SoftPLC Web Studio
Smart Control Solutions
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Import Tool for PanelBuilder™

User Guide

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PanelBuilder Import Tool

SoftPLC Corporation introduces the PanelBuilder Import Tool — a powerful, flexible, easy-to-use tool that expands the capabilities of your installed plant-floor systems. You can use the Tool to import applications created with PanelBuilder (Allen-Bradley's programmer for PanelView Human Machine Interfaces (HMIs)) into SoftPLC Web Studio (SWS) using a fast and intuitive wizard.
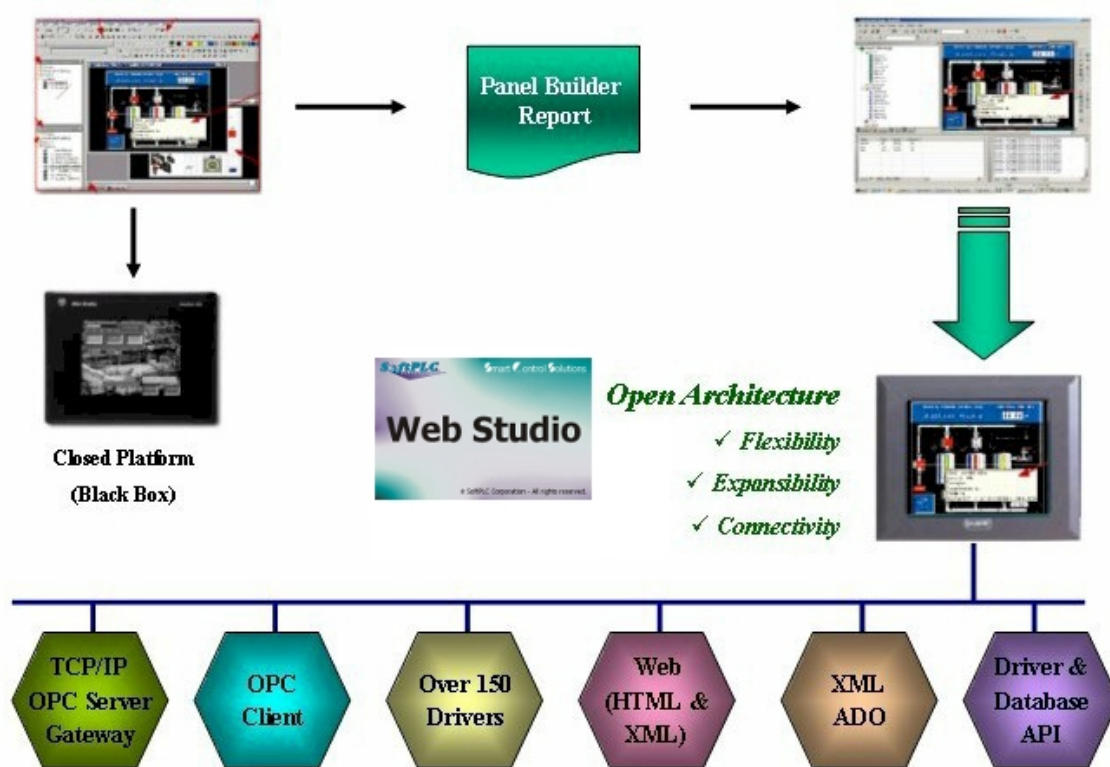
Using the Import Tool to Import PanelBuilder Applications to SoftPLC Web Studio

After importing an application into Web Studio, you can take advantage of the these Web Studio features:

◆ **Flexibility:** Web Studio can run the application on any Microsoft® Windows® platform (NT/2000/XP/Vista/7/8/10, Embedded or CE).

◆ **Expansibility:** You can use the development suite to add functionality to your application (historical data, XML reports, math scripts, and so forth).

◆ **Connectivity**: Because the application is now running under the Web Studio runtime, you can take advantage of all connectivity tools embedded in the Web Studio package, such as:

• Communication drivers for several protocols from different manufacturers (Modbus, Profibus, DeviceNET, Siemens S7 – MPI/PP, GE-Fanuc SNP/SRTP and many others)

• OPC Client and Server interfaces

• XML and ADO interfaces to exchange data with third-party systems, such as Enterprise Resource Planning (ERP) systems

• API Toolkits to integrate the application with third-party programs written in any language that supports DLLs (VB, C, C++, and so forth).

• TCP/IP modules for redundant and networked applications

• Thin Client solution that provides remote access to your application using just a Web Browser, through any TCP/IP link (intranet, Internet, or dial-up connection)

• Remote management and debugging tools that allow you to manage (download, upload, run, stop, and debug) your application remotely from a development station.

The Import Tool's greatest advantage is how easy it is to use — which can dramatically reduce the cost and hassle of modernizing the automation systems in your facility.

Import Requirements

To import a PanelBuilder application you must install the following software on your computer:

Web Studio v6.0+SP1 (or higher)
PanelBuilder32 programming software
PanelBuilder application file (.pba file)

Import Procedures

The Import Tool provides a simple, straightforward wizard to guide you through the process of importing PanelBuilder projects into Web Studio. This import process consists of three steps:

1. Installing a Generic / Text only printer

Note: To generate a PanelBuilder application report, you must use the Generic/Text only printer provided with your computer operating system. If you already have this printer installed on your system, you can skip step 1.

2. Generating a PanelBuilder application report

3. Importing the application using ***Web Studio Import Wizard***

Step 1 – Installing the Generic / Text Only Printer

To install the Generic / Text only printer that comes with your operating system, follow these steps:

1. Click the Windows **Start** button and then select **Settings** → **Printers**.

2. In the Printers window, double-click the **Add Printer** icon to start the Add Printer wizard.

3. When the wizard Welcome screen displays, click **Next** to open the Local or Network Printer screen.

4.   Click (enable) the **Local Printer** radio button and clear (disable) the **Automatically detect and install my Plug and Play printer** check box. Click **Next** to continue to the next screen.
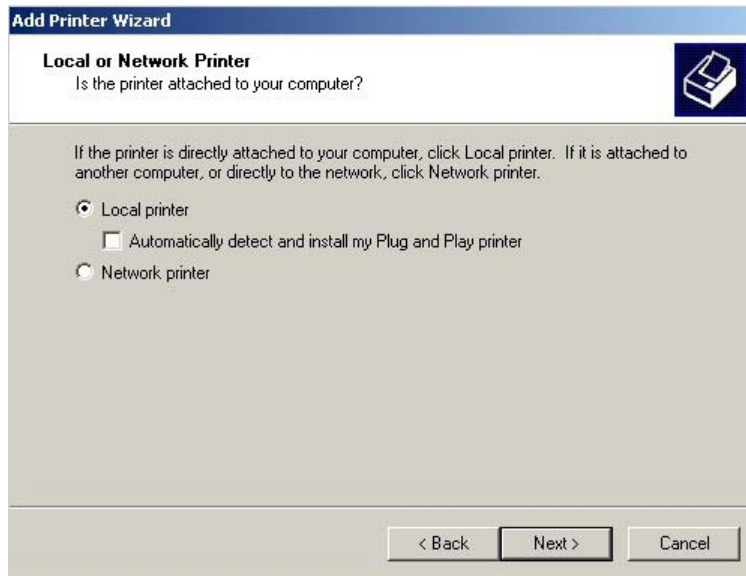
Local or Network Printer Screen

5.   When the Select the Printer Port screen displays, select **FILE: Print to File** from the list of Ports, and then click **Next**.
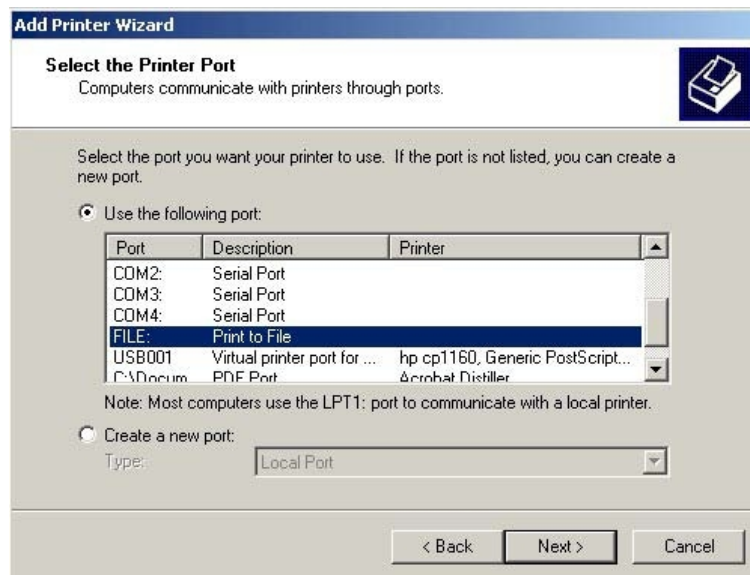
Selecting the Printer Port

6. On the Add Printer Wizard screen, select **Generic** from the **Manufacturers** list and select **Generic / Text Only** from the **Printers** list. Click **Next** to continue.
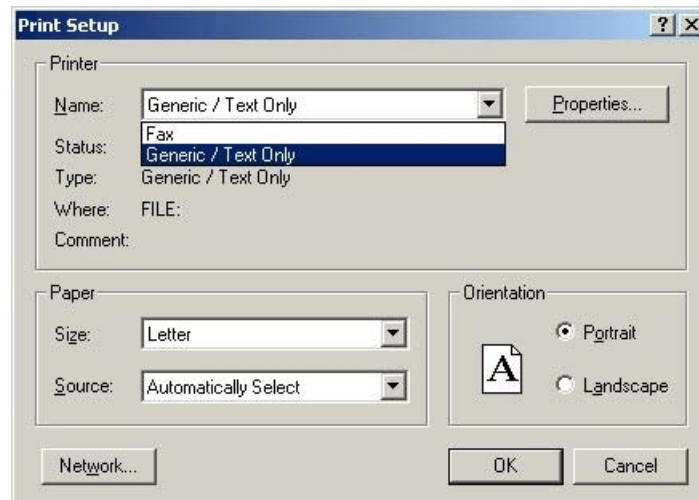
Adding a Generic Printer Wizard

The Wizard will take you to three more screens, as follows:

• **Name Your Printer:** Allows you to specify a name for the printer and make it your default.

• **Printer Sharing**: Allows you to share this printer.

• **Print Test Page**: Allows you to confirm the printer installed correctly by printing a test page.

1. You can change any of the default parameters and then click Next to progress through the screens, or simply accept the default settings on each screen by clicking Next.

2. When the Completing the Add Printer Wizard screen displays, verify the information displayed and if there are no changes, click Finish.

Final Screen

Now you are finished installing the printer. Continue to the next section and follow the instructions for generating the PanelBuilder application report.

Step 2 – Generating a PanelBuilder Application Report

This section explains how to generate a PanelBuilder application report.

1. After you install the Generic / Text only printer, open your PanelBuilder application to generate the report.

2.   Select **Tools → Options** from the PanelBuilder menu bar, and when the Options dialog box displays, select the Report Setup tab.

3. Click (enable) only the options shown in the following figure and then click **OK**.
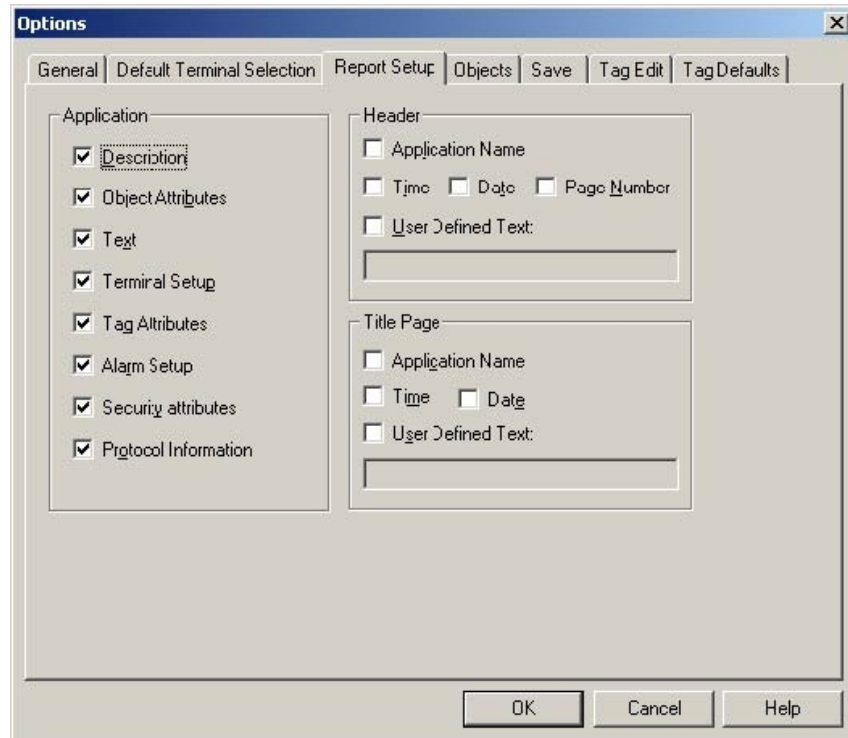
Options Dialog

4. Select **File → Reports** from the PanelBuilder menu bar.

5.   When the Print Reports dialog displays, click the **Printer Setup** button.
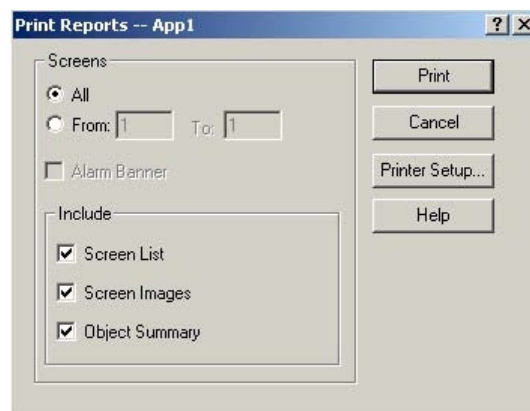
Print Reports Dialog

6. When the Print Setup dialog displays, click the **Name** combo-box button and select **Generic / Text only** from the list.
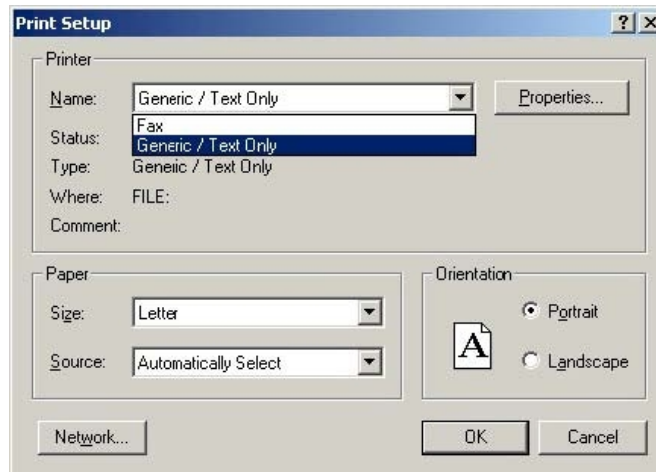
Selecting the Printer

7. In the Paper section, click the **Size** combo-box button and select the **A3** paper size.
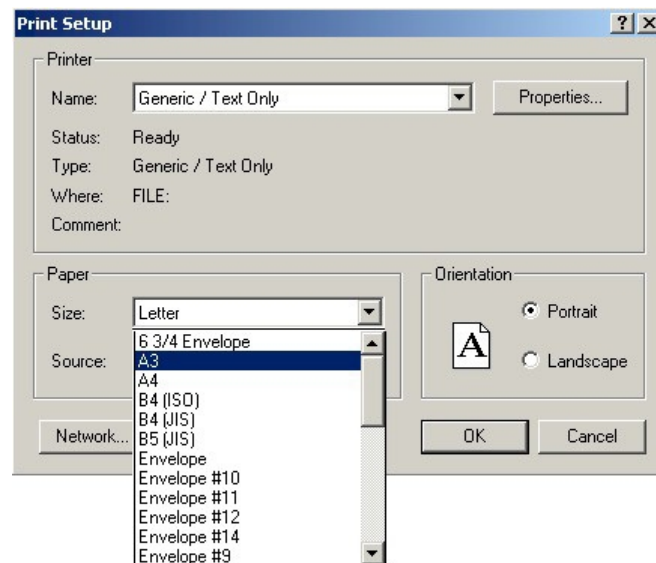
Selecting the Paper Size

8. In the Orientation section, click **Landscape**, and then click **OK**.
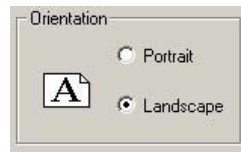
Selecting the Paper Orientation

9. When the Print Reports dialog displays again, clear (disable) the **Screen Images** check box and then click the **Print** button.
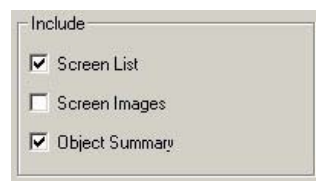
Clearing the Screen Images Check Box

10. When the Print to File dialog displays, enter a file name and location for the report, and then click **OK**.

Specifying a File Name

PanelBuilder will save the resulting file to the designated location. Now you can import this file into Web Studio, continue to the next section for instructions.

Step 3 – Importing the Application Using Web Studio

After generating the application report, you can import the information from that report into SWS and automatically create a new SWS application with the same characteristics as your original PanelBuilder application.

Use the following procedure to import the PanelBuilder application report into SWS:

1. Start Web Studio by selecting **Start → Programs → Web Studio → Web Studio**.

2. Select **File → Import Wizard** (see figure) to open the Import Tool Wizard.
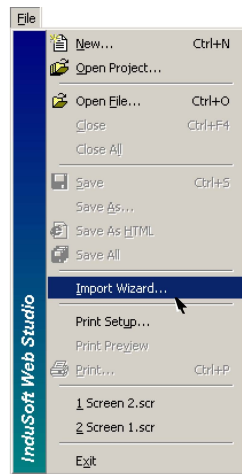
Opening the Import Wizard

Note: You can use the SWS Import Wizard to import application data from sources other than PanelBuilder applications. For more information about importing other application types, refer to the Web Studio Users Guide and Technical Reference.

3. When the Import Wizard dialog box displays (see figure), select **PanelBuilder Application** from the **Source Type** list, and then click **Next**.
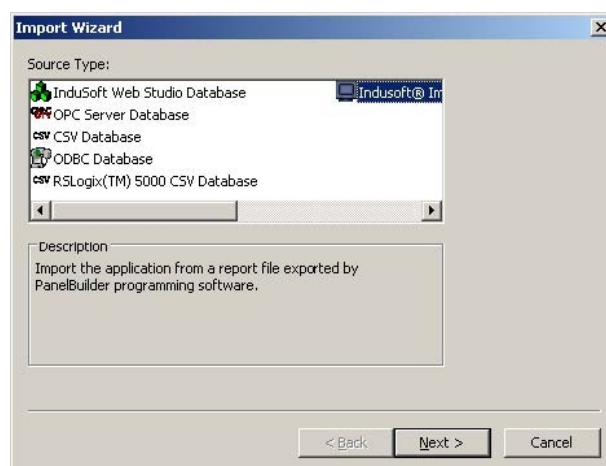
Selecting the Application to Import

The Import PanelView Application Wizard dialog box displays (as follows).
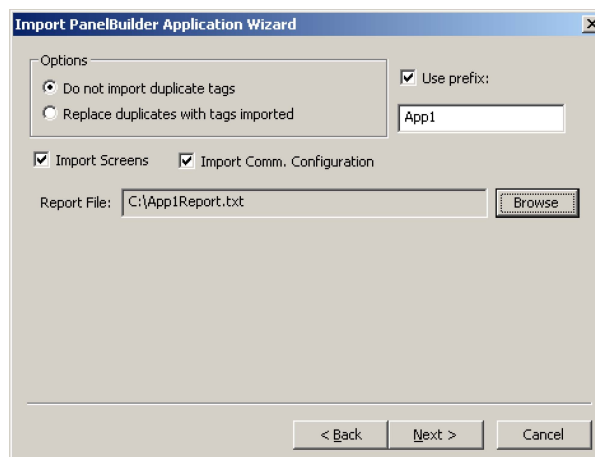
Import PanelBuilder Application Wizard

4. Use this dialog to specify the following import parameters, and then click **Next**.:

• **Do not import duplicate tags** radio button: Click (enable) this option to prevent the Import PanelBuilder Application Wizard from importing tags with the same name as tags in the current SWS application database.

• **Replace duplicates with tags imported** radio button: Click (enable) this option if you want the Import PanelBuilder Application Wizard to replace duplicate tag properties in the current SWS application database.

• **Use prefix** check box: Click (enable) this option if you want to add a prefix to all imported tags. Because you can import multiple PanelBuilder applications into a single SWS application, this feature is provided to help you identify where the imported application tags originated and avoid duplications. Simply type a prefix into the text field.

• **Import Screens** check box and text field: Clear (disable) this option to prevent the Import PanelBuilder Application Wizard from importing the PanelBuilder application screens.

• **Import Comm. Configuration** check box: Clear (disable) this option to prevent the Import PanelBuilder Application Wizard from importing the communication properties configured for each tag in the PanelBuilder application.

• **Report File** text field: Type the name of the PanelBuilder report file you generated earlier.

The Import PanelBuilder Application Wizard will read the report file and then display a new dialog box listing all the tags in the report file (similar to the following figure).
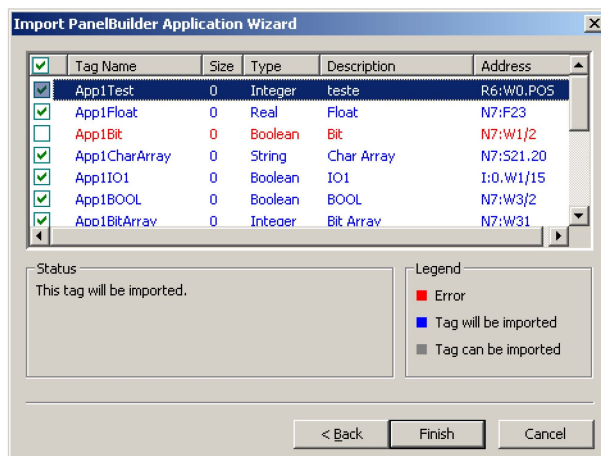
List of Tags in the Report File

The tags are color-coded to indicate which tags will be imported:

• **Blue tags** will be imported. (If you do not want to import one of these tags, simply clear (disable) the check box to the left of the tag name.)

• **Red tags** will not be imported. (If you enabled the **Do not import duplicate tags** option, the Import PanelBuilder Application Wizard will not import tags that already exist in the SWS application database.)

• **Gray tags** can be imported. Tags become gray in two circumstances:

(a) You cleared (disabled) the check box to the left of an importable (blue) tag, which changes the blue tag to gray.

(b) You have met, or exceeded, the number of tags allowed by your Web Studio license. For example, if your license allows 1,500 tags, and you would exceed this limit by importing the grey tags, SWS will not allow the Import PanelBuilder Application Wizard to add these tags to the SWS database.

You can import gray tags (by enabling the check box to the left of the tag name), as long as you do not exceed the number of tags allowed by your SWS license.

5. Click the **Finish** button to import the application according to the import parameters you specified in the previous step.

Note: If your application uses bitmaps (.bmp) other than those in the standard PanelBuilder list, export the bitmap file and copy it to the **< Web Studio Installation Folder>*Lib*** folder.

Release Notes

The Import Tool is still going through the development process. This first release implements the most important features. The next list illustrates all the features that are not imported automatically. Because Web Studio is much more powerful than PanelBuilder is, it is possible to workaround the items that are not imported by implementing some minor changes in the application. If your application uses one of the features that you the import wizard does not import and you think that you will spend a lot of time implementing this feature on your application, please contact your representative or send an e-mail to support@softplc.com and we will analyze the possibility of implementing that specific feature.

Graphical Interface

The graphical tools offered by Web Studio overcome the expectations when compared with the other tools available in the market. When importing the application using the Import Wizard, you will realize that the imported graphical interface will look even better than the original one.

 However, some features available in other products are very different from the way that Web Studio implements; development philosophy is to implement Windows standards and use simple to use controls, that is why the product is so easy to use and you can develop good looking screens in a few minutes. During our development research we realized that some features available in the PanelBuilder are so "unusual" that most of the applications do not use them. These features are not being imported, only because most of the applications that we tested against did not use them. The following properties, unless they are explicitly declared in the graphical compatibility list (see next topic), are not imported by the import wizard: Shape, Fill Pattern, Graphic, Line Type and Print.

This section has the objects supported by PanelBuilder and also mentions the properties that are not supported by the Import Wizard. Items marked in **RED** are features that we found in some of the applications that we test against and that will probably be implemented for next releases. Items marked in **YELLOW** are minor items that do not make much difference in the graphical interface and they will not be implemented unless there is a strong reason to do so. If there is any property associated with an object that you could not find in this list it means that the property is not being imported and that you should contact your SoftPLC representative or send an e-mail to support@softplc.com with the information about the specific property.

PB Object: **Pushbutton – Momentary, Maintained and Latched**

SWS Object: **Pushbutton**

Write Tag	Tag / Exp
Hold Time	<mark style="background:red">Not Supported</mark>
Indicator/Display Tag	Indicator
Handshake Tag	Reset
Data Type/Format	<mark style="background:yellow">Not Supported</mark>
Contact Type	State
Initial State	<mark style="background:red">Not Supported</mark>
States:	
Number	0 - Open / 1 – Closed / Error – Aditional Pushbutton with Position
Blink	Blink set to slow
Value	Value
FG Color	<mark style="background:red">Not Supported</mark>
BG Color	Color
Text Properties	<mark style="background:yellow">All the properties are supported, but they need to be the same for all states.</mark>

PB Object: **Screen Selector – Goto**

SWS Object: **Button with command dynamic (Open Function)**

Text Properties	All the text properties are supported
FG Color	<mark style="background:red">Not Supported</mark>
BG Color	Button Fill Color
Destination Screen	Parameter passed to open function in the button command

PB Object: **Screen Selector - Return**

SWS Object: **Button with command dynamic** *(OpenPrevious Function)*

Text Properties	All the text properties are supported
FG Color	<mark style="background:red">Not Supported</mark>
BG Color	Button Fill Color
Blink	Position Dynamic associated with the object

PB Object: **Screen Selector - Goto Config Screen**

SWS Object: <mark style="background-color:red">**Config Screen is not supported**</mark>

PB Object: **Screen Selector - Screen List Selector**

SWS Object: **List Box + Button with command dynamic** *(Open Function)*

Wrap List	List Box List Wrap Option
FG Color	List Box Border
BG Color	List Box Window Color
Fix Cursor at State	<mark style="background-color:red">Not Supported</mark>
Text Properties	<mark style="background-color:yellow">Wrap is the only text property not supported. The font size and background color will be the same for all the items in the screen list.</mark>

PB Object: **Numeric Entry – Cursor Point**

SWS Object: **Rectangle with command dynamic +**
                             Text I/O with keypad enabled

Text Properties	Text I/O Properties
FG Color	Rectangle Liner Color
BG Color	Rectangle Fill Color
Write Tag	Text I/O Expression and Keypad function call in the command dynamic
Indicator/Display Tag	<mark style="background-color:yellow">Not Supported</mark>
Notification Tag	<mark style="background-color:red">Not Supported</mark>
Handshake Tag	<mark style="background-color:red">Not Supported</mark>
Decimal Point	Format Function in the Text I/O Expression
Blink	Position Dynamic associated with the object

PB Object: **Numeric Entry – Inc/Dec**

SWS Object: <mark style="background-color:red">**Not Supported**</mark>

PB Object: **Numeric Entry – Keypad Enable**

SWS Object: **Rectangle + Command Dynamic to open the Keypad + Rectangle with caption**

Text Properties	Rectangle caption properties
FG Color	Rectangle Liner Color
BG Color	Rectangle Fill Color
Write Tag	Used in the command that activates the Keypad
Indicator/Display Tag	Used in the rectangle caption
Notification Tag	Not Supported
Handshake Tag	Not Supported
Decimal Point	Format Function in the Rectangle Caption

PB Object: **Control List Selector** *(Standard and Piloted)* **& Indicator - List**

Web Studio: **List Box**

Write Tag	Write Tag
Search Tag or Read Tag	Read/Search Tag
Control Tag	Control Enable
Block Write Start Tag	Not Supported
Data Type/Format	Integer value, LSB and Single Bit are only modes supported.
Initial State	Not Supported
Write Value On Enter	Enter Required
Wrap List	List Wrap
FG Color	Border Color
BG Color	Win Color
States:	
Number	List Box State number or Error State
Message	List Box Message
Access	Not Supported
Value	Value
Text Properties	Alignment option not supported. Text Foreground Color, Font and Size need to be the same for all states.

PB Object: **Graphic Indicator – Bar Graph**

SWS Object: **Rectangle with Bargraph Dynamic +**
                           Rectangle with caption

Text Properties	Rectangle Caption Properties
FG Color	Rectangle Liner Color
BG Color	Rectangle Fill Color
Read Tag	Expression field of Bargraph Dynamic
Fill	Bar Graph Dynamic Foreground Color
Blink	Applied using a Color Dynamic with Blink Slow selected
Fill From	Direction and Orientation fields from the Bargraph Dynamic
Min/Max Range	Min and Max values in the Bargraph Dynamic

PB Object: **Graphic Indicator – Gauge**

SWS Object: <mark>Not Supported</mark>

PB Object: Graphic Indicator – Scale Linear

SWS Object: Set of lines that will represent the scale

Blink	Position Dynamic with Blinkslow attached in each line
FG Color	Used in the line colors
Tickmarks	Import Wizard creates a line per each tick

PB Object: **Graphic Indicator – Scale Circular**

SWS Object: <mark>Not Supported</mark>

PB Object: Numeric Data Display

SWS Object: Rectangle

Text Properties	Rectangle caption properties
Read Tag	Used in the caption text between curly brackets

PB Object: Indicator – Message Display and Multistate Pushbutton

SWS Object: Smart Message Object configured to message display

Read Tag	Read Tag
Data Type/Format	Value property. Real/Integer values, LSB and Single Bit are only modes supported.
States:	
Number	Smart Message Number of Error State
Blink	Rec Blink
Value	Value
FG Color	Rec (FG)
BG Color	Rec (BG)
Graphic	Graphic File
Text Properties	All the properties are supported. Text Font and Size need to be the same for all states.

PB Object: Graphics - Line

SWS Object: Line

Blink	Implemented using Position Dynamic
FG Color	Color

> **Note:**
> There is no way to determine the direction of the line based on the report information, so the Import Wizard will always import the lines from down to up, left to right. In some cases the user will have to flip the lines after finishing the import.

PB Object: Graphics – Connected Line and Free Form

SWS Object: <mark style="background-color: red">Not Supported</mark>

PB Object: Graphics – Rectangle, Ellipse and Circle

SWS Object: Rectangle, Ellipse and Circle

BG Color	Fill Color
FG Color	Line Color

PB Object: Graphics – Graphic Image

SWS Object: Bitmap

BG Color	Used to change the bitmap color when importing
FG Color	Used to change the bitmap color when importing

PB Object: Text

SWS Object: Rectangle with caption

Text Properties	Rectangle caption properties
Variables	All the variables are inserted in the caption using the Format function when format is necessary

PB Object: List Keys

SWS Object: <mark style="background-color: red">Not Supported</mark>

PB Object: Alarm List and Alarm Buttons

SWS Object: <mark style="background-color: yellow">Partially Supported, see note.</mark>

> **Note:** The alarms list is inserted on the screen but its properties are not configured automatically. The alarm buttons are not imported, but then can be easily inserted in the application by the user.

Communication

This release implements the most important communication drivers. However, some of the imported drivers have some differences due the way that Web Studio treats the information. Most of the applications should not be affected by the differences, but in some cases small changes will be necessary. This section lists all the drivers supported by the Import Wizard and lists the limitations of each one.

PanelBuilder Protocol: **Modbus**
Web Studio Driver: **MODBU**
- Signed and Unsigned variables will be imported as signed
- BCD Data Type is not supported
- Char Array data types are not supported
- Bit Arrays can only be used for readings

PanelBuilder Protocols: **DH+/ DH485 / DF1 / DF1 -Ethernet**
Web Studio Drivers: **ABKE, ABTCP and ABENI**
In order to communicate using DH+ or DH485 you will have to acquire a specific board for these protocols. Please refer to Web Studio ABKE driver documentation for more information about the hardware that you will have to acquire.

> **Hint:** Another option for DH+ is to use a Smart Gateway. See
> http://softplc.com/products/migrations/hmi/

- Signed and Unsigned variables will be imported as signed;
- Double words are not supported
- It is not possible to have PLCs from different families in the same network
- Bit Arrays can only be used for readings
- Bit Arrays for counters and timers are not allowed
- PLC 5 addresses are imported using octal notation

 Note: These drivers were tested against the following devices: PLC-5, SLC-500, Micrologix PLCs and Micrologix 1761-NET-ENI. According to the manufacturer documentation, the driver should workwith other devices. If you face any problem to establish communication with your device, please contact your SoftPLC representative.

PanelBuilder Protocols: **EthernetIP and ControlNet**
Web Studio Drivers: **ABCIP**
The Import Wizard does not support the ControlNet network. When the ControlNet network is identified, the Import Wizard will convert all the tags using the ABCIP driver for Ethernet.
-Network path is not supported

 Note: This driver was tested against the following devices: ControlLogix5000 and FlexLogix 1761-NET-ENI. According to the manufacturer documentation, the driver should work with other devices. If you face any problem to stablish
communication with your device, please contact your representative.

Alarm Configuration

Web Studio is very powerful and manages the whole alarm systemwithout any aditional PLC programming. PanelBuilder, on the other hand, requires the alarms to be configured in the PLC and is only able to display the alarm messages and provide the acklowledgment feature. Migrating the whole PanelBuilder system to a Web Studio system using the PanelBuilder phiosophy would make applications as complex as they are in PanelBuilder.

Therefore, the Import Wizard adopted a different approach. It imports the information necessary to turn on the Web Studio alarm system and display all the alarm messages with Acklowledge capabilities. Depending on the PanelBuilder features that you are using on your application, you will have to perform some minor configurations in your imported application. You should read the next topics in order to understand how the Alarm Configuration is imported and which features are not imported automatically.

Alarm Banner

The current version does not import the Alarm Banner. The user needs to create a screen using the alarm object and name it Alarm_Banner. This screen will be automatically opened when an alarm is active.

Alarm Setup

Banner Pop Up: Implemented automatically by Import Wizard selecting the alarm banner as Pop Up or Dialog

Print Items: Web Studio will print the alarms in the way that they are formated in the alarm object. You can customize the columns as well as the order in which the alarms will be printed. This powerful capability is imported in the alarm object that is inserted in your screen and you can customize it if you want. Because of this functionality we ignore the print items parameter.

Ack Hold Time and Snapshot: Industrial Alarm object is a scroll list with a lot of capabilities. These parameters are also not applied.

Remote Ack and Use Optional Fields: Web Studio supports remote acknowledgment by alarm message and by alarm group. PanelBuilder works very different and in some cases the user is required to associate bit off tags to acknowledge alarms. If you are using this functionality you will have to implement some minor scripts using math. This parameter is ignored.

Alarm Triggers

Trigger Tag: Tag used as base to generate the alarm messages inside the imported application.

Trigger Type: The Import Wizard supports Bit and Value triggers.

Ack, Remote and Handshake and Ack All: When importing the alarm list the Import Wizard creates an Alarm Worksheet with all the alarm messages. In order to implement these commands the user will have to implement some aditional configuration in the worksheet.

Alarm Messages

The Alarm Messages are implemented using auxiliar tags. The name of the auxiliar tags is formed using the formula **[Trigger Tag]_Alr_[Value]** where:

Trigger Tag: Name of the tag used as trigger.

Value: Value specified in the value colum.

The auxiliar tags will have the alarm HI configured to 1 (one) with the PanelBuilder alarm message. If the trigger is a Bit, the tag will be associated with the specific bit in the Driver Worksheet, otherwise it will be in a scheduler worksheet and it will go off when the trigger value assumes the value specified in the value column. All the parameters available in the Alarm Messages configuration are available in Web Studio, but because the conception is completely different (PanelBuilder requires that the user configures colors per individual alarms instead of configuring per groups) they are not automatically imported.

Security System

The current version of Import Wizard does not import the security system automatically.