ComponentOne

Gauges for Windows Phone

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ComponentOne Gauges for Windows Phone Overview

ComponentOne Gauges™ for Windows Phone includes seven controls to enhance your data visualizations and business dashboards. Provide an interactive and attractive way to display information graphically. The **C1.Windows Phone.Gauge** assembly includes three main controls:

- C1RadialGauge
  Uses a rotating pointer to show a value along a curved scale. This is similar to a typical speedometer.
- C1LinearGauge
  Uses a linear pointer to show a value along a linear scale. This is similar to a typical thermometer.
-

Both the C1RadialGauge and C1LinearGauge derive from a common abstract class C1Gauge that provides the base functionality common to all gauges.

Getting Started

Get started with the following topics:

- Key Features (page 3)

- Quick Start (page 3)

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Getting Started

For information on installing **ComponentOne Studio for Windows Phone**, licensing, technical support, namespaces and creating a project with the control, please visit Getting Started with Studio for Windows Phone.

What's New

For a list of the latest features added to **ComponentOne Studio for Windows Phone**, visit What's New in Studio for Windows Phone.

Key Features

ComponentOne Gauges for Windows Phone allows you to create customized, rich applications. Make the most of **Gauges for Windows Phone** by taking advantage of the following key features:

- **Five Gauge Controls**

  Gauges for Windows Phone includes 5 controls with different shapes so you can select the most appropriate gauge for your data. The 5 controls include C1RadialGauge, C1LinearGauge, C1RulerGauge, C1SpeedometerGauge and C1VolumeGauge.

- **Tick Marks and Labels**

  Define marks and labels in XAML or code. Use simple properties to customize their interval, location and appearance. Apply formatting to the gauge labels; for example, format labels in currency or percentage format using standard .NET format strings.

- **Ranges**

  Add colored ranges to the gauge to draw attention to a certain range of values. Use simple properties to customize their start and end point, as well as location, size and appearance. Create non-linear ranges by specifying a start and end width to show growth and add visual appeal to any gauge.

- **Pointer Customization**

  Use simple properties to customize the appearance and location of the pointer and pointer cap.

- **Scale Customization**

  Use simple properties to set the start and sweep angle of the gauge scale. Gauges for Windows Phone also supports logarithmic scales.

- **Off Mode Support**

  If there is no value, you can set the off position outside the range.

- **Default Metro Style**

  Each gauge supports a default look and feel which stands out on the phone's smaller screen.

- **Easily Change Colors with ClearStyle**

  Gauges for Windows Phone supports ComponentOne ClearStyle™ technology that allows you to easily change control colors without having to change control templates. By just setting a few color properties in Visual Studio you can easily change the look of any gauge.

Gauges for Windows Phone Quick Start

The following quick start guide is intended to get you up and running with **Gauges for Windows Phone**. In this quick start you'll start in Visual Studio and create a new project, add **Gauges for WPF** controls to your application, and customize the appearance and behavior of the controls. At run time when a user changes the value of the knob, the value of the gauges will also change.

Step 1 of 4: Setting up the Application

In this step you'll begin in Visual Studio to create a Windows Phone application using **Gauges for Silverlight** and add **StackPanel** panels to customize the layout of the controls you'll be adding to the application.

To set up your project, complete the following steps:

1. In Visual Studio, select **File | New | Project** to open the **New Project** dialog box.
2. In the **New Project** dialog box, select a language in the left pane, and in the templates list select **Windows Phone Application**. Enter a **Name** for your project and click **OK**. The **New Windows Phone Application** dialog box will appear.
3. Click **OK** to close the **New Windows Phone Application** dialog box and create your project.
4. Right-click the project in the Solution Explorer and select **Add Reference**.
5. In the **Add Reference** dialog box, locate and choose the **C1.Phone.dll** and **C1.Phone.Gauge.dll** assemblies and click **OK** to add references to those assemblies to your application.
6. Add the XAML namespace to the `<phone:PhoneApplicationPage>` tag by adding `xmlns:c1gauge="clr-namespace:C1.Phone.Gauge;assembly=C1.Phone.Gauge"` so it appears similar to the following:

```
<phone:PhoneApplicationPage x:Class="C1WP7.MainPage"
xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml" xmlns:phone="clr-
namespace:Microsoft.Phone.Controls;assembly=Microsoft.Phone"
xmlns:shell="clr-namespace:Microsoft.Phone.Shell;assembly=Microsoft.Phone"
xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
xmlns:c1gauge="clr-namespace:C1.Phone.Gauge;assembly=C1.Phone.Gauge"
mc:Ignorable="d" d:DesignWidth="480" d:DesignHeight="768"
FontFamily="{StaticResource PhoneFontFamilyNormal}"
FontSize="{StaticResource PhoneFontSizeNormal}"
Foreground="{StaticResource PhoneForegroundBrush}"
SupportedOrientations="Portrait" Orientation="Portrait"
shell:SystemTray.IsVisible="True">
```

7. Edit the **TitlePanel** content to change the text in the **TextBlock** controls. It will appear similar to the following:

```
<!--TitlePanel contains the name of the application and page title-->
<StackPanel x:Name="TitlePanel" Grid.Row="0" Margin="12,17,0,28">
    <TextBlock x:Name="ApplicationTitle" Text="ComponentOne Studio for
Windows Phone" Style="{StaticResource PhoneTextNormalStyle}"/>
    <TextBlock x:Name="PageTitle" Text="Gauges" Margin="9,-7,0,0"
Style="{StaticResource PhoneTextTitle1Style}"/>
</StackPanel>
```

8. In the XAML window of the project, place the cursor between the `<Grid x:Name="ContentPanel"></Grid>` tags and click once.
9. Navigate to the Toolbox and double-click the **StackPanel** icon to add the panel to the **Grid**.
10. Add `x:Name="sp" Width="Auto" Height="Auto" Orientation="Vertical" HorizontalAlignment="Center" VerticalAlignment="Center"` to the `<StackPanel>` tag so that it appears similar to the following:

```
<StackPanel x:Name="sp" Width="Auto" Height="Auto"
Orientation="Vertical" HorizontalAlignment="Center"
VerticalAlignment="Center"></StackPanel>
```

    Elements in the panel will now appear centered and horizontally positioned.

You've successfully created a new Windows Phone project and set up your application. In the next step you'll added **ComponentOne Gauges for Windows Phone** controls to the application and customize those controls.

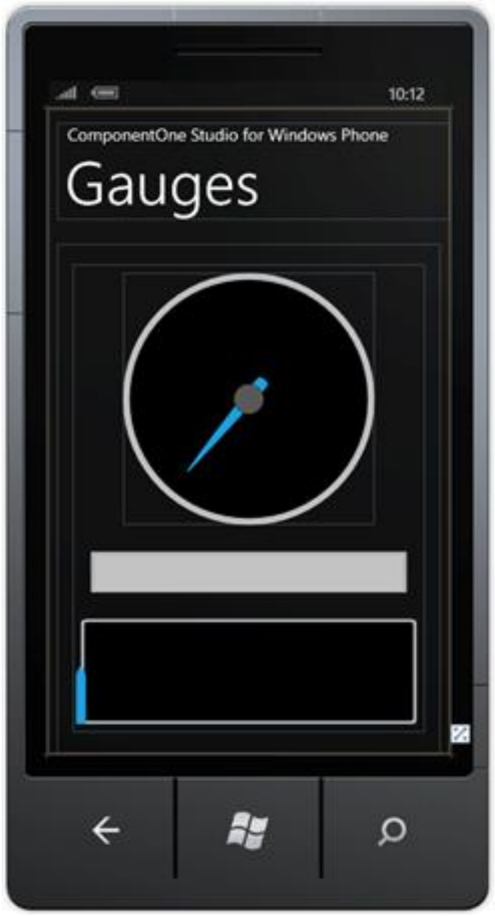
Step 2 of 4: Adding Controls

In this step you'll set up the application by adding C1RadialGauge and C1LinearGauge controls to the project as well as a standard **TextBox** control which will display the current value of the gauge controls.

To set add the gauge controls to your application, complete the following steps:

1. In the XAML window of the project, place the cursor between the `<StackPanel x:Name="sp">` and `</StackPanel>` tags.
2. Navigate to the Toolbox and double-click the **C1RadialGauge** icon to add the control to the **StackPanel**. The XAML markup will now look similar to the following:
   ```
   <!--ContentPanel - place additional content here-->
   <Grid x:Name="ContentPanel" Grid.Row="1" Margin="12,0,12,0">
       <StackPanel x:Name="sp" Width="Auto" Height="Auto"
   Orientation="Vertical" HorizontalAlignment="Center"
   VerticalAlignment="Center">
           <c1gauge:C1RadialGauge Name="c1RadialGauge1" />
   </StackPanel>
   </Grid>
   ```
3. Give your control a name by changing the default name to `x:Name="c1rg1"` in the `<c1gauge:C1RadialGauge>` tag so that it appears similar to the following:
   ```
   <c1gauge:C1RadialGauge x:Name="c1rg1"/>
   ```
   By giving it a unique identifier, you'll be able to access the control in code.
4. Resize your control a margin by adding `Width="300"` to the `<c1gauge:C1RadialGauge>` tag so that it appears similar to the following:
   ```
   <c1gauge:C1RadialGauge x:Name="c1rg1" Width="300"/>
   ```
   The control will appear smaller when the application is run.
5. Give your control a margin by adding `Margin="10"` to the `<c1gauge:C1RadialGauge>` tag so that it appears similar to the following:
   ```
   <c1gauge:C1RadialGauge x:Name="c1rg1" Width="300" Margin="10"/>
   ```
   This will add spacing between the **C1RadialGauge** and other controls you will add to the page.
6. In the XAML window of the project, place the cursor between the `</c1gauge:C1RadialGauge>` and `</StackPanel>` tags.
7. Navigate to the Toolbox and double-click the **TextBox** icon to add the standard control to the **StackPanel**.
8. Customize the control by adding `x:Name="tb1" Width="400" Margin="10" TextChanged="tb1_TextChanged"` to the `<TextBox>` tag so that it appears similar to the following:
   ```
   <TextBox x:Name="tb1" Width="400" Margin="10"
   TextChanged="tb1_TextChanged"></TextBox>
   ```
   This will give the **TextBox** a name, resize the control, and add spacing between this and other controls. You will add code for the event handler in a later step.
9. In the XAML window of the project, place the cursor between the `</TextBox>` and `</StackPanel>` tags.
10. Navigate to the Toolbox and double-click the **C1LinearGauge** icon to add the control to the **StackPanel**.
11. Customize the control by adding `x:Name="c1lg1" Width="400" Height="125" Margin="10"` to the `<c1gauge:C1LinearGauge>` tag so that it appears similar to the following:
    ```
    <c1gauge:C1LinearGauge x:Name="c1lg1" Width="400" Height="125"
    Margin="10"></c1:C1LinearGauge>
    ```

This will give the **C1LinearGauge** control a name, resize the control, and add spacing between this and other controls. The application will look similar to the following when previewed in Visual Studio:



You've successfully set up your application's user interface – you've added **ComponentOne Gauges for Windows Phone** controls to the application and customized those controls. In the next step you'll add code to your application.

Step 3 of 4: Adding Code to the Application

In the previous step you created a new Silverlight project and added **Gauges for Windows Phone** controls to the application. In this step you'll add code to your application to customize it.

Complete the following steps:

1. Select **View | Code** to switch to Code view.
2. Add the following imports statements to the top of the page:
   - Visual Basic
     ```
     Imports C1.Phone
     Imports C1.Phone.Gauge
     ```
   - C#
     ```
     using C1.Phone;
     using C1.Phone.Gauge;
     ```

3. Add code for the **TextBox_TextChanged** event handler so that it appears like the following:

   - Visual Basic

   ```
   Private Sub tb1_TextChanged(ByVal sender As System.Object, ByVal e As
   System.Windows.Controls.TextChangedEventArgs) Handles tb1.TextChanged
       Me.c1lg1.Value = Me.tb1.Text
       Me.c1rg1.Value = Me.tb1.Text
   End Sub
   ```

   - C#

   ```
   private void tb1_TextChanged(object sender, TextChangedEventArgs e)
   {
       this.c1lg1.Value = Convert.ToDouble(this.tb1.Text);
       this.c1rg1.Value = Convert.ToDouble(this.tb1.Text);
   }
   ```

   When a number is entered in the text box at run time, the value of the gauge controls will be set to that number.

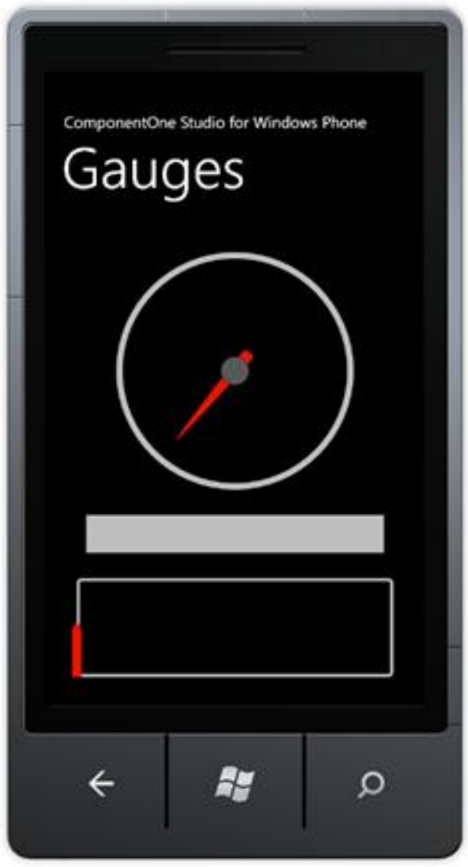
In this step you completed adding code to your application. In the next step you'll run the application and observe run-time interactions.

Step 4 of 4: Running the Application

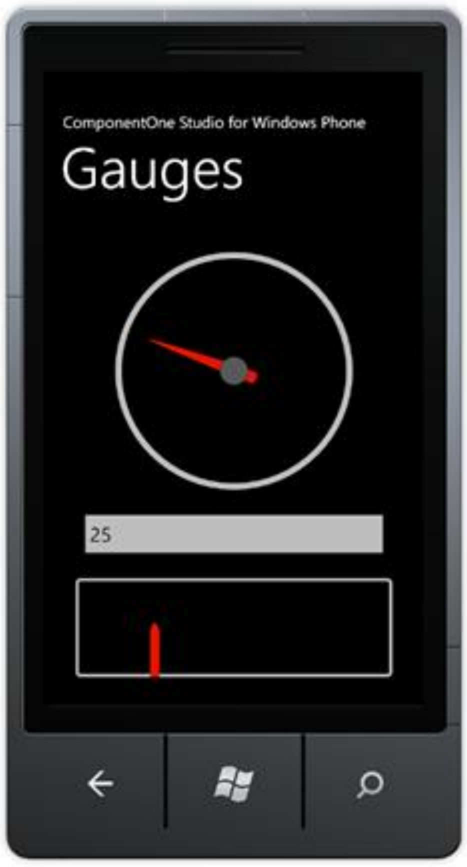
Now that you've created a Windows Phone application and customized the application's appearance and behavior, the only thing left to do is run your application. To run your application and observe **Gauges for Windows Phone**'s run-time behavior, complete the following steps:

1. From the **Debug** menu, select **Start Debugging** to view how your application will appear at run time.

   The application will appear in the Windows Phone Emulator similar to the following:



1. Select the text box, choose the **Numeric** button, and enter a value, for example **25** in the text box.
2. Tap outside of the text box and notice that the values of the C1RadialGauge and C1LinearGauge controls change:



By default the Minimum property of the gauge controls is set to **0** and the Maximum is set to **100**, so when the Value is set to **25** the gauges appear a quarter complete.

Congratulations! You've completed the **Gauges for Wndows Phone** quick start and created an application using the C1RadialGauge and C1LinearGauge controls and viewed some of the run-time capabilities of your application.

About Gauges for Windows Phone

ComponentOne Gauges for Windows Phone includes these main controls:

- C1RadialGauge
  Uses a rotating pointer to show a value along a curved scale. This is similar to a typical speedometer.
- C1LinearGauge
  Uses a linear pointer to show a value along a linear scale. This is similar to a typical thermometer.

Both the C1RadialGauge and C1LinearGauge derive from a common abstract class C1Gauge that provides the base functionality common to all gauges. **ComponentOne Gauges for Windows Phone** includes the following additional controls:

- C1RulerGauge
  Based on the C1LinearGauge control, this control provides an easy way of adding ruler-type gauges to your application.
- C1SpeedometerGauge
  Based on the C1RadialGauge control, this control provides an easy way of adding speedometer-type gauges to your application.
- C1VolumeGauge
  Based on the C1RadialGauge control, this control provides an easy way of adding volume-type gauges to your application.

Why Use Gauge Controls?

You might be asking why you'd need to use gauge controls – after all, gauges just display a single value and you could display that value using a simple label instead of a gauge.

Gauges are better because they also display a range, allowing users to determine instantly whether the current value is low, high, or intermediate. You could use two additional labels to display the range as well as the current value, but that would make your user interface more confusing. That is why many applications use progress indicators that are simple linear gauges, instead of showing progress simply as a label.

Gauges are also more visually attractive than simple labels (or sliders or scrollbars), and that adds value to your applications.

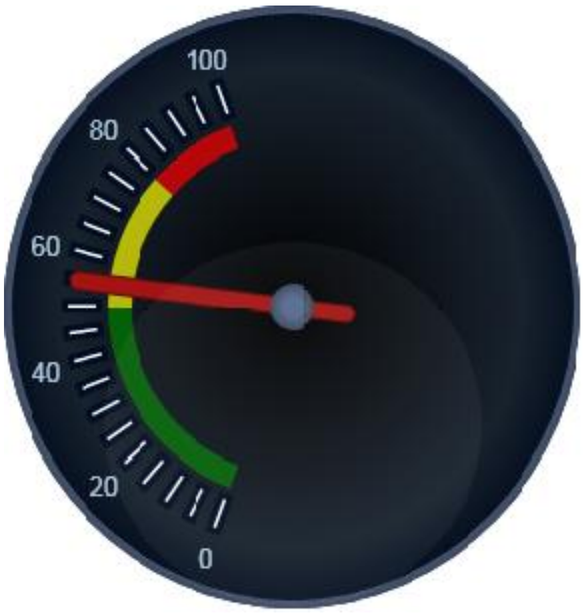
But why use a gauge control instead of simply asking a designer to create a visually attractive gauge in XAML and then animating an element to show the current value? Why use a control?

There are a couple of reasons for that. First, you may not be a great designer and may not have access to one. Second, you probably don't need a single gauge in your application. You may need several, showing values that span different ranges. Maybe you don't even know the actual range when you are writing the application (what's the maximum value of sales this quarter?).

Gauge controls provide the flexibility to adjust the ranges programmatically, based on data, rather than hardwiring them in XAML.

Using C1RadialGauge

C1RadialGauge uses a rotating pointer to show a value along a curved scale. The **C1RadialGauge** control displays a value using a rotating pointer. The value is represented by a **Value** property and the range is defined by the **Minimum** and **Maximum** properties. The C1RadialGauge control appears similar to a typical speedometer:

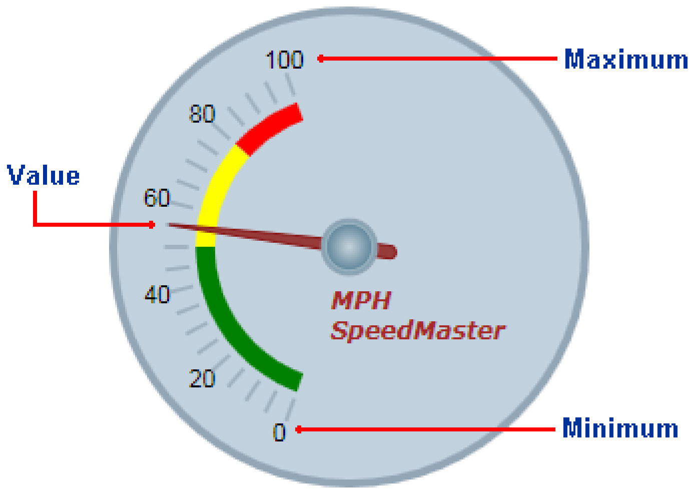


Creating and using a C1RadialGauge typically involves the following steps:

1. Creating the C1RadialGauge control and setting its main properties: Minimum, Maximum, StartAngle, and SweepAngle.
2. Adding C1GaugeMark and C1GaugeLabel decorators to show the scale. Each element may show a set of labels, tick marks, or both.
3. Optionally adding C1GaugeRange decorators to highlight parts of the scale. Ranges are typically used to indicate ranges that are too low, acceptable, or too high. Ranges can also be dynamic, moving automatically when the Value property changes.
4. Optionally customizing gauge elements with XAML templates.
5. Setting the Value property to display the value you want to show.

C1RadialGauge Values

You can use the C1RadialGauge control's Minimum, Maximum, and Value properties to specify the available range and the selected value in that range:



The Minimum and Maximum properties specify the range of values the gauge is designed to show. For example, a thermometer may have a scale ranging from -40 to 100 degrees, and a speedometer may have range of 0 to 140 miles per hour. The range is specified through the Minimum and Maximum properties (of type **double**). The default range for a C1RadialGauge control is from 0 to 100.

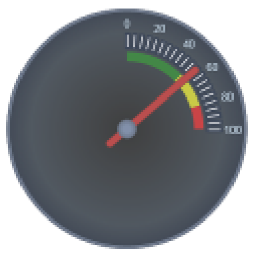
The Value property indicates the current value of the gauge. In the C1RadialGauge control, this is indicated visually by the value the Pointer element is pointing to. The default Value for a C1RadialGauge control is 50.

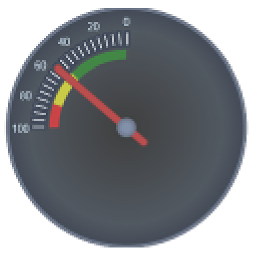
C1RadialGauge StartAngle and SweepAngle

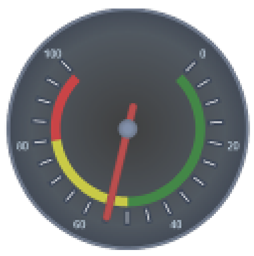
Once the range has been defined, you need to specify the angles that match the Minimum and Maximum values. The StartAngle defines the position of the pointer when the Value property is set to the Minimum value in the range. The SweepAngle specifies the rotation added to the StartAngle when the Value property is set to the Maximum value in the range.

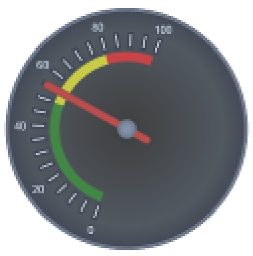
All angles are specified in degrees, measured clockwise from the top of the control. The angles may be negative, but the absolute value of the SweepAngle may not exceed 360 degrees. The default values for StartAngle is -140 and for SweepAngle is 280.

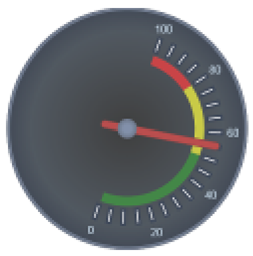
The images below show the effect of the StartAngle and SweepAngle properties:

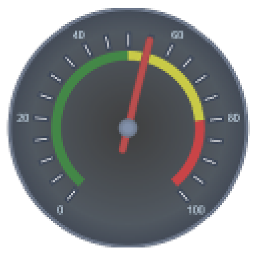

StartAngle = 0
SweepAngle = 90


StartAngle = 0
SweepAngle = -90


StartAngle = 45
SweepAngle = 270



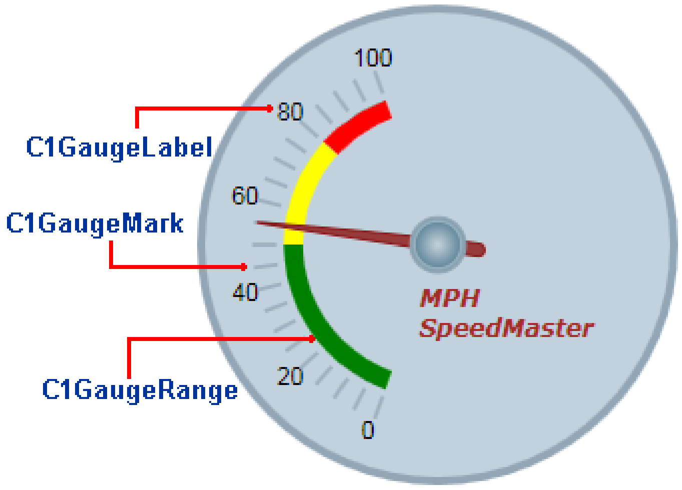




StartAngle = -160 **SweepAngle** = 180	**StartAngle** = -160 **SweepAngle** = -180	**StartAngle** = -140 **SweepAngle** = 280

C1RadialGauge Decorators

By default, the C1RadialGauge control displays only a blue-gray background and a pointer. In most applications, you'll also want to display a scale composed of labels and tick marks that allow users to see what the current value is and where it lies within the gauge's range. This is done by adding C1GaugeMark, C1GaugeLabel, and C1GaugeRange elements to the gauge's Decorators collection:



The decorators are displayed at specific positions on the scale, determined by the value of the From, To, and Interval properties.

In the image above, you'll see one C1GaugeMark and one C1GaugeLabel element:

```
<!-- Add label marks -->
<c1:C1GaugeLabel From="0" To="100" Interval="20" Location="1.1"/>


<!-- Add tick marks -->
<c1:C1GaugeMark From="0" To="100" Interval="5" Location=".9"/>
```

The C1GaugeLabel element shows labels for the values 0 to 100 along the scale. The C1GaugeMark element shows tick marks spaced 5 units apart.

In addition to showing the scale, you may want to highlight parts of the scale range. For example, you may want to add a red marker to indicate that values in that range are too low (sales) or too high (expenses). This can be done easily by adding one or more C1GaugeRange elements to the gauge's Decorators collection.

In the image above, you'll see three C1GaugeRange elements:

```
<!-- Add three colored ranges -->
<c1:C1GaugeRange From="80" To="100" Location="0.7" Fill="Red" />
<c1:C1GaugeRange From="50" To="80" Location="0.7" Fill="Yellow" />
<c1:C1GaugeRange From="0" To="50" Location="0.7" Fill="Green" />
```

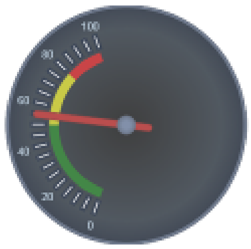
The C1GaugeRange elements show red, yellow, and green range areas. Each C1GaugeRange element displays a curved swath along the scale. The color of the swath is determined by the Fill property, and the position is determined by the From and To properties. You can control the thickness of the ranges using the StrokeThickness property.

C1RadialGauge Decorators Location

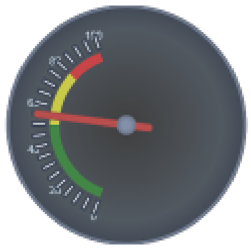
Each decorator element has a Location property that determines where the elements are displayed. These properties range from zero (the center of the gauge) to one (the outer edge of the gauge). The gauge control also has a Radius property that ranges from zero to one and affects the positioning of all decorators. The default value for the radius property is 0.8, which causes all decorators to be displayed entirely within the control.

In the C1RadialGauge Decorators (page 14) example, the Location property for the C1GaugeLabel was set to 1.1. This caused the labels to appear offset towards the outer edge of the gauge. The labels are still drawn within the control because the Radius property is set to 0.8 (the actual position of the labels in this case can be calculated as 1.1 * 0.8 = 0.88).

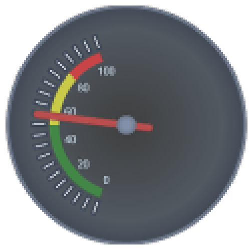
The diagrams below show the effect of the Location properties applied to the C1GaugeMark and C1GaugeLabel elements on our sample gauge:



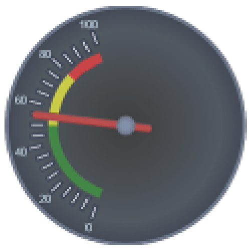
C1GaugeLabel.Location = 1.1
C1GaugeMark.Location = 1



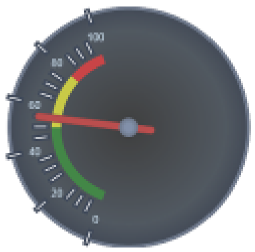
C1GaugeLabel.Location = 1
C1GaugeMark.Location = 1



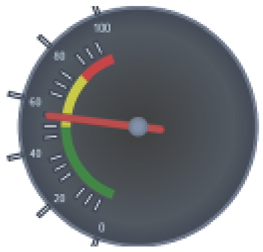
C1GaugeLabel.Location = 0.6
C1GaugeMark.Location = 1



C1GaugeLabel.Location = 1.12
C1GaugeMark.Location = 1.05



C1GaugeLabel.Location = 1
C1GaugeMark.Location = 1.3



C1GaugeLabel.Location = 1.1
C1GaugeMark.Location = 1.4

Notice how specifying values greater than 1 for the Location may cause the labels or marks to be drawn outside the body of the gauge.

You may specify as many C1GaugeMark elements as you want. For example, you could create a clock gauge with a range from 0 to 60 minutes. In that case, you could use one C1GaugeLabel and two C1GaugeMark elements:

- One C1GaugeLabel with an interval of 15, to show labels for the four "main" hours (12, 3, 6, 9);
- One C1GaugeMark with an interval of five, to show every full hour;
- One C1GaugeMark with an interval of one, to show each minute.

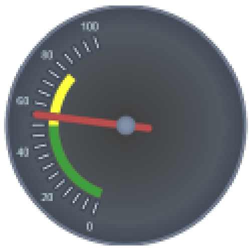
You may also customize the labels and tick marks using the **Template** properties.

C1RadialGauge Decorators Value Binding

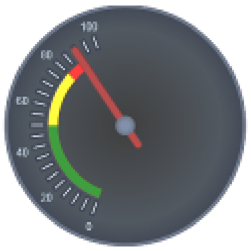
The ranges are not restricted to static values. You can use the ValueBinding property to bind the range's starting or ending positions to the current value being displayed by the gauge. For example, the code below would cause the red range to appear only when the speed exceeded 80 miles per hour:

```
<!-- Add three colored ranges -->
<c1:C1GaugeRange From="80" ValueBinding="To" Location="0.7" Background="Red"
/>
<c1:C1GaugeRange From="50" To="80" Location="0.7" Fill="Yellow" />
<c1:C1GaugeRange From="0" To="50" Location="0.7" Fill="Green" />
```

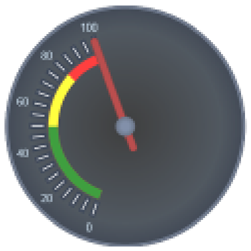
The diagrams below show the effect of this change as the **Value** property changes:



Value = 55



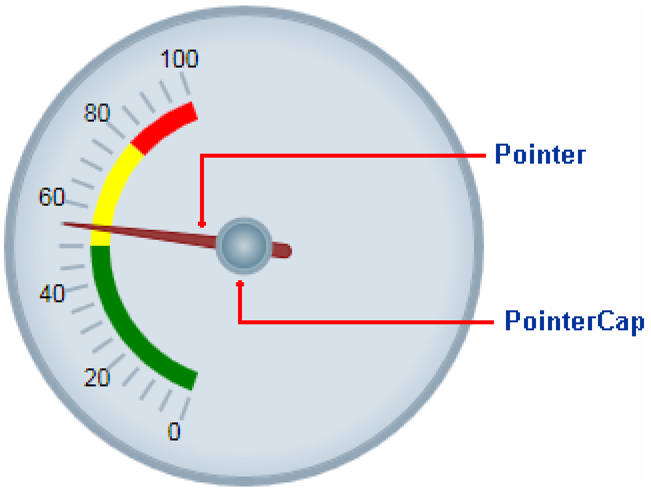
Value = 90



Value = 100

C1RadialGauge Pointer and PointerCap

The C1RadialGauge control includes a pointer which indicates the selected Value of the control. The pointer consists of the actual Pointer element and the PointerCap element:



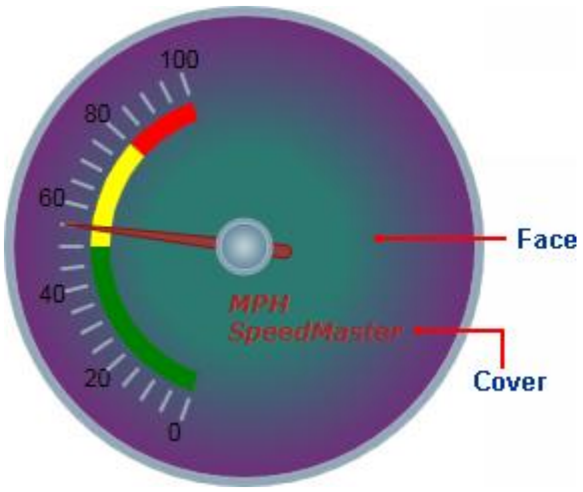
The PointerOrigin property sets the location of the pointer; you can customize the location of the pointer by setting this property – for example the point (0, 0) is the top-left corner of the control and the point (0.5, 0.5) is the center of the control. The Location property sets the relative location of the Pointer element.

The Pointer element appears by default as a brown tapering element, but you can customize the appearance of the Pointer element by setting several properties, including the PointerFill, PointerLength, PointerOffset, PointerStroke, PointerStrokeThickness, PointerStyle, PointerVisibility, and PointerWidth properties.

The PointerCap element appears by default as a gray circle, but you can customize the appearance of the PointerCap element by setting several properties, including the PointerCap, PointerCapFill, PointerCapStroke, PointerCapStrokeThickness, and PointerCapStyle properties. You can also edit the PointerCapSize template. For more information, see Templates (page 22).

C1RadialGauge Face and Cover

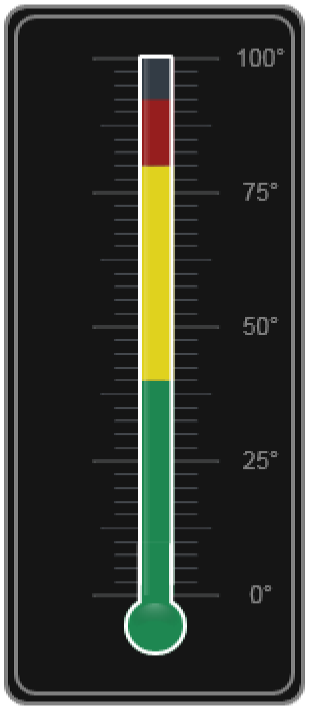
Like a watch, the C1RadialGauge control includes a Face and a Cover. The Face appears above the background but behind the pointer and other decorators, and the Cover appears, like a glass over on a watch, above all other elements. For example, in the image below the Face includes a gradient that appears behind the elements in the gauge and the Cover includes text that appears above the Face and all other elements:



You can customize the appearance of the Cover by using the CoverTemplate and you can customize the appearance of the Face by using the FaceTemplate. For more information, see Templates (page 22).

Using C1LinearGauge

The C1LinearGauge control has an object model that is almost identical to the one of the **C1RadialGauge**. C1LinearGauge uses a linear pointer to show a value along a linear scale. This is similar to a typical thermometer:

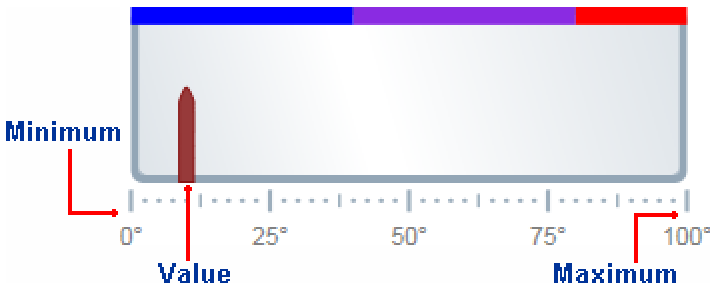


The steps involved in creating and using a C1LinearGauge control are the same as the ones we described before for the C1RadialGauge:

1. Create the C1LinearGauge control and set its main properties: Minimum, Maximum, and Orientation.
2. Add C1GaugeMark decorators to show the scale. Each C1GaugeMark element may show a set of labels, tick marks, or both.
3. Optionally add C1GaugeRange decorators highlight parts of the scale. Ranges are typically used to indicate ranges that are too low, acceptable, or too high. Ranges can also be dynamic, moving automatically when the Value property changes.
4. Optionally customize gauge elements with XAML templates.
5. Set the Value property to display the value you want to show.

C1LinearGauge Values

You can use the C1LinearGauge control's Minimum, Maximum, and Value properties to specify the available range and the selected value in that range:



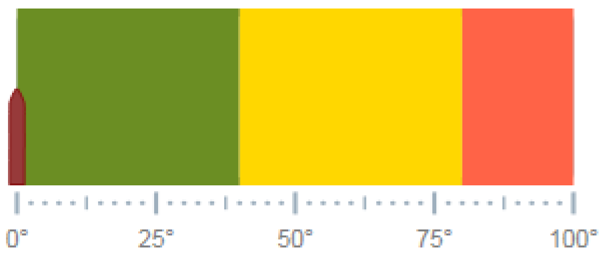
The Minimum and Maximum properties specify the range of values the gauge is designed to show. For example, a thermometer may have a scale ranging from -40 to 100 degrees, and a speedometer may have range of 0 to 140 miles per hour. The range is specified through the Minimum and Maximum properties (of type **double**). The default range for a C1LinearGauge control is from 0 to 100.

The Value property indicates the current value of the gauge. In the C1LinearGauge control, this is indicated visually by the value the Pointer element is pointing to. The default Value for a C1LinearGauge control is 0; in the above image, the Value was set to 10.

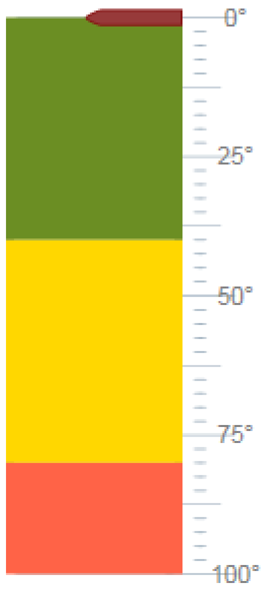
C1LinearGauge Orientation

C1LinearGauge controls do not have the StartAngle and SweepAngle properties used with radial gauges. Instead, they have an Orientation property that you can use to create vertical or horizontal gauges.

By default, the Orientation property is set to **Horizontal** and the gauge appears displayed horizontally in the application:



You can set the Orientation property to **Vertical** to create a vertical gauge:



By default, the vertical **C1LinearGauge** control will display a scale from top to bottom – for example 0 to 100 in the example above. To reverse the direction of the scale you would need to set the following properties:

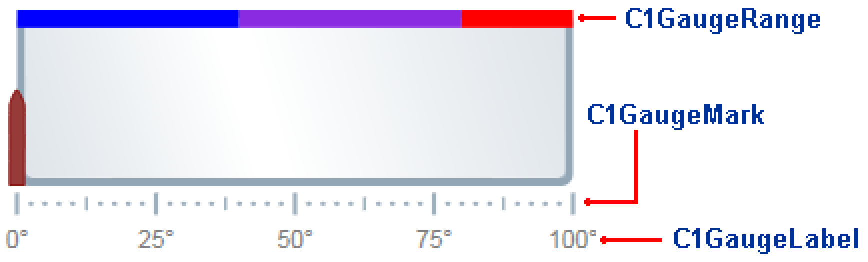
- Set **XAxisLocation** to **1**
- Set **XAxisLength** to **-1**

The scale will be reversed so 100 is at the top and 0 is at the bottom of the gauge.

A linear gauge has many applications. For example, a vertical linear gauge could be used as a thermometer such as the one displayed in the Using C1LinearGauge (page 17) topic.

C1LinearGauge Decorators

By default, the C1LinearGauge control displays only a plain horizontal linear gauge. In most applications, you'll also want to display a scale composed of labels and tick marks that allow users to see what the current value is and where it lies within the gauge's range. This is done by adding C1GaugeMark, C1GaugeLabel, and C1GaugeRange elements to the gauge's Decorators collection:



The decorators are displayed at specific positions on the scale, determined by the value of the From, To, and Interval properties.

In the image above, you'll see three C1GaugeMark elements and one C1GaugeLabel element:

```
<!—Add tick marks -->

<c1:C1GaugeMark From="0" To="100" Interval="25" Location="1.1" />

<c1:C1GaugeMark From="0" To="100" Interval="12.5" Location="1.1" />

<c1:C1GaugeMark From="0" To="100" Interval="2.5" Location="1.1" />

<!—Add label marks -->

<c1:C1GaugeLabel Location="1.3" Interval="25" Foreground="Gray"
Alignment="Center" Format="0°" />
```

The C1GaugeLabel element shows labels every 25 units for the values 0 to 100 along the scale. The C1GaugeMark element shows tick marks spaced 25, 12.5, and 2.5 units apart.

In addition to showing the scale, you may want to highlight parts of the scale range. For example, you may want to add a red marker to indicate that values in that range are too low (sales) or too high (expenses). This can be done easily by adding one or more C1GaugeRange elements to the gauge's Decorators collection.

In the image above, you'll see three C1GaugeRange elements:

```
<!-- Add three colored ranges -->

<c1:C1GaugeRange Fill="Blue" To="40" Width=".1" />

<c1:C1GaugeRange Fill="BlueViolet" From="40" To="80" Width=".1" />

<c1:C1GaugeRange Fill="Red" From="80" To="100" Width=".1" />
```

The C1GaugeRange elements show blue, blue violet, and red range areas. Each C1GaugeRange element displays a curved swath along the scale. The color of the swath is determined by the Fill property, and the position is determined by the From and To properties. You can control the thickness of the ranges using the Width property.

C1LinearGauge Decorators Location

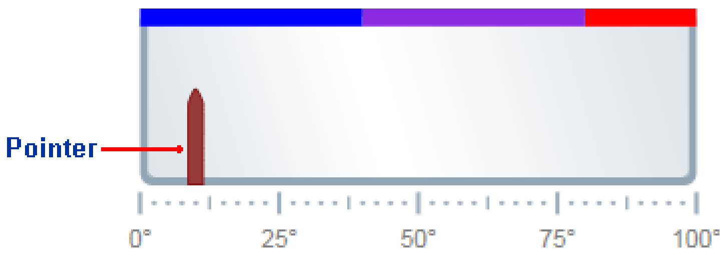
Decorators are positioned with the C1LinearGauge control compared to the C1RadialGauge control. Recall that the C1RadialGauge control has a Radius property that determines how far from the center of the gauge that decorators are displayed. The Radius property ranges from zero (center of the gauge) to one (outer edge of the gauge). Individual decorators are offset from the Radius by an amount specified by the **Location** property.

The C1LinearGauge has a YAxisLocation property that is analogous to Radius. This property ranges from zero (top of the gauge) to one (bottom of the gauge). Individual decorators are offset from the YAxisLocation by an amount specified by their Location property.

The default value for the YAxisLocation property is zero. The default value for the Location of the C1GaugeMark decorators is one (causing these elements to appear at the bottom of the gauge by default). The default value for the Location property of the C1GaugeRange decorator is zero (causing it to appear at the top of the gauge by default).

C1LinearGauge Pointer

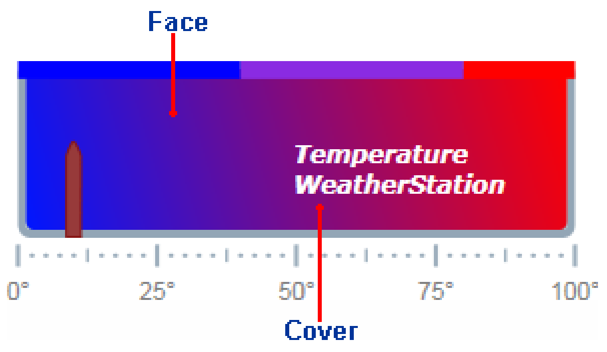
The C1LinearGauge control includes a pointer which indicates the selected Value of the control. The pointer consists of the Pointer element:



The Pointer element appears by default as a brown tapering element, but you can customize the appearance of the Pointer element by setting several properties, including the PointerFill, PointerLength, PointerOffset, PointerStroke, PointerStrokeThickness, PointerStyle, PointerVisibility, and PointerWidth properties. You can also customize how the Pointer element appears by setting the Orientation property to **Vertical** or **Horizontal**.

C1LinearGauge Face and Cover

Like a watch or thermometer, the C1LinearGauge control includes a Face and a Cover. The Face appears above the background but behind the pointer and other decorators, and the Cover appears, like a glass over a thermometer, above all other elements. For example, in the image below the Face includes a gradient that appears behind the elements in the gauge and the Cover includes text that appears above the Face and all other elements:



You can customize the appearance of the Cover by using the CoverTemplate and you can customize the appearance of the Face by using the FaceTemplate. For more information, see Templates (page 22).

Layout and Appearance

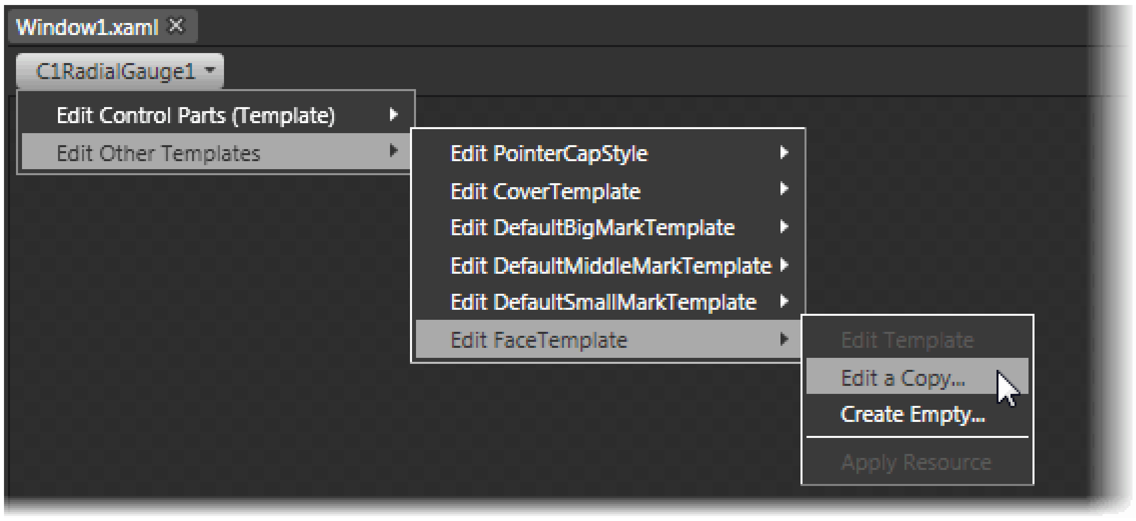
The following topics detail how to customize the gauge controls' layout and appearance. You can use built-in layout options to lay your controls out in panels such as Grids or Canvases. Themes allow you to customize the appearance of the grid and take advantage of Windows Phone's XAML-based styling. You can also use templates to format and layout the grid and to customize grid actions.

Templates

One of the main advantages to using a Windows Phone control is that controls are "lookless" with a fully customizable user interface. Just as you design your own user interface (UI), or look and feel, for Windows Phone applications, you can provide your own UI for data managed by **ComponentOne Gauges for Windows Phone**. Extensible Application Markup Language (XAML; pronounced "Zammel"), an XML-based declarative language, offers a simple approach to designing your UI without having to write code.

Accessing Templates

You can access templates in Microsoft Expression Blend by selecting a gauge control and, in the menu, selecting **Edit Control Parts (Templates)** or **Edit Other Templates**. Choose a template and select **Edit a Copy** to create an editable copy of the current template or **Create Empty**, to create a new blank template. For example, in C1RadialGauge:



Note: If you create a new template through the menu, the template will automatically be linked to that template's property. If you manually create a template in XAML you will have to link the appropriate template property to the template you've created.

Included Templates

The following templates are included in **Gauges for Windows Phone**:

Template	Description
PointerCapStyle	Style bound to the **PointerCap** element. This element is not available in

	the C1LinearGauge control.
CoverTemplate	DataTemplate used to generate the element placed on top of the C1Gauge. After the DataTemplate is loaded, the FrameworkElement can be accessed through the **Top** property.
DefaultBigMarkTemplate	Default DataTemplate for the big Marks.
DefaultMiddleMarkTemplate	Default DataTemplate for the middle Marks.
DefaultSmallMarkTemplate	Default DataTemplate for the small Marks.
FaceTemplate	DataTemplate used to generate the element placed over the C1Gauge background. After the DataTemplate is loaded, the FrameworkElement can be accessed through the **Bottom** property.

Note that you can use the Template property to customize the templates.ComponentOne ClearStyle Technology

ComponentOne ClearStyle™ technology is a new, quick and easy approach to providing Silverlight and WPF control styling. ClearStyle allows you to create a custom style for a control without having to deal with the hassle of XAML templates and style resources.

Currently, to add a theme to all standard Silverlight controls, you must create a style resource template. In Microsoft Visual Studio this process can be difficult; this is why Microsoft introduced Expression Blend to make the task a bit easier. Having to jump between two environments can be a bit challenging to developers who are not familiar with Blend or do not have the time to learn it. You could hire a designer, but that can complicate things when your designer and your developers are sharing XAML files.

That's where ClearStyle comes in. With ClearStyle the styling capabilities are brought to you in Visual Studio in the most intuitive manner possible. In most situations you just want to make simple styling changes to the controls in your application so this process should be simple. For example, if you just want to change the row color of your data grid this should be as simple as setting one property. You shouldn't have to create a full and complicated-looking template just to simply change a few colors.

How ClearStyle Works

Each key piece of the control's style is surfaced as a simple color property. This leads to a unique set of style properties for each control. For example, a **Gauge** has **PointerFill** and **PointerStroke** properties, whereas a **DataGrid** has **SelectedBrush** and **MouseOverBrush** for rows.

Let's say you have a control on your form that does not support ClearStyle. You can take the XAML resource created by ClearStyle and use it to help mold other controls on your form to match (such as grabbing exact colors). Or let's say you'd like to override part of a style set with ClearStyle (such as your own custom scrollbar). This is also possible because ClearStyle can be extended and you can override the style where desired.

ClearStyle is intended to be a solution to quick and easy style modification but you're still free to do it the old fashioned way with ComponentOne's controls to get the exact style needed. ClearStyle does not interfere with those less common situations where a full custom design is required.

Gauges for Windows Phone Task-Based Help

The task-based help assumes that you are familiar with programming in Visual Studio .NET and know how to use the gauge controls in general. If you are unfamiliar with the **ComponentOne Gauges for Windows Phone** product, please see the Gauges for Windows Phone Quick Start (page 3) first.

Each topic in this section provides a solution for specific tasks using the **ComponentOne Gauges for Windows Phone** product.

Each task-based help topic also assumes that you have created a new Windows Phone project and added a gauge control to the project.

Setting the Start Value

In this topic you'll change the C1LinearGauge control's Value property. The Value property determines the currently selected number. By default the C1LinearGauge control starts with its Value set to **0** but you can customize this number at design time, in XAML, and in code. Note that although this topic sets the Value of the C1LinearGauge control, the same steps can be used to customize the Value of other controls.

At Design Time

To set the C1LinearGauge control's Value property at run time, complete the following steps:

1. Click the C1LinearGauge control once to select it.
2. Navigate to the Properties window, and enter a number, for example "20", in the text box next to the Value property.

   This will set the Value property to the number you chose.

In XAML

For example, to set the Value property add `Value="20"` to the `<c1:C1LinearGauge>` tag so that it appears similar to the following:

```
<c1:C1LinearGauge Height="89" Margin="47,57,33,43" Name="C1LinearGauge1"
Width="287" Value="20">
```

In Code

For example, to set the Value property, add the following code to your project:

- Visual Basic

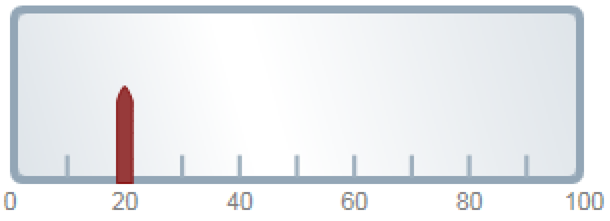
  ```
  C1LinearGauge1.Value = 20
  ```

- C#

  ```
  c1LinearGauge1.Value = 20;
  ```

Run your project and observe:

Initially the gauge's Pointer will be set to the Value you selected:



Setting the Minimum and Maximum Values

You can use the Minimum and Maximum properties to set a numeric range that the gauge would be limited to. You can customize the Minimum and Maximum values at design time, in XAML, and in code. Although this topic sets the Minimum and Maximum properties of the C1LinearGauge control, the same steps can be used to customize the Minimum and Maximum of other controls.

Note: When setting the Minimum and Maximum properties, the Minimum should be smaller than the Maximum. Also be sure to set the Value property to a number within the Minimum and Maximum range (here the default is 0, which falls within the range set below).

At Design Time

To set the Minimum and Maximum for the C1LinearGauge at run time, complete the following steps:

1. Click the C1LinearGauge control once to select it.
2. Navigate to the Properties window, and enter a number, for example **50**, next to the Maximum property.
3. In the Properties window, enter a number, for example **-50**, next to the Minimum property.

   This will set Minimum and Maximum values.

In XAML

To set the C1LinearGauge control's Minimum and Maximum in XAML add `Maximum="50" Minimum="-50"` to the `<c1:C1LinearGauge>` tag so that it appears similar to the following:

```
<c1:C1LinearGauge Height="89" Margin="47,57,33,43" Name="C1LinearGauge1"
Width="287" Maximum="50" Minimum="-50">
```

In Code

To set the C1LinearGauge control's Minimum and Maximum add the following code to your project:

- Visual Basic

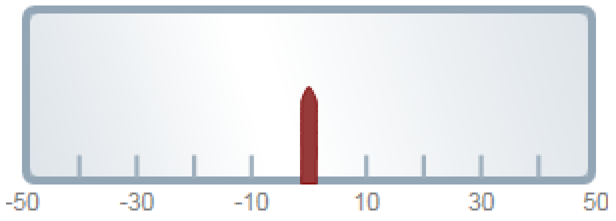
```
C1LinearGauge1.Minimum = -50
C1LinearGauge1.Maximum = 50
```

- C#

```
c1LinearGauge1.Minimum = -50;
c1LinearGauge1.Maximum = 50;
```

Run your project and observe:

The gauge will be limited to the selected range at run time:



Adding Labels to the Gauge

You can add and customize the C1RadialGauge control's labeling in the Properties window, XAML, or through code. Although this topic sets the C1GaugeLabel properties of the C1RadialGauge control, the same steps can be used to customize the C1GaugeLabel of other controls.

At Design Time

To add labeling to the C1RadialGauge control in the Properties window at design time, complete the following steps:

1. Click the C1RadialGauge control once to select it.
2. Navigate to the Properties window, and click the **ellipsis** button next to the **Decorators** item. The **Decorators** collection editor will open.
3. Choose C1GaugeLabel in the drop-down list in the top-left of the editor and click the **Add** button. A C1GaugeLabel decorator will be added to the collection and will be selected.
4. In the right-side properties pane, set the C1GaugeLabel element's Location to **1**.
5. Set the C1GaugeLabel element's Interval to **20**.

   This will set the control's label.

In XAML

To add labeling to the C1RadialGauge control in XAML add the `<c1:C1GaugeLabel>` tag to the `<c1:C1RadialGauge>` tag so that it appears similar to the following:

```
<c1:C1RadialGauge Height="189" Margin="42,29,188,31" Name="C1RadialGauge1"
Width="189">
    <c1:C1GaugeLabel Interval="20" Location="1" />
</c1:C1RadialGauge>
```

In Code

Right-click the window and select **View Code** to open the Code Editor. Add code to the main class, so it appears similar to the following:

- Visual Basic

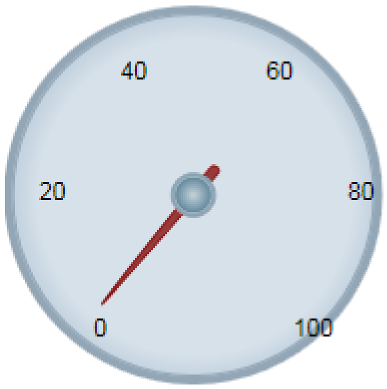
```
Public Sub New()
InitializeComponent()
    Dim c1gl As New C1.Windows Phone.Gauge.C1GaugeLabel
    c1gl.Location = 1
    c1gl.Interval = 20
    Me.C1RadialGauge1.Decorators.Add(c1gl)
End Sub
```

- C#

```
MainPage(){
InitializeComponent();
    C1.Windows Phone.Gauge.C1GaugeLabel c1gl = new C1.Windows
Phone.Gauge.C1GaugeLabel();
    c1gl.Location = 1;
    c1gl.Interval = 20;
    this.c1RadialGauge1.Decorators.Add(c1gl);
}
```

Run your project and observe:

The C1RadialGauge control will appear with labeling:



Adding Tick Marks to the Gauge

You can add tick marks to the C1LinearGauge control through the Properties window, XAML, or through code. Although this topic sets the C1GaugeMark properties of the C1LinearGauge control, the same steps can be used to customize the C1GaugeMark of other controls.

At Design Time

To add tick marks to the C1LinearGauge control in the Properties window at design time, complete the following steps:

1. Click the C1LinearGauge control once to select it.
2. Navigate to the Properties window, and click the **ellipsis** button next to the **Decorators** item. The **Decorators** collection editor will open.
3. Choose C1GaugeMark in the drop-down list in the top-left of the editor and click the **Add** button. A C1GaugeMark decorator will be added to the collection and will be selected.
4. In the right-side properties pane, set the C1GaugeMark element's Location to **1.1**.
5. Set the C1GaugeLabel element's Interval to **20**.
6. Choose C1GaugeMark in the drop-down list in the top-left of the editor and click the **Add** button. A second C1GaugeMark decorator will be added to the collection and will be selected.
7. In the right-side properties pane, set the C1GaugeMark element's Location to **1.1**.
8. Set the C1GaugeLabel element's Interval to **10**.
9. Choose C1GaugeMark in the drop-down list in the top-left of the editor and click the **Add** button. A third C1GaugeMark decorator will be added to the collection and will be selected.
10. In the right-side properties pane, set the C1GaugeMark element's Location to **1.1**.
11. Set the C1GaugeLabel element's Interval to **5**.

In XAML

To add labeling to the C1LinearGauge control in XAML add three `<c1:C1GaugeMark>` tags to the `<c1:C1LinearGauge>` tag so that it appears similar to the following:

```
<c1:C1LinearGauge Height="89" Margin="90,72,41,88" Name="C1LinearGauge1"
Width="287">
    <c1:C1GaugeMark Interval="20" Location="1.1" />
    <c1:C1GaugeMark Interval="10" Location="1.1" />
    <c1:C1GaugeMark Interval="5" Location="1.1" />
</c1:C1LinearGauge>
```

In Code

Right-click the window and click **View Code** to switch to the Code Editor. And add code to the main class,, so it appears similar to the following:

- Visual Basic

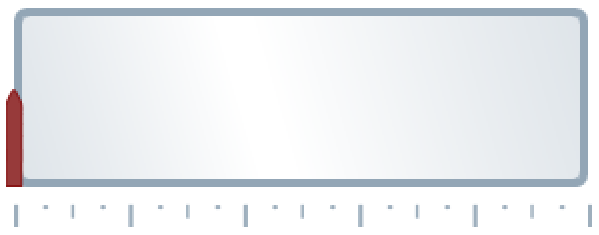
```
Public Sub New()
InitializeComponent()
    Dim c1gm1 As New C1.Windows Phone.Gauge.C1GaugeMark
    c1gm1.Location = 1.1
    c1gm1.Interval = 20
    Me.C1LinearGauge1.Decorators.Add(c1gm1)
    Dim c1gm2 As New C1.Windows Phone.Gauge.C1GaugeMark
    c1gm2.Location = 1.1
    c1gm2.Interval = 10
    Me.C1LinearGauge1.Decorators.Add(c1gm2)
    Dim c1gm3 As New C1.Windows Phone.Gauge.C1GaugeMark
    c1gm3.Location = 1.1
    c1gm3.Interval = 5
    Me.C1LinearGauge1.Decorators.Add(c1gm3)
End Sub
```

- C#

```
public MainPage(){
InitializeComponent();
    C1.Windows Phone.Gauge.C1GaugeLabel c1gm1 = new C1.Windows
Phone.Gauge.C1GaugeMark();
    c1gm1.Location = 1.1;
    c1gm1.Interval = 20;
    this.c1LinearGauge1.Decorators.Add(c1gm1);
    C1.Windows Phone.Gauge.C1GaugeLabel c1gm2 = new C1.Windows
Phone.Gauge.C1GaugeMark();
    c1gm2.Location = 1.1;
    c1gm2.Interval = 10;
    this.c1LinearGauge1.Decorators.Add(c1gm2);
    C1.Windows Phone.Gauge.C1GaugeLabel c1gm3 = new C1.Windows
Phone.Gauge.C1GaugeMark();
    c1gm3.Location = 1.1;
    c1gm3.Interval = 5;
    this.c1LinearGauge1.Decorators.Add(c1gm3);
}
```

Run your project and observe:

The C1LinearGauge control will appear with tick marks of three sizes:



Customizing Tick Marks

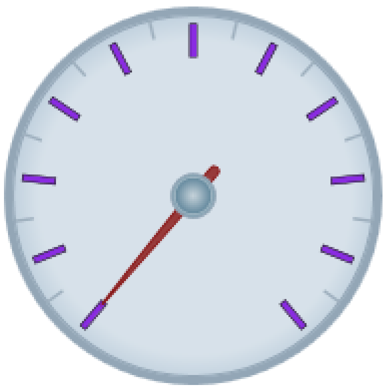
By default, gauge marks are drawn as blue-gray rectangles. You can customize their appearance by assigning a custom template to the Template property of the C1GaugeMark element. In the following steps, you'll create a new **DataTemplate** which defines the C1GaugeMark appearance and then you'll assign that template to the C1GaugeMark element's Template property in the C1RadialGauge control.

Complete the following steps:

1. Switch to XAML view and add three `<c1:C1GaugeMark>` tags to the `<c1:C1LinearGauge>` tag so that it appears similar to the following:
```
<c1:C1LinearGauge Height="89" Margin="90,72,41,88"
Name="C1LinearGauge1" Width="287">
    <c1:C1GaugeMark From="0" To="100" Interval="10"
Template="{StaticResource MyMarkTemplate}"/>
    <c1:C1GaugeMark Interval="5" Location="1.1" />
</c1:C1LinearGauge>
```
2. Add the following markup just under the UserControl tag to add a template:
```
<UserControl.Resources>
    <!-- Template used to render the gauge marks -->
    <DataTemplate x:Key="MyMarkTemplate">
        <Rectangle Width="4" Height="18" Fill="BlueViolet"
Stroke="Black" StrokeThickness=".5"/>
    </DataTemplate>
</UserControl.Resources>
```
   This template defines the appearance of the tick marks.
3. Next, set the Template property on the first C1GaugeMark element you added to reference the new template's key:
```
<c1:C1GaugeMark From="0" To="100" Interval="10"
Template="{StaticResource MyMarkTemplate}"/>
```

Run your project and observe:

The C1RadialGauge control appears with custom tick marks:



Notice that the marks are drawn from the position specified by the Location property and grow inward. If you increase the **Height** of the rectangles used to show the marks, the tick marks will extend farther toward the center of the gauge. To make them extend out you would change the Location property on the C1GaugeMark element. Also, notice how elements used to show tick marks are rotated along the scale; elements used to show labels are not (see Adding Labels to the Gauge (page 27)).

Customizing the Gauge Shape

Most radial gauges are circular, but you can create gauges with other shapes as well. To customize the shape of a C1RadialGauge, you would need to:

- Choose a shape for the gauge.
- Set the PointerOrigin property to match the position of the pointer taking into account the gauge shape.
- Hide the default round background by setting the gauge's **Background** property to **Transparent** and the **BorderThickness** to **0**.
- Add elements to the Face layer to show the new gauge shape.

Complete the following steps to follow the steps above to create a C1RadialGauge with a customized shape:

1. Switch to XAML view and modify the `<c1:C1RadialGauge>` tag so that it appears similar to the following:

   ```
   <c1:C1RadialGauge Height="189" Margin="102,34,127,26"
   Name="C1RadialGauge1" Width="189" StartAngle="-160" SweepAngle =
   "140">
   </c1gauge>
   ```

   This will set the C1RadialGauge control's initial properties.

2. In XAML view add `PointerOrigin="0.8,0.5"` to the `<c1:C1RadialGauge>` tag so that it appears similar to the following:

   ```
   <c1:C1RadialGauge Height="189" Margin="102,34,127,26"
   Name="C1RadialGauge1" Width="189" StartAngle="-160" SweepAngle =
   "140" PointerOrigin="0.8,0.5">
   </c1gauge>
   ```

   The PointerOrigin property will set where the C1RadialGauge control's Pointer originates.

3. In XAML view add `Background="Transparent"` to the `<c1:C1RadialGauge>` tag so that it appears similar to the following:

   ```
   <c1:C1RadialGauge Height="189" Margin="102,34,127,26"
   Name="C1RadialGauge1" Width="189" StartAngle="-160" SweepAngle =
   "140" PointerOrigin="0.8,0.5" Background="Transparent">
   </c1gauge>
   ```

   The C1RadialGauge control will now appear transparent.

4. In XAML view add `BorderThickness="0"` to the `<c1:C1RadialGauge>` tag so that it appears similar to the following:

   ```
   <c1:C1RadialGauge Height="189" Margin="102,34,127,26"
   Name="C1RadialGauge1" Width="189" StartAngle="-160" SweepAngle =
   "140" PointerOrigin="0.8,0.5" Background="Transparent"
   BorderThickness="0">
   </c1gauge>
   ```

   The C1RadialGauge control will now appear without a border.

5. In XAML view add markup after the `<c1:C1RadialGauge>` tag so that it appears similar to the following:

   ```
   <c1:C1RadialGauge Height="189" Margin="102,34,127,26"
   Name="C1RadialGauge1" Width="189" StartAngle="-160" SweepAngle =
   "140" PointerOrigin="0.8,0.5" Background="Transparent"
   BorderThickness="0">
       <!-- Add tick marks to the gauge -->
       <c1:C1GaugeMark Interval="10" Location="1"/>
       <c1:C1GaugeMark Interval="5" Location="1" />
   </c1gauge>
   ```

   This will add C1GaugeMark elements and tick marks to the gauge.

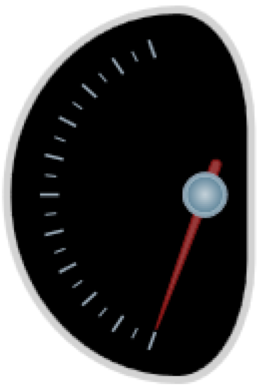
6. In XAML view add markup after the `<c1:C1RadialGauge>` tag so that it appears similar to the following:

```
<c1:C1RadialGauge Height="189" Margin="102,34,127,26"
Name="C1RadialGauge1" Width="189" StartAngle="-160" SweepAngle =
"140" PointerOrigin="0.8,0.5" Background="Transparent"
BorderThickness="0">
    <!-- Add tick marks to the gauge -->
    <c1:C1GaugeMark Interval="10" Location="1"/>
    <c1:C1GaugeMark Interval="5" Location="1" />
    <!-- Add a face with custom shape -->
    <c1:C1RadialGauge.Face>
        <Grid>
            <Grid.ColumnDefinitions>
                <ColumnDefinition Width="4*" />
                <ColumnDefinition Width="10*" />
                <ColumnDefinition Width="1*" />
            </Grid.ColumnDefinitions>
            <Border Grid.Column="1" Background="Black"
BorderBrush="LightGray" BorderThickness="4"
CornerRadius="140,60,60,140"/>
        </Grid>
    </c1:C1RadialGauge.Face>
</c1gauge>
```

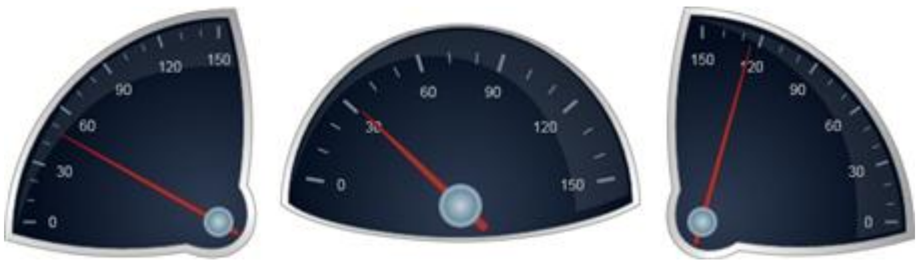
This will add a customized Face to the gauge.

Run your project and observe:

The C1RadialGauge control appears with a customized face:



You can customize the Face of the C1RadialGauge control even further. For example, take a look at the following customized gauges included on the **SpeedometersPage.xaml** page of the **GaugeSamples** sample installed with **Studio for Windows Phone**:



Customizing the Pointer's Appearance

By default, the Pointer appears as a tapered brown rectangle and the pointer cap appears as a gray circle with a gradient. You can customize the appearance of both. In the following steps, you'll customize the appearance of the C1RadialGauge control's Pointer and PointerCap.

Complete the following steps:

1. Click once on the C1RadialGauge control to select it.
2. Switch to XAML view and add `PointerFill="SkyBlue" PointerStroke="CornflowerBlue"` to the `<c1:C1RadialGauge>` tag so that it appears similar to the following:

   ```
   <c1:C1RadialGauge Height="226" Margin="22,24,0,12"
   Name="C1RadialGauge1" Width="256" PointerFill="SkyBlue"
   PointerStroke="CornflowerBlue">
   </c1:C1RadialGauge>
   ```

   This will set customize the color of the Pointer.
3. In XAML view add `PointerCapStroke="CornflowerBlue"` to the `<c1:C1RadialGauge>` tag so that it appears similar to the following:

   ```
   <c1:C1RadialGauge Height="226" Margin="22,24,0,12"
   Name="C1RadialGauge1" Width="256" PointerFill="SkyBlue"
   PointerCapStroke="CornflowerBlue" PointerStroke="CornflowerBlue">
   </c1:C1RadialGauge>
   ```

   This will customize the color that the PointerCap is outlined in.
4. In XAML view add the following `<c1:C1RadialGauge.PointerCapFill>` markup to the `<c1:C1RadialGauge>` tag so that it appears similar to the following:

   ```
   <c1:C1RadialGauge Height="226" Margin="22,24,0,12"
   Name="C1RadialGauge1" Width="256" PointerFill="SkyBlue"
   PointerCapStroke="CornflowerBlue" PointerStroke="CornflowerBlue" >
       <c1:C1RadialGauge.PointerCapFill>
           <RadialGradientBrush>
               <GradientStop Color="CornflowerBlue" Offset="0"/>
               <GradientStop Color="SkyBlue" Offset="1"/>
           </RadialGradientBrush>
       </c1:C1RadialGauge.PointerCapFill>
   </c1:C1RadialGauge>
   ```

   This will add a radial gradient to the C1RadialGauge control's PointerCap.

Run your project and observe:

The C1RadialGauge control appears with a customized Pointer and PointerCap: