



**SIMPLIFY
ACCESS &
CONTROL**

**Allen Bradley PLC
Panel Guide**

Allen Bradley PLC Panel Guide

Intelli-Site

Security Management Software

Allen Bradley PLC Panel Guide

For Windows 7 Professional and Ultimate,
Windows 8.1 Pro and Enterprise,
Windows 10 Pro and Enterprise,
Server 2008 R2, and
Server 2012 R2

Allen Bradley PLC Panel Guide

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When calling, please be at the computer prepared to provide the following information:

- Product version number, found by selecting the  **About** button from the Intelli-Site Application Menu.
- The type of computer being used including, operating system, processor type, speed, amount of memory, type of display, etc.
- Exact wording of any messages that appear on the screen.
- What was occurring when the problem was detected?
- What steps have been taken to reproduce the problem?
- It is highly recommended that the user generate a support package for transmission to Intelli-Site technical support staff. To generate the package, run the Intelli-Site Configuration Utility. *Create Support Package...* is the last option in the **Tools** menu.

Allen Bradley PLC Panel Guide

Table of Contents

Copyright	3
Trademarks	3
Technical Support Assistance	4
Table of Contents	5
1 Introduction	7
2 Installation Guide.....	8
3  Hardware Management View	9
3.1 Setup.....	9
3.1.1 Add an Allen Bradley Driver	9
3.1.2 Add an Allen Bradley PLC Panel	12
3.1.3 Configure the Allen Bradley PLC Panel	13
3.1.4 Enable the Allen Bradley Driver	17
3.2 Panel Control Screen.....	18
4 Design View	20
4.1 Allen Bradley Driver Node.....	20
4.2 Allen Bradley PLC Panel Node.....	22
4.2.1 Allen Bradley PLC Panel Node Properties.....	23
4.2.2 Allen Bradley PLC Panel Quick Config	24
4.2.3 Allen Bradley PLC Panel Child Nodes	28
4.3 Project Programming	33
4.3.1 Evaluation Grids and Action Grids.....	33
4.3.2 Automatically Created Screen Objects.....	35

Allen Bradley PLC Panel Guide

4.3.3 The Panel Control Screen	41
Revision History	46

Allen Bradley PLC Panel Guide

1 Introduction

Intelli-Site supports the Allen Bradley PLC panel.

This integration was written using API version _____.

Define any needed external software.

This guide explains using the Allen Bradley PLC with Intelli-Site Security Management Software.

Allen Bradley PLC Panel Guide

2 Installation Guide

The Allen Bradley drivers in Intelli-Site must be installed. No external software is needed.

If Intelli-Site has been installed without the Allen Bradley PLC drivers, run the Intelli-Site installer again and select **Modify**.

During the installation or modify installation process, you are presented with the **Select the drivers you want to install** window.

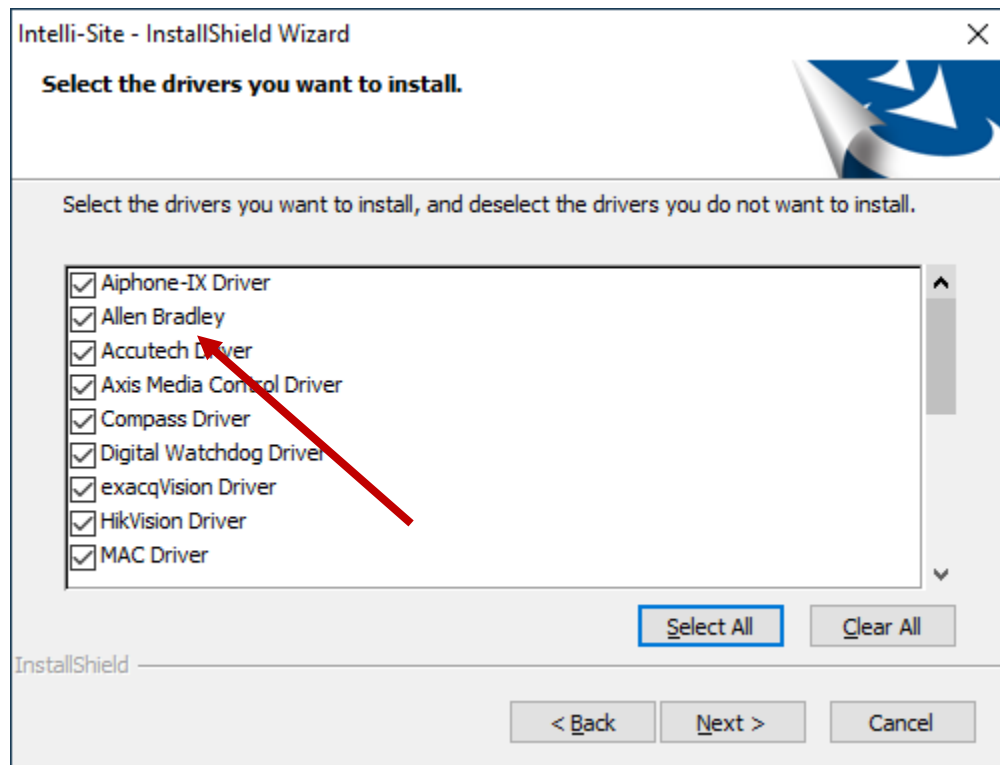




Figure 1 - Select the drivers you want to install

Ensure the **Allen Bradley Driver** option is checked then continue with the installation or modification.

3 Hardware Management View

The Allen Bradley Driver and Allen Bradley PLC panel are best configured in  **Hardware Management View**. Once configured, the user may wish to program the panel control screen to display and control tags from the Allen Bradley PLC panel.

3.1 Setup

The Allen Bradley Driver and Allen Bradley PLC panel are best configured in  **Hardware Management View**. Before we begin though, it is a good idea to have the Control and Information Protocol (CIP) address of the panel. The syntax is normally **<IP address>,<backplane port number>,<Logix slot number>**.

Once the above information is obtained, the setup process is straight forward.

1. Add an Allen Bradley Driver
2. Add an Allen Bradley PLC Panel
3. Configure the Allen Bradley PLC Panel
4. Enable the Allen Bradley PLC Driver

3.1.1 Add an Allen Bradley Driver

Adding an Allen Bradley Driver is simple, but important. Without it, no communication with the Allen Bradley PLC panels can occur.

Launch the Desktop Client and login.

Hardware is managed in the  **Hardware Management View**. If you are not in  **Hardware Management View** (Figure 2), click on  and select .

Allen Bradley PLC Panel Guide

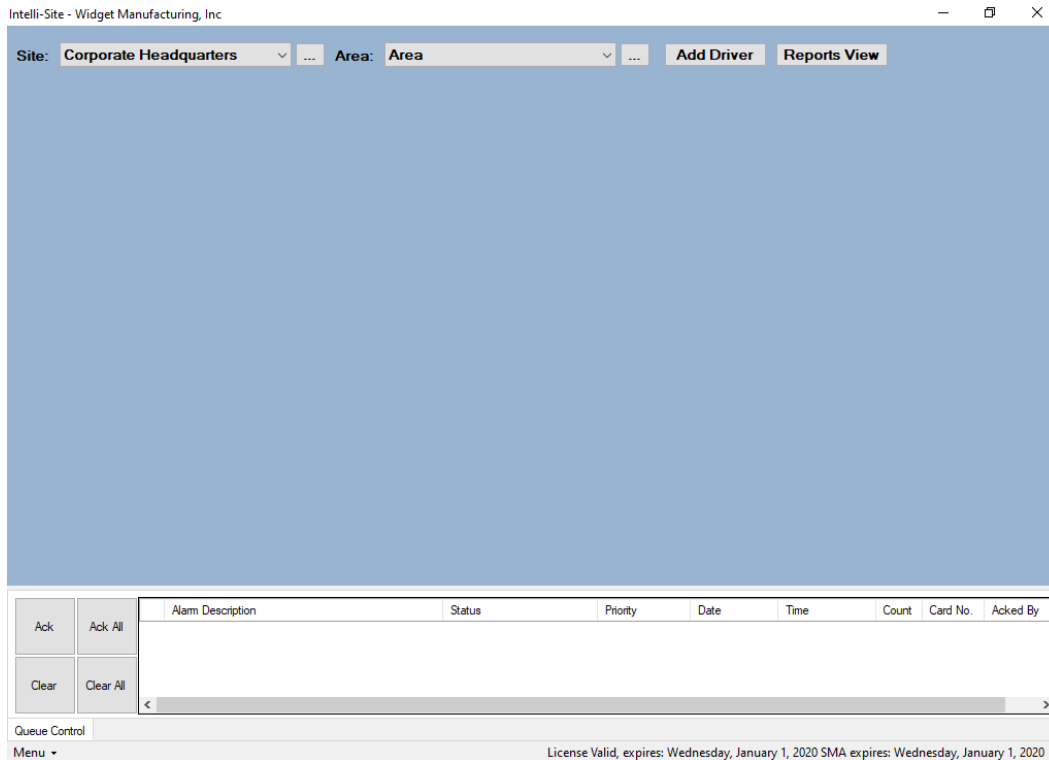


Figure 2 - Hardware Management View

To add the Allen Bradley driver, click **Add Driver**. The **Choose Driver Type** dialog displays.

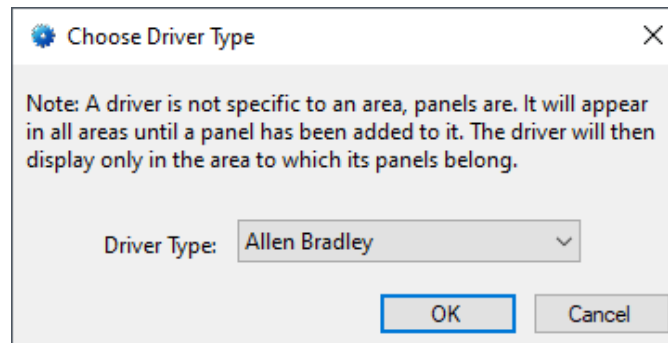


Figure 3 - Choose Driver Type Dialog

Select *Allen Bradley* from the **Driver Type** drop-down menu in the **Choose Driver Type** dialog. Click **OK**. A new Allen Bradley driver icon is added to the screen and its properties dialog opens.

Allen Bradley PLC Panel Guide

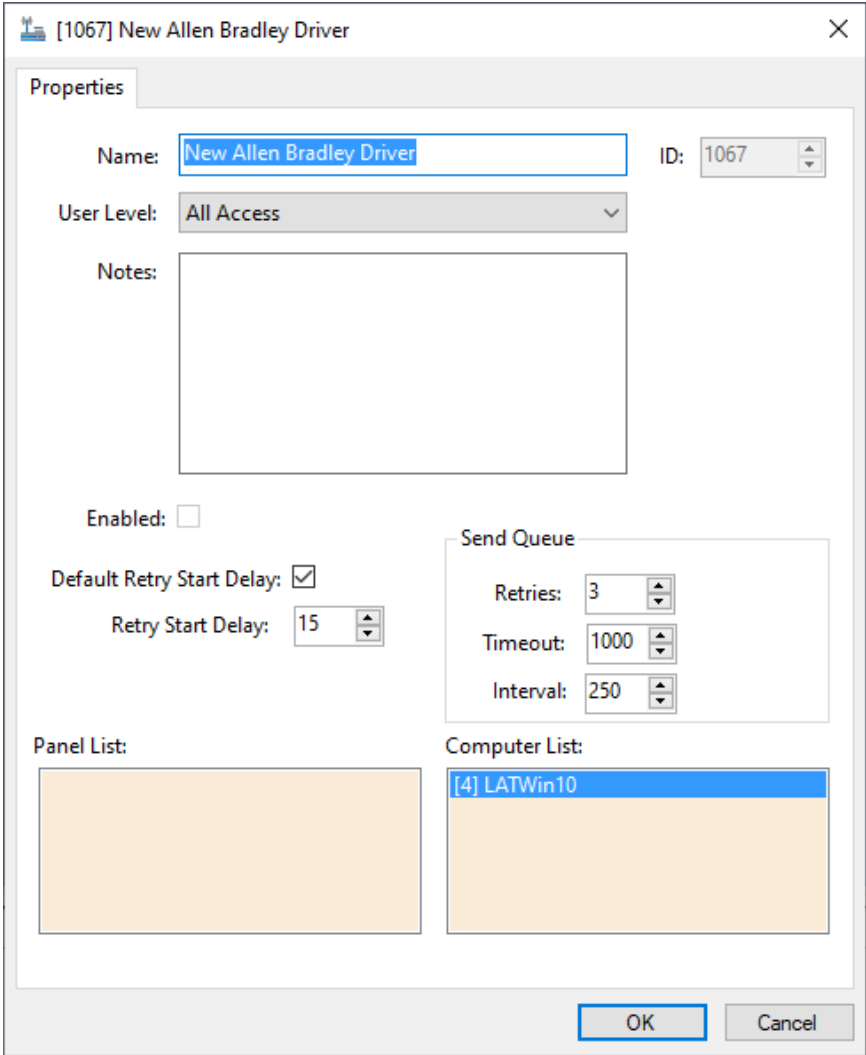


Figure 4 - Allen Bradley Driver Properties Dialog

Please change the name of the driver to reflect the use and/or location of the panels that this driver will manage.

Note: For an explanation of all of the driver properties, see [Allen Bradley Driver Node](#).

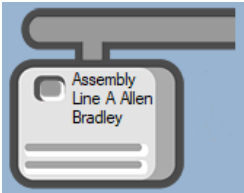


Figure 5 - Allen Bradley Driver Icon

Allen Bradley PLC Panel Guide

Note: *The Allen Bradley driver does not need a communication method because it communicates with the panel via an API, not directly.*

3.1.2 Add an Allen Bradley PLC Panel

Once an Allen Bradley driver has been added, it's time to add an Allen Bradley PLC panel to it.

Right-click on the Allen Bradley Driver and select *Add Panel*. The **Add Panel** dialog displays.

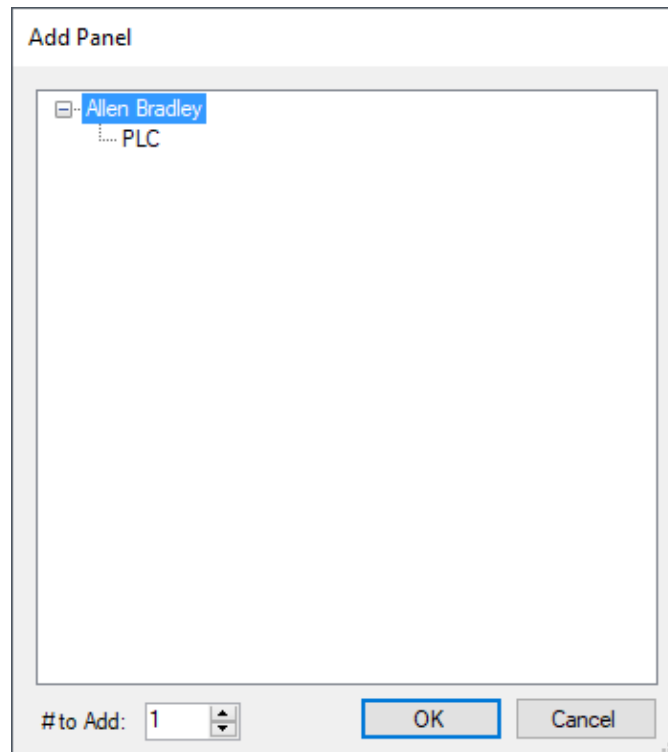


Figure 6 - Add Panel Dialog

This dialog only displays the panels that are appropriate for the target driver. Select the Allen Bradley PLC panel. Leave the value of **# to Add** alone. There should only be one panel per driver. Click . A **New Allen Bradley PLC** icon is added to the target Allen Bradley driver.

Allen Bradley PLC Panel Guide

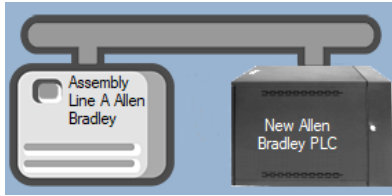


Figure 7 - A new Allen Bradley PLC panel attached to an Allen Bradley driver

Next comes configuring the panel.

3.1.3 Configure the Allen Bradley PLC Panel

The Allen Bradley PLC panel is configured using the **Quick Config** dialog. To open the **Quick Config** dialog, right-click on the Allen Bradley PLC icon and select *Quick Config*.

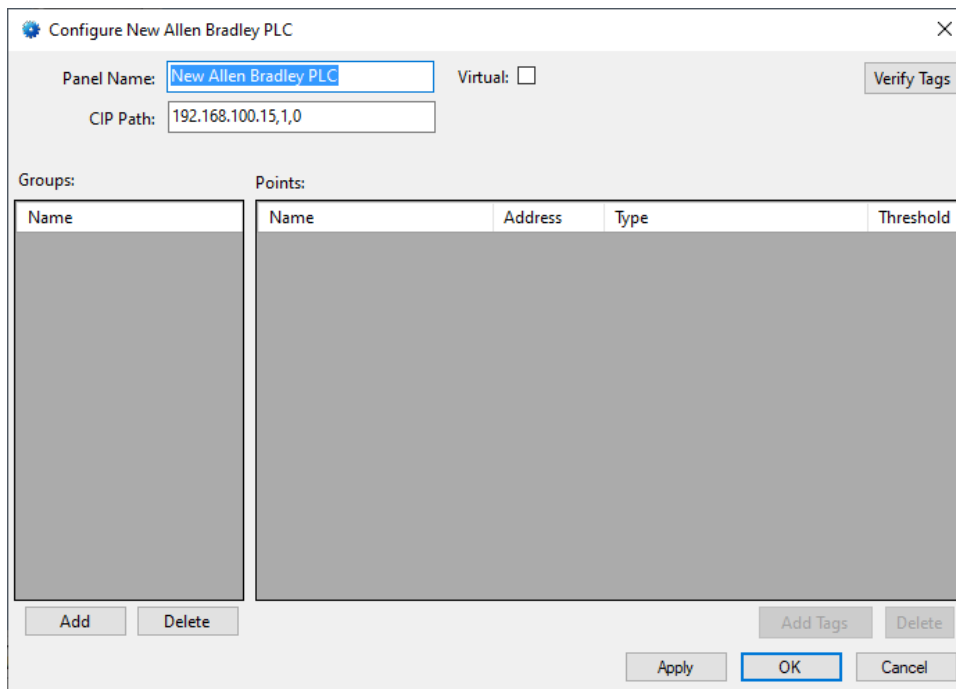


Figure 8 – Allen Bradley PLC Panel Quick Config Dialog

Change the **Panel Name** to describe its use or location. In our example, it is the PLC controller for Assembly Line A.

Set the **CIP Address** to the CIP address of the Allen Bradley PLC panel. The default value is meant to indicate the proper format. The syntax is normally **<IP address>,<backplane port number>,<Logix slot number>**.

Allen Bradley PLC Panel Guide

Now is a good time to consider tag organization. How the tags are added can aid or hinder locating the tag in the Project Node Tree. Every tag that is added must be added to a group. That's why the **Add Tags** button is disabled. For the example, there are two sections to the line.

Click the **Add** button under the **Groups** list box. A **New Group** is added to the list. The **Add Tags** button is now enabled. Click on the new group and change then text to be something descriptive about the group. In the example, it is "LA Section 1". Then click the **Add Tags** button. The **Add Tags** dialog opens.

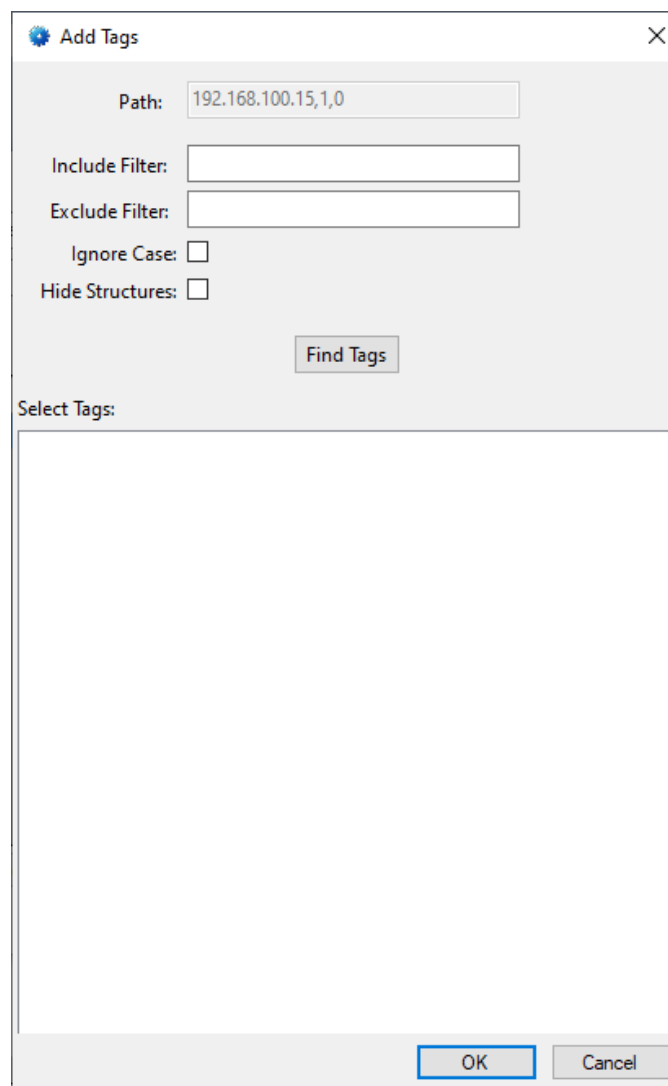


Figure 9 - Add Tags dialog

Allen Bradley PLC Panel Guide

There can be dozens and hundreds of tags on the PLC. The **Include Filter**, and **Exclude Filter** allow you to limit the number of tags that are found when the **Find Tags** button is clicked. The filter fields are exact match fields. Whatever is typed in the field is used to match or reject tags. Therefore, the wildcard '*' must be used to locate multiple tags. It's also case-sensitive unless **Ignore Case** is checked.

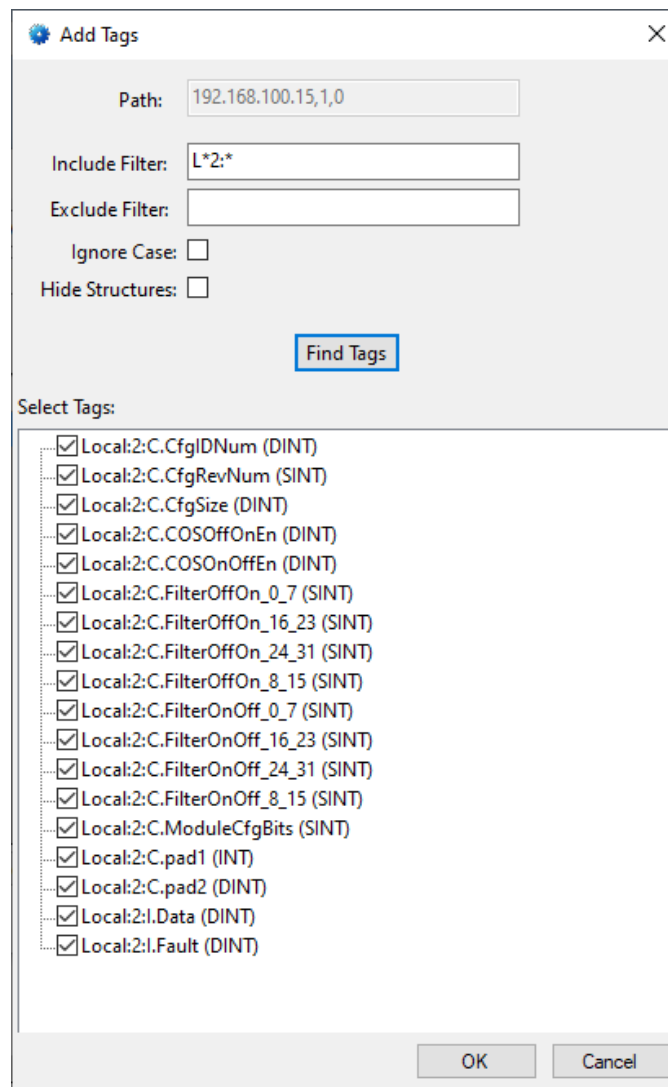


Figure 10 - Add Tags dialog displaying found tags

The check box next to each tag indicates which tags to add to the group. Clear any that don't apply to this group. Then click **OK**.

Allen Bradley PLC Panel Guide

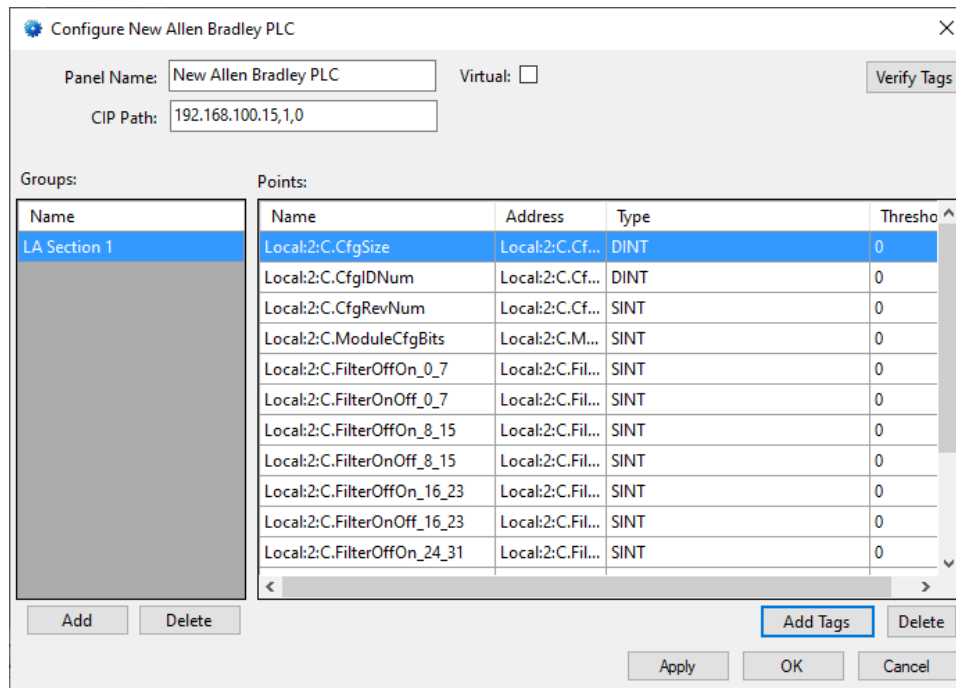


Figure 11 - Quick Config after adding tags

If there are more points that should be organized with this group but didn't match the **Include Filter** and **Exclude Filter**, repeat the process until all the tags are added for this group.

Then add the next group and add the tags that are part of that group. Repeat until done.

Allen Bradley PLC Panel Guide

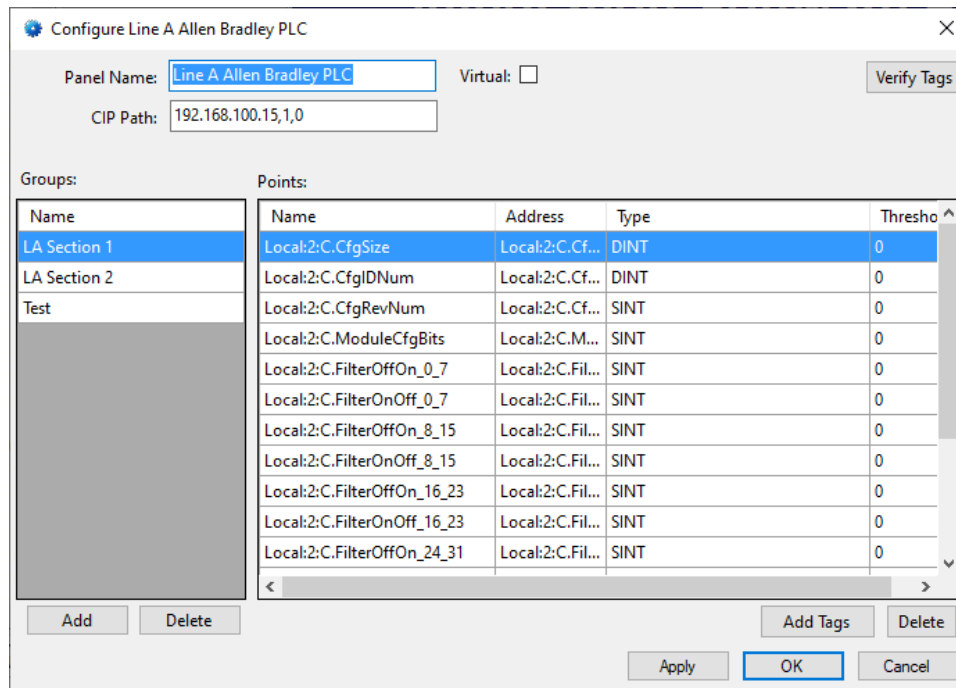


Figure 12 - Quick Config dialog: fully configured

Then click .

3.1.4 Enable the Allen Bradley Driver

At this point, the Allen Bradley PLC panel and the Allen Bradley driver are configured, but the driver is not online. A quick way to know this is that the communication indicator is grey.

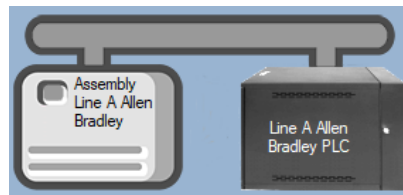


Figure 13 - Disabled Allen Bradley Driver

Allen Bradley PLC Panel Guide

Right-click on the driver to open the context menu; select *Enable Driver*. The communications indicator will change color to green when it's online.

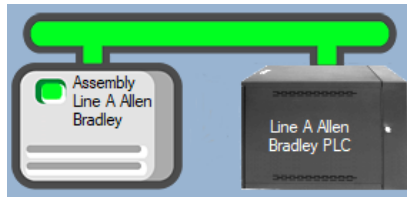


Figure 14 - Enabled Allen Bradley PLC Driver

If for some reason the Engine cannot connect to the Driver Service, the communication indicator will be red.

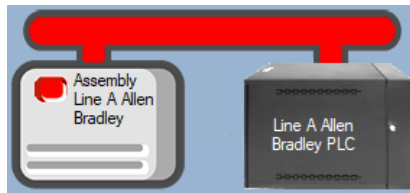




Figure 15 - Enabled Allen Bradley Driver that is not communicating with the Driver Service

Note: *Because the Allen Bradley integration uses an API, the driver does not connect to the panel directly, the API does. There is no way to know if the panel is online or not.*

Congratulations! The Allen Bradley PLC is integrated and ready to use in screen design for  **Live View**. Screen design occurs in  **Design View**.

It is a good time now to discuss the Panel Control Screen.

3.2 Panel Control Screen

Every Allen Bradley PLC panel has a **Panel Control Screen**. Clicking on the panel icon opens the **Panel Control Screen** of the target panel. When the panel is added, there are no tags which means the screen is not useful.

Allen Bradley PLC Panel Guide

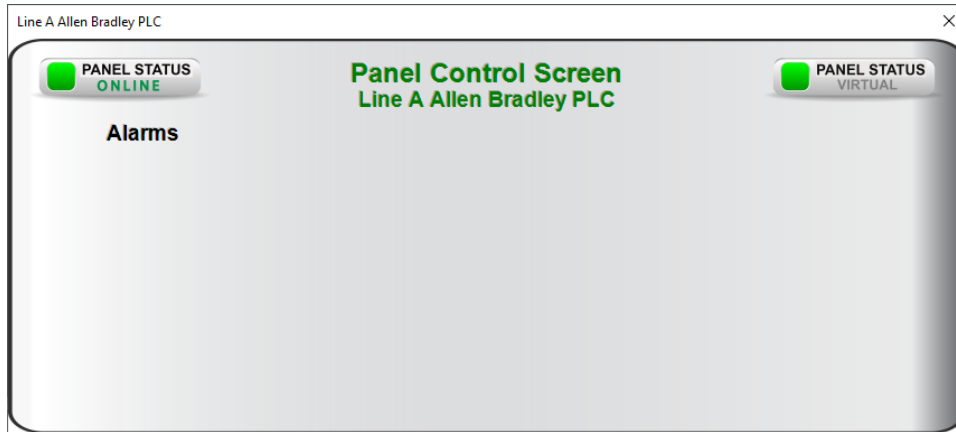


Figure 16 - Sample Allen Bradley PLC Panel Control Screen

It is suggested that this panel be programmed to be useful. Programming is done in  **Design View**. The panel control screen is found by expanding **Screen Control->Popup Screens->'Area' Popup Screens** where 'Area' is the name of the area to which the panel was added.

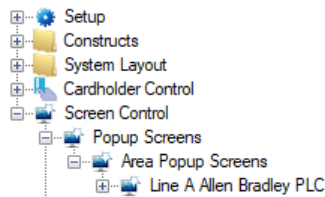



Figure 17 - Panel Control Screen in the Tree

Allen Bradley PLC Panel Guide

4 Design View

 **Design View** is the home of the Project Node Tree and the place where screens and screen objects are programmed. The following sections explain the Allen Bradley PLC Driver node properties, the Allen Bradley PLC node properties, and screen object programming especially the automatically created screen objects.

4.1 Allen Bradley Driver Node

The Allen Bradley driver node is found by expanding **Setup->Computer Setup->Drivers**.

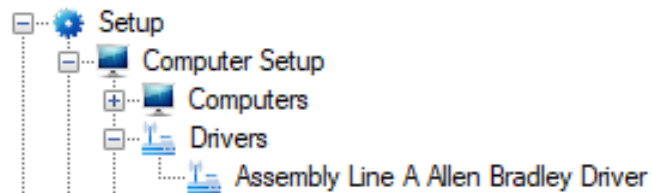


Figure 18 - Allen Bradley Driver node in the Project Node Tree

Right-click on the driver node and select *Properties* to open the properties dialog.

Allen Bradley PLC Panel Guide

The screenshot shows a dialog box titled "[1067] Assembly Line A Allen Bradley Driver". It has a "Properties" tab. The fields are as follows:

- Name:** Assembly Line A Allen Bradley Driver
- ID:** 1067
- User Level:** All Access
- Notes:** (Empty text area)
- Enabled:**
- Default Retry Start Delay:**
- Retry Start Delay:** 15
- Send Queue:**
 - Retries: 3
 - Timeout: 1000
 - Interval: 250
- Panel List:** [1068] Line A Allen Bradley PLC
- Computer List:** [4] LATWin10

Buttons: OK, Cancel

Figure 19 - Allen Bradley PLC Driver properties dialog

Name – edit box; the name for the node; the name doesn't have to be unique

ID – numeric (disabled); the unique identifier of this node; generated by Intelli-Site

User Level – drop-down menu (default: All Access); the User Level a user must possess to open the properties for this node

Notes – multiline edit box; any notes the user may have for the node

Enabled – check box; when checked the driver is enabled

Default Retry Start Delay – check box (default: checked); if the driver did not connect, pause before attempting to connect again

Allen Bradley PLC Panel Guide

Retry Start Delay – numeric (default: 15); number of seconds to wait between retries on connection attempts

Retries – numeric (default: 3); number of retries for sending a packet


Timeout – numeric (default: 1000); number of milliseconds to wait for a response before assuming the packet was not received

Interval – numeric (default: 25); number of milliseconds to wait after a timeout before sending the packet again

Panel List- drop box; the Allen Bradley PLC nodes attached to this driver

Computer List – drop box (default: the computer on which the Engine is running); the computer node on which this driver is running

4.2 Allen Bradley PLC Panel Node

The Allen Bradley PLC panel node is found by expanding **System Layout** then the Site and Area to which the Allen Bradley PLC panel was added in  **Hardware Management View**. In the example below, the panel was added to the site **Corporate Headquarters** and the area **Area**.

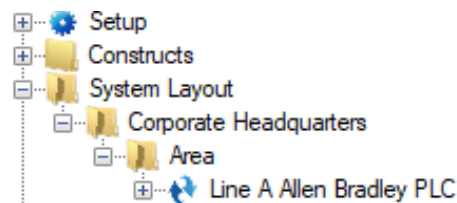


Figure 20 - The Allen Bradley PLC panel node in the Project Node Tree

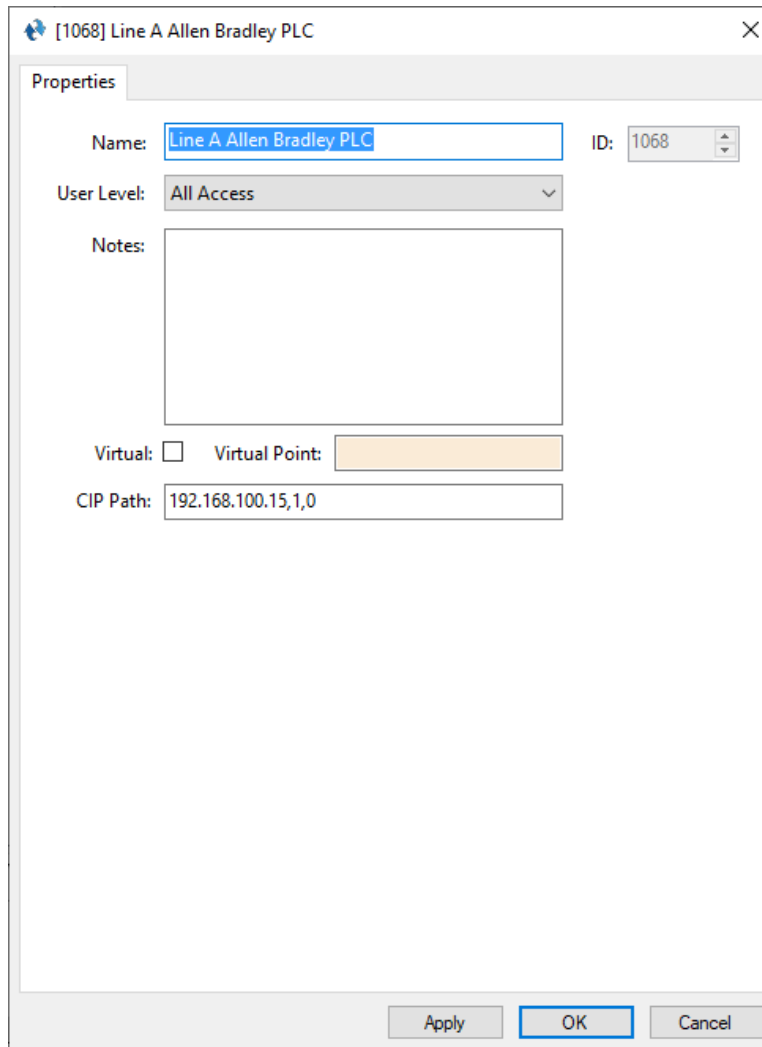
The Allen Bradley PLC panel node is the root node for the panel. The following sections will explain:

- The properties of the Allen Bradley PLC panel node
- The configuration of the Allen Bradley PLC panel (a.k.a. **Quick Config**)
- The child nodes of the Allen Bradley PLC panel

Allen Bradley PLC Panel Guide

4.2.1 Allen Bradley PLC Panel Node Properties

Right-click on the Allen Bradley PLC panel node to open the properties. These fields are not accessible through the **Quick Config** dialog except for **Name**, **Address**, and **Virtual**. They correspond to those features that aren't part of the day to day running of the system.



The screenshot shows a dialog box titled "[1068] Line A Allen Bradley PLC". The dialog has a "Properties" tab. It contains the following fields:

- Name:** A text box containing "Line A Allen Bradley PLC".
- ID:** A numeric spinner box set to "1068".
- User Level:** A dropdown menu set to "All Access".
- Notes:** A large empty text area.
- Virtual:** A checkbox that is currently unchecked.
- Virtual Point:** A text box containing a yellow highlight.
- CIP Path:** A text box containing "192.168.100.15,1,0".

At the bottom of the dialog are three buttons: "Apply", "OK", and "Cancel".

Figure 21 - Allen Bradley PLC node properties dialog

Name – edit box; the name for the node; the name doesn't have to be unique

ID – numeric (disabled); the unique identifier of this node; generated by Intelli-Site

Allen Bradley PLC Panel Guide

User Level – drop-down menu (default: All Access); the User Level a user must possess to open the properties for this node

Notes – multiline edit box; any notes the user may have for the node

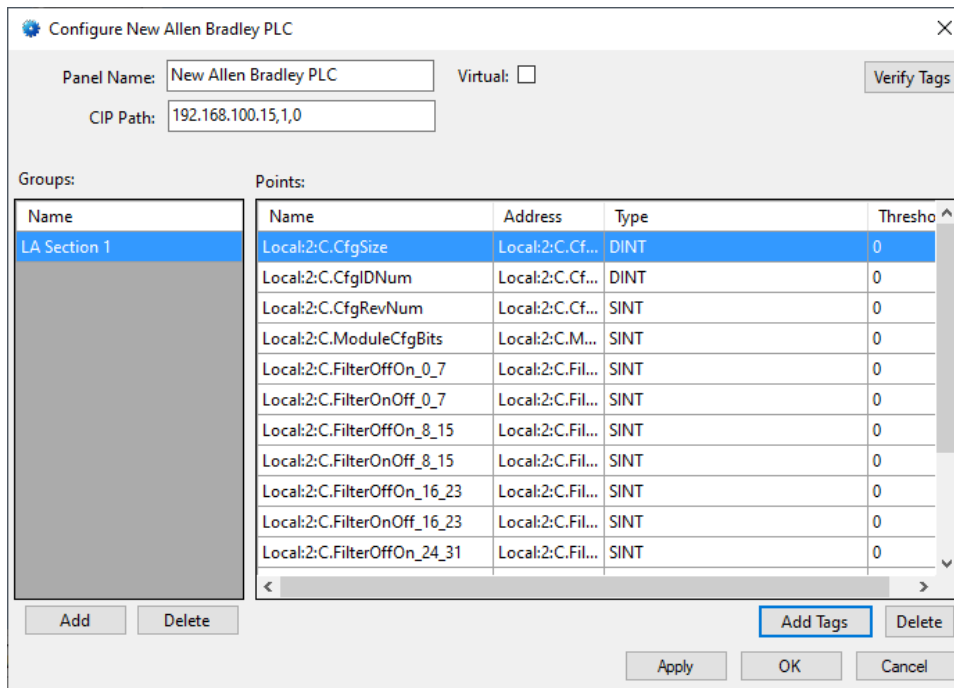
Virtual – check box; when checked the panel is virtualized, allowing the driver to be brought online without having the physical panel available

Virtual Point – drop box; this I/O Point will be set when the panel is virtualized, clear when it is not

CIP Address – edit box; the CIP address of the Allen Bradley PLC; the default value is meant to indicate the proper format, normally <IP address>,<backplane port number>,<Logix slot number>

4.2.2 Allen Bradley PLC Panel Quick Config

The **Quick Config** dialog is accessible either in  **Hardware Management View** or in  **Design View**. To open the **Quick Config** dialog, right-click on the Allen Bradley PLC panel node and select *Quick Config*.



Name	Address	Type	Thresho
Local:2:C.CfgSize	Local:2:C.Cf...	DINT	0
Local:2:C.CfgDNum	Local:2:C.Cf...	DINT	0
Local:2:C.CfgRevNum	Local:2:C.Cf...	SINT	0
Local:2:C.ModuleCfgBits	Local:2:C.M...	SINT	0
Local:2:C.FilterOffOn_0_7	Local:2:C.Fil...	SINT	0
Local:2:C.FilterOnOff_0_7	Local:2:C.Fil...	SINT	0
Local:2:C.FilterOffOn_8_15	Local:2:C.Fil...	SINT	0
Local:2:C.FilterOnOff_8_15	Local:2:C.Fil...	SINT	0
Local:2:C.FilterOffOn_16_23	Local:2:C.Fil...	SINT	0
Local:2:C.FilterOnOff_16_23	Local:2:C.Fil...	SINT	0
Local:2:C.FilterOffOn_24_31	Local:2:C.Fil...	SINT	0

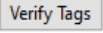
Figure 22 - Allen Bradley PLC panel Quick Config dialog

Allen Bradley PLC Panel Guide

Panel Name – edit box; the name of the Allen Bradley PLC panel; updating this field will change the name of the node

CIP Path – edit box; the CIP address of the Allen Bradley PLC; the default value is meant to indicate the proper format, normally **<IP address>,<backplane port number>,<Logix slot number>**

Virtual – check box; when checked the panel is virtualized, allowing the driver to be brought online without having the physical panel available

 - button; when clicked, verifies that all the tags in the software exist in the PLC; if any tags do not exist in the PLC, they are listed in a new dialog

Groups – list box; the groups into which the tags are organized

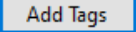
Points – list box; the tags in the selected group with columns

Name – edit box; tag name

Address – edit box; tag address

Type – edit box; the tag's type (BOOL, SINT, DINT...)

Threshold – edit box; when the value of the tag is at this number or high, the tag is in the high state

 - button; opens the **Add Tags** dialog

Allen Bradley PLC Panel Guide

The image shows a software dialog box titled "Add Tags". At the top left is a gear icon and the text "Add Tags", and at the top right is a close button (X). Below the title bar, there is a "Path:" label followed by a text box containing "192.168.100.15,1,0". Below that are two empty text boxes labeled "Include Filter:" and "Exclude Filter:". Underneath are two checkboxes: "Ignore Case:" and "Hide Structures:". A "Find Tags" button is centered below the checkboxes. Below the button is the label "Select Tags:" followed by a large, empty rectangular area for displaying search results. At the bottom of the dialog are "OK" and "Cancel" buttons.

Figure 23 - Add Tags dialog

Path – edit box (disabled); the CIP Path

Include Filter – edit box; the search criteria for tags to include in the **Select Tags** list box; the search is an exact match unless the '*' wildcard is used; to find all tags that begin with Local, have a ':2', one would enter "Local*:2*"

Exclude Filter – edit box; the search criteria for tags to exclude from the **Select Tags** list box; the search is an exact match unless the '*' wildcard is used; to exclude all tags that begin with Local, have a ':2', one would enter "Local*:2*"

Ignore Case – checkbox; when checked, the search is case-insensitive

Allen Bradley PLC Panel Guide

Hide Structures – checkbox; when checked structures are excluded from the search

Add Tags

Path: 192.168.100.15,1,0

Include Filter: Loc*:2*

Exclude Filter: Loc*:3*

Ignore Case:

Hide Structures:

Find Tags

Select Tags:

- Local:2:C.pad1 (INT)
- Local:2:C.pad2 (DINT)

OK Cancel

Figure 24 - Example Add Tags dialog

Select Tags – tree list; the tags found using the defined search criteria; the tags that are checked will be added on **OK**

Allen Bradley PLC Panel Guide

4.2.3 Allen Bradley PLC Panel Child Nodes

When an Allen Bradley PLC panel is first added, the only child node it has is the **Alarms** node. Once groups have been added to the panel, each group is a child node of the panel.

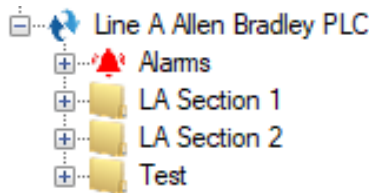


Figure 25 – Example Allen Bradley PLC panel child nodes

In this figure, **LA Section 1**, **LA Section 2**, and **Test** are group nodes.

4.2.3.1 Alarms

The alarms for the Allen Bradley PLC are located under the **Alarms** node. There is only one (1) alarm, **Panel Status**. Every panel integration in Intelli-Site has this alarm. But for this integration, the point is moot.

Note: Because the Allen Bradley PLC is an API integration, the software does not maintain a connection to the panel. It does not know the current status of the panel. Panel Status is irrelevant.

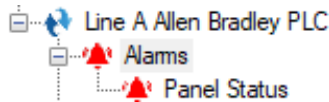


Figure 26 - Allen Bradley PLC panel Alarms child nodes

4.2.3.2 Group Nodes

Each group node is a GenProto node, a generic I/O Point with a bit of additional information that is customized for the specific usage. The first tab of the properties dialog contains these fields. For an explanation of the rest of the fields and tabs, see section [9.3 The Properties Dialog](#) of the Intelli-Site User's Guide.

Allen Bradley PLC Panel Guide

The screenshot shows a dialog box titled "[1080] Line A Allen Bradley PLC\LA Section 1". It has four tabs: "Properties", "Operation", "Alarm Queue", and "Actions". The "Properties" tab is selected. The dialog contains the following fields:

- Name: LA Section 1
- ID: 1080
- User Level: All Access
- Notes: (empty text area)
- Address: (empty text box)
- Protocol: (empty text box)
- Node Type: General

At the bottom right, there are "OK" and "Cancel" buttons.

Figure 27 - Example Group node properties dialog

For a group node, the important field is **Node Type**. It is set to *General* for all group nodes.

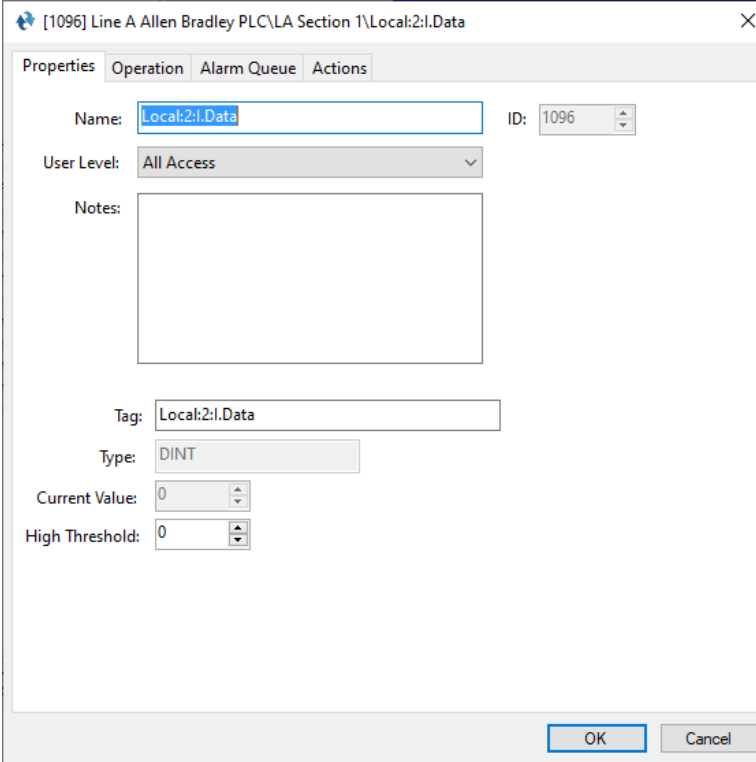
4.2.3.3 Tag Nodes

Tag nodes are the child nodes of group nodes. There are two types of tags: points and values. Points are tags of type BOOL. Values are tags that are numeric such as SINT or DINT.

Allen Bradley PLC Panel Guide

4.2.3.3.1 Tag Node Properties

Like the group nodes, tag nodes are GenProto nodes.



The screenshot shows a dialog box titled "[1096] Line A Allen Bradley PLC\LA Section 1\Local:2:I.Data". It has four tabs: "Properties", "Operation", "Alarm Queue", and "Actions". The "Properties" tab is active. The fields are as follows:

- Name: Local:2:I.Data
- ID: 1096
- User Level: All Access
- Notes: (empty text area)
- Tag: Local:2:I.Data
- Type: DINT
- Current Value: 0
- High Threshold: 0

Buttons for "OK" and "Cancel" are at the bottom right.

Figure 28 - Example Tag node properties dialog

The fields relevant to the tag are:

Tag – edit box; the address of the tag, displays in the **Address** column of the **Quick Config**; returned with the tag information from the PLC

Type – edit box (disabled); the type of tag, displays in the **Type** column of the **Quick Config**; returned with the tag information from the PLC


Current Value – numeric (disabled); the current value of the tag as reported via the API

High Threshold – numeric; only applicable to value tags, not point ones; when the value of the tag is at or above this number, the tag is high; displays in the **Threshold** column of the **Quick Config**

Allen Bradley PLC Panel Guide

For an explanation of the rest of the fields and tabs, see section [9.3 The Properties Dialog](#) of the Intelli-Site User's Guide.

4.2.3.3.2 Value Tag Node Child Nodes

When the **Node Type** of a tag is a value type, not BOOL, i child nodes can be added to it in  **Design View**. Like their parents, these sub-nodes are special GenProto nodes. They are like counter value nodes in that their state is tied to the current value of their parent node. And like a counter value, when a value sub-node is the target of a **SendCommand** action, the parent node is acted on by the value child node if possible.

To better understand these nodes, let's examine the properties dialog. Because a value sub-node is a GenProto node, we will only discuss the additional fields specific to a value sub-node. For an explanation of the rest of the fields and tabs, see section [9.3 The Properties Dialog](#) of the Intelli-Site User's Guide.

First, though, one needs to add a value child node. Locate the desired tag node in the Tree. Right-click on it and select either *Add Node*, *Add Multiple...*, or *Add Node and Edit*.

Note: If the tag node is not a value type node, these menu options are disabled. In fact, Add Multiple... is not present.

Allen Bradley PLC Panel Guide

The screenshot shows a dialog box titled "[1118] Line A Allen Bradley PLC\Local:2:C.COSOnOffEn\New Node". It has four tabs: "Properties", "Operation", "Alarm Queue", and "Actions". The "Properties" tab is selected. The dialog contains the following fields:

- Name:** A text box containing "New Node".
- ID:** A dropdown menu showing "1118".
- User Level:** A dropdown menu showing "All Access".
- Notes:** A large empty text area.
- Value (optional):** A small empty text box.

At the bottom right, there are "OK" and "Cancel" buttons.

Figure 29 - Value Sub-Node properties dialog

The Properties tab has the standard properties of **Name**, **ID**, **User Level**, and **Notes**. The only new field is **Value**. It is an optional field. If it is empty, this node is treated as group node. This means even value sub-nodes can have child nodes. There is no limit to the depth of child nodes. This gives the user flexibility in organizing the sub-values. Even if the value sub-node has a number in the **Value** field, it can still have child nodes of its own.

The **Value** field is an integer field that can have a signed or unsigned number in it. When the number is signed, it can be used to increment or decrement the parent tag node's value using **SendCommand**. For example, the sub-node **Value** field is -2. **SendCommand** targeting this sub-node will decrement the parent tag node by 2.

When the **Value** field is unsigned, it is treated much like a counter value. When the parent tag node equals this sub-node, this sub-node is in the high state. The parent tag node can be set to the value of this sub-node using **SendCommand**.

Allen Bradley PLC Panel Guide

4.3 Project Programming

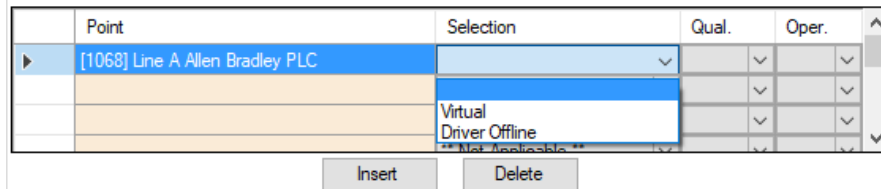
The point nodes can be used in project programming in evaluation grids and in action grids. The point nodes can also be dragged and dropped onto screens to automatically create screen objects.

4.3.1 Evaluation Grids and Action Grids

The panel and point nodes can be used in evaluation and action grids.

4.3.1.1 The Panel Node

When a panel node is used in the evaluation grid, there are two **Selection** options: *Virtual* and *Driver Online*.



The panel node can be used in action grids as the target of the following actions:

- VirtualizePanel
- UnvirtualizePanel

4.3.1.2 The Point Nodes

The point nodes are I/O Points. Therefore, they can be used in evaluation grids and action grids.

4.3.1.3 The Sub-nodes of Point Nodes

The sub-nodes of tag nodes whose **Node** Type is not BOOL can be used in action grids to modify the tag node's value assuming the tag is writable.

4.3.1.3.1 Sub-nodes with Unsigned Values

To set the parent tag node to equal the sub-node, use **SendCommand** and target the sub-node.

Allen Bradley PLC Panel Guide

Action	Target
1 Play	[962] Click.wav
▶ 2 SendCommand	[1120] Line A Allen Bradley PLC\Local:2:I....
3	[1120] Line A Allen Bradley PLC\Local:2:I.Data\27
4	
5	
6	

Mouse Down Mouse Up Active Inactive Mouse Enter Mouse Leave

Figure 30 - Example Action grid using a sub-value node

If tag **Local:2:I.Data**, is writeable, it will be set to the **Value** of sub-node 27.

4.3.1.3.2 Sub-nodes with Signed Values

Below are the properties of a sub-node with a signed **Value** field.

The screenshot shows a 'Properties' dialog box for a sub-node. The title bar reads '[1122] Line A Allen Bradley PLC\Local:2:I.Data\1'. The 'Properties' tab is active, showing the following fields:

- Name: [1]
- ID: 1122
- User Level: All Access
- Notes: (empty text area)
- Value (optional): -1

Buttons for 'OK' and 'Cancel' are visible at the bottom right.

Figure 31 - Example sub-node with a signed Value field

When the **Value** field is signed (e.g., +1 or -2), this node can be used to increment or decrement the parent tag node. Use **SendCommand** and target this node in any action grid.

Allen Bradley PLC Panel Guide

	Action	Target
1	Play	[962] Click.wav
2	SendCommand	[1122] Line A Allen Bradley PLC\Local:2:I...
3		[1122] Line A Allen Bradley PLC\Local:2:I.Data\ -1
4		
5		
6		

Mouse Down | Mouse Up | Active | Inactive | Mouse Enter | Mouse Leave

Delete

Figure 32 - Example Action grid using sub-node

In this example, if the tag is writeable, the value of tag Local:2:I.Data will be decremented by 1 because the value of **-1** is -1.

4.3.2 Automatically Created Screen Objects

The tag nodes can be used as evaluation points for the evaluation grids of screen objects. This allows the user to monitor and control the state of each point.

Instead of programming the screen objects by hand, drag and drop the nodes onto the screen to automatically create screen objects that are programmed based on the type of point it is.

4.3.2.1 Point Type Screen Objects

When tag node of **Type** *BOOL* is dragged and dropped onto the screen, a button is created.

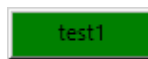


Figure 33 - Sample screen node created from a tag node of type *BOOL*

The screen object is programmed to display the current state of the tag. Clicking on the button will set the tag on or off.

Note: If the tag in the PLC is not a writable tag, setting it on or off will do nothing.

The following examines the properties of the button screen object and the programming of the different states.

Allen Bradley PLC Panel Guide

4.3.2.1.1 State 0 – Normal

State 0 is the base state. It displays when the evaluation grid on the other state does not evaluate to true. Stated more simply, when the point is off, this state displays.

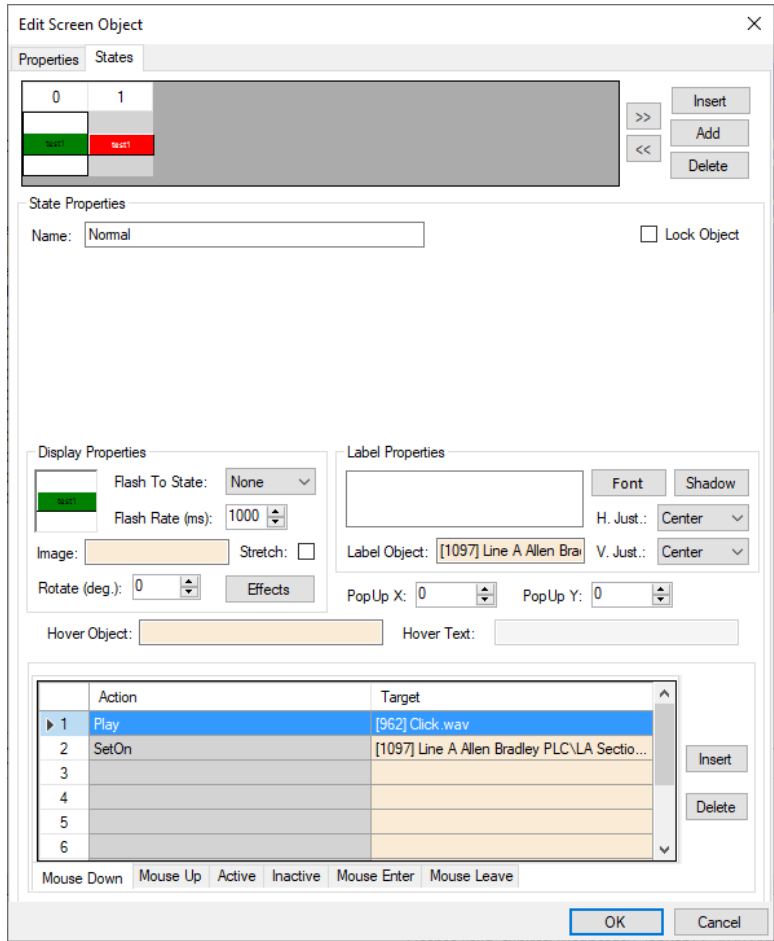


Figure 34 - Sample point button properties dialog: State 0

Notice the **Action** grid. When this button is clicked in this state, a **SetOn** command is sent to the PLC panel for this point. The panel will set the point if applicable. Intelli-Site will receive the updated state.

4.3.2.1.2 State 1 - Alarm

This state displays when the point is high. See the evaluation grid. The evaluation grid is programmed to return true when the point's state evaluates as high.

Allen Bradley PLC Panel Guide

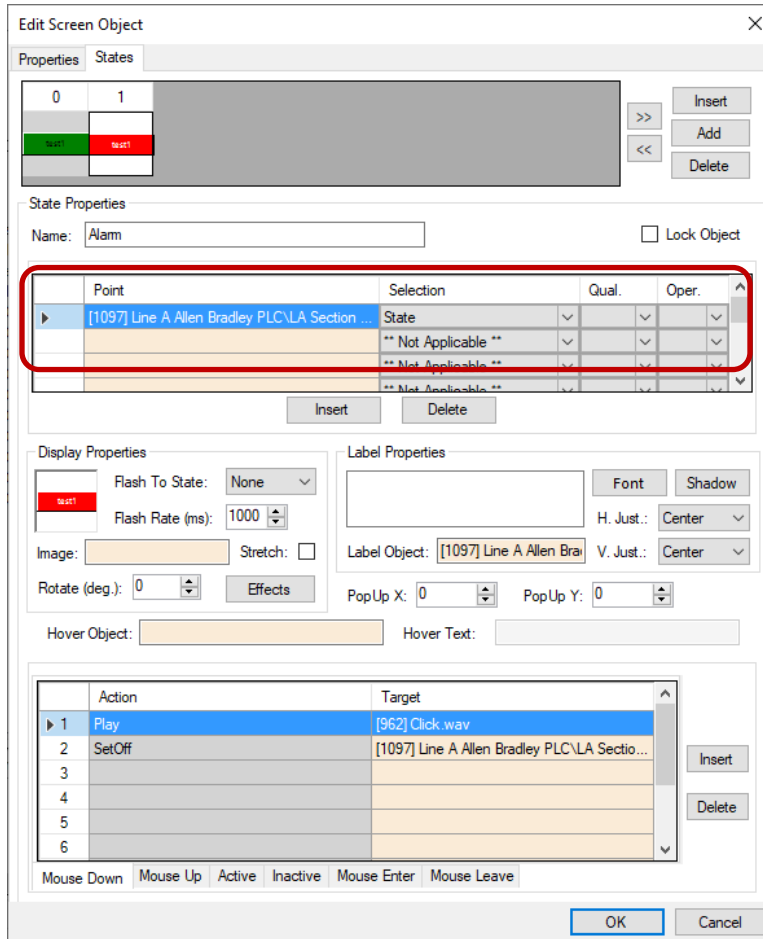


Figure 35 - Sample point button properties dialog: State 1

Notice the **Action** grid. When this button is clicked in this state, a **SetOff** command is sent to the PLC panel for this point. The panel will turn off the tag if applicable. Intelli-Site will receive the updated state of the point when it changes.

4.3.2.2 Value Type Screen Objects

When a tag node with a numeric type is dragged and dropped to the screen, a simple screen object is created that displays the current value of the object.



Figure 36 - Sample screen node created from a Point node of numeric type

The screen object is programmed to display the current value of the point.

Allen Bradley PLC Panel Guide

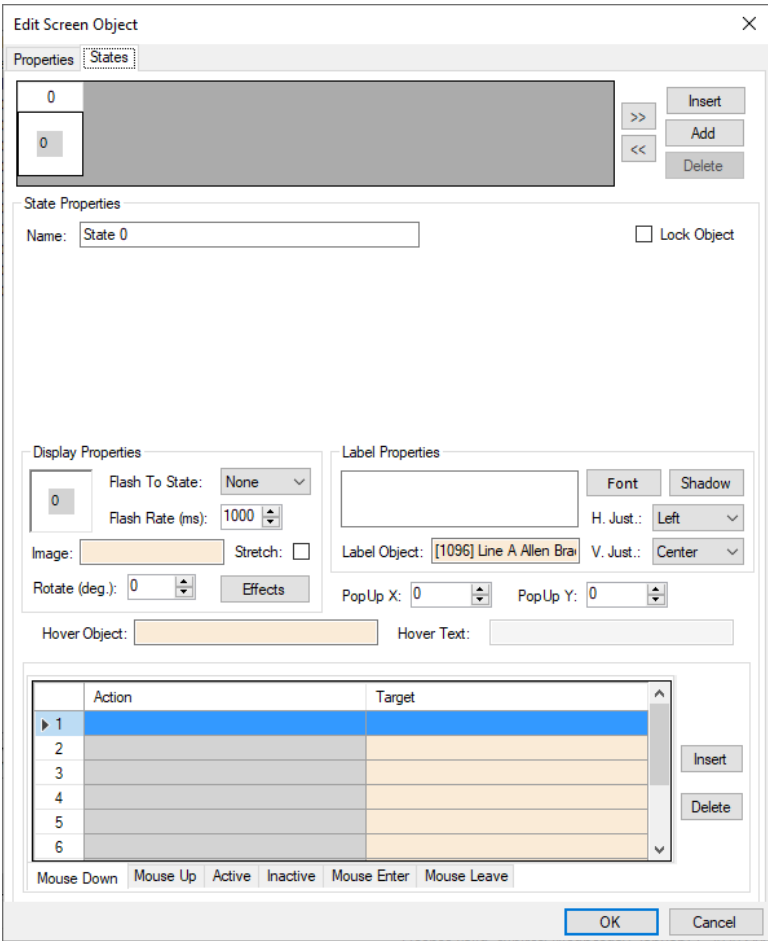


Figure 37 - Sample value screen object properties dialog: State 0

Values cannot be set on or off; they can only be displayed. Therefore, the **Action** grid has no programming. Sub-value nodes of the tag are used to modify the value of the tag from the software.

4.3.2.3 Sub-Value Node Screen Objects

When a sub-value node is dragged and dropped onto a screen, a button screen object is created. If the **Value** field of the node is unsigned, a two-state button is created. If the **Value** field is signed, a single state button is created.

Allen Bradley PLC Panel Guide

4.3.2.3.1 Signed Sub-Value Node Screen Object

When a sub-node of a Value node whose **Value** field is signed is dragged and dropped on the screen, a single state button screen object is created.

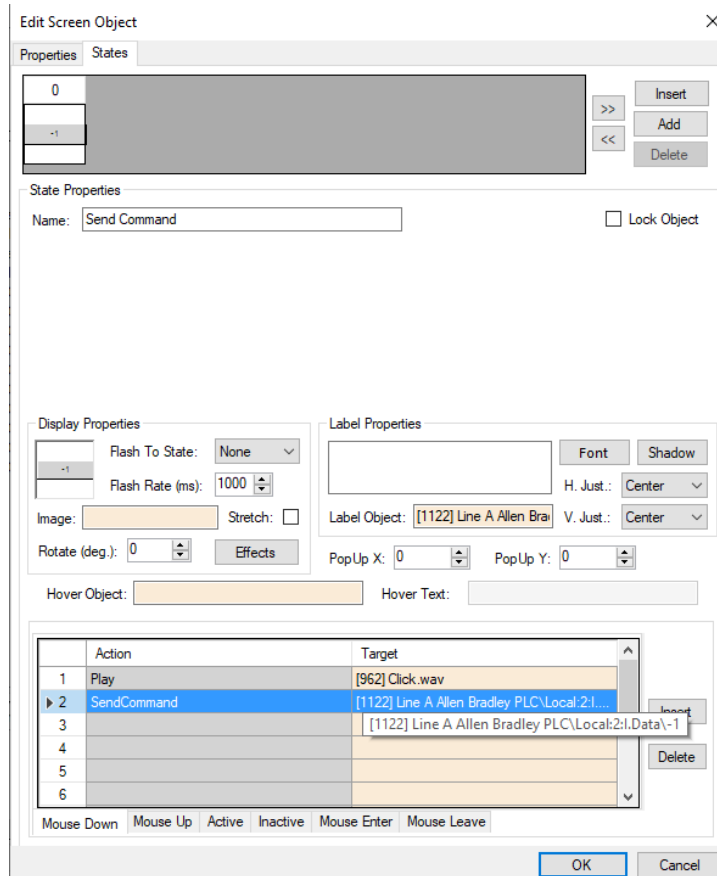


Figure 38 - Sample sub-value node screen object properties dialog

Notice the **Action** grid. When this button is clicked, a **SendCommand** action targeting this sub-value node is executed. If the tag is writeable, the value will be modified by the signed value in the sub-value node and sent to the panel. It will be incremented if the sign is positive and decremented if the sign is negative. Intelli-Site will receive the updated state of the tag from the PLC if it is successful.

4.3.2.3.2 Unsigned Sub-Value Node Screen Object

When a sub-node of a tag node whose **Value** field is unsigned is dragged and dropped on the screen, a two-state button screen object is created.

Allen Bradley PLC Panel Guide

4.3.2.3.2.1 State 0 – Off

State 0 is the base state. It displays when the evaluation grid on the other state does not evaluate to true. Stated more simply, when the point is off, this state displays.

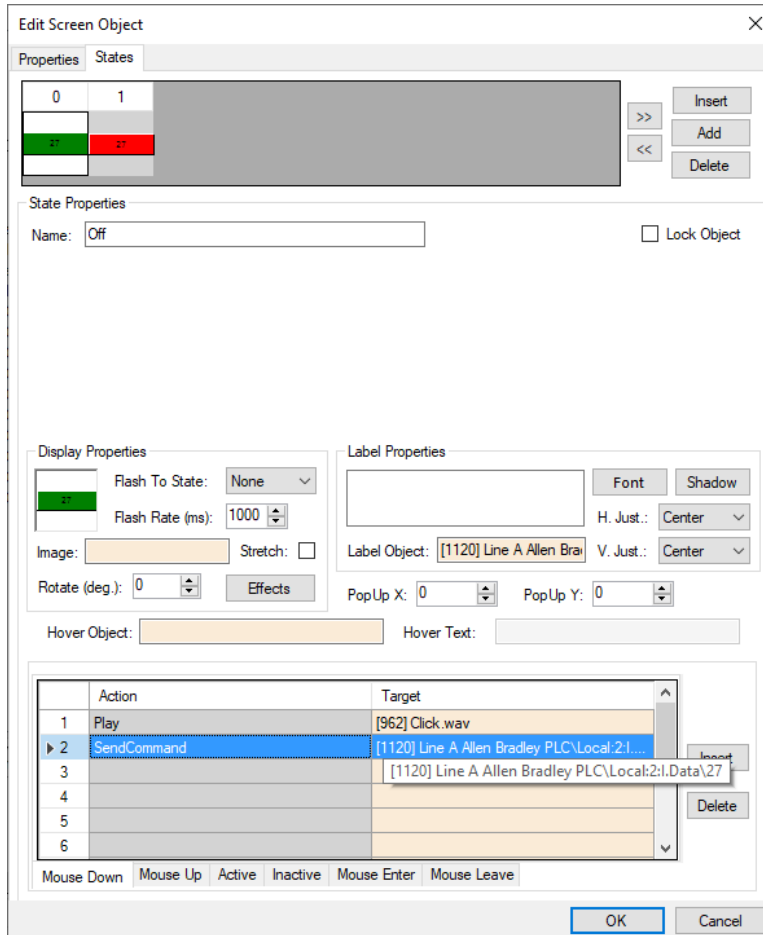


Figure 39 - Sample sub-value node screen object properties dialog: State 0

Notice the **Action** grid. When this button is clicked in this state, a **SendCommand** action targeting this sub-value node is executed. If the memory polling area for the parent Value point is writeable, the value of the parent Value node will be set to the value in the sub-value node. The new value for the parent Value node is sent to the panel. Intelli-Site will receive the updated state of the point in the next poll.

Allen Bradley PLC Panel Guide

4.3.2.3.2.2 State 1 - On

This state displays when the point is high. See the evaluation grid. The evaluation grid is programmed to return true when the point's state evaluates as high.

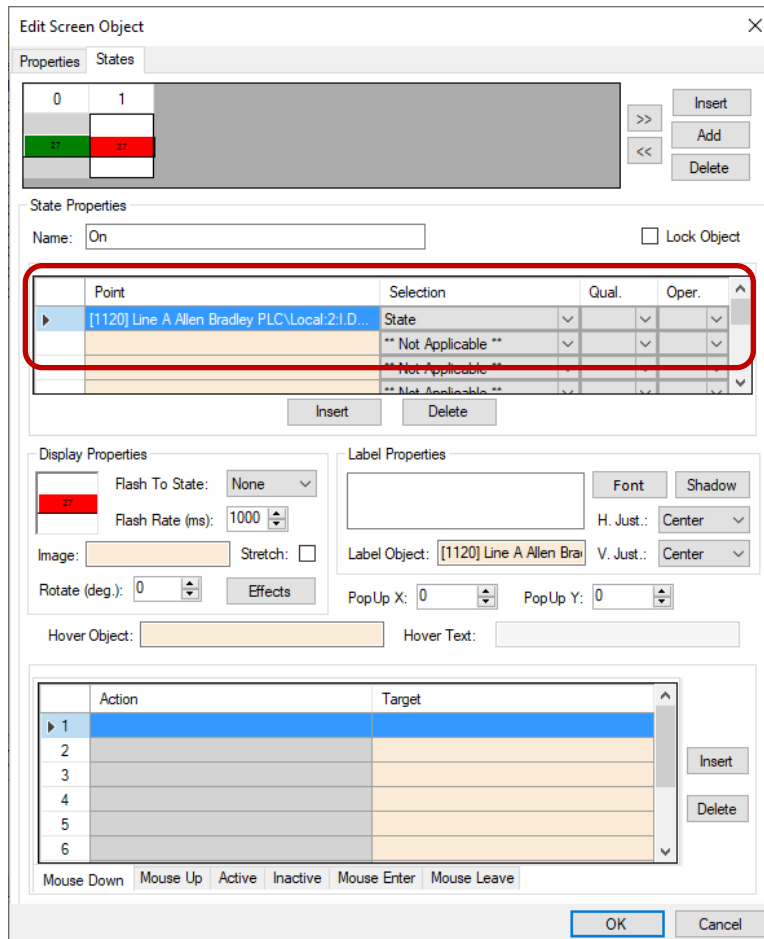



Figure 40 - Sample sub-value node screen object properties dialog: State 0

Notice the **Action** grid. There are no actions when the screen object is in this state. Clicking on this button when it is in this state does nothing. The tag is currently at this value. What good would be done if the tag was set to the same value? With great power comes great responsibility.

4.3.3 The Panel Control Screen

The Panel Control Screen is a popup screen that is added when the panel is added. It can be displayed in  **Hardware Management View** by clicking on the panel icon.

Allen Bradley PLC Panel Guide

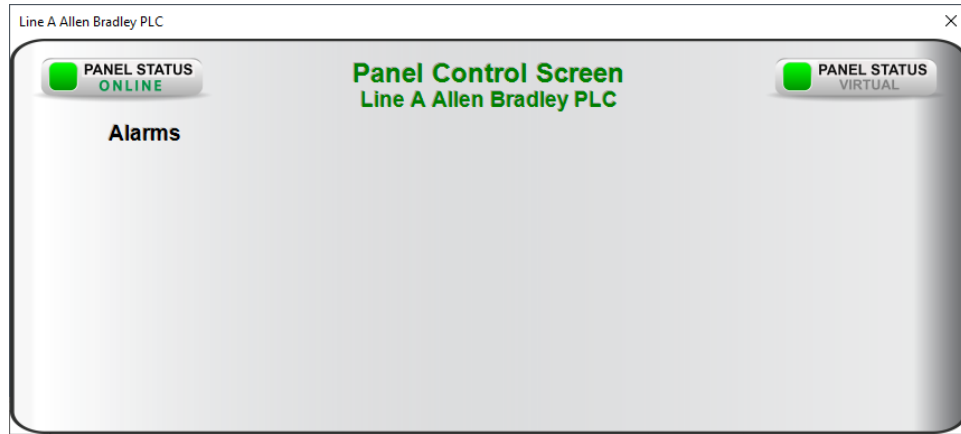



Figure 41 - Panel Control Screen

When an Allen Bradley PLC panel is added, there are no points. Therefore, the Panel Control Screen has no points. You must program the screen to display the points and values once the panel is programmed.

To find and modify the Panel Control Screen, you'll need to be in  **Design View**. The Panel Control Screens are found by expanding **Screen Control->Popup Screens->Area Popup Screens**.

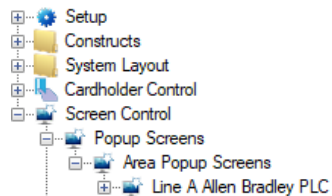


Figure 42 - Panel Control Screens in the Project Node Tree

If there is only one or two Allen Bradley PLC panels, finding the corresponding Panel Control Screen is relatively simple. Open the properties dialog of the Panel Control Screen and examine **Base Object** field.

Allen Bradley PLC Panel Guide

[1072] Area Popup Screens\Line A Allen Bradley PLC

Properties

Name: ID:

User Level:

Notes:

Height: X Position:

Width: Y Position:

Background:

Base Object:

Display/Dismiss Actions

Event:

	Action	Target
▶ 1		
2		
3		
4		
5		

Insert

Delete

OK Cancel

Figure 43 - Panel Control Screen properties dialog

Another way to locate the corresponding Panel Control Screen is to use *Find...->All objects referencing this node* on the panel node itself.

Allen Bradley PLC Panel Guide

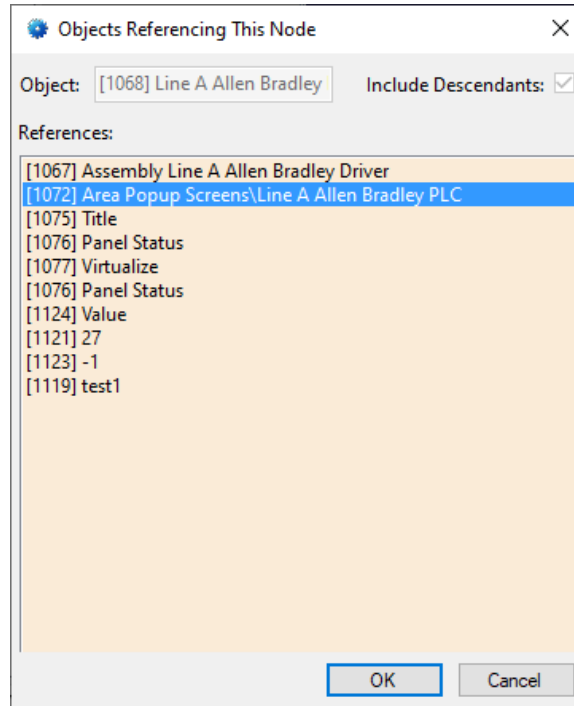
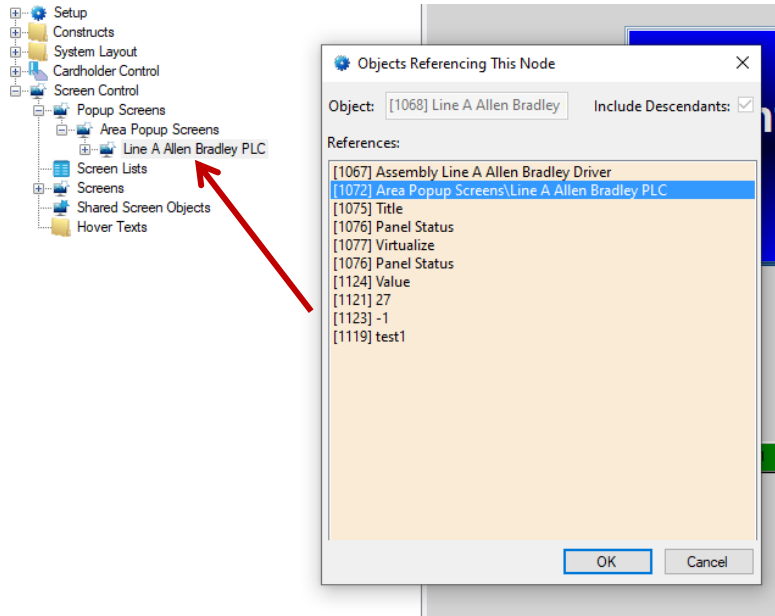


Figure 44 - Find...->All objects referencing this node dialog

Right-click on the Panel Control Screen in the **References** and select *Go To/Find In Tree*. The software will expand the Tree and select the Panel Control Screen node.

Allen Bradley PLC Panel Guide



The highlighting is grey because it does not have focus. Cancel out of the **Objects Referencing This Node** dialog and the highlighting will be blue. Double-click on the Panel Control Screen node to open the screen for programming.

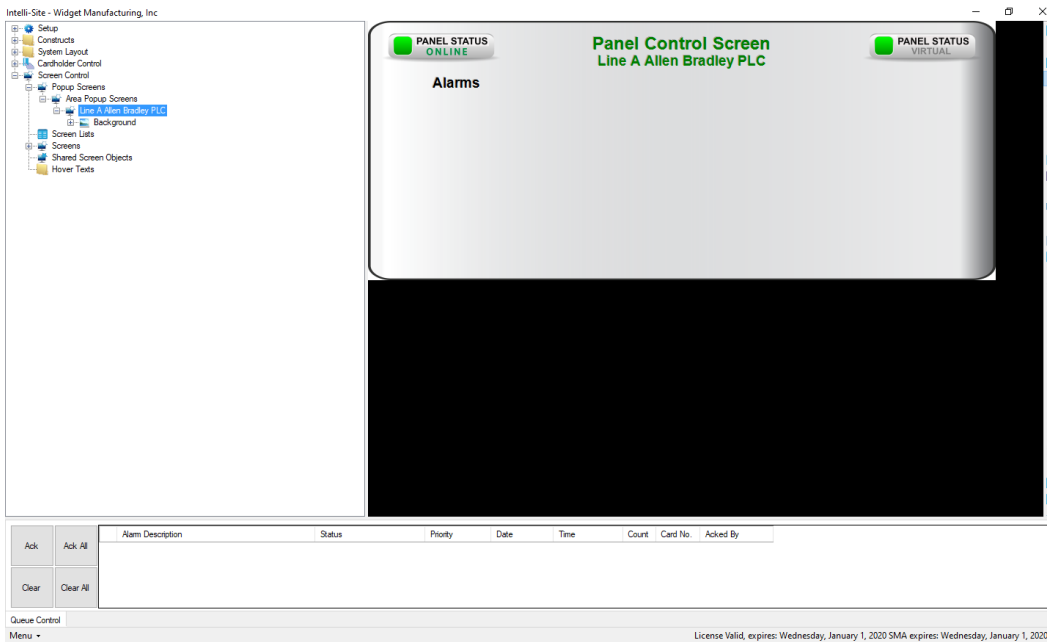


Figure 45 - Panel Control Screen in Design View

Add the points that are important to watch in **Hardware Management View**.

Revision History

2019-06-24 Initial Creation