HOWTO: Apply a zoom while keeping the image centered (WinForms)

This article contains a zip file with projects showing how to zoom in and out of an image programmatically while keeping the center of the viewable area centered. The zip contains both C# and VB projects using DotImage 11.1

The concept is that when you zoom in/out you need to calculate the correct scroll position and programmatically scroll the control on the fly. This must be done on both zoom in and zoom out

C#

```
// /// This code will apply a new zoom to the viewer, /// keeping the center pixel centered
after the zoom. /// /// The new zoom level. private void ZoomViewer(double newZoomLevel) { //
Limit the zoom amount. if (newZoomLevel < 1.0) newZoomLevel = 1.0; if (newZoomLevel > 20.0)
newZoomLevel = 20.0; double oldZoom = this._viewer.Zoom; if (newZoomLevel == oldZoom) return;
// Get the current viewable area. Size imageSize = this._viewer.Image.Size; Size clientSize =
this._viewer.ClientSize; int width = Convert.ToInt32(Math.Min((clientSize.Width / oldZoom),
(imageSize.Width / oldZoom))); int height = Convert.ToInt32(Math.Min((clientSize.Height /
oldZoom), (imageSize.Height / oldZoom))); int left =
Convert.ToInt32(Math.Abs(this._viewer.ScrollPosition.X) / oldZoom); int top =
Convert.ToInt32(Math.Abs(this._viewer.ScrollPosition.Y) / oldZoom); Rectangle rc = new
Rectangle(left, top, width, height); // Now we have the center pixel. Point centerPixel = new
Point(rc.Width / 2 + rc.Left, rc.Height / 2 + rc.Top); // Calculate the new scroll position.
width = Convert.ToInt32(Math.Min((clientSize.Width / newZoomLevel), (imageSize.Width /
newZoomLevel))); height = Convert.ToInt32(Math.Min((clientSize.Height / newZoomLevel),
(imageSize.Height / newZoomLevel))); left = Convert.ToInt32(Math.Abs(centerPixel.X - (width /
2)) * newZoomLevel); top = Convert.ToInt32(Math.Abs(centerPixel.Y - (height / 2)) *
newZoomLevel); if (left < 0) left = 0; if (top < 0) top = 0; // Using SuspendLayout and
ResumeLayout will keep it from flickering. this._viewer.SuspendLayout(); this._viewer.Zoom =
newZoomLevel; this._viewer.ScrollPosition = new Point(-left, -top);
this._viewer.ResumeLayout(); }
```

VB.NET

```
/ '/ This code will apply a new zoom to the viewer, '/ keeping the center pixel centered
after the zoom. '/ '/ The new zoom level. Private Sub ZoomViewer(ByVal NewZoomLevel As
Double) ' Limit the zoom amount. If NewZoomLevel < 1.0 Then NewZoomLevel = 1.0 End If If
NewZoomLevel > 20.0 Then NewZoomLevel = 20.0 End If Dim oldZoom As Double = Me._viewer.Zoom
If NewZoomLevel = oldZoom Then Return End If ' Get the current viewable area. Dim imageSize
As Size = Me._viewer.Image.Size Dim clientSize As Size = Me._viewer.ClientSize Dim width As
Integer = Convert.ToInt32(Math.Min((clientSize.Width / oldZoom), (imageSize.Width /
oldZoom))) Dim height As Integer = Convert.ToInt32(Math.Min((clientSize.Height / oldZoom),
(imageSize.Height / oldZoom))) Dim left As Integer =
Convert.ToInt32(Math.Abs(Me._viewer.ScrollPosition.X) / oldZoom) Dim top As Integer =
Convert.ToInt32(Math.Abs(Me._viewer.ScrollPosition.Y) / oldZoom) Dim rc As Rectangle = New
Rectangle(left, top, width, height) ' Now we have the center pixel. Dim centerPixel As Point
```

```
= New Point(rc.Width / 2 + rc.Left, rc.Height / 2 + rc.Top) ' Calculate the new scroll
position. width = Convert.ToInt32(Math.Min((clientSize.Width / NewZoomLevel),
(imageSize.Width / NewZoomLevel))) height = Convert.ToInt32(Math.Min((clientSize.Height /
NewZoomLevel), (imageSize.Height / NewZoomLevel))) left =
Convert.ToInt32(Math.Abs(centerPixel.X - (width / 2)) * NewZoomLevel) top =
Convert.ToInt32(Math.Abs(centerPixel.Y - (height / 2)) * NewZoomLevel) If left < 0 Then left
= 0 End If If top < 0 Then top = 0 End If ' Using SuspendLayout and ResumeLayout will keep it
from flickering. Me._viewer.SuspendLayout() Me._viewer.Zoom = NewZoomLevel
Me._viewer.ScrollPosition = New Point(-left, -top) Me._viewer.ResumeLayout() End Sub
```

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