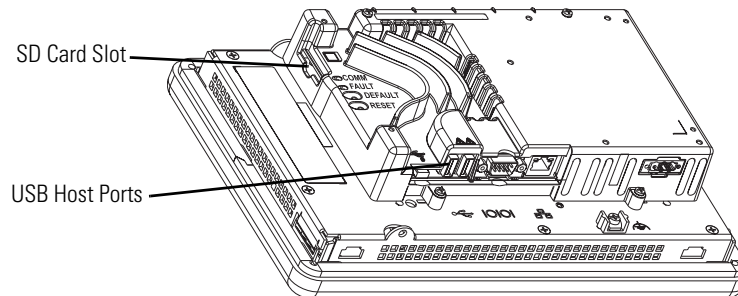
**IMPORTANT**

The root of the CompactFlash card must have the path 'RockwellSoftware\RSViewME\Runtime' or the application file will not be recognized at runtime.



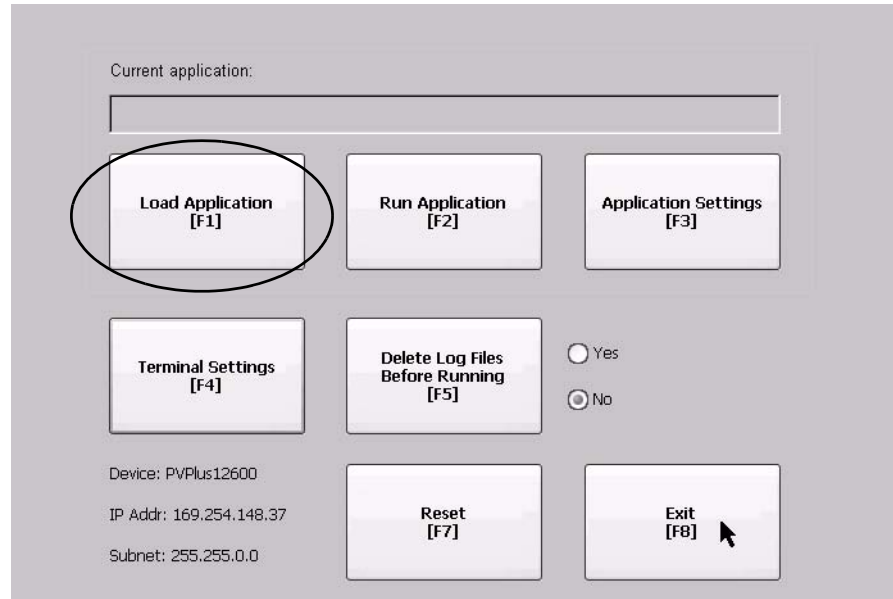
CompactFlash card slot on PanelView Plus 700 and 1500 terminals supporting FactoryTalk View Machine Edition software version 5.1 or earlier.

SD card slot and USB host port on PanelView Plus 6 terminals

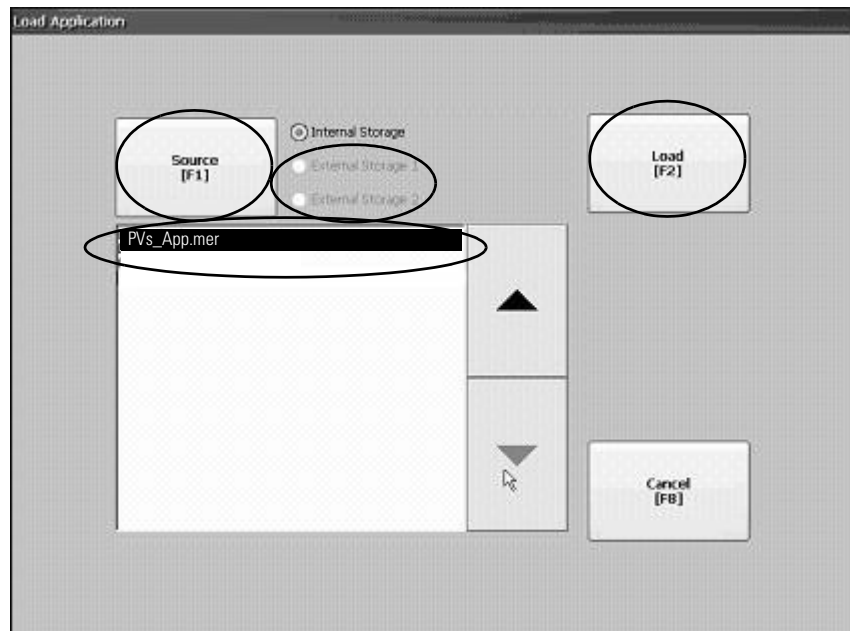




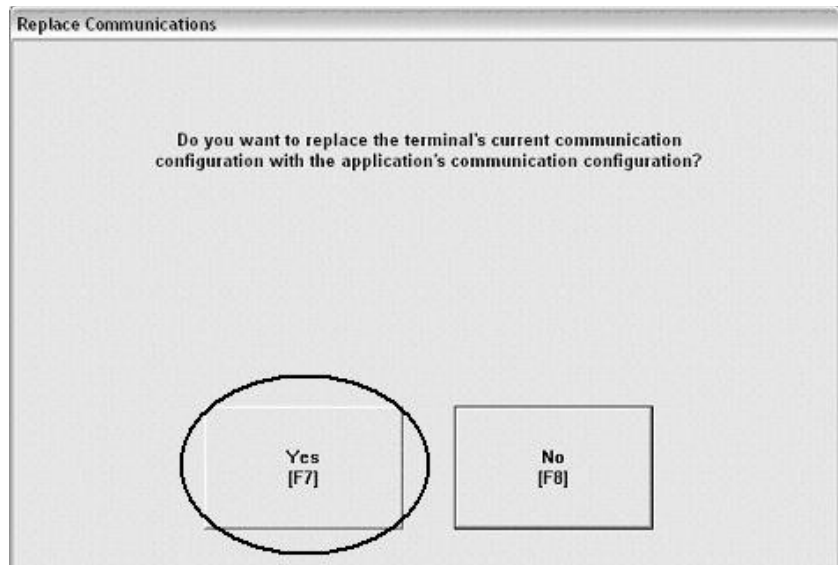
4. Turn on power to the PanelView Plus terminal.
5. On the configuration display, press Load Application or the [F1] function key on the terminal.



6. Press the Source button or [F1] on the terminal to select External Storage 1 or 2.
7. Select your runtime application.
  - c. Press the up or down cursor to select the application if more than one exists.
  - d. Press the Load button or [F2] function key on the terminal.



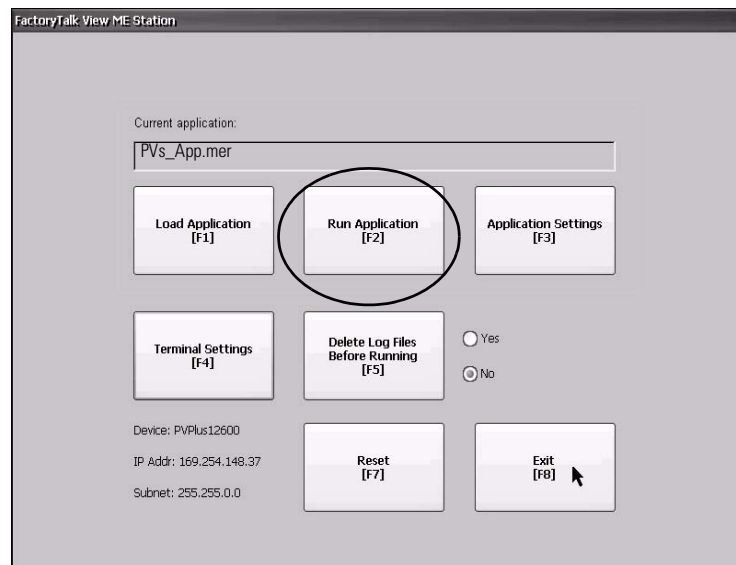
8. Press Yes or the [F7] function key on the terminal to replace the communication settings in the terminal with those in your runtime application.



## Run the Application

Follow these steps to run your application on a PanelView Plus terminal.

1. Press Run Application or the [F2] function key on the terminal to run the currently loaded application.



---

### IMPORTANT

If your application is not communicating to the controller:

- Check all cable connections.
  - Verify that the Target tab in the RSLinx Enterprise Communication Setup is configured correctly.
- 

2. Cycle through all the runtime displays continuously.

# Optimize Runtime Performance

## Introduction

In this chapter, you will learn how to benchmark performance of your runtime application so that you can optimize as needed.

## Before You Begin

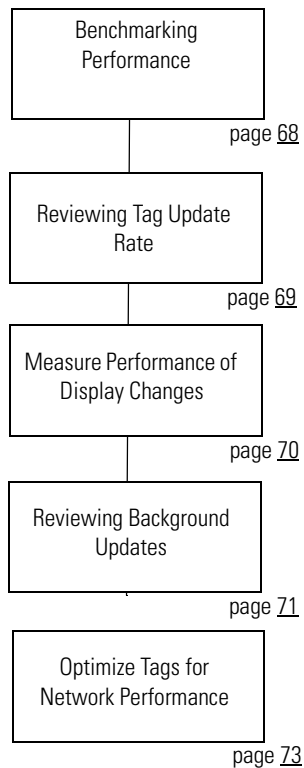
- Review migration considerations (Chapter 1).
- Select a PanelView Plus terminal replacement and adapter plate, if required (Chapter 2).
- Optionally install the PanelView Plus terminal in the existing PanelView Standard panel cutout (Chapter 2).
- Import your PanelBuilder32 .pba application into FactoryTalk View ME software (Chapter 3).
- Review the conversion log for your migrated application (Chapter 4).
- Review object mapping (Chapter 5).
- Review unsupported features and common migration issues (Chapter 6).
- Correct, validate, and test the application (Chapter 7).
- Create, download, and run the application on a PanelView Plus terminal (Chapter 8).

## What You Need

- A converted FactoryTalk View ME runtime application file downloaded and loaded in your PanelView Plus terminal.

## Follow These Steps

Follow this path to benchmark and optimize the performance of your converted application.



## Benchmarking Performance

You are now ready to compare performance of your PanelBuilder 32 application running on a PanelView Standard terminal and the converted FactoryTalk View ME application running on a PanelView Plus terminal.

You will perform the benchmarking by functional areas so that you can optimize performance one step at a time. Each function may also provide alternative methods to improve performance where needed.

---

**IMPORTANT**

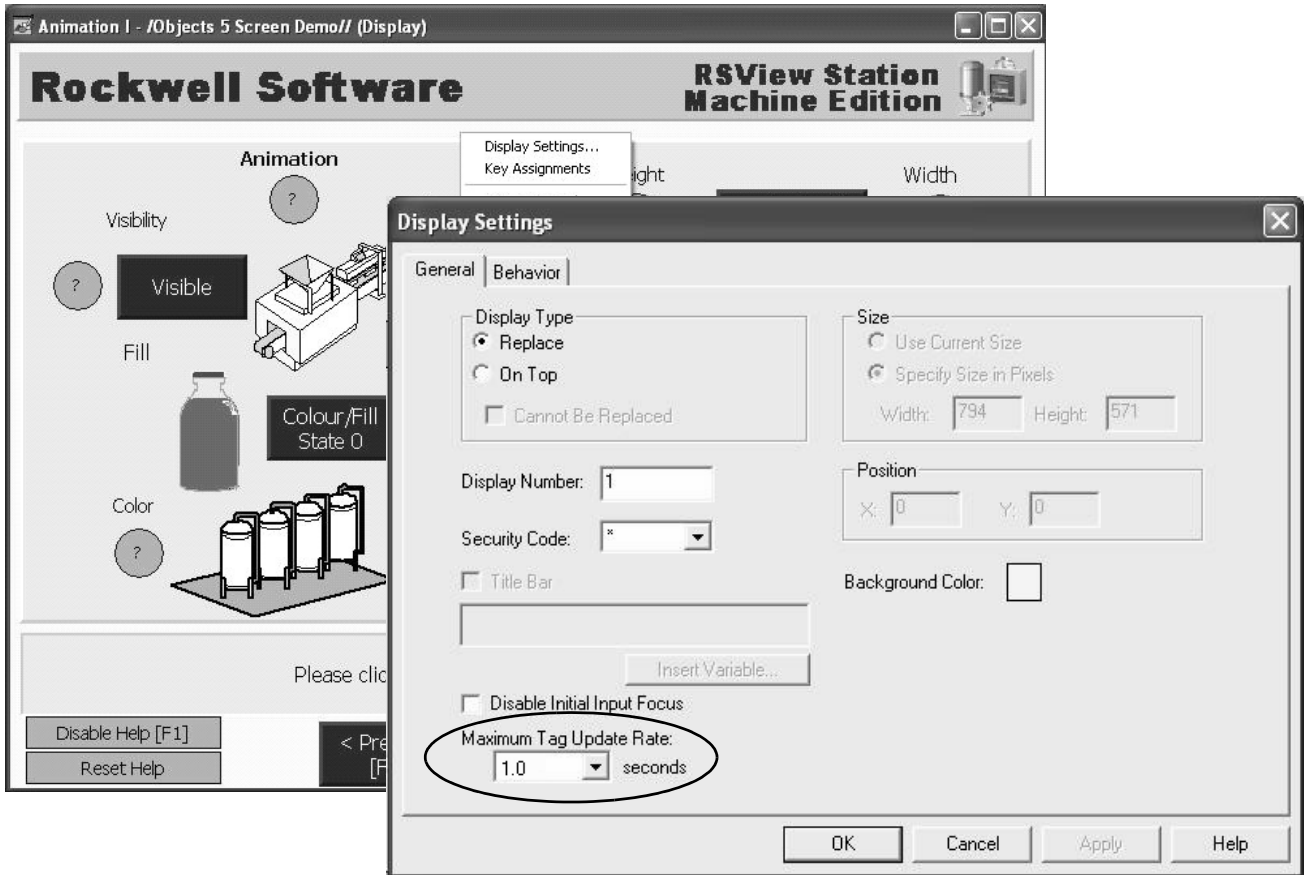
Performance benchmarking between the terminal platforms is critical so that operators experience the same, if not better, performance on the new platform.

---

## Reviewing Tag Update Rate

The tag update response is dependent on where the tag is used in the application. Each display or feature has a maximum tag update rate. This parameter specifies the maximum rate at which new data will be updated on the display, including tags used in expressions and embedded variables.

The default tag update rate is 1.0 second.



## Measure Performance of Display Changes

During performance benchmarking, you may want to measure the time it takes for the application to change from one display to another. It is important that the operator experiences the same display feedback, if not better, on the PanelView Plus terminal.

If possible, place your PanelView Standard terminal and the new PanelView Plus terminal side by side. Run the original PanelView Standard application and the converted PanelView Plus application at the same time.

Follow these steps to measure the length of time it takes to change from one display to another in the application.

1. Load and run your converted application on the PanelView Plus terminal.
2. Use a stopwatch in the next steps to record the time it takes to change from one display to another display.
3. On any display, press the button that results in a display change and start recording the time.
4. Stop recording the time after all tag information is loaded on the next display.
5. Repeat steps 3 and 4 until you have recorded the times for all displays in the application.

---

**IMPORTANT** Cycle through all displays at least twice. The first time you open a display it loads slower than subsequent displays because tag information is cached into memory after a display is opened.

---

6. If possible, repeat this procedure for the same application on the PanelView Standard terminal.

In a FactoryTalk View ME application, each display can have a maximum of 1000 tag connections assigned. The more tag connections a display has, the longer it will take to load the display.

If performance is slower for some displays in the PanelView Plus application, you can do one of the following:

- Adjust the maximum tag update rate for these displays
- Reduce the number of tags used on these displays

# Reviewing Background Updates

Background tags are continuously updated by the runtime application whether or not the operator is on a specific display. Tags update according to the maximum tag update rate for the associated feature.

The more familiar you are with these tags and features, the easier it is to update and finetune your application.

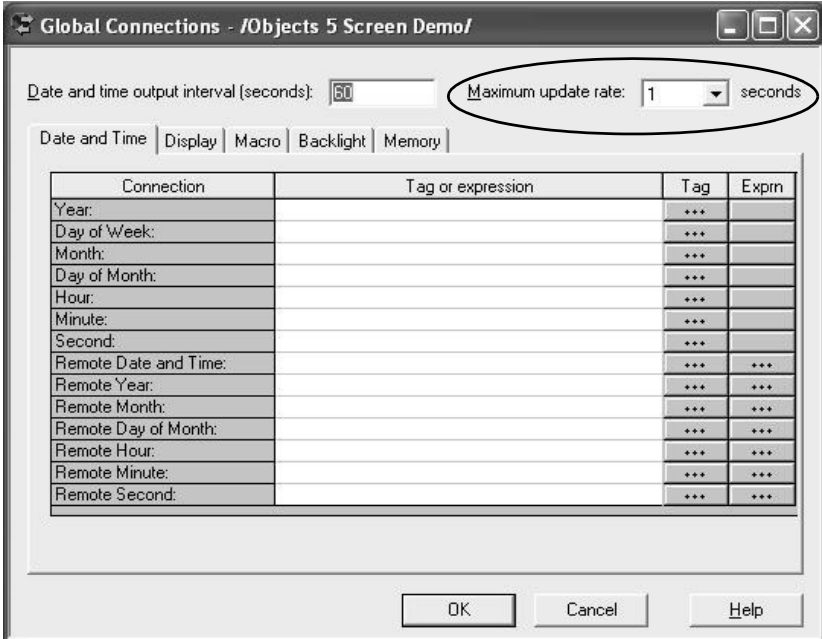
**TIP** Set noncritical tags to a longer maximum update rate. Set critical tags to a lower rate so that time-sensitive information is always available to the operator.

## Global Connections

The Global Connections editor provides a list of connections that you can assign to tags:

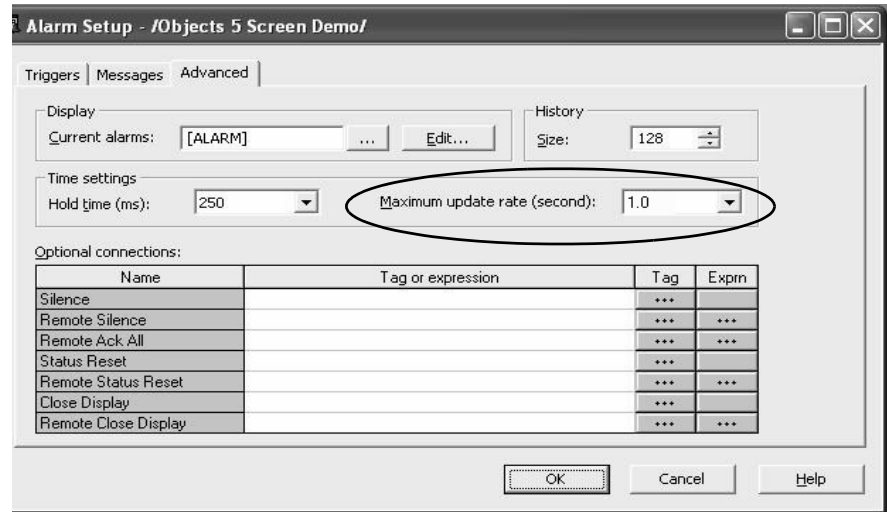
- Date and Time
- Display
- Macro
- Backlight
- Memory

These tags are continuously updated in the background by the application, regardless of what display is currently active. The tags update according to the setting of the maximum update rate parameter.



## Alarms

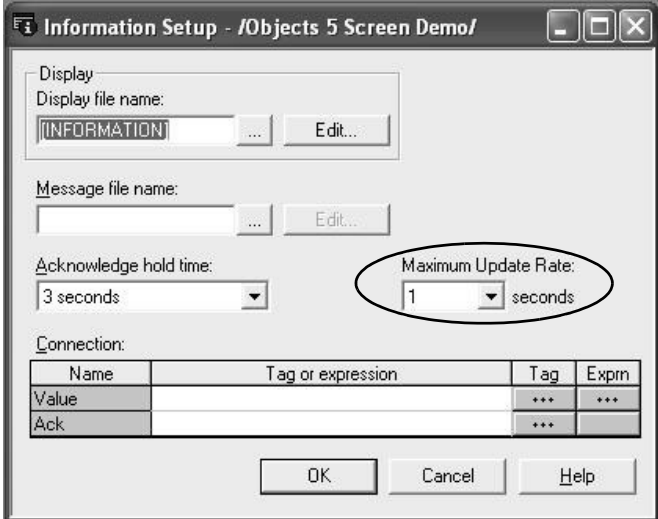
The Alarm Setup editor lets you define triggers, messages, and advanced features for alarms. Any trigger tags or optional connections assigned within the editor will update according to the maximum update rate. This parameter is on the Advanced tab.





## Information Messages

The Information Message editor lets you specify information messages to automatically display on a user-defined display. The tags assigned in this editor, update at the rate defined by the maximum update rate.



## Optimize Tags for Network Performance

You can further improve network performance by converting the application tags from HMI tags to direct reference tags.

The tag converter wizard (TCW) automatically converts tags in an application from HMI tags to direct reference tags.

**TIP** You can download The TCW utility from the Knowledgebase. Refer to Technote 31289.

## About the Tag Converter Wizard

The tag converter wizard (TCW) requires information from an existing application to perform the conversion:

- Exported HMI tag database
- Exported displays (xml format)
- Exported alarms (xml format)

When this pre-conversion information is available, you can run the wizard. The wizard examines the HMI tag database to determine which tags to convert to alias tags or direct reference tags.

---

**IMPORTANT** The tag converter wizard converts HMI tags to device tags. It does not convert device tags to HMI tags. Back up your application before starting the conversion. The conversion alters the original displays when imported into your new application.

---

### *Remote I/O Applications*

---

**IMPORTANT** For Remote I/O applications, HMI tags that use custom scale and offsets are not converted. Any alias tags with initial values assigned are not converted. You must manually set the custom scale, offsets, and initial values for these tags, for objects to operate correctly.

---

The HMI tags are substituted with the alias or device tags in the display and alarm xml files. When the conversion is done, a `Convert_Log.txt` file is generated. This file indicates all tag substitutions on a display-by-display basis. A new set of display and alarm xml files are created that you can import into your migrated application. The original display and alarm xml files are unaltered.

### *Non-Remote I/O Applications*

For all non-Remote I/O applications, HMI tags are converted to direct reference tags regardless of scale, offset, and min/max values. This includes Ethernet, DF1, DH+, and DH-485 applications.

---

**IMPORTANT** Memory tags are not converted. You should convert memory tags manually before running the Tag Converter Wizard.

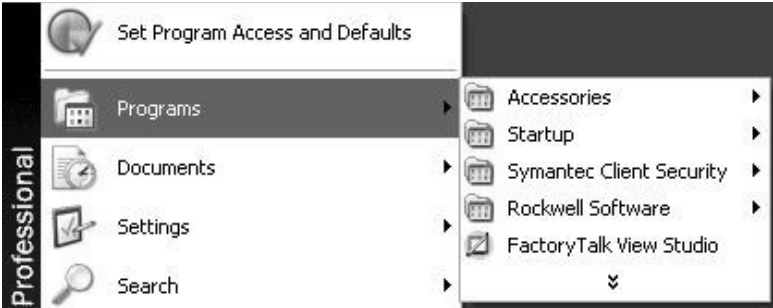
---

The TCW does not add the L parameter to alarm trigger tags. Refer to [page 15](#) for details on converting alarm trigger tags to direct reference.

### Export the HMI Tag Database

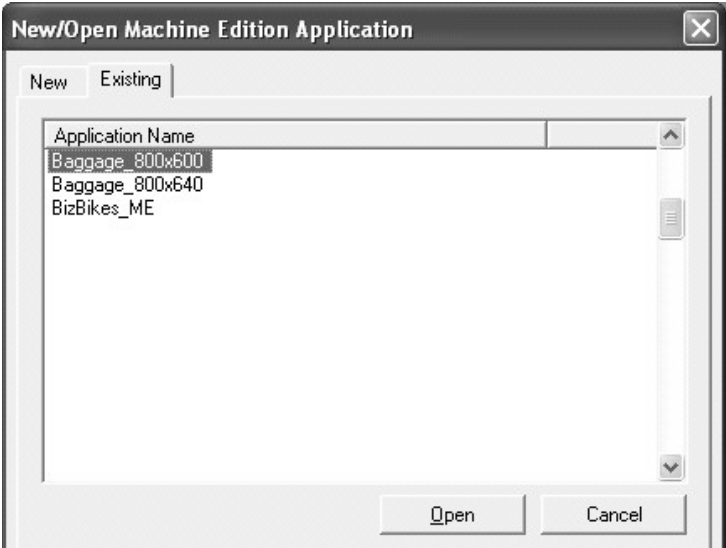
Follow these pre-conversion steps to export the HMI tag database in your migrated application.

- 1. Launch FactoryTalk View Studio software.

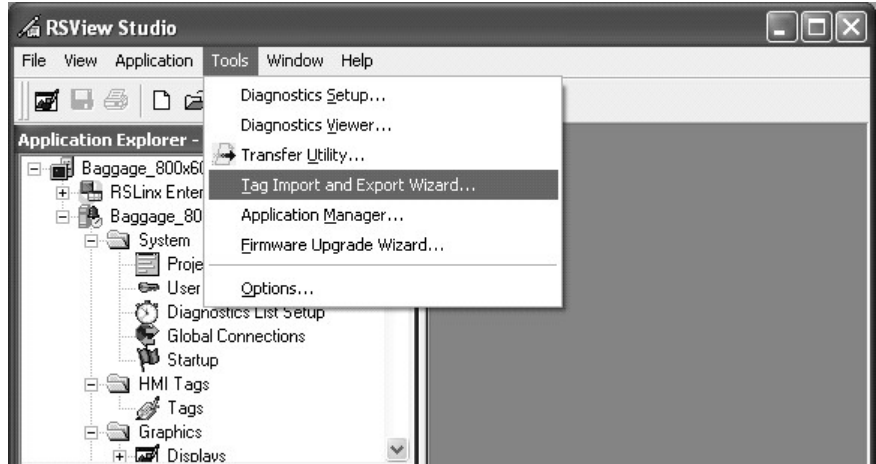


- 2. Select your ME application and click Open.

This example selects Baggage\_800x600.



- 3. Choose Tools>Tag Import and Export Wizard from the Tools menu.

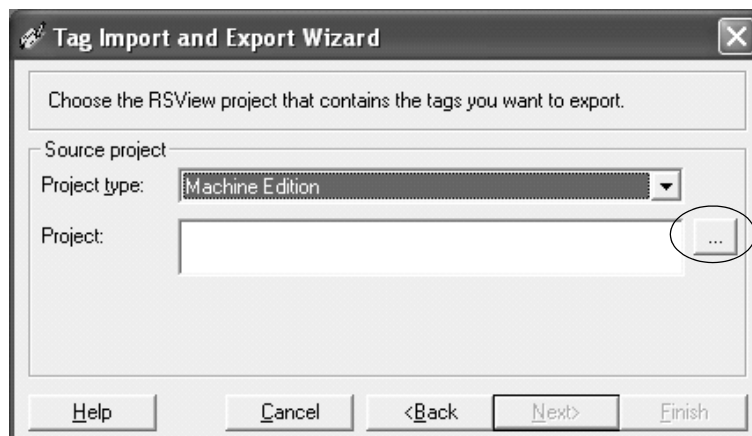


- In the Operation field, select Export RSVIEW Tag Database to CSV files and click Next.



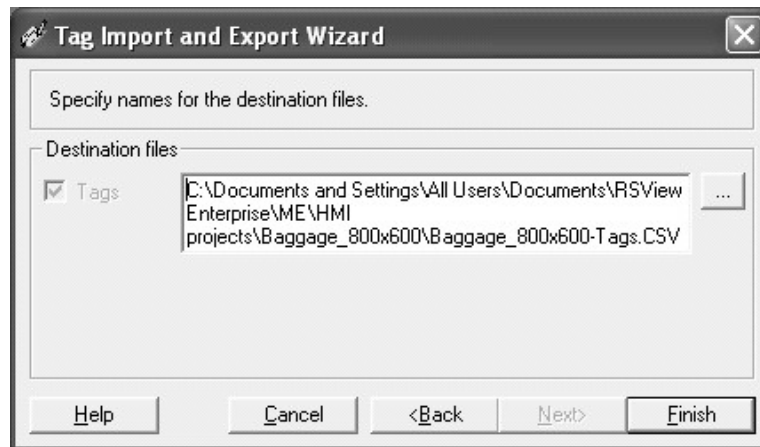
- Click the ... button and browse to the project .med file and click Next.

This example uses Baggage\_800x600.med.



- Accept the default name for the destination file.
- Click Finish.

You have just successfully exported the HMI tag database.



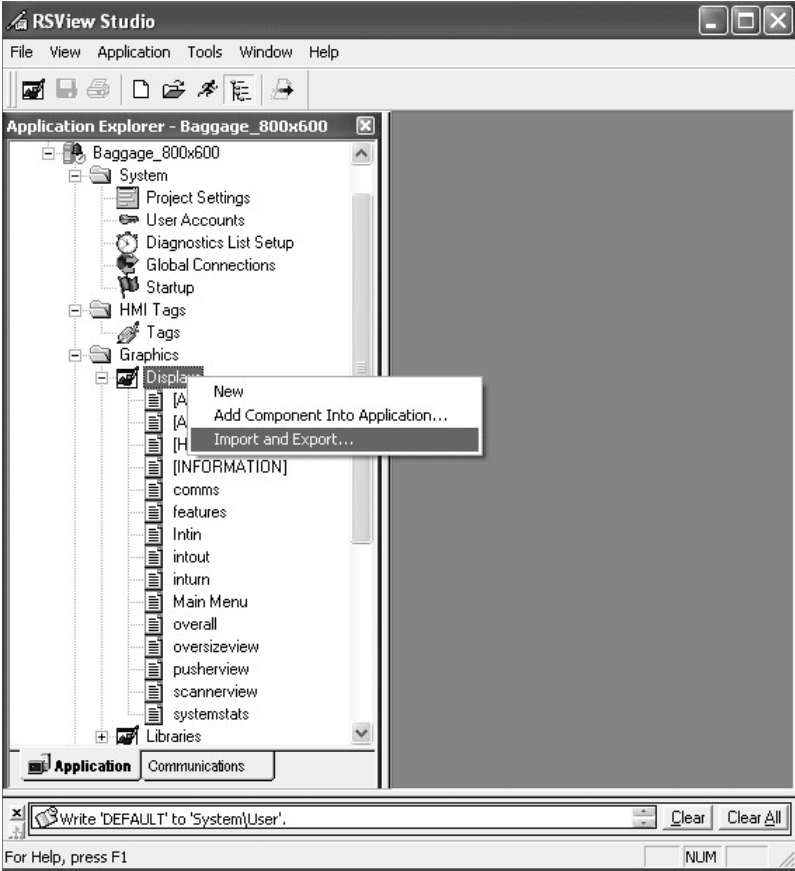
The default destination of the .csv file is:

C:\Documents and Settings\All Users\Documents\RSView Enterprise\ME\HMI Projects\Project\_Name\Project\_Name-Tags.CSV

## Export Graphic Displays to XML File

Follow these pre-conversion steps to export the graphics display in your converted application to an xml format.

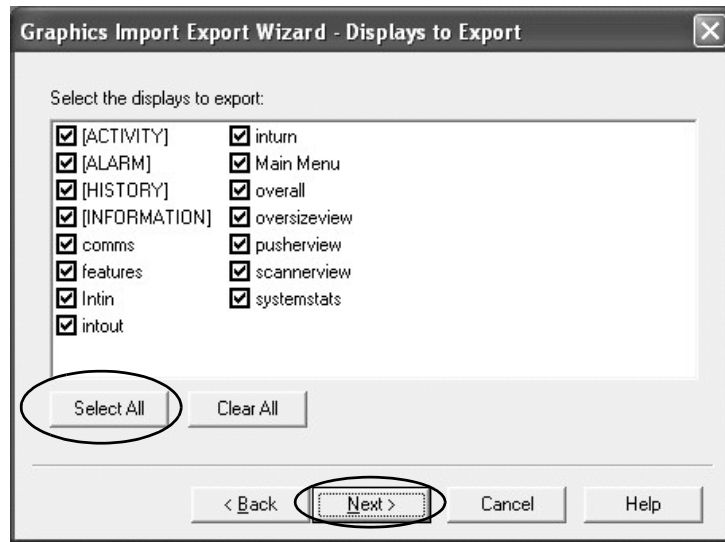
- 1. Navigate back to the open instance of the FactoryTalk View Studio software.
- 2. In the Application Explorer, right-click Displays and choose Import and Export.



- 3. Select Export graphic information from displays and click Next.



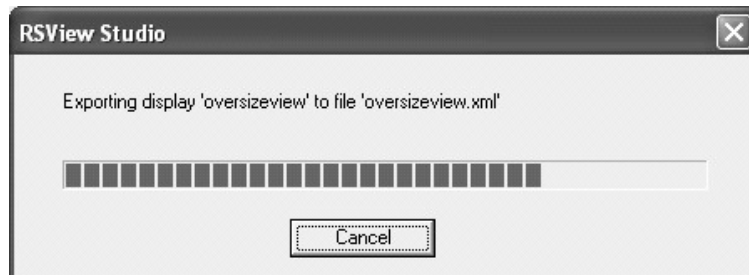
4. Click Select All, then Next.



5. Click the ... button.
6. Create a folder anywhere on your computer named Exported Displays.
7. Click Finish.

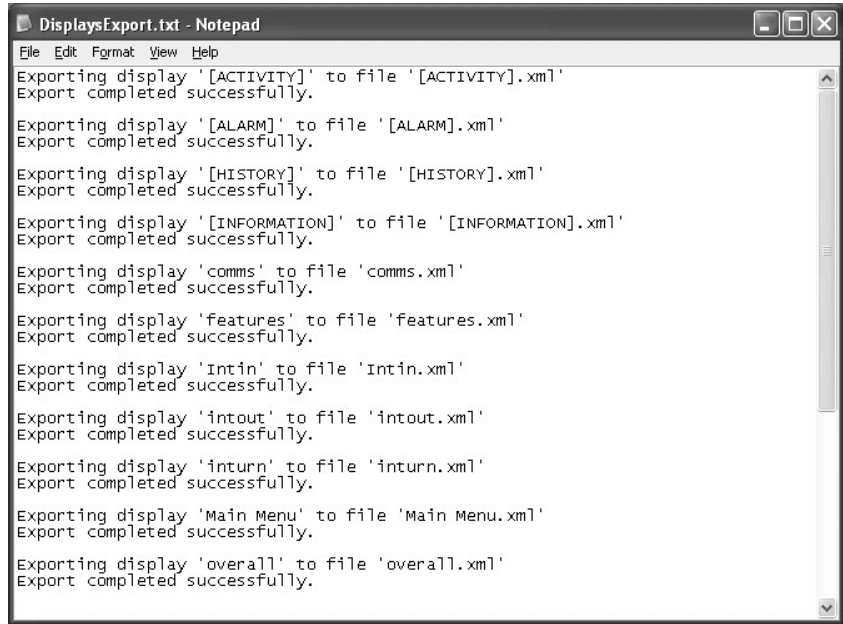


A dialog box shows the name of each graphic display as it is exported to an .xml file.



- Review the Display\_Export.txt file for any errors generated during the export.

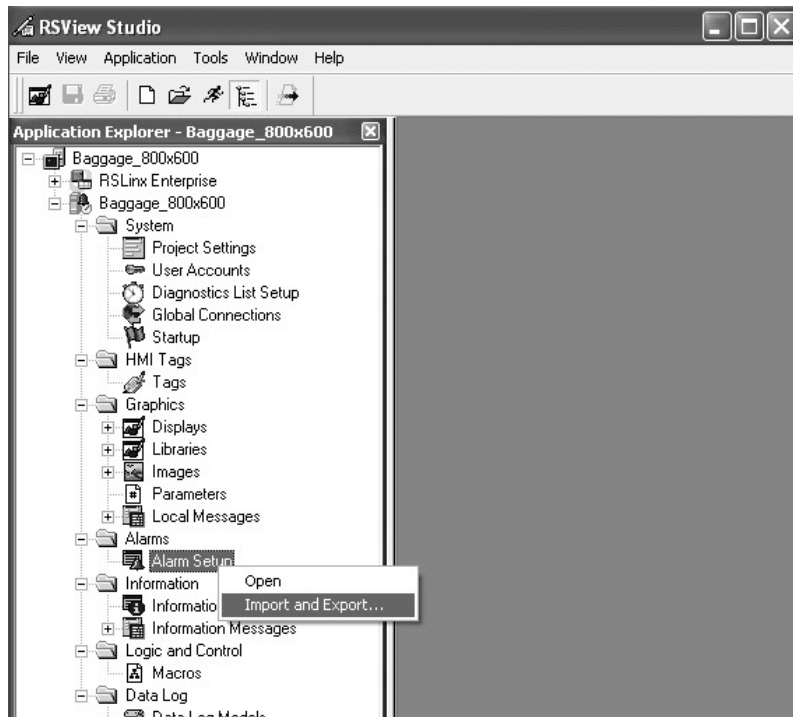
The displays have been successfully exported to the folder created in step 6.



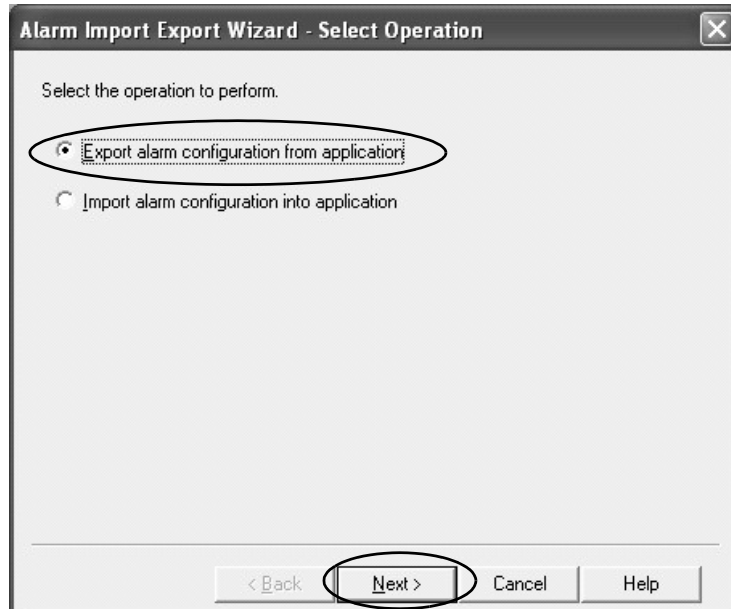
### Export Alarms to XML File

Follow these pre-conversion steps to export alarms in your converted application to an xml format.

- Navigate back to the open instance of the FactoryTalk View Studio software.
- In the Application Explorer, right-click Alarm Setup and choose Import and Export.

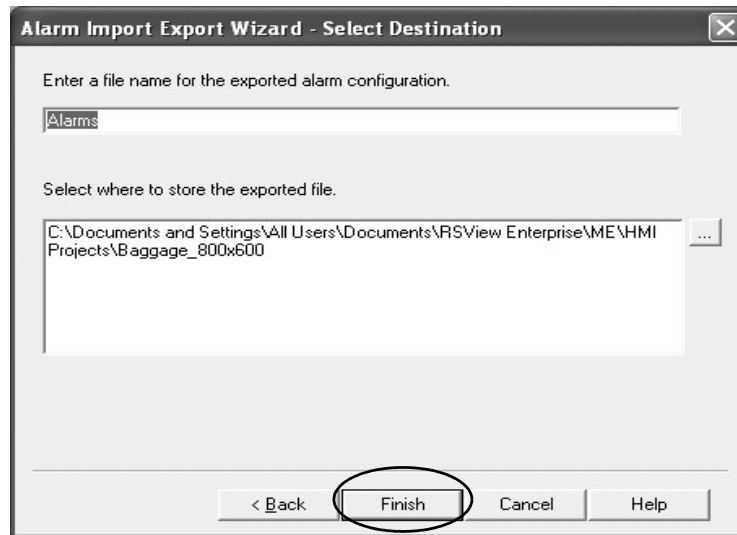


3. Select Export alarm configuration from application and click Next.



4. Accept the default file name Alarms and click Finish.

The alarms have been successfully exported to the alarms.xml file.



The default location for the alarm.xml file is:

C:\Documents and Settings\All Users\Documents\RSView Enterprise\ME\HMI Projects\Project\_Name\Alarms.xml



## Run the Tag Converter Wizard

Now that you have completed the pre-conversion process, you are ready to run the tag converter wizard. The executable file is named TCW.exe.

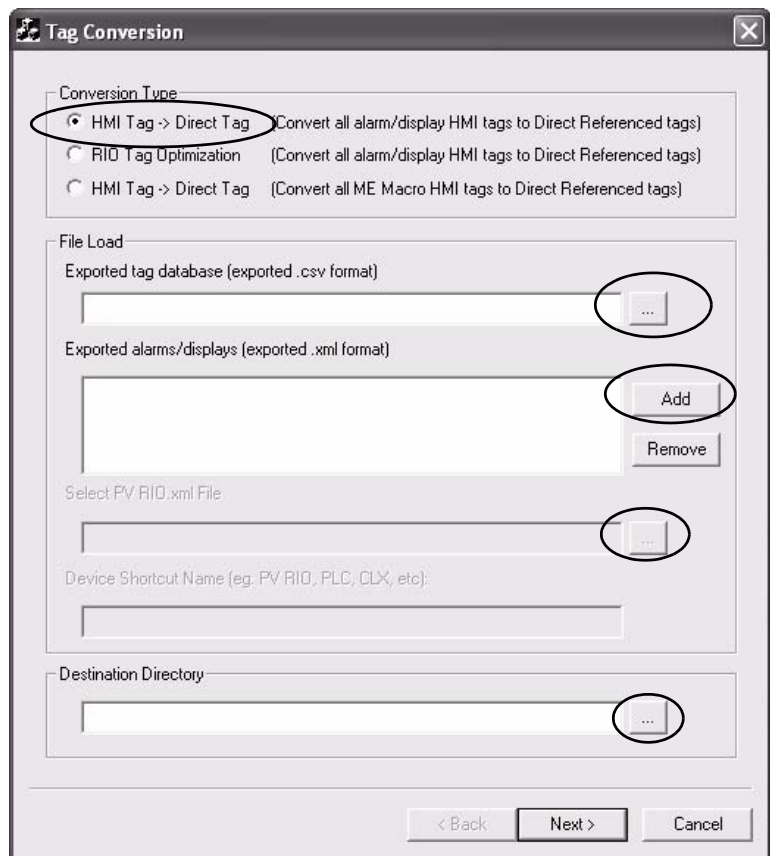
**TIP** The original HMI tag database is not altered.

During the conversion, most of the tags are converted to direct reference tags. You will have to manually set scale and offset values for tags after the conversion.

1. Double-click the TCW.exe utility.
2. Select the HMI Tag ->Direct Tag conversion type.
3. Click the ... button next to the Exported Tag Database field and load the exported tag database.

The file is located in the directory specified in step 6 on page 76.

4. Click the Add button next to Exported alarms/displays.

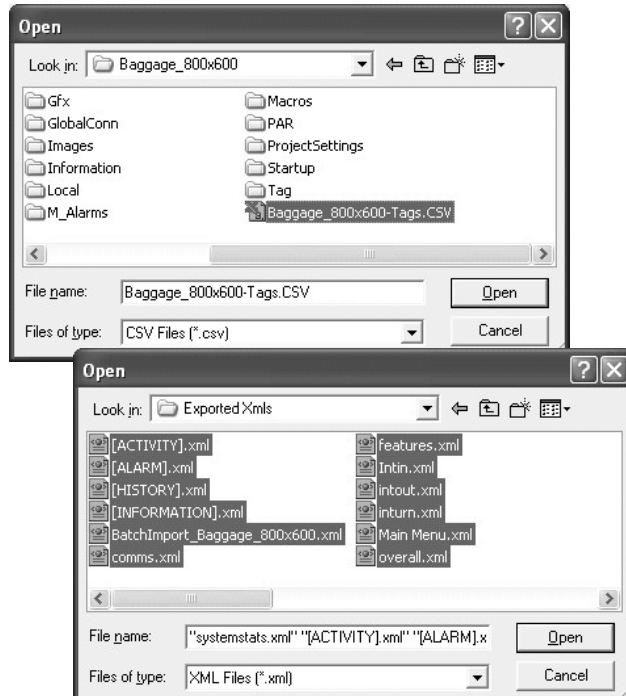


5. Load the exported alarms and display xml files.

The alarms file is located in the folder specified under step 4 on page 80.

The xml display files are located in the folder specified in step 6 on page 78.

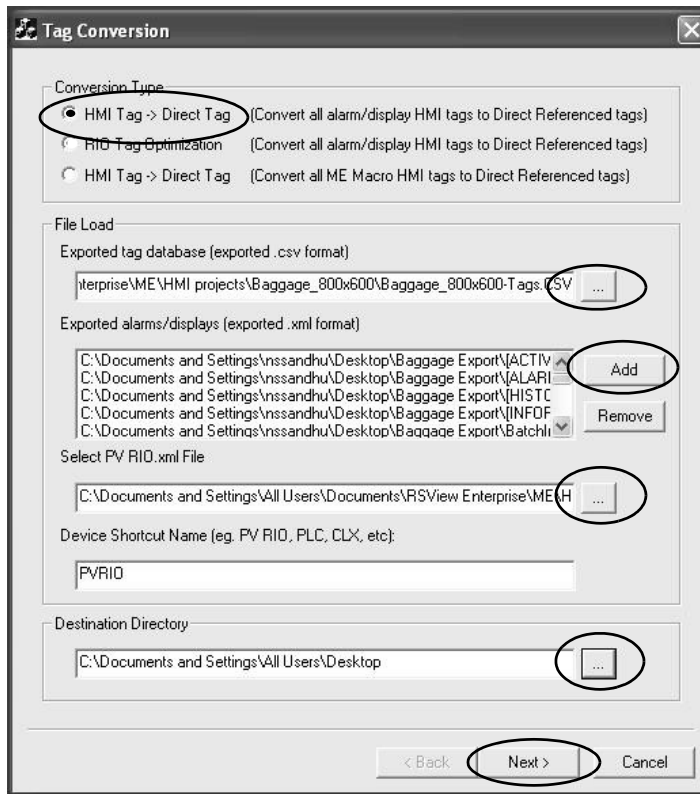
Hold down the Shift key and select all displays to load all displays at once.



6. In the Destination Directory field, click the ... button to specify any location for the new xml display files.

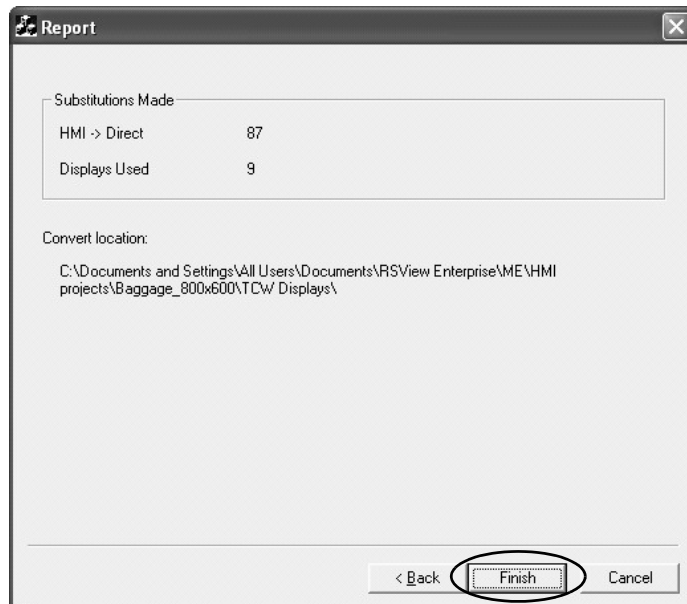
The example shown may look different depending the network protocol of your application.

7. Click Next to continue the conversion.



The Report dialog box shows the number of tag and display substitutions made.

8. Click Finish.



A conversion log file, Conversion\_Log.txt, is created and stored with the converted xml files.

The conversion process is complete. The utility has successfully converted all HMI device tags to alias or direct reference tags in all displays.



In addition to the conversion log file, the tag converter wizard generates a tag cross reference .csv file in the destination folder. This file cross references HMI tags to alias and direct reference tags.

When you open the .csv file in Excel, three columns show how the tags are linked.

| HMI Tag | Alias Tag  | Direct Reference Tag |
|---------|------------|----------------------|
| Tag1    | MotorSart1 | N7:0                 |

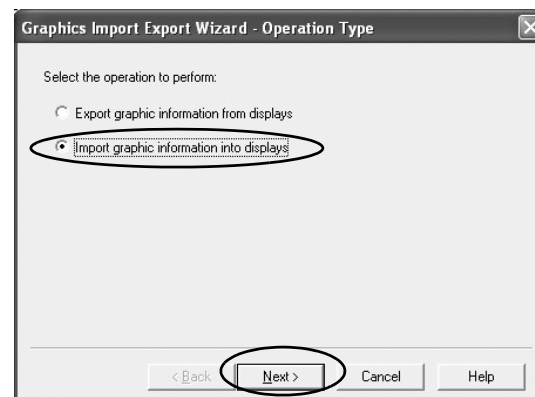
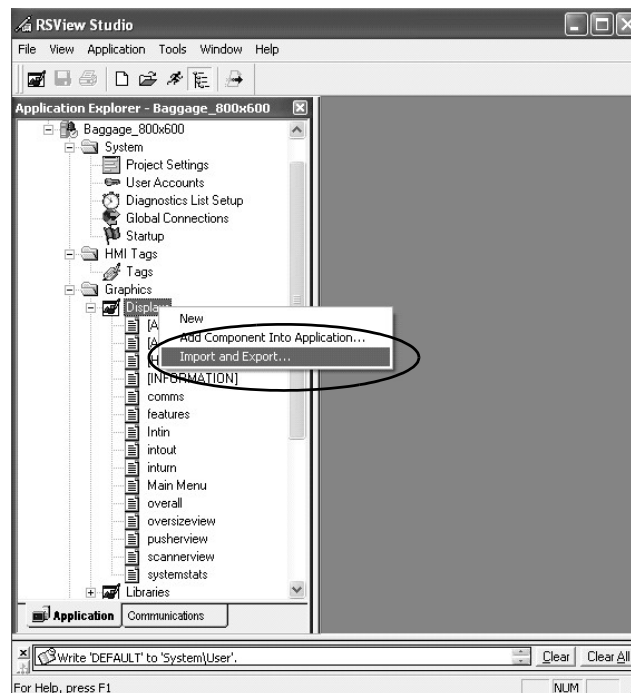
## Re-import the Display XML File

Now that you have converted all alarms and displays, you are ready to re-import the information into your application.

**IMPORTANT** Manually copy the BatchImport\_Your\_Project\_Name.xml file to the location of the new displays created by the TCW utility. Select the xml file from this folder so all new displays are imported, not the original, unmodified displays.

Follow these steps to re-import the xml display files to your application.

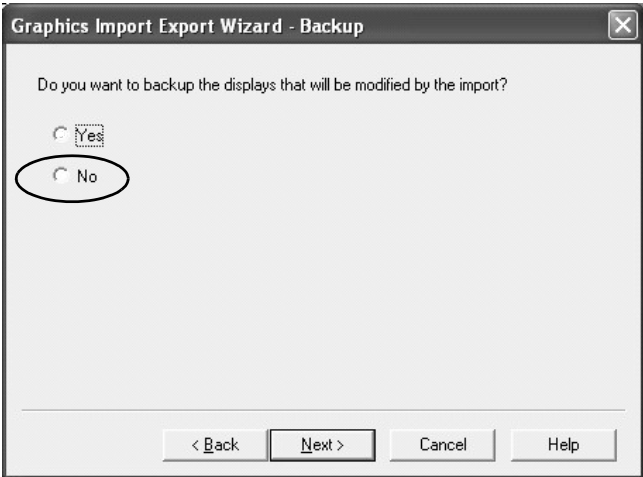
1. Navigate back to the open instance of the FactoryTalk View Studio software.
2. In the Application Explorer, right-click Displays and choose Import and Export.
3. Select Import graphic information into displays and click Next.



- 4. Select No to not back up the displays.

You did this when exporting graphic displays to xml format on page 77.

- 5. Click Next.



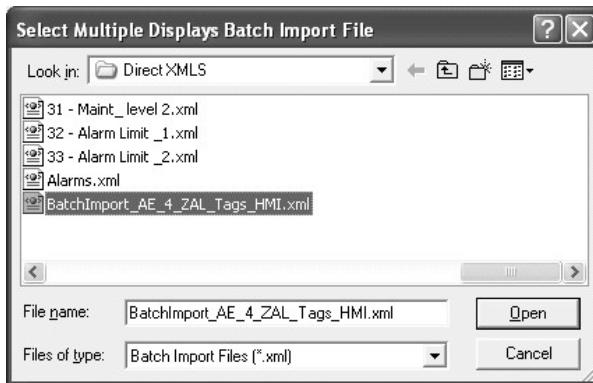
- 6. Select Multiple displays batch import file and click Next.



- 7. Click the ... button.

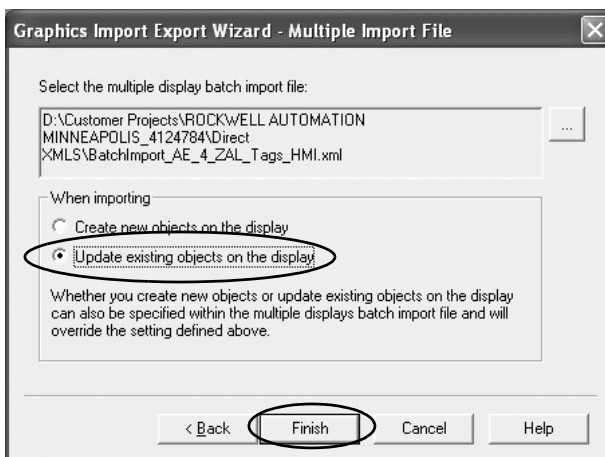


8. Select and open the BatchImport\_Your\_Project\_Name.xml



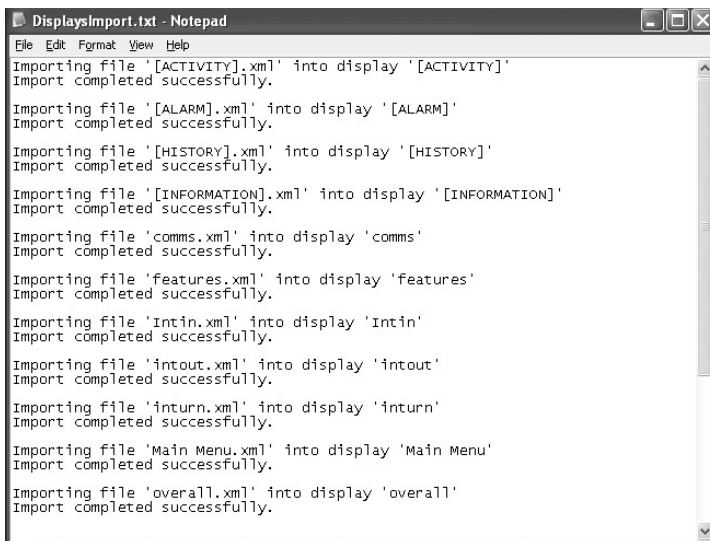
9. Select Update existing objects on the display.

10. Click Finish.



11. Review the DisplaysImport.txt file for errors.

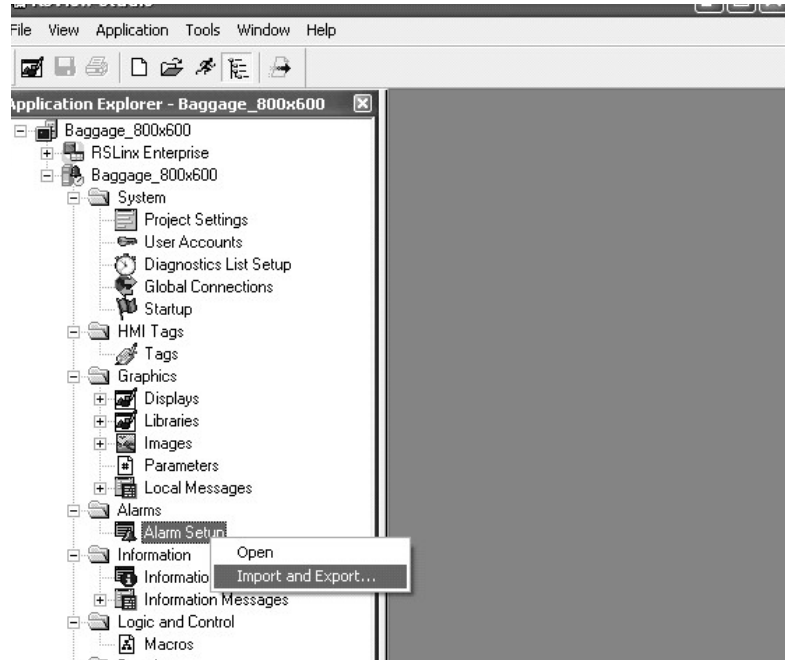
The new alias and direct reference tags have been successfully imported into the application.



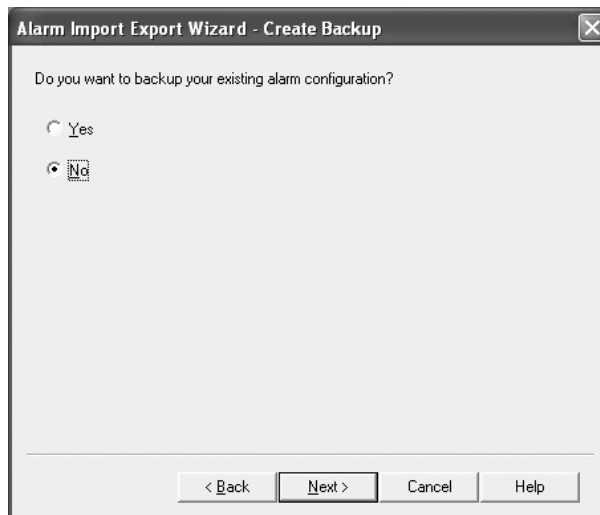
## Re-import the Alarms XML File

Follow these steps to re-import the xml alarms file to your application.

1. Navigate back to the open instance of the FactoryTalk View Studio software.
2. In the Application Explorer, right-click Alarm Setup and choose Import and Export

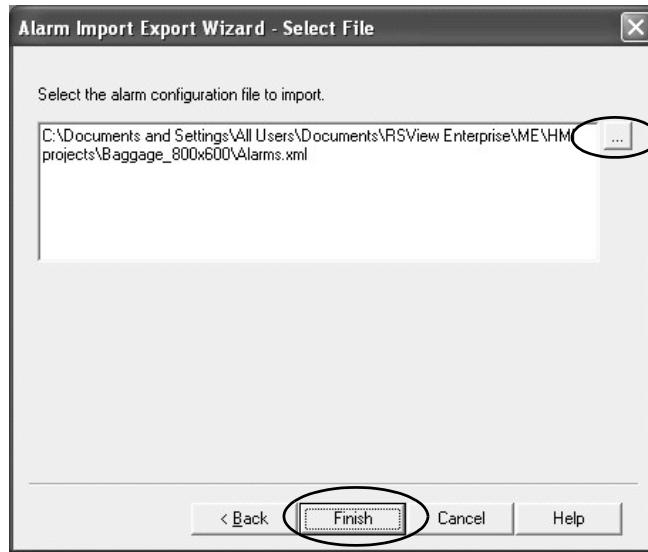


3. Select No to not back up the alarms.
4. Click Next.



5. Click the ... button to select the Alarms.xml file from created by the TCW utility.
6. Click Finish.

The project has been successfully updated with the new alarms.



You can now retest your application for optimized performance.



## Advanced Object Editing

### Introduction

Editing techniques can save you time when using FactoryTalk View Studio software. Use these techniques to reduce the migration effort when updating common properties between multiple graphic objects:

- Property panel
- Editing multiple objects
- Object explorer
- Tag substitution

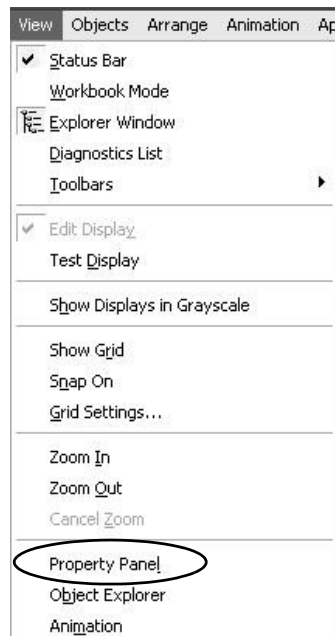
### Property Panel

The property panel is a powerful editing tool that you can use to perform quick edits and tag assignments by simply clicking on a graphic object. You can modify the property values of graphic objects, and assign tags and expressions to objects. Any edits you make in the property panel are applied immediately.

Follow these steps to open the property panel.

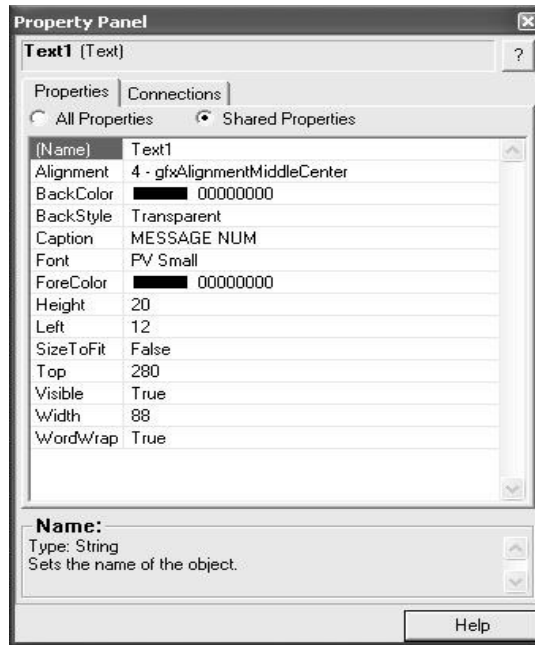
1. With a graphic display open, choose View>Property Panel.

The property panel may not contain any information in it. This is the result of not selecting an object.



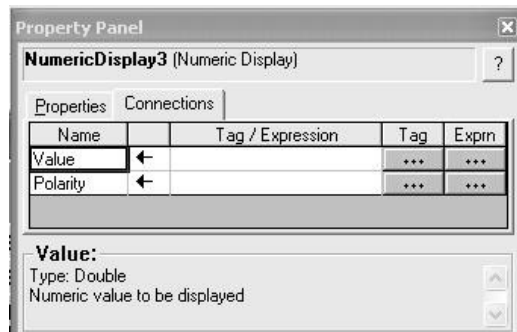
2. Select a graphic object on the display.

This example shows a text object selected. The property panel shows all properties that you can edit for the selected object.



3. Select the Connections tab to view and edit the tag connection properties for the selected object.

This example shows the Value and Polarity connections for a numeric display object.



## Edit Multiple Objects

One of the most useful features of the property panel is that you can edit multiple graphic objects with common properties at the same time, rather than editing each object, one by one.

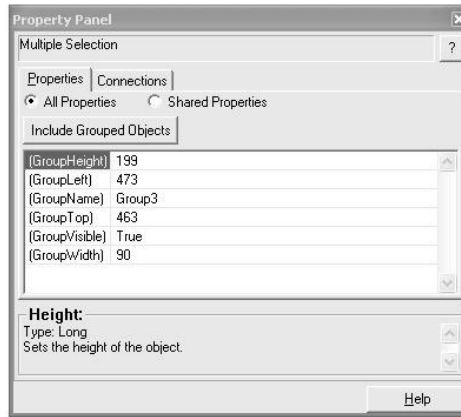
Chapter 6, Review Unsupported Features, showed you how to create replacement multistate indicator, local message and numeric data display list objects in FactoryTalk View ME software. Creating those replacement graphic objects also required you to update properties to match the original PanelBuilder32 objects. These properties included captions, foreground/background colors, text size, number of states, and more.

Follow these steps to change a few properties for a group of ten multistate indicator objects.

1. Select a group of graphic objects you want to edit.

If your objects are not grouped, simply hold down the Ctrl key and click each object.

When a set of grouped objects are selected, the property panel shows only the grouped properties.



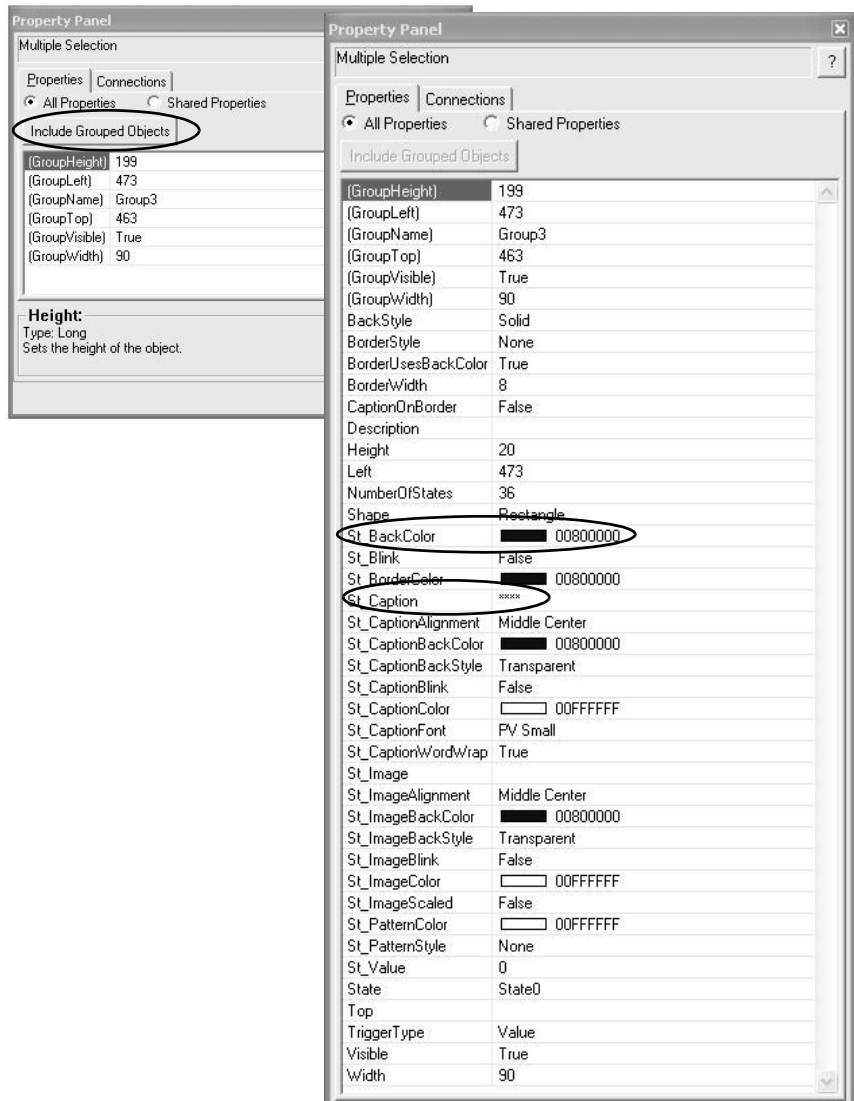
2. Click the Include Grouped Objects button on the property panel.

You will see all properties that can be edited for the objects in the group.

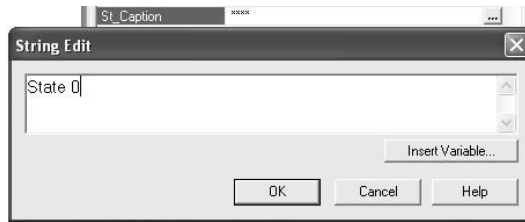
Clicking on any property provides a popup, drop-down menu, or other editing method.

In the next step, you will change the ST\_Caption from \*\*\*\* to State 0 and the ST\_BackColor to Green. These changes will then be applied to all selected objects for the state defined in the State property.

To change other states, simply change the State property to State1 and make the desired edits.



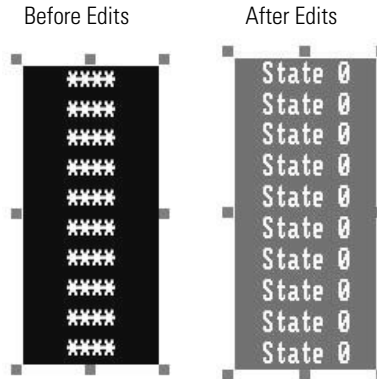
3. Click the ... button next to St\_Caption.
4. Type the new caption in the String Edit dialog box and click OK.



5. Click the ... button in the St\_BackColor field.
6. In the color palette that opens, click a new color.

The example shows the grouped objects before and after edits.

Depending on the object you are editing, the properties will differ. Help text at the bottom identifies what the property does.



**TIP**

You can apply this editing technique to cursor Ilist objects, depending on the number of objects. This will save you time when updating your objects in FactoryTalk View ME software to match the original PanelBuilder32 object.

## Object Explorer

The object explorer provides a tree-list of all objects in the selected display. You can select and highlight objects in this list.

Groups are listed as expandable items, with the + icon. To view the objects in a group, click the + icon or double-click the group name. The list expands to show the objects and groups within a group.

You can use the highlight settings to highlight specified objects on both the graphic display and object explorer. You can select objects by object type, by animation type, or by tag name.

For a display with many objects, object explorer provides an efficient way of locating and selecting graphic objects. If you want to edit specific objects, object explorer can highlight these objects for you. In conjunction with the property panel, you can do one the following:

- Perform multiple edits instantly
- Double-click the object in object explorer to open the properties dialog box and make edits to a single object

Follow these steps to open object explorer.

1. With a graphic display open, choose View>Object Explorer.

Expand or collapse groups of objects by clicking the Expand or Collapse buttons.

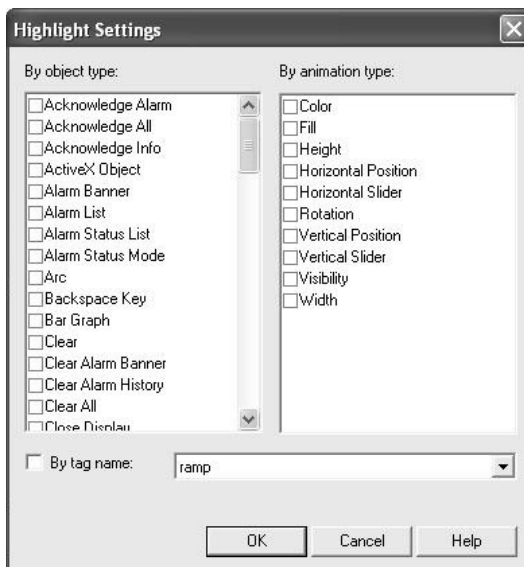
The objects that appear in the list will differ for each display.

2. Click the Settings button to search for objects.



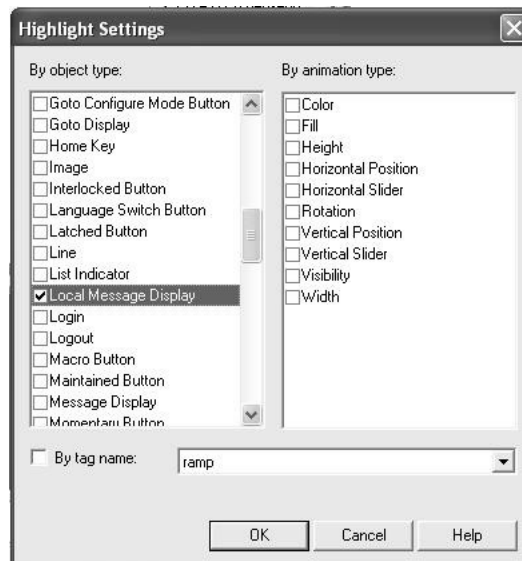
The Highlight Settings dialog box lets you search for objects by Object Type, Animation Type, or Tag Name.

When selecting by tag name, the list shows all tags and expressions referenced by objects in the display, except tags with embedded variables.



3. Select Local Message Objects to search for all local message objects.

4. Click OK to return to the object explorer.



5. Check the Highlighting on check box and click the Expand button.

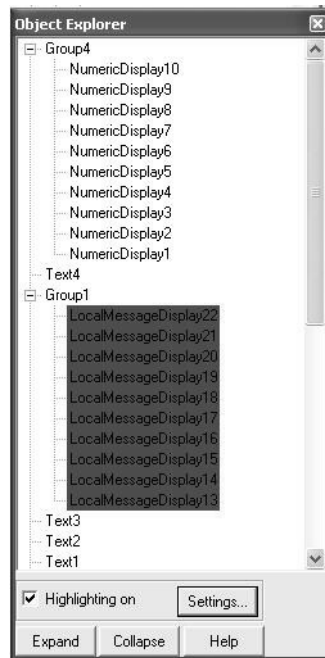


The object explorer highlights all local message displays in red.

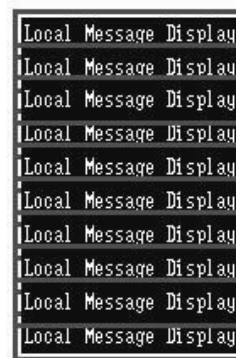
Local message objects on the display also appear red with a border.

If you have a display with a red background, the red highlights will not be visible.

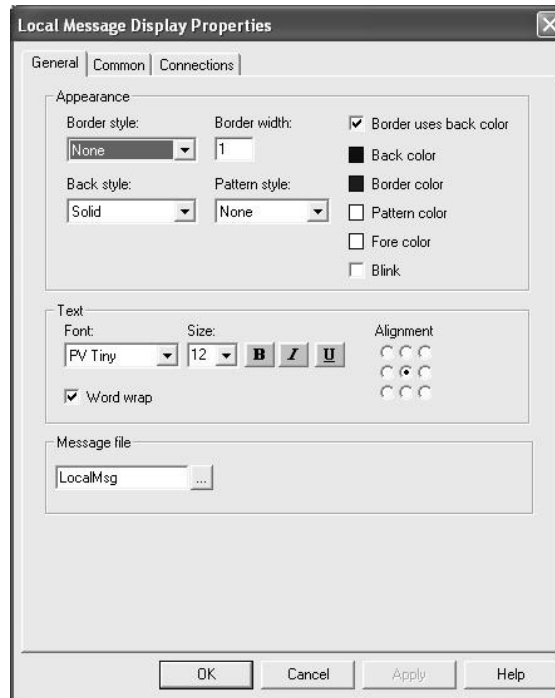
When you select an object in the object explorer, the Highlight mode turns off. Simply, recheck the Highlight on box to turn the highlights back on.



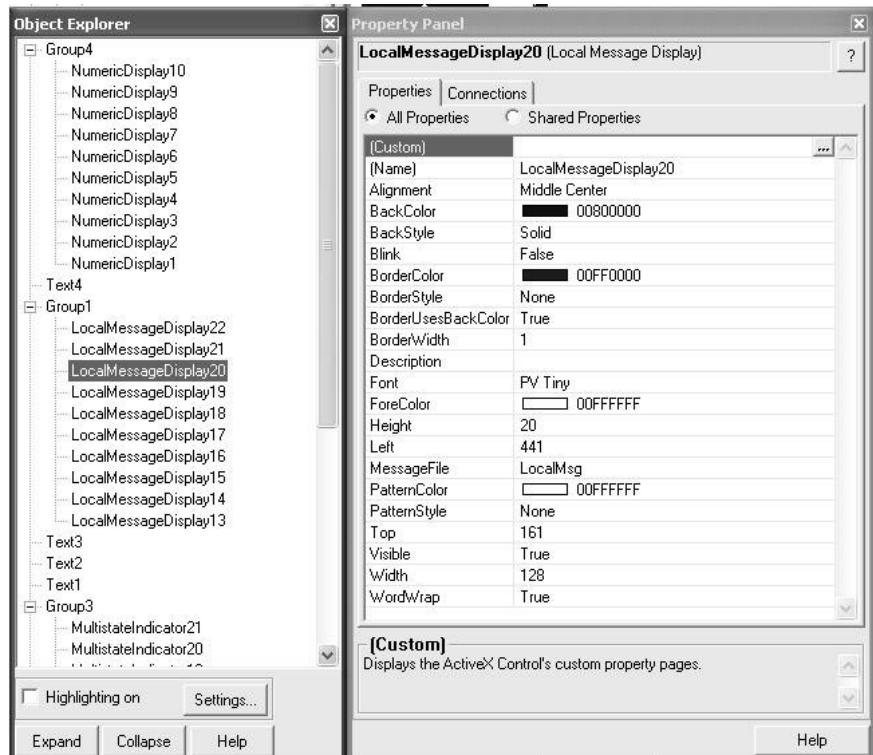
Display Object



6. Double-click an object in the object explorer to open the properties for the local message display.
7. Edit the properties and click OK.



If the property panel and object explorer are both open, click any object in object explorer. The property panel will update the display with the edit properties for the selected objects. You can make any updates from the property panel.



## Substitute Tags

You can use tag substitution to replace tag names or character strings in all selected graphic objects on a display. Character strings include tag placeholders, expressions and parts of strings within expressions. When replacing tags, you can use an entire tag name, including folders, or you can replace a string of characters.

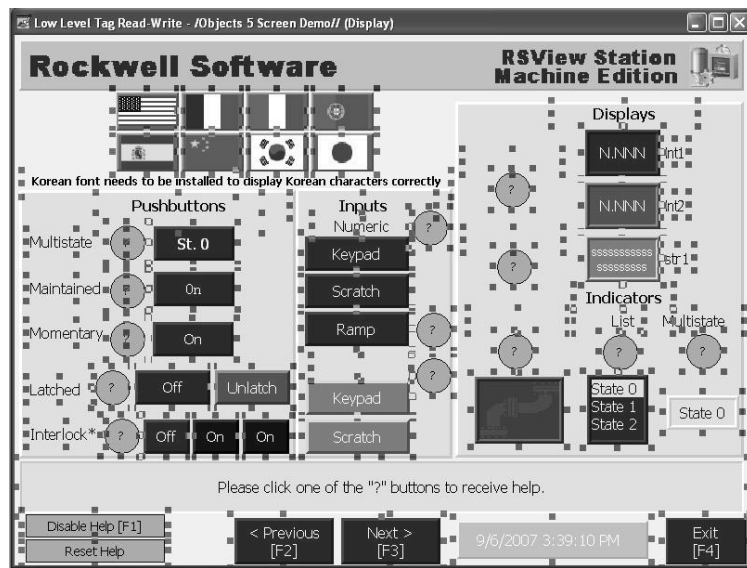
**TIP** You cannot use wildcard characters when searching for or replacing tag names.

Tag substitution is useful when your graphic displays use a direct reference tag name or if an HMI Tag name is referenced throughout your application and needs to be updated.

Follow these steps to substitute a tag or character string.

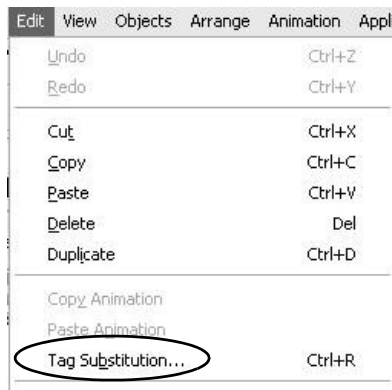
1. Open the graphic display you want to update.
2. Press Ctrl-A to select all objects in the display.

All objects on the display are highlighted. This example display is for illustration purposes only.



**TIP** You must select all objects or the Tag Substitution dialog box will only show tags of the selected objects.

3. Choose Edit>Tag Substitution.





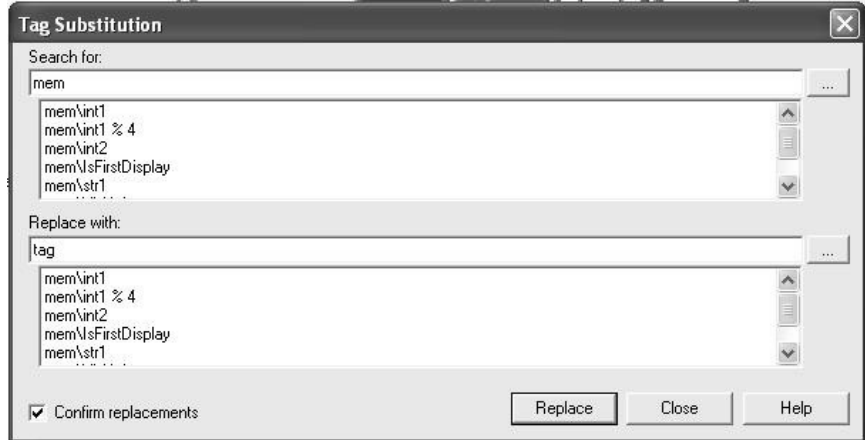
In the Tag Substitution editor, you can search on an existing name or a part of a tag name.

- 4. Type mem in the Search for box.
- 5. Type tag in the Replace with box.

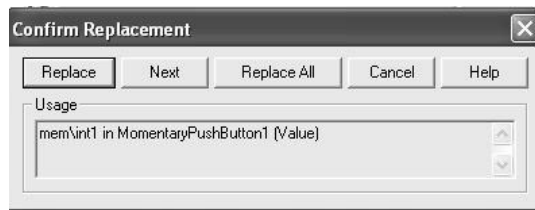
Uncheck the Confirm Replacement option, if you don't want to confirm every replacement.

- 6. Click Replace.

The editor searches for each tag that contains the partial string mem and replaces the string with tag. You are prompted to confirm each replacement.

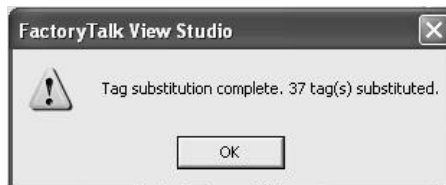


- 7. Click Replace All to confirm the replacement of all tags at once.

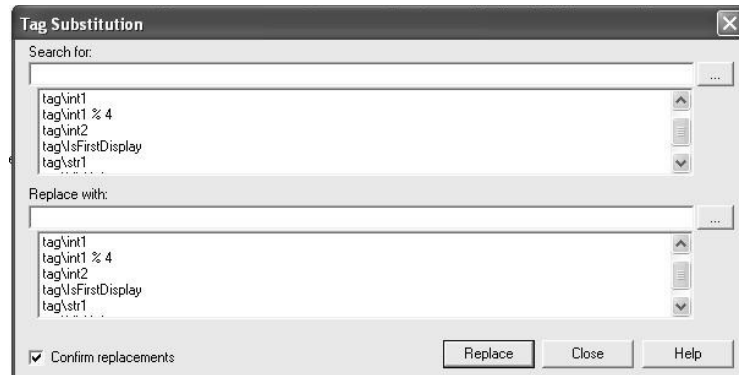


You are notified when the substitution is complete.

- 8. Click OK.



- 9. Choose Edit>Tag Substitution to verify that tags with the string mem were updated to tag.



You can use tag substitution on a display-by-display basis to verify that all tags or partial strings are updated correctly in the application.

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# Rockwell Automation Support

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At <http://www.rockwellautomation.com/support/>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnect support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://www.rockwellautomation.com/support/>.

## Installation Assistance

If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

|                                 |  |
|---------------------------------|--|
| United States or Canada         | 1.440.646.3434   |
| Outside United States or Canada | Use the <a href="#">Worldwide Locator</a> at <a href="http://www.rockwellautomation.com/support/americas/phone_en.html">http://www.rockwellautomation.com/support/americas/phone_en.html</a> , or contact your local Rockwell Automation representative. |

## New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

|                       |   |
|-----------------------|---|
| United States         | Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process. |
| Outside United States | Please contact your local Rockwell Automation representative for the return procedure.  |

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