Component Customizers

Using the Component Customizers

Ignition provides a number of **Customizers** to configure components in ways that are too complex or cumbersome for basic properties. In this page, the **Customizers > Custom Properties** and the **Customizers > Styles Customizer** are described. These two Customizers are used repeatedly for many different components. For special purpose components like the Easy Chart, Table, Tab Strip, and Multi-State Button, they have their own special customizers for you to create your own custom properties, such as the Easy Chart Customizer.

To use a customizer, right-click on the component and choose the **Customizer** menu, or use the Customizer split-button (

) icon in the Vision main toolbar.

Expert Tip
Often, a Customizer is really just a user-friendly user interface to one or more expert properties. For example, all the **Easy Chart** Customizer really does, is to modify the contents of the pens, tagPens, calcPens, axes, and subplots Dataset properties. Knowing this is very powerful, because this means you can also use Property Bindings and scripting to modify the values of these expert properties at runtime, giving you the ability to dynamically perform complex manipulations of components.

On this page

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Custom Properties

In addition to the component's basic property settings, you can also create your own custom properties to enhance and add functionality to a component. You can use the custom properties like any other properties - with data binding, scripting, styles, and so on. Custom properties are important for passing parameters from one window to another especially a popup window. Properties on the window's Root Container are special in that they double as a window's parameters. For example, when you click on a button to open a popup window, it will pass a certain set of values into the window, and then into the custom property (that you created on the Root Container) for use on that window. For more information, see Parameterized Popup Windows. You can see how custom properties can turn any "plain" component into one customized for your particular use.

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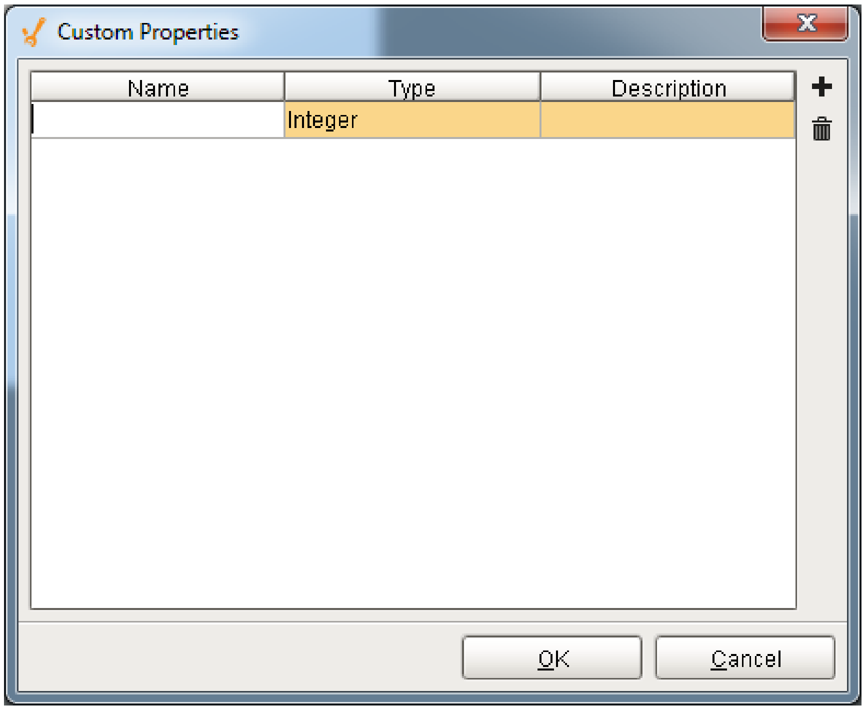
Custom Properties

Watch the Video

To configure the custom property

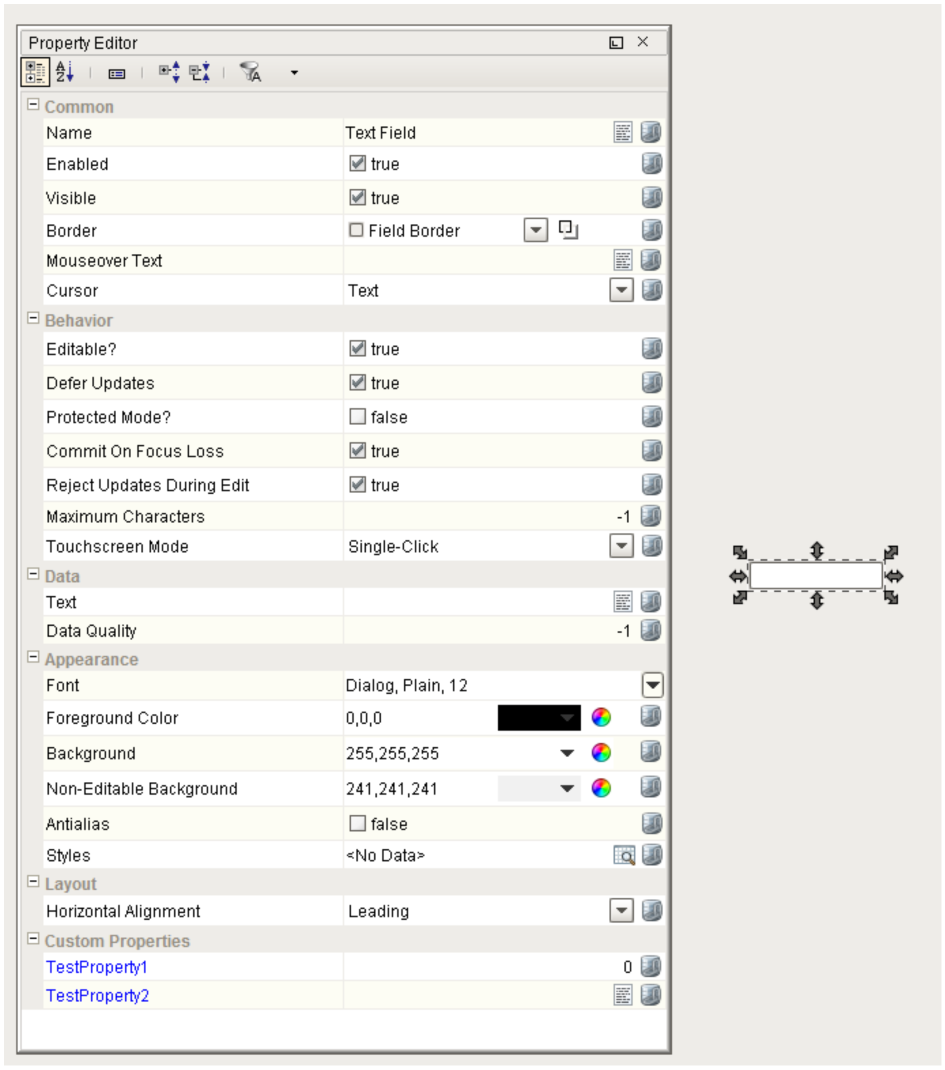
1. Right-click on a component and go to **Customizer > Custom Properties**.
   The Custom Properties window is displayed.

2. Click the **black +** icon in the upper right to add a row to the table.



Name	Type	Description
	Integer	

3. Add a **Name**, **Type**, and **Description** for each custom property you want to add.
4. Click **OK**.
   Notice the custom properties you added are displayed in the **Property Editor** in blue.



Property Editor

Common	
Name	Text Field
Enabled	☑ true
Visible	☑ true
Border	☐ Field Border
Mouseover Text	
Cursor	Text
Behavior	
Editable?	☑ true
Defer Updates	☑ true
Protected Mode?	☐ false
Commit On Focus Loss	☑ true
Reject Updates During Edit	☑ true
Maximum Characters	-1
Touchscreen Mode	Single-Click
Data	
Text	
Data Quality	-1
Appearance	
Font	Dialog, Plain, 12
Foreground Color	0,0,0
Background	255,255,255
Non-Editable Background	241,241,241
Antialias	☐ false
Styles	<No Data>
Layout	
Horizontal Alignment	Leading
Custom Properties	
TestProperty1	0
TestProperty2	

Style Customizer

Many components support the **Style Customizer** which lets you define a set of visual styles that change based on a single **Driving Property**. Typically, you'll have a property (often a custom property) on your component that you want to use as a driving property, usually a discrete state, and you have multiple visual properties, like the font, border, foreground color, visibility, and so on that you want to change based on that one driving property. Style Customizer lets you define these relationships all at once, and lets you preview them too! Without styles, you would have to go to every property and bind them all individually.

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Component Styles

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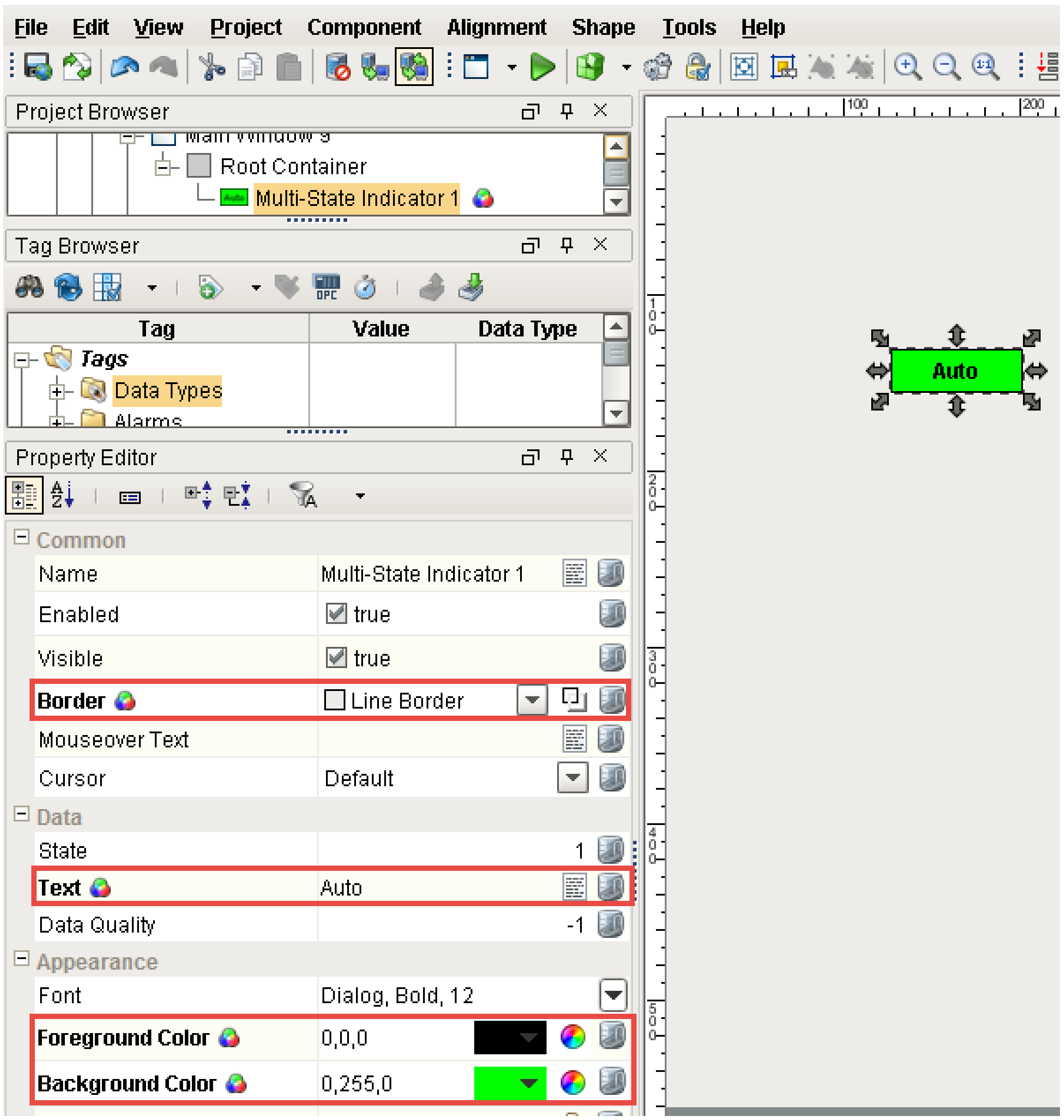
Configuring the Style Customizer

Some components have styles already setup and others do not. The following example involves a component that already has a styles defined.

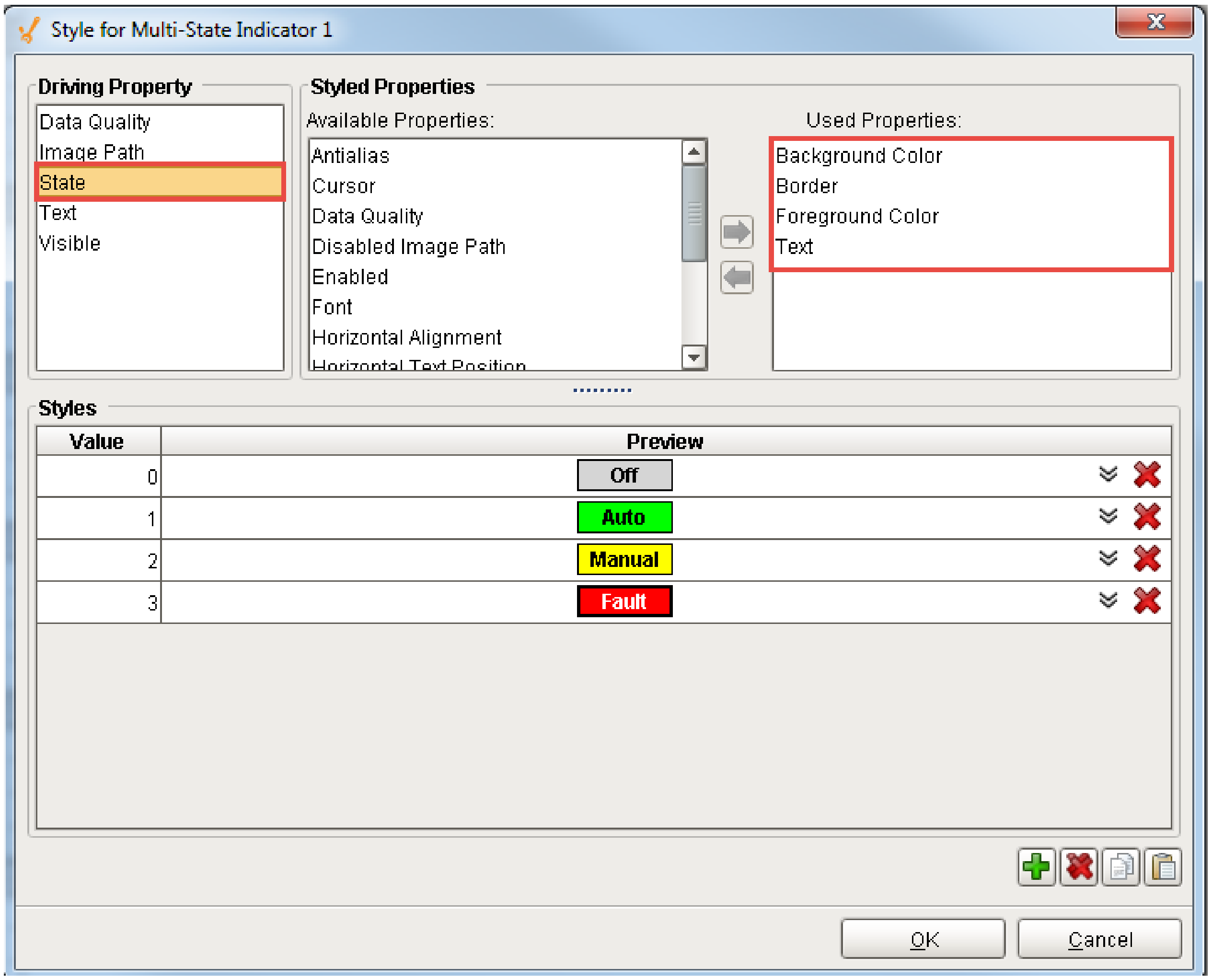
1. Drag in a **Multi-State Indicator** from your component palette on to your window. Right click on the component and notice in the Property Editor that several properties appear in bold with a paint canvas icon next to them letting you know that they are used in a style.



Common	
Name	Multi-State Indicator 1
Enabled	✓ true
Visible	✓ true
Border	Line Border
Mouseover Text	
Cursor	Default
Data	
State	1
Text	Auto
Data Quality	-1
Appearance	
Font	Dialog, Bold, 12
Foreground Color	0,0,0 ■
Background Color	0,255,0 🟩

2. Right click on the **Multi-State Indicator component** and scroll down to **Customizers > Style Customizer**.

   Since styles are already setup on this component, you'll notice that it already has a driving property selected. The driving property is **State** and it uses multiple visual properties like **Background Color**, **Border**, **Foreground Color** and **Text** which are already configured.


Style for Multi-State Indicator 1

Driving Property

- Data Quality
- Image Path
- State
- Text
- Visible

Styled Properties

Available Properties:

- Antialias
- Cursor
- Data Quality
- Disabled Image Path
- Enabled
- Font
- Horizontal Alignment
- Horizontal Text Position

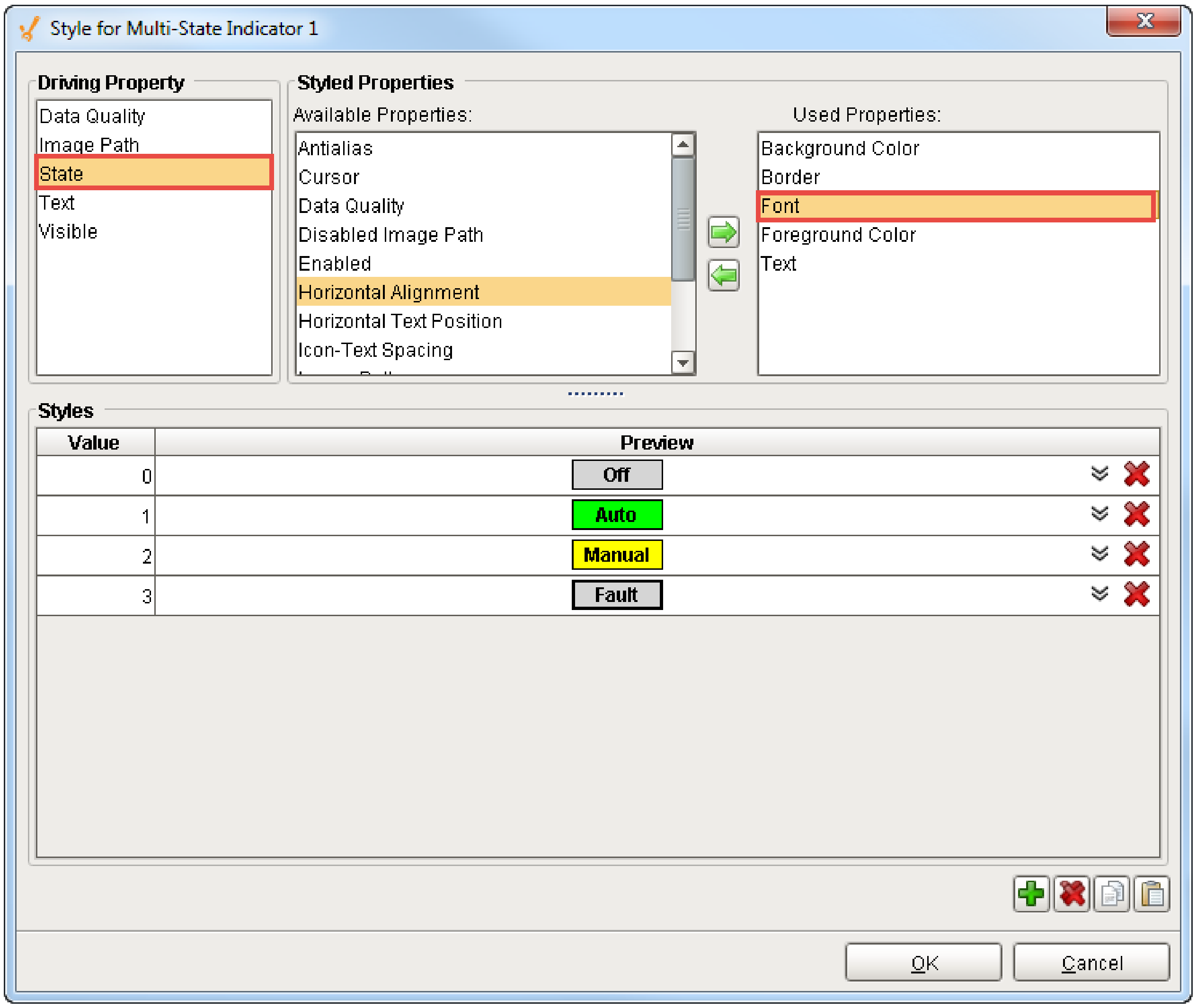
Used Properties:

- Background Color
- Border
- Foreground Color
- Text

Styles

Value	Preview
0	Off
1	Auto
2	Manual
3	Fault

3. Styles are totally customizable. If you don't like the pre-defined style for the preset values for the Multi-State Indicator, you can change it. You can add or remove styled properties. Adding and removing a styled property affects all the **Values** under the component. In this example, the **Font** property was added.


Style for Multi-State Indicator 1

Driving Property

- Data Quality
- Image Path
- State
- Text
- Visible

Styled Properties

Available Properties:

- Antialias
- Cursor
- Data Quality
- Disabled Image Path
- Enabled
- Horizontal Alignment
- Horizontal Text Position
- Icon-Text Spacing

Used Properties:

- Background Color
- Border
- Font
- Foreground Color
- Text

Styles

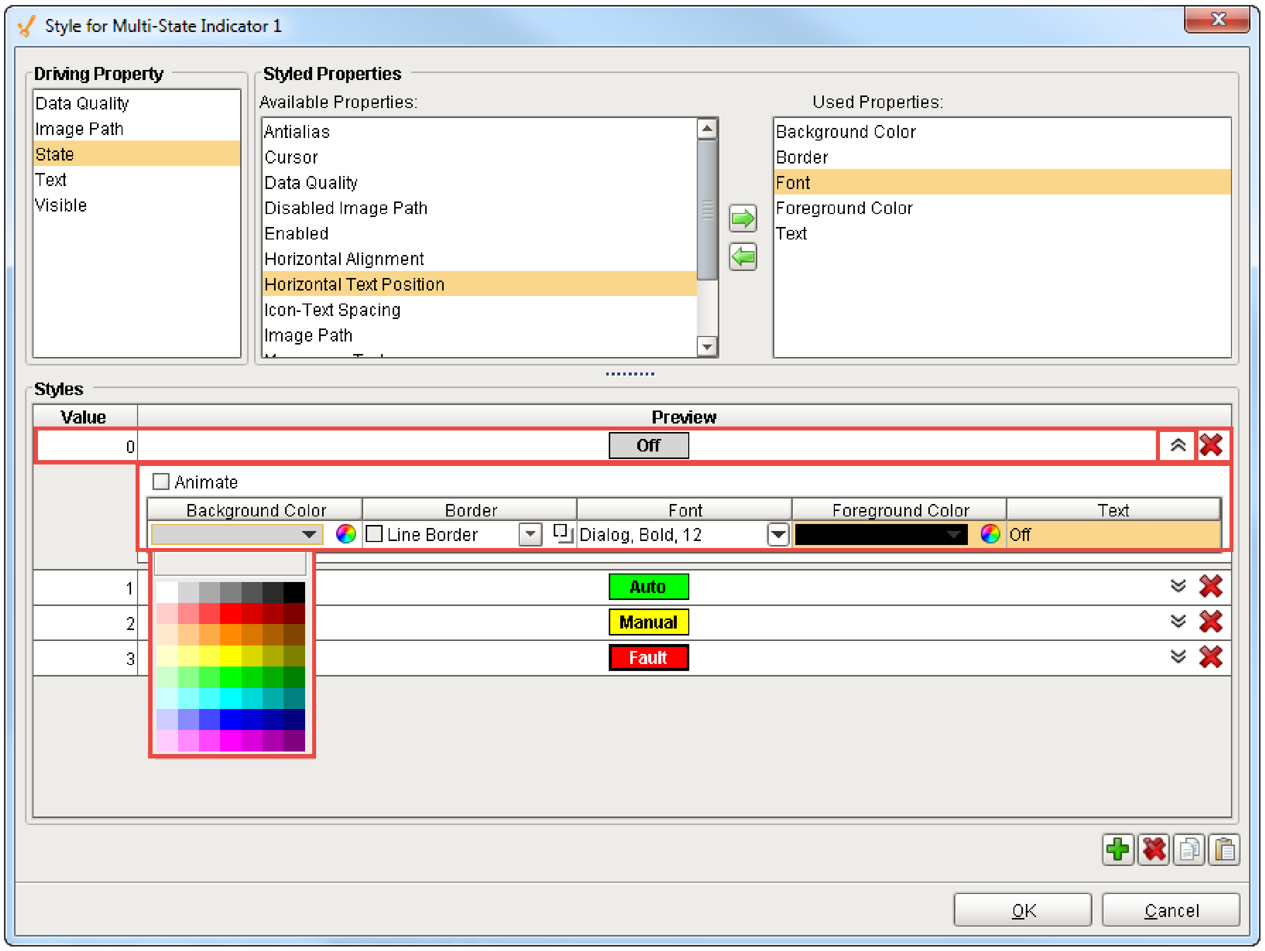
Value	Preview
0	Off
1	Auto
2	Manual
3	Fault

4. For each **Value** property, you can change its styled property to fit your requirements. Click the **Expand icon**

   ︾

   and see all the styles for the **Value '0'**. Starting with Background Color, click on the **dropdown list** to change the color. You can configure all the styles you want to change: Border, Font, Foreground Color and Text.

   You can change the styles for any Value in this Multi-State Indicator component. You can **Preview** each change after you make it.


Style for Multi-State Indicator 1

Driving Property

- Data Quality
- Image Path
- State
- Text
- Visible

Styled Properties

Available Properties:

- Antialias
- Cursor
- Data Quality
- Disabled Image Path
- Enabled
- Horizontal Alignment
- Horizontal Text Position
- Icon-Text Spacing
- Image Path

Used Properties:

- Background Color
- Border
- Font
- Foreground Color
- Text

Styles

Value	Preview
0	Off
1	Auto
2	Manual
3	Fault

☐ Animate

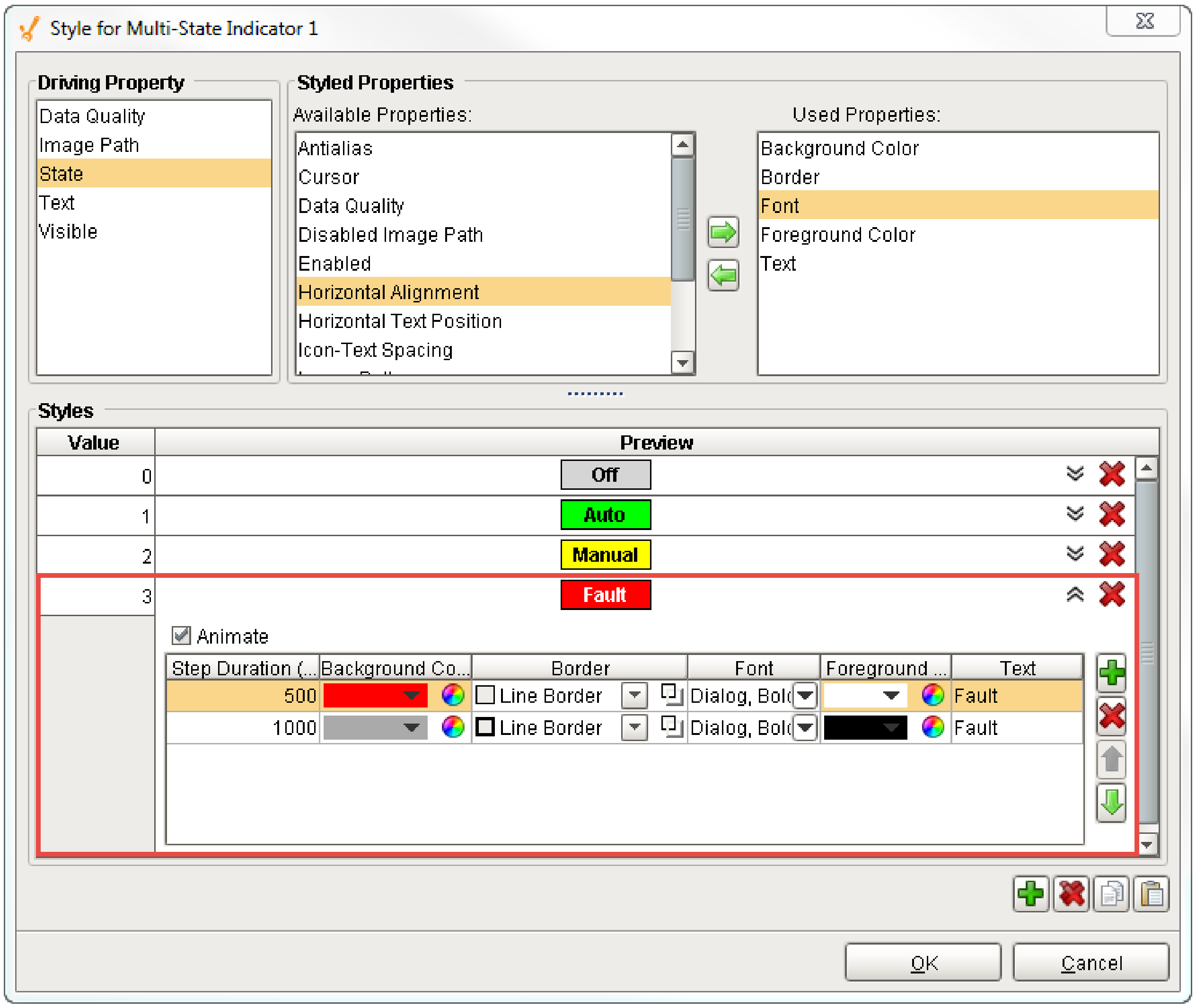
Background Color	Border	Font	Foreground Color	Text
	☐ Line Border	Dialog, Bold, 12		Off

OK Cancel

5. With the styles feature you can **'Animate'** between different styles on the same **State**. To **Animate**, you can add one or more rows and set the style for what you want those new rows to look like.

   In this example, expand **Value '3'** and you will see that the **Animate** box is checked. Two rows were added and each animation step has a different background and foreground color set along with a **Step Duration** set in milliseconds to control the blinking between the 2 steps. You can add many steps and each step can have a different duration. See how it works in **Preview**.

   Press **OK**.



Style for Multi-State Indicator 1

Driving Property

- Data Quality
- Image Path
- State
- Text
- Visible

Styled Properties

Available Properties:

- Antialias
- Cursor
- Data Quality
- Disabled Image Path
- Enabled
- Horizontal Alignment
- Horizontal Text Position
- Icon-Text Spacing

Used Properties:

- Background Color
- Border
- Font
- Foreground Color
- Text

Styles

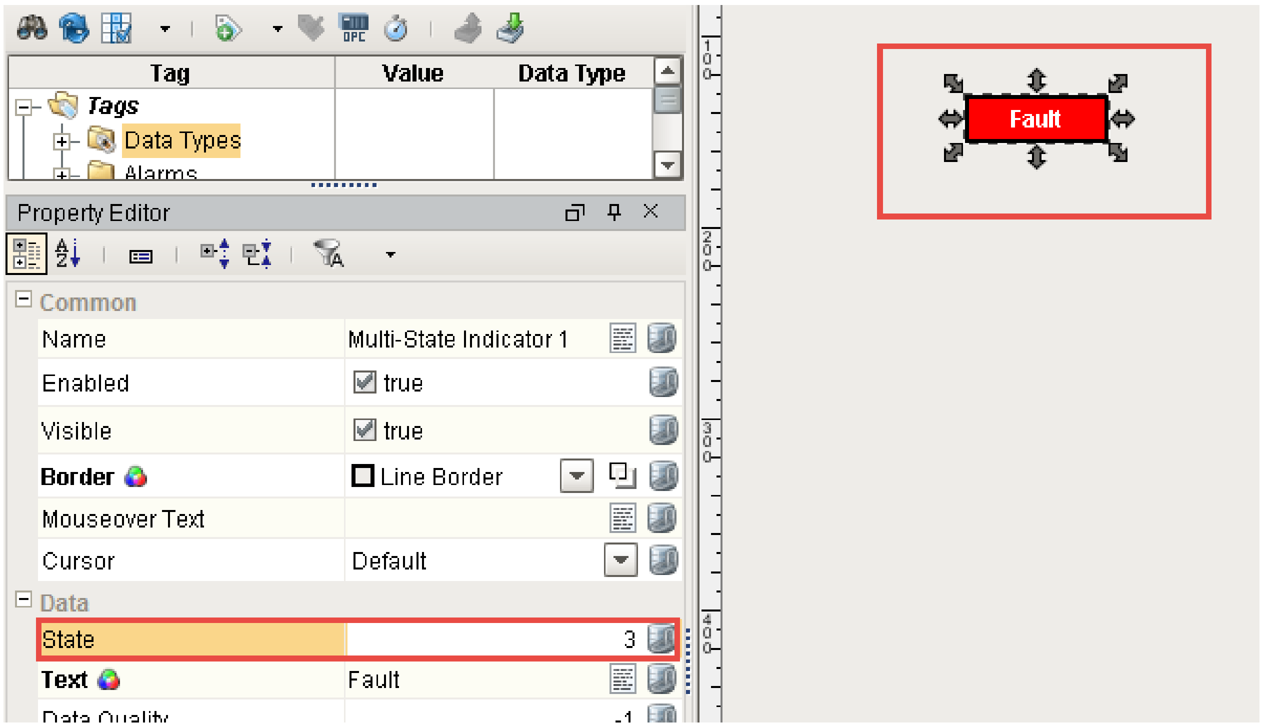
Value	Preview
0	Off
1	Auto
2	Manual
3	Fault

☑ Animate

Step Duration (...	Background Co...	Border	Font	Foreground ...	Text
500	🟥	Line Border	Dialog, Bol(	⬜	Fault
1000	▨	Line Border	Dialog, Bol(	⬛	Fault

OK Cancel

6. Change the **State** to **'3'** to see the component blink **'Faulted'** and switch between the background and foreground colors you setup.



Property Editor

Common

Name	Multi-State Indicator 1
Enabled	✓ true
Visible	✓ true
Border	Line Border
Mouseover Text	
Cursor	Default

Data

State	3
Text	Fault
Data Quality	-1

Once your styles are setup, you can see styles coming through on the Multi-State Indicator component as it moves through the different States. In the Property Editor, you will notice that the Border, Foreground Color and Background Color properties are bold letting you know that they are used in styles.

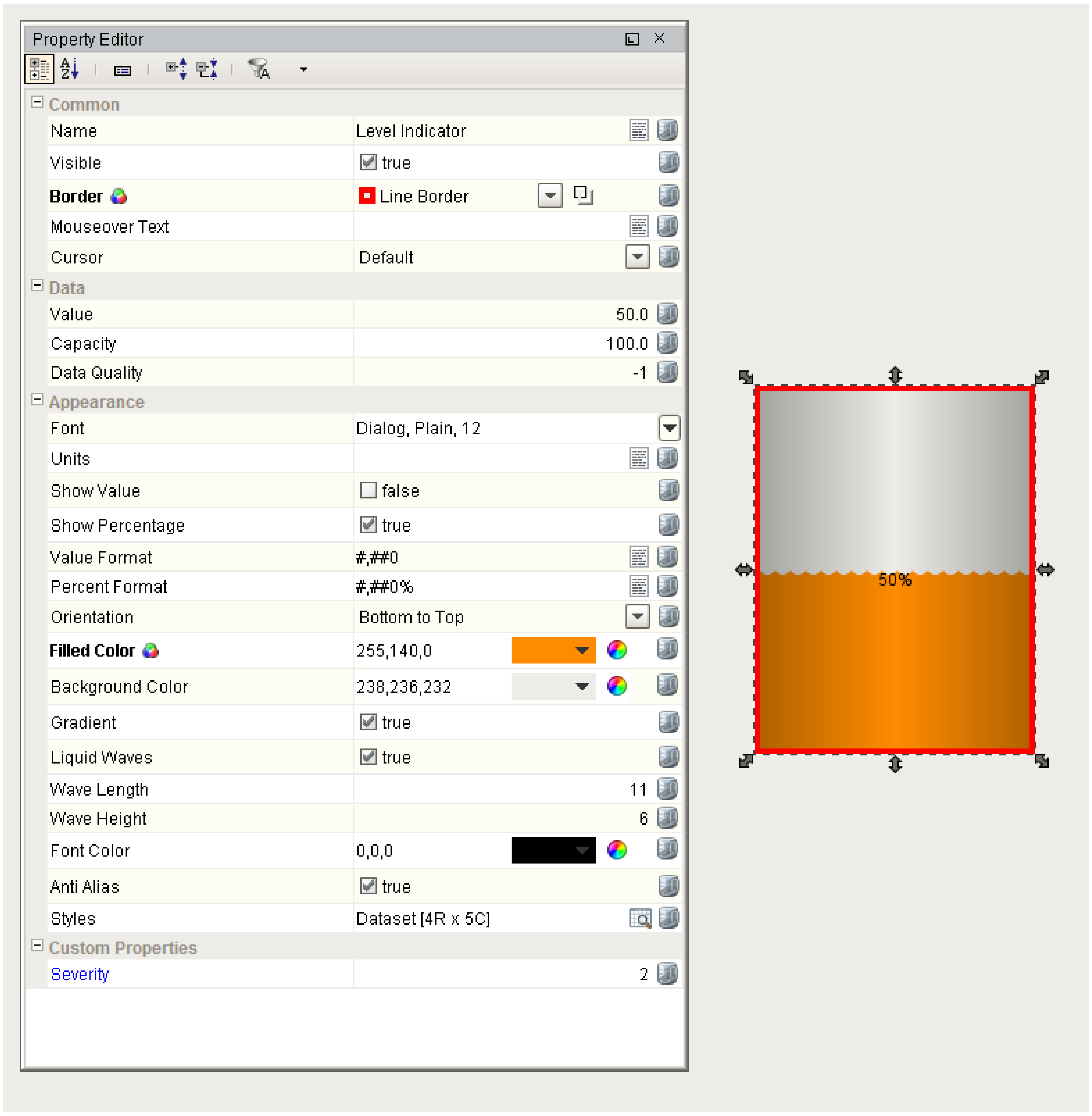
So as you can see, it's easy to change all the properties from one location using the Styles Customizer.

Example 1

Lets say that you have a Level Indicator component that is displaying the level in a tank. Lets say that you want to have its appearance change based on the alarm state of the tank's temperature. You can add an integer custom property, call it **Severity**, to the level indicator that you'll bind to the tank temperature tag's **AlertCurrentSeverity** property.

Now go to the **Style customizer**. Choose your **Severity** property as the driving property, and the **Border** and **Filled Color** properties as the styled properties. Add states for -1 (not in alarm), 2 (Medium alarm) and 4 (High alarm). Leave the -1 state alone. Use a red border for state 2 and an orange fill color. For state 4, you can animate it to get a flashing effect. Add two animation frames and set their delay to 500ms each. Configure the frames differently from each other so that you can get a flashing effect. Click **OK** and notice that the styled properties you chose are now bold and have the styles indicator (

) next to them. This is to help remind you that those properties are being driven, so if you change their values directly, your changes will be overwritten.

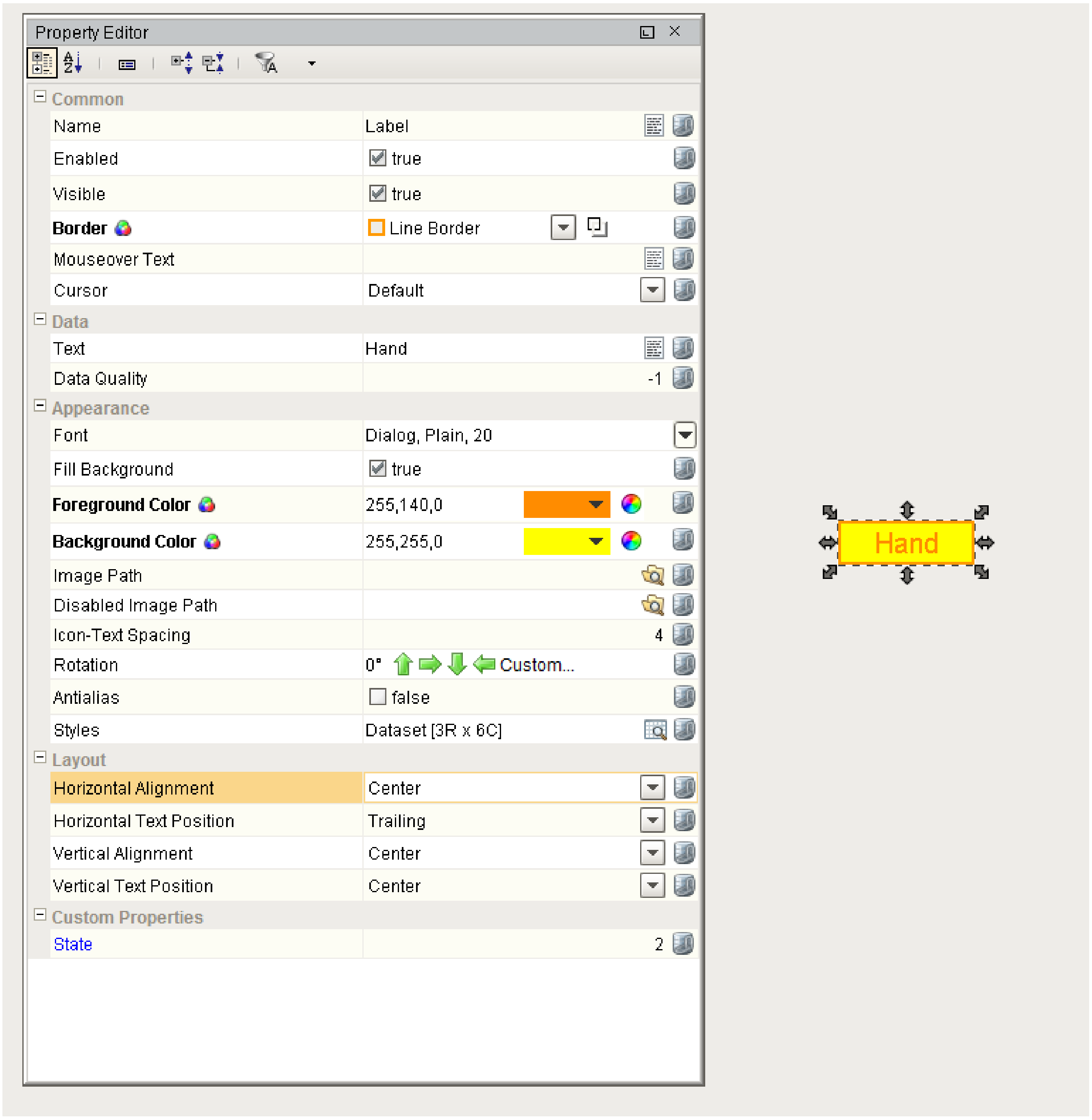


Property Editor

Common	
Name	Level Indicator
Visible	✓ true
Border	🟥 Line Border
Mouseover Text	
Cursor	Default
Data	
Value	50.0
Capacity	100.0
Data Quality	-1
Appearance	
Font	Dialog, Plain, 12
Units	
Show Value	☐ false
Show Percentage	✓ true
Value Format	#,##0
Percent Format	#,##0%
Orientation	Bottom to Top
Filled Color	255,140,0 🟧
Background Color	238,236,232
Gradient	✓ true
Liquid Waves	✓ true
Wave Length	11
Wave Height	6
Font Color	0,0,0 ⬛
Anti Alias	✓ true
Styles	Dataset [4R x 5C]
Custom Properties	
Severity	2

Example 2

Let's look at another example that uses the Custom Properties and the Styles feature together. Take the Label component. It seems pretty plain at first - it just displays a String. Of course, you can use its foreground color, background color, and border to make it look interesting. Add an integer custom property on it and name it **state**, and bind that property to a discrete state tag coming out of a PLC. Now use the **State** property to drive its Styles configuration to make the component look different and display different things based on the state being 0, 1, or 2 (maybe for a Hand/Off/Auto indicator).


Property Editor

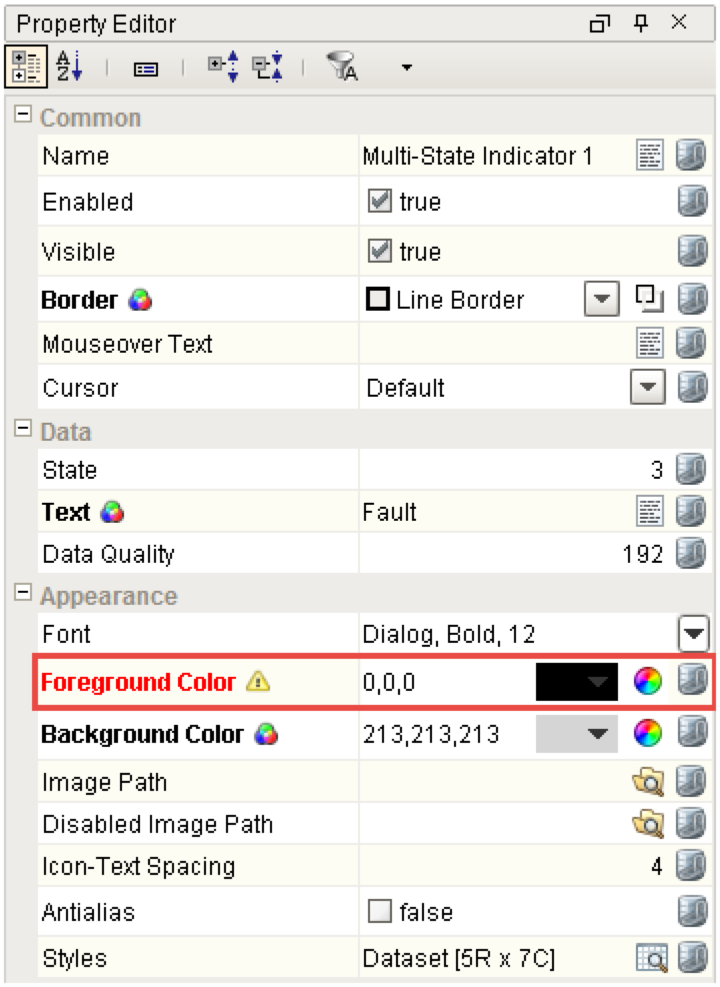
Common	
Name	Label
Enabled	☑ true
Visible	☑ true
Border	Line Border
Mouseover Text	
Cursor	Default
Data	
Text	Hand
Data Quality	-1
Appearance	
Font	Dialog, Plain, 20
Fill Background	☑ true
Foreground Color	255,140,0
Background Color	255,255,0
Image Path	
Disabled Image Path	
Icon-Text Spacing	4
Rotation	0° Custom...
Antialias	☐ false
Styles	Dataset [3R x 6C]
Layout	
Horizontal Alignment	Center
Horizontal Text Position	Trailing
Vertical Alignment	Center
Vertical Text Position	Center
Custom Properties	
State	2

We could have used the Multi-State Indicator component from the very beginning, but understanding this example will let you create your own types of components by combining the existing components in creative ways.

Some components like the Easy Chart, Tables, Tab Strip, and Multi-State Button/Indicator already have default styles already setup, but you can modify them however you like. If you don't like the default styles, change them! They are there to simply help you get started.

Value Conflict

You can bind a property that is already being used by a style, but a warning icon will appear on the property, and the property name turns red in the In the Property Editor. This means there is a conflict between the binding on the property, and the style on the component. As a general practice, only the style or binding should write to the property, not both.



Property Editor

Common

Name	Multi-State Indicator 1
Enabled	✓ true
Visible	✓ true
Border	Line Border
Mouseover Text	
Cursor	Default

Data

State	3
Text	Fault
Data Quality	192

Appearance

Font	Dialog, Bold, 12
Foreground Color ⚠	0,0,0
Background Color	213,213,213
Image Path	
Disabled Image Path	
Icon-Text Spacing	4
Antialias	false
Styles	Dataset [5R x 7C]

Related Topics ...

- Adding Icons to Labels and Buttons