ComponentOne

ReportViewer for WPF and Silverlight

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ReportViewer for WPF and Silverlight Overview

Add report viewing capabilities to your WPF applications. **ReportViewer for WPF and Silverlight** can display HTML and PDF-based reports from virtually any report service, including Microsoft SQL Server Reporting Services and **C1Report**. This powerful viewer allows users to see, search, zoom, select, print and save the reports to local files.

Help with WPF and Silverlight Edition

Getting Started

- For information on installing **ComponentOne Studio WPF Edition**, licensing, technical support, namespaces and creating a project with the control, please visit Getting Started with WPF Edition.
- For information on installing **ComponentOne Studio Silverlight Edition**, licensing, technical support, namespaces and creating a project with the control, please visit Getting Started with Silverlight Edition.

Key Features

Using **ReportViewer**, you can display HTML and PDF-based reports from virtually any report service, including Microsoft SQL Server Reporting Services and C1Report. The control lets you view, browse, search, zoom, select, print and save reports to local files. In addition, ReportViewer comes with various features as follows:

- **View reports from multiple sources**
  The ReportViewer control is engine-agnostic, because it supports the most common document formats: HTML and PDF. Use ReportViewer to display reports from virtually any report generator such as C1Report, Microsoft Reporting Services, Active Reports, Crystal or any other report provider capable of generating HTML or PDF output.

- **Load and save documents**
  ReportViewer allows users to print the current document in its entirety or print a selection of pages. Or print directly from code using the PrintDocument method.
- **Printing support**
  ReportViewer allows users to print the current document in its entirety or print a selection of pages. Or print directly from code using the **PrintDocument** method.

- **Search text**
  Users can perform text searches within the document. As matches are found they are brought into view, and users can navigate through search results in a quick and intuitive manner.

- **Multiple view modes**
  ReportViewer comes with multiple viewing modes to support viewing documents at any scale. Users can set the zoom level to fit the page into view, and view a single page or multiple pages in side by side layout.

- **Page customization**
  Specify page properties such as page size and margin thickness. You can even design a page template to provide custom headers and footers that are not generated as part of the report.

- **Customizable toolbar**
  ReportViewer includes a default toolbar for quick development. Creating a custom toolbar is very simple because each button in the default toolbar has a corresponding command in the control.

- **Silverlight toolkit themes**
  Add style to your UI with built-in support for the most popular Microsoft Silverlight Toolkit themes, including ExpressionDark, ExpressionLight, WhistlerBlue, RainerOrange, ShinyBlue, and BureauBlack.

- **Load and view PDF files containing attachments**
  ReportViewer lets you load and view PDF files containing attachments. The attached files appear in the shape of a clip-shaped icon that can be clicked and readily viewed.

C1ReportViewer Quick Start

The following quick start guide is intended to get you up and running with **ReportViewer for WPF and Silverlight**. In this quick start you'll create a simple project using a C1ReportViewer control. You'll create a new WPF or Silverlight application, add the C1ReportViewer control to your application, add a PDF file that will be displayed in the C1ReportViewer control, and observe some of the run-time interaction possible with **ReportViewer for WPF and Silverlight**.

Step 1 of 3: Creating the C1ReportViewer Application

In this step you'll create a WPF application using **ReportViewer for WPF and Silverlight**. When you add a C1ReportViewer control to your application, you'll have a complete, functional document viewer interface that you can display PDF and HTML files in. To set up your project and add a C1ReportViewer control to your application, complete the following steps:

1. From the Visual Studio **File** menu select **New** and choose **Project**.
2. In the **New Project** dialog box choose a language and **WPF Application** or **Silverlight Application** in the left-side menu, choose **.NET Framework 4** in the **Framework** drop-down list, and enter a name for the project. In this example the application will be named "QuickStart". If you name the project something else, in later steps you may need to change references to "QuickStart" with the name of your project.
3. In the Solution Explorer, right-click the project name and choose **Add Reference**. In the **Add Reference** dialog box, locate and select the **C1.WPF** and **C1.WPF.ReportViewer** or **C1.Silverlight** and **C1.Silverlight.ReportViewer** assemblies and click **OK** to add references to your project.
4. Open the XAML view of the MainWindow.xaml or MainPage.xaml file; in this quick start you'll add the C1ReportViewer control using XAML markup.
5. Add the XAML namespace to the Window tag with the following markup: `xmlns:c1="http://schemas.componentone.com/winfx/2006/xaml"`.

   The namespaces will now appear similar to the following:

   WPF XAML

   ```
   <Window x:Class="MainWindow"
       xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
       xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
       xmlns:c1="http://schemas.componentone.com/winfx/2006/xaml"
       Title="MainWindow" Height="350" Width="525">
   ```

   Silverlight XAML

   ```
   <UserControl x:Class="QuickStart.MainPage"
   xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
   xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
   xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
   xmlns:c1="http://schemas.componentone.com/winfx/2006/xaml" mc:Ignorable="d"
   d:DesignHeight="300" d:DesignWidth="400">
   ```

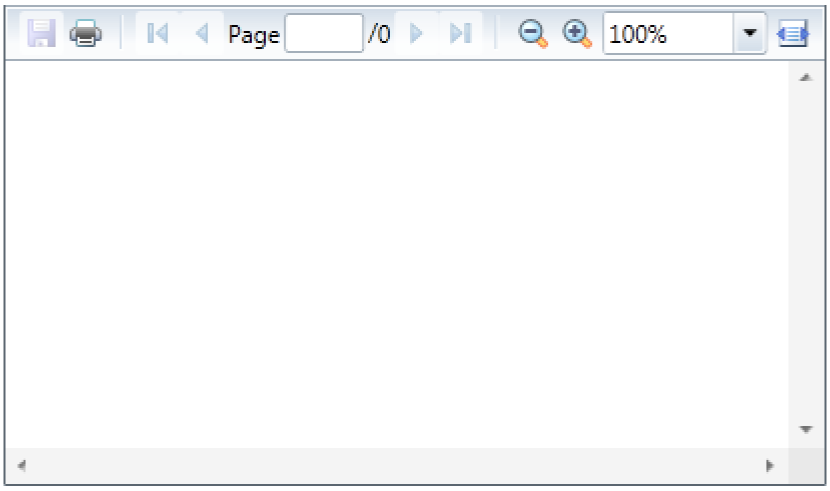
   This is a unified namespace that will enable you to work with most ComponentOne WPF or Silverlight controls without adding multiple namespaces.

6. Add the `<c1:C1ReportViewer x:Name="C1ReportViewer1" />` tag within the Grid tags on the page to add the C1ReportViewer control to the application.

   The XAML will appear similar to the following:

   XAML
   ```
   <Grid x:Name="LayoutRoot" Background="White">
       <c1:C1ReportViewer x:Name="C1ReportViewer1" />
   </Grid>
   ```

   This will add a C1ReportViewer control named "C1ReportViewer1" to the application. If you run the application now, it will appear similar to the following image:



You've successfully set up your application's user interface, but if you run your application now you'll see that the C1ReportViewer control currently contains no content. In the next steps you'll add content to the C1ReportViewer control, and then you'll observe some of the run-time interactions possible with the control.

From 2015v2 onwards, please add C1.Win.4 and C1.Win.Barcode.4 dlls to the Silverlight applications referencing C1.WPF.C1Report.CustomFields.4 dll.

Step 2 of 3: Adding Content to the C1ReportViewer Control

In the previous step you created a WPF application and added the C1ReportViewer control to your project. In this step you'll add PDF content to the C1ReportViewer control. Note that in this step you will add a PDF file that is included with the **WPF Edition** samples, which are by default installed in the **Documents** or **MyDocuments** folder in the **Documents\ComponentOne Samples\WPF** or **Documents\ComponentOne Samples\Silverlight** directory. If you choose, you can instead use another PDF file and adapt the steps. To customize your project and add a PDF file to the C1ReportViewer control in your application, complete the following steps:

1. Navigate to the Solution Explorer, right-click the project name, and select **Add** | **Existing Item**.
2. In the **Add Existing Item** dialog box, locate the **C1XapOptimizer.pdf** file included in the **ControlExplorer** sample. In the file type drop-down box, you may need to choose **All Files** to view the PDF file. Note that if you choose, you can instead pick another PDF file to use.
3. In the Solution Explorer, click the PDF file you just added to the application. In the Properties window, set its **BuildAction** property to **Resource** and confirm that the **Copy to Output Directory** item is set to **Do not Copy**.

4. Switch to Code view by right-clicking the page and selecting **View Code**. In the next steps you'll add XAML markup to your application to add content to the drop-down box.
5. Add the following imports statement at the top of the page:

Visual Basic

```
Imports C1.WPF.ReportViewer
```

C#

```
using C1.WPF.ReportViewer;
```

6. Add the following code to the main class:

Visual Basic

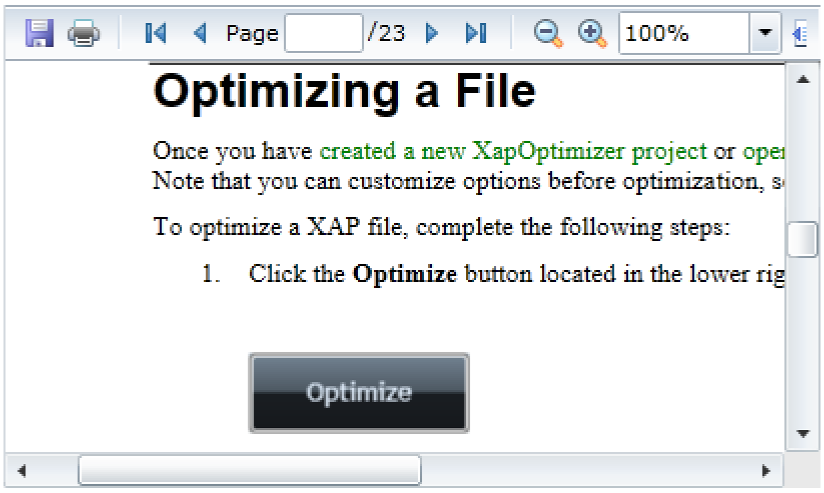
```
Public Sub New()
    InitializeComponent()
    Dim resource = Application.GetResourceStream(New
Uri("QuickStart;component/C1XapOptimizer.pdf", UriKind.Relative))
Me.C1ReportViewer1.LoadDocument(resource.Stream)
End Sub
```

C#

```
public MainPage()
{
    InitializeComponent();
    var resource = Application.GetResourceStream(new
Uri("QuickStart;component/C1XapOptimizer.pdf", UriKind.Relative));
    this.C1ReportViewer1.LoadDocument(resource.Stream);
}
```

This code adds a stream and loads the stream into the C1ReportViewer control. Note that if you named the application differently, you will need to replace "QuickStart" with the name of your project. If you added a different PDF file, replace "C1XapOptimizer.pdf " with the name of your file.

If you run the application now, it will appear in the content window within the C1ReportViewer control:



Optimizing a File

Once you have created a new XapOptimizer project or ope
Note that you can customize options before optimization, s

To optimize a XAP file, complete the following steps:

1. Click the Optimize button located in the lower rig

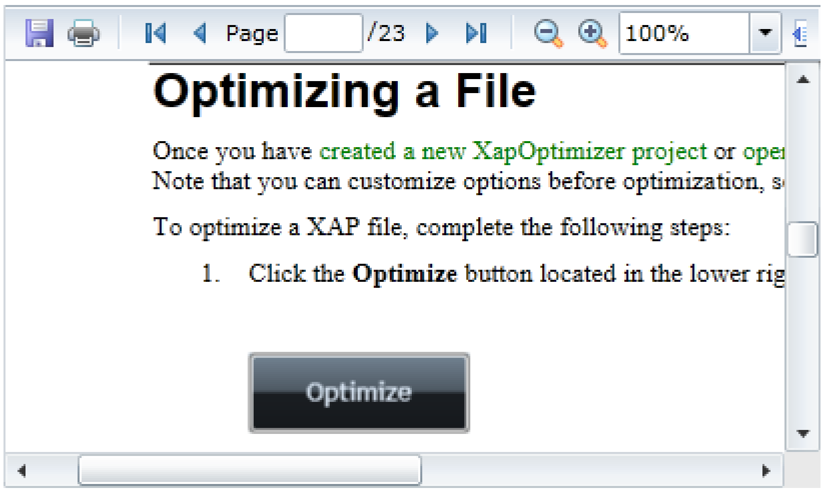
In this step you added content to the C1ReportViewer control. In the next step you'll view some of the run-time interactions possible in the control.

Step 3 of 3: Running the C1ReportViewer Application

Now that you've created a WPF or Silverlight application and added content to the C1ReportViewer control, the only thing left to do is run your application. To run your application and observe **ReportViewer for WPF and Silverlight**'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 similar to the following:



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To optimize a XAP file, complete the following steps:

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   The C1ReportViewer control appears as a toolbar and content area. Notice that the PDF file you added appears in the content area of the control.

2. In the toolbar, click the **Next Page** arrow button to move to the next page of the PDF file. You can return to the previous page by clicking the **Previous Page** arrow button. You can also navigate to the first or last page of the document using the **First Page** and **Last Page** buttons.
3. Click the **Zoom Out** button to view more of the PDF in the window. Note that you can also choose a zoom level by clicking the **Zoom** drop-down box.

4. Click the **Fit Width** button to automatically fit the width of the PDF file to the size of the viewer's content window. Other options include **OnePage** to view the entire page in the available space and **TwoPage** to view two pages of the document in the available space.
5. Click in the **Search** text box and enter text to search for – for example "Sales". Notice that the document scrolls to the next instance of that word and that the word is highlighted in the PDF file. The toolbar also displays the number of instances of that word or phrase. You can click the **Find Previous** and **Find Next** buttons to navigate to the previous or next instance of the word.
6. Click the **Save** button. In the **Save** As dialog box enter a name for the file and click the **Save** button to save the file to a location of your choice. If you choose, you can click the **Print** button in the toolbar to print the file.

Congratulations! You've completed the **C1ReportViewer** quick start and created a simple application, added and customized a **ReportViewer for WPF and Silverlight** control, and viewed some of the run-time capabilities of the control.

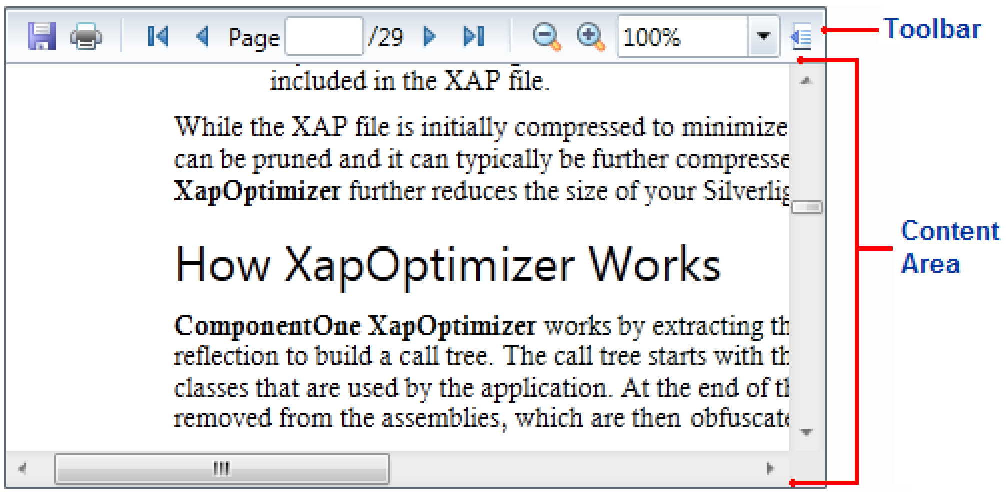
ReportViewer for WPF Layout and Appearance

The following topics detail how to customize the C1ReportViewer control's 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 Silverlight's XAML-based styling. You can also use templates to format and lay out the control and to customize the control's actions.

ReportViewer Elements

ReportViewer for WPF and Silverlight includes the C1ReportViewer control, a simple viewer that allows you to load and view HTML and PDF files. When you add the C1ReportViewer control to a XAML window it exists as a fully functional input control that can be customized and include loaded content.

The C1ReportViewer control consists of two parts: a toolbar and a content area. The image below identifies the toolbar and content area:



included in the XAP file.

While the XAP file is initially compressed to minimize
can be pruned and it can typically be further compresse
XapOptimizer further reduces the size of your Silverlig

How XapOptimizer Works

ComponentOne XapOptimizer works by extracting th
reflection to build a call tree. The call tree starts with th
classes that are used by the application. At the end of th
removed from the assemblies, which are then obfuscate

Any HTML content or PDF that you load into the C1ReportViewer control will be viewed in the content area. The toolbar allows users to manipulate the content at run time, for example to print or zoom in or out the content. For more information about the content area and toolbar, see the ReportViewer Content Area and ReportViewer Toolbar topics.

ReportViewer for WPF and Silverlight also includes the C1ReportViewerToolbar control which consists of just the toolbar element.

ReportViewer Templates

One of the main advantages to using a WPF 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 WPF applications, you can provide your own UI for data managed by **ReportViewer for WPF and Silverlight**. 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 the C1ReportViewer control and, in the menu, selecting **Edit Template**. Select **Edit a Copy** to create an editable copy of the current template or **Create Empty**, to create a new blank template.

Once you've created a new template, the template will appear in the **Objects and Timeline** window. Note that you can use the Template property to customize the template.

> **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.

Additional Templates

In addition to the default template, the C1ReportViewer control includes a few additional templates. These additional templates can also be accessed in Microsoft Expression Blend – in Blend select the C1ReportViewer control and, in the menu, select **Edit Additional Templates**. Choose a template, and select **Create Empty**.

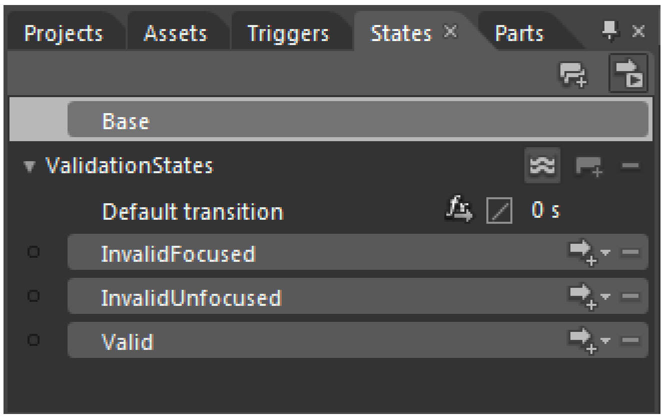
C1ReportViewer Styles and Templates

ReportViewer for WPF and Silverlight's C1ReportViewer control provides several style properties that you can use to change the appearance of the control. Some of the included styles are described in the table below:

Style	**Description**
FocusVisualStyle	Gets or sets a property that enables customization of appearance, effects, or other style characteristics that will apply to this element when it captures keyboard focus. This is a dependency property.
FontStyle	Gets or sets the font style. This is a dependency property.
PageTemplate	Gets or sets the DataTemplate used to display pages.
Style	Gets or sets the style used by this element when it is rendered. This is a dependency property.
ToolbarStyle	Gets or set the style applied to this C1ReportViewer control's toolbar.

C1ReportViewer Visual States

In Microsoft Expression Blend, you can add custom states and state groups to define a different appearance for each state of your user control – for example, the visual state of the control could change on mouse over. You can view and edit visual states by creating a new template. Once you've done so the available visual states for that part will be visible in the **States** window:



Run-Time Interaction

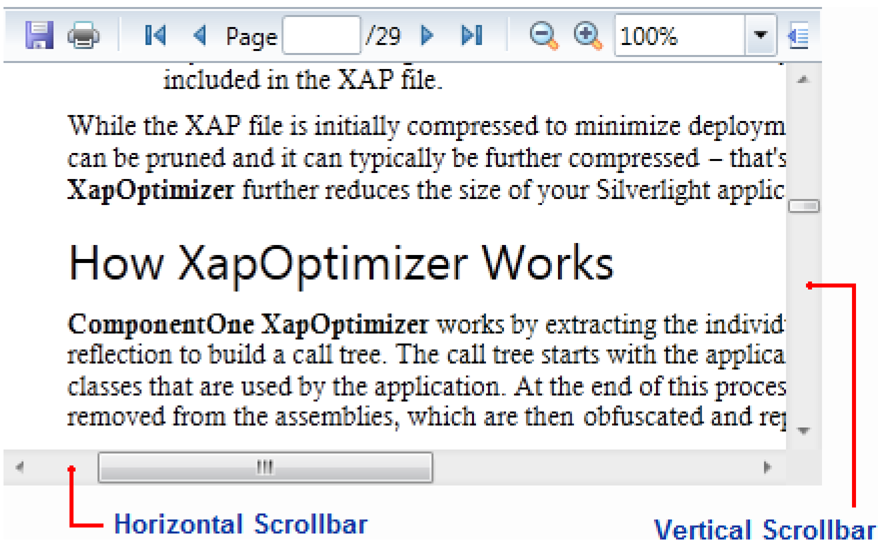
Users can interact with items in the toolbar and content area of the C1ReportViewer control at run time. Users can move and drag content in the content area or use the toolbar to manipulate the document displayed in the content area.

ReportViewer Content Area

At run time, users can manipulate content in the content area, scrolling, selecting, and copying content from the C1ReportViewer control.

Scrolling Content

When the content of the control is taller and viewer than the viewing area of the control's content area, scrollbars appear to allow users to move to different areas of the document:



included in the XAP file.

While the XAP file is initially compressed to minimize deploym
can be pruned and it can typically be further compressed – that's
XapOptimizer further reduces the size of your Silverlight applic

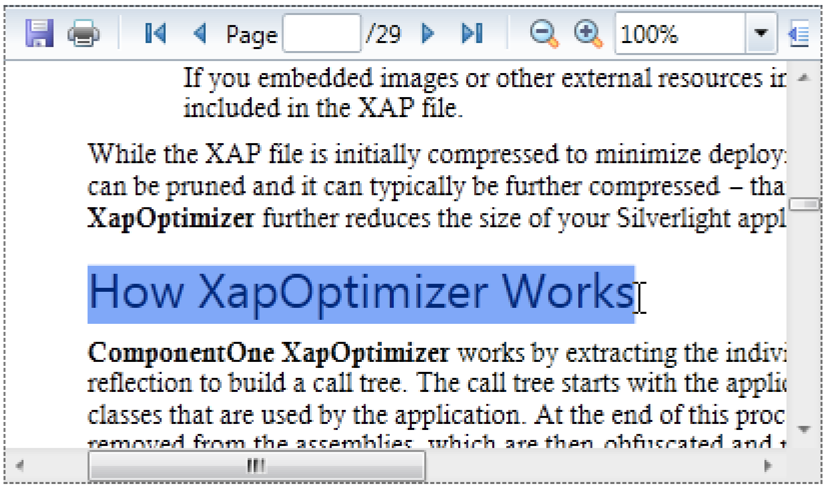
How XapOptimizer Works

ComponentOne XapOptimizer works by extracting the individ
reflection to build a call tree. The call tree starts with the applica
classes that are used by the application. At the end of this proces
removed from the assemblies, which are then obfuscated and re

You can scroll through the content area using the arrow buttons, moving the scrollbar thumb buttons, with the keyboard arrow buttons, or with the mouse scroll wheel.

Selecting Content

You can select content using by clicking and dragging the mouse cursor over the content you want to select. When content is selected, it will appear highlight. For example, the words "How XapOptimizer Works" are selected in the image below:


Page /29 100%

If you embedded images or other external resources ir
included in the XAP file.

While the XAP file is initially compressed to minimize deploy
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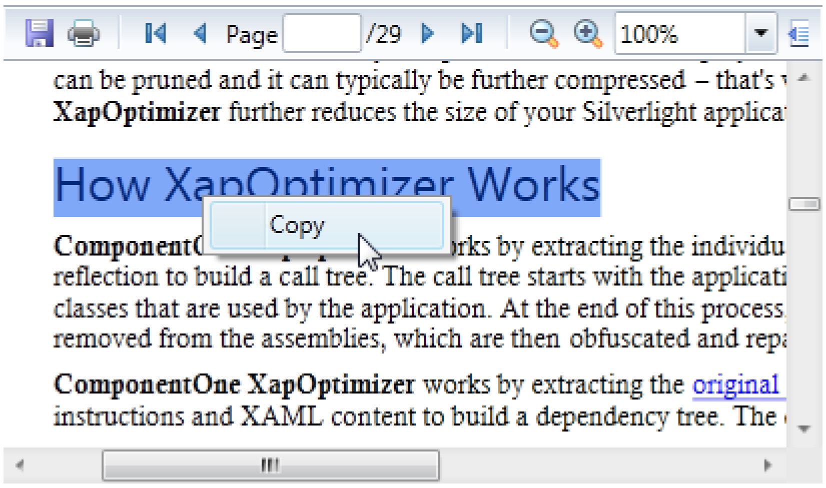
classes that are used by the application. At the end of this proc
removed from the assemblies, which are then obfuscated and r

Copying Content

The C1ReportViewer control includes a context menu that allows you to copy content. First select the content that you want to copy and then right-click the document. A context menu will appear; by selecting **Copy** in the context menu you can copy the content:



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How XapOptimizer Works

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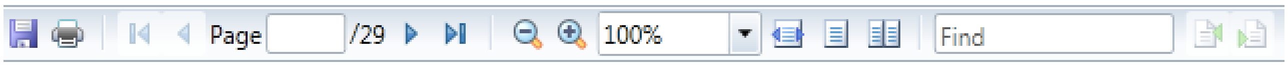
reflection to build a call tree. The call tree starts with the applicati
classes that are used by the application. At the end of this process
removed from the assemblies, which are then obfuscated and repa

ComponentOne XapOptimizer works by extracting the original
instructions and XAML content to build a dependency tree. The

You can also copy selected content using the keyboard by using the **CTRL + C** key combination.

ReportViewer Toolbar

At run time, users can use the toolbar to manipulate the document displayed in the content area. The toolbar appears similar to the following image by default:



Note that some items in the toolbar are not active or visible by default. For example, the **Previous Page** button is not active when on the first page of the document. The following options are included in the toolbar:

Image	Name	Description
💾	Save	Save the current document to the local file system.
🖨	Print	Prints the current document.
⏮	First Page	Navigates to the first page in the document.
◀	Previous Page	Navigates to the previous page in the document.
Page 3 /29	Page	Navigates to a specific page entered in the text box.
▶	Next Page	Navigates to the next page in the document.
⏭	Last Page	Navigates to the last page in the document.
🔍	Zoom Out	Zooms out of the document.
🔍	Zoom In	Zooms into the document.
100% ▾	Zoom	Zooms to the value selected.
	Fit Width	Fits the width of the document to the size of the viewport.
📄	One Page	Fits the size of the document to the size of the viewport so that an entire page is displayed.
	Two Pages	Displays two pages side-by-side.
Find	Find	Searches the document for text entered in the box as it is typed.
	Find Previous	Navigates to the previous instance of the searched text.
	Find Next	Navigates to the next instance of the searched text.

Each of the toolbar interactions can be also be performed programmatically so that you can easily replace the built-in toolbar with your own custom toolbar. If you choose to create a custom toolbar, you can hide the built-in toolbar using the ToolbarVisibility property.

C1ReportViewer Task-Based Help

The following task-based help topics assume that you are familiar with Visual Studio and Expression Blend and know how to use the C1ReportViewer control in general. If you are unfamiliar with the **ReportViewer for WPF and Silverlight** product, please see the C1ReportViewer Quick Start first.

Each topic in this section provides a solution for specific tasks using the **ReportViewer for WPF and Silverlight** product. Most task-based help topics also assume that you have created a new WPF or Silverlight project and added a C1ReportViewer control to the project – for information about creating the control, see Adding C1ReportViewer to the Application.

Adding C1ReportViewer to the Application

Complete the following steps to add a C1ReportViewer control to your application:

1. From the Visual Studio **File** menu select **New** and choose **Project**.
2. In the **New Project** dialog box choose a language in the left-side menu, choose **.NET Framework 4** in the **Framework** drop-down list, and enter a name for the project.
3. In the Solution Explorer, right-click the project name and choose **Add Reference**. In the **Add Reference** dialog box, locate and select the following assemblies and click **OK** to add references to your project:
    - C1.WPF
    - C1.WPF.ReportViewer
    - C1.WPF.RichTextBox
    - C1.WPF.Zip
4. Open the XAML view of the MainWindow.xaml file and add the XAML namespace to the UserControl tag with the following markup: `xmlns:c1="http://schemas.componentone.com/winfx/2006/xaml"`.

    The namespaces will now appear similar to the following:

    XAML
    ```
    <Window x:Class="MainWindow"
        xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
        xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
        xmlns:c1="http://schemas.componentone.com/winfx/2006/xaml"
        Title="MainWindow" Height="350" Width="525">
    ```

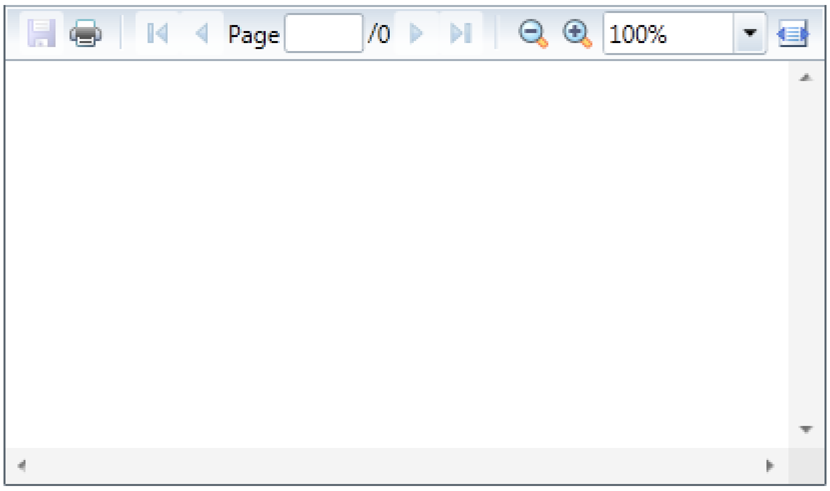
    This is a unified namespace that will enable you to work with most ComponentOne WPF or Silverlight controls without adding multiple namespaces.

5. Add the `<c1:C1ReportViewer x:Name="C1ReportViewer1" />` tag within the Grid tags on the page to add the C1ReportViewer control to the application.

    The XAML will appear similar to the following:

    XAML
    ```
    <Grid x:Name="LayoutRoot" Background="White">
        <c1:C1ReportViewer x:Name="C1ReportViewer1" />
    </Grid>
    ```

    This will add a C1ReportViewer control named "C1ReportViewer1" to the application. If you run the application now, it will appear similar to the following image:



You've successfully set up your application's user interface, but if you run your application now you'll see that the C1ReportViewer control currently contains no content. See the Loading Documents into C1ReportViewer topic for options for loading content.

Note: If the **C1ReportViewer** control was installed to the Visual Studio Toolbox, simply dragging the control onto a page will automatically perform all the steps above.

Loading Documents into C1ReportViewer

If you run the application after adding a C1ReportViewer control to your application, you'll see an empty C1ReportViewer on the page. The next step is to invoke the LoadDocument method to add some content to the control. The LoadDocument method allows you to load content from **Stream** objects (which may contain PDF, HTML, or MHTML documents), or from **strings** (which may contain HTML or MHTML documents).

You can easily load a document from an application resource. For example, complete the following steps:

1. Navigate to the Solution Explorer, right-click the project name, and select **Add | Existing Item**.
2. In the **Add Existing Item** dialog box, locate a PDF file. In the file type drop-down box, you may need to choose **All Files** to view the PDF file. Note that if you choose, you can instead pick another PDF file to use.
3. In the Solution Explorer, click the PDF file you just added to the application (in this example, we'll assume the file is named **resource.pdf**). In the Properties window, set its **BuildAction** property to **Resource** and confirm that the **Copy to Output Directory** item is set to **Do not Copy**.
4. Switch to Code view by right-clicking the page and selecting **View Code**. In the next steps you'll add XAML markup to your application to add content to the drop-down box.
5. Add the following imports statement at the top of the page:

Visual Basic

```
Imports C1.WPF.ReportViewer
```

C#

```
using C1.WPF.ReportViewer;
```

6. Add the following code to the main class:

Visual Basic

```
Public Sub New()
    InitializeComponent()
    Dim resource = Application.GetResourceStream(New
Uri("AppName;component/resource.pdf", UriKind.Relative))
Me.C1ReportViewer1.LoadDocument(resource.Stream)
End Sub
```

C#

```
public MainPage()
{
    InitializeComponent();
    var uri = new Uri("/AppName;component/resource.pdf", UriKind.Relative);
    var resource = Application.GetResourceStream(uri);
    this.C1ReportViewer1.LoadDocument(resource.Stream);
}
```

This code adds a stream and loads the stream into the C1ReportViewer control. Note that if you named the application differently, you will need to replace "AppName" with the name of your project. If you added a different PDF file, replace "resource.pdf" with the name of your file.

Loading Documents from Application Resources (Silverlight)

You can easily load a document from an application resource. For example, complete the following steps:

1. Navigate to the Solution Explorer, right-click the project name, and select **Add** | **Existing Item**.
2. In the **Add Existing Item** dialog box, locate a PDF file. In the file type drop-down box, you may need to choose **All Files** to view the PDF file. Note that if you choose, you can instead pick another PDF file to use.
3. In the Solution Explorer, click the PDF file you just added to the application (in this example, we'll assume the file is named **resource.pdf**). In the Properties window, set its **BuildAction** property to **Resource** and confirm that the **Copy to Output Directory** item is set to **Do not Copy**.
4. Switch to Code view by right-clicking the page and selecting **View Code**. In the next steps you'll add XAML markup to your application to add content to the drop-down box.
5. Add the following imports statement at the top of the page:

Visual Basic

```
Imports C1.Silverlight|variable=Silverlight.ReportViewer
```

C#

```
using C1.Silverlight|variable=Silverlight.ReportViewer;
```

6. Add the following code to the main class:

Visual Basic

```
Public Sub New()
    InitializeComponent()
    Dim resource = Application.GetResourceStream(New
Uri("AppName;component/resource.pdf", UriKind.Relative))
Me.C1ReportViewer1.LoadDocument(resource.Stream)
End Sub
```

C#

```
public MainPage()
{
    InitializeComponent();
    var uri = new Uri("/AppName;component/resource.pdf", UriKind.Relative);
    var resource = Application.GetResourceStream(uri);
    this.C1ReportViewer1.LoadDocument(resource.Stream);
}
```

This code adds a stream and loads the stream into the C1ReportViewer control. Note that if you named the application differently, you will need to replace "AppName" with the name of your project. If you added a different PDF file, replace "resource.pdf" with the name of your file.

Loading Documents from Files on the Client Machine (Silverlight)

In this example, you'll set up the application so that users can load a file from the local file system. You will add a button to the application and then add code to choose and open a file at run time. Because this example uses the **OpenFileDialog** control this code must be executed in a **Button Click** event. Note that this topic assumes you have added a C1ReportViewer control named "C1ReportViewer1" to your application.

Complete the following steps.

1. Open the MainPage.xaml file in your application, and open XAML view.
2. Add the following markup to add a button control to the application.
   `<Button Content="Load File" Height="23" Name="Button1" Width="70" Click="Button1_Click" />`
3. Right-click the page and select **View Code**. In Code View you'll add code to initialize the button you added in the previous step.
4. Add the following imports statement at the top of the page:

Visual Basic

```
Imports C1.Silverlight.ReportViewer
```

C#

```
using C1.Silverlight.ReportViewer;
```

5. Add the following **Button_Click** event handler code:

Visual Basic

```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As
System.Windows.RoutedEventArgs) Handles Button1.Click
    Dim dialog = New OpenFileDialog()
    dialog.Filter = "PDF files|*.pdf|HTML files|*.html;*.mhtml"
    If dialog.ShowDialog() = True Then
        Using fileStream = dialog.File.OpenRead()
            Try
                C1ReportViewer1.LoadDocument(fileStream)
            Catch ex As Exception
                MessageBox.Show("Failed to load document.")
            End Try
        End Using
    End If
End Sub
```

C#

```
private void Button1_Click(System.Object sender, System.Windows.RoutedEventArgs e)
{
   dynamic dialog = new OpenFileDialog();
   dialog.Filter = "PDF files|*.pdf|HTML files|*.html;*.mhtml";
   if (dialog.ShowDialog() == true) {
         using (fileStream == dialog.File.OpenRead()) {
               try {
                     C1ReportViewer1.LoadDocument(fileStream);
               } catch (Exception ex) {
                     MessageBox.Show("Failed to load document.");
               }
         }
   }
}
```

This code initializes a dialog box to be opened when the button is clicked. In the dialog box users can select a file to open in the C1ReportViewer control. Notice how, in the code above, the **LoadDocument** method allows you to load PDF and HTML content.

6. Run the application.
7. In the running application, click the **Load File** button. Notice that a dialog box appears, allowing you to choose a PDF or HTML file of your choice.
8. Locate and select a PDF file on your local machine to open and then click the **Open** button. The dialog box will close and the file you selected will be loaded into the C1ReportViewer control.

Loading Documents from Files on the Server (Silverlight)

A common usage scenario for the **C1ReportViewer** control is to have a report server (such as **C1Report** or Microsoft SQL Server Reporting Services) generate reports on a schedule, and deploy them to the file system on the server. Your Silverlight or WPF applications can then get these files from the server and display them to the user with very little overhead.

This scenario is illustrated in the **C1ReportViewerQuickstart** sample.

After adding the **C1ReportViewer** to your application, you should add a Silverlight-enabled WCF service to the server project. This service will provide the Silverlight client with the list of reports available and with the actual document streams for each report.

For example, the following is a typical implementation of a report provider Web service:

Visual Basic

```
<ServiceContract([Namespace] := "")> _
<AspNetCompatibilityRequirements(RequirementsMode :=
AspNetCompatibilityRequirementsMode.Allowed)> _
Public Class ReportingService
      <OperationContract> _
      Public Function GetReportList() As String()
      Dim path__1 = Path.Combine(System.AppDomain.CurrentDomain.BaseDirectory,
"Resources")
      Return Directory.GetFiles(path__1, "*.pdf")
      End Function
      <OperationContract>
Public Function GetReportStream(reportName As String) As Byte()
      ' get file name
      Dim path__1 = Path.Combine(System.AppDomain.CurrentDomain.BaseDirectory,
"Resources")
      reportName = Path.Combine(path__1, reportName)

      ' load file into stream
      Dim ms = New MemoryStream()
      Dim buff = New Byte(63999) {}
      Using sr = New FileStream(reportName, FileMode.Open)
            While True
                  Dim read As Integer = sr.Read(buff, 0, buff.Length)
                  ms.Write(buff, 0, read)
                  If read = 0 Then
                        Exit While
                  End If
            End While
      End Using
End Function
' return byte stream
Return ms.ToArray()
End Class
```

C#

```
[ServiceContract(Namespace = "")]
[AspNetCompatibilityRequirements(RequirementsMode =
         AspNetCompatibilityRequirementsMode.Allowed)]
public class ReportingService
{
  [OperationContract]
  public string[] GetReportList()
  {
    var path = Path.Combine(System.AppDomain.CurrentDomain.BaseDirectory,
"Resources");
    return Directory.GetFiles(path, "*.pdf");
  }

  [OperationContract]
  public byte[] GetReportStream(string reportName)
  {
    // get file name
      var path = Path.Combine(System.AppDomain.CurrentDomain.BaseDirectory,
"Resources");
      reportName = Path.Combine(path, reportName);

      // load file into stream
      var ms = new MemoryStream();
      var buff =new byte[64000];
      using (var sr = new FileStream(reportName, FileMode.Open))
      {
        for (; ; )
        {
          int read = sr.Read(buff, 0, buff.Length);
          ms.Write(buff, 0, read);
          if (read == 0) break;
        }
      }
    }

    // return byte stream
    return ms.ToArray();
  }
}
```

As you can see, the code is very standard. The first method lists the reports available on the server so the Silverlight application can show a list of reports to the user, and the second method returns the byte stream that represents the selected report.

The client part of the application uses the service as follows:

Visual Basic

```
Public Sub New()
      InitializeComponent()
      ' go get the list of reports available
      Dim svc = New ReportingServiceReference.ReportingServiceClient()
      AddHandler svc.GetReportListCompleted, AddressOf svc_GetReportListCompleted
      svc.GetReportListAsync()
End Sub

' populate ComboBox with list of reports available on the server
Private Sub svc_GetReportListCompleted(sender As Object, e As
ReportingServiceReference.GetReportListCompletedEventArgs)
      _cmbReport.Items.Clear()
      For Each file As String In e.Result
            _cmbReport.Items.Add(Path.GetFileNameWithoutExtension(file))
      Next
      _cmbReport.IsEnabled = True
      _cmbReport.SelectedIndex = 0
End Sub

' show the report that was selected
Private Sub ReportType_Click(sender As Object, e As EventArgs)
      ' build report name
      Dim reportName As String = DirectCast(_cmbReport.SelectedItem, String)
      reportName += If(_btnPDF.IsChecked.Value, ".pdf", ".mhtml")

      ' go get the stream
      Dim svc = New ReportingServiceReference.ReportingServiceClient()
      AddHandler svc.GetReportStreamCompleted, AddressOf svc_GetReportStreamCompleted
      svc.GetReportStreamAsync(reportName)
End Sub

' display the report
Private Sub svc_GetReportStreamCompleted(sender As Object, e As
ReportingServiceReference.GetReportStreamCompletedEventArgs)
      Dim ms = New MemoryStream(e.Result)
      _reportViewer.LoadDocument(ms)
End Sub
```

C#

```
public MainPage()
{
  InitializeComponent();

  // go get the list of reports available
  var svc = new ReportingServiceReference.ReportingServiceClient();
  svc.GetReportListCompleted += svc_GetReportListCompleted;
  svc.GetReportListAsync();
}

// populate ComboBox with list of reports available on the server
void svc_GetReportListCompleted(object sender,
  ReportingServiceReference.GetReportListCompletedEventArgs e)
{
  _cmbReport.Items.Clear();
  foreach (string file in e.Result)
  {
    _cmbReport.Items.Add(Path.GetFileNameWithoutExtension(file));
  }
  _cmbReport.IsEnabled = true;
  _cmbReport.SelectedIndex = 0;
}

// show the report that was selected
void ReportType_Click(object sender, EventArgs e)
{
  // build report name
  string reportName = (string)_cmbReport.SelectedItem;
    reportName += _btnPDF.IsChecked.Value ? ".pdf" : ".mhtml";

    // go get the stream
    var svc = new ReportingServiceReference.ReportingServiceClient();
    svc.GetReportStreamCompleted += svc_GetReportStreamCompleted;
    svc.GetReportStreamAsync(reportName);
  }

  // display the report
  void svc_GetReportStreamCompleted(object sender,
    ReportingServiceReference.GetReportStreamCompletedEventArgs e)
  {
    var ms = new MemoryStream(e.Result);
    _reportViewer.LoadDocument(ms);
  }
```

Creating and Loading Reports Dynamically (Silverlight)

Another fairly common scenario is dynamic report creation. In this case, you would configure the report server to allow access from your application server, and would use a Web service similar to the one described in the Loading Documents from Files on the Server topic to obtain the report stream directly from the report server (instead of loading it from a file).

The specific steps involved depend on the specific report server you are using. To dynamically obtain a PDF report from a Microsoft SQL Server Reporting Services server, for example, you would modify the Web service listed in the Loading Documents from Files on the Server topic as follows:

Visual Basic

```
<ServiceContract([Namespace] := "")> _
<AspNetCompatibilityRequirements(RequirementsMode :=
AspNetCompatibilityRequirementsMode.Allowed)> _
Public Class ReportsService
      <OperationContract> _
      Public Function GetReportStream(reportName As String) As Byte()
            Dim reportServer As String = "YOUR REPORT SERVER NAME"

            Dim url = String.Format("http://{0}/ReportServer?/{1}&rs:Format=PDF",
reportServer, reportName.Replace(" "C, "+"C))

            Dim wc = New System.Net.WebClient()
            wc.UseDefaultCredentials = True

            Dim stream = wc.OpenRead(url)
            Dim ms = New MemoryStream()

            Dim buf = New Byte(64 * 1024 - 1) {}
            While True
                  Dim read As Integer = stream.Read(buf, 0, buf.Length)
                  If read = 0 Then
                        Exit While
                  End If
                  ms.Write(buf, 0, read)
            End While
            ms.Flush()

            Return ms.ToArray()
      End Function
End Class
```

C#

```
[ServiceContract(Namespace = "")]
[AspNetCompatibilityRequirements(RequirementsMode =
     AspNetCompatibilityRequirementsMode.Allowed)]
public class ReportsService
{
  [OperationContract]
  public byte[] GetReportStream(string reportName)
  {
    string reportServer = "YOUR REPORT SERVER NAME";

    var url = string.Format("http://{0}/ReportServer?/{1}&rs:Format=PDF",
      reportServer,
      reportName.Replace(' ', '+'));

    var wc = new System.Net.WebClient();
    wc.UseDefaultCredentials = true;

    var stream = wc.OpenRead(url);
    var ms = new MemoryStream();

    var buf = new byte[64 * 1024];
    for (; ; )
    {
      int read = stream.Read(buf, 0, buf.Length);
      if (read == 0) break;
      ms.Write(buf, 0, read);
    }
    ms.Flush();

    return ms.ToArray();
  }
}
```

As you can see, the difference is minimal. This approach still allows you to specify the report caching policy on the report server, so there is no loss of performance or scalability.

Hiding the Toolbar

If you choose to create a customized toolbar (for an example, see the Customizing the Toolbar topic), you may need to hide the default toolbar available in the C1ReportViewer control. You can hide the built-in toolbar using the ToolbarVisibility property. For example:

XAML

```
<c1:C1ReportViewer x:Name="C1ReportViewer1" ToolbarVisibility="Collapsed"/>
```

Visual Basic

```
Me.C1ReportViewer.ToolbarVisibility = Visibility.Collapsed
```

C#

```
this.C1ReportViewer.ToolbarVisibility = Visibility.Collapsed;
```

Customizing the Toolbar

Creating a custom toolbar for **C1ReportViewer** is very simple. All buttons in the default toolbar have a corresponding Command in the control, so you can create a custom toolbar using only XAML. Here is some sample code using **C1Toolbar** to create a **C1ReportViewer** toolbar:

XAML

```
<Grid x:Name="LayoutRoot">
    <Grid.RowDefinitions>
        <RowDefinition Height="Auto" />
        <RowDefinition />
    </Grid.RowDefinitions>
    <c1:C1ToolbarStrip>
        <c1:C1ToolbarButton
```

```
            Content="First"
            Command="{Binding FirstPageCommand,ElementName=reportViewer}" />
        <c1:C1ToolbarButton
            Content="Previous"
            Command="{Binding PreviousPageCommand,ElementName=reportViewer}" />
        <ContentPresenter
            Content="{Binding PageNumber,ElementName=reportViewer}" />
        <TextBlock Text="/"/>
        <ContentPresenter
            Content="{Binding PageCount,ElementName=reportViewer}" />
        <c1:C1ToolbarButton
            Content="Next"
            Command="{Binding NextPageCommand,ElementName=reportViewer}" />
        <c1:C1ToolbarButton
            Content="Last"
            Command="{Binding LastPageCommand,ElementName=reportViewer}" />
        <ComboBox
            SelectedItem="{Binding Zoom,ElementName=reportViewer,Mode=TwoWay}">
            <sys:Double>0.5</sys:Double>
            <sys:Double>1</sys:Double>
            <sys:Double>1.5</sys:Double>
        </ComboBox>
    </c1:C1ToolbarStrip>
    <c1:C1ReportViewer
        x:Name="reportViewer"
        Grid.Row="1"
        ToolbarVisibility="Collapsed"/>
</Grid>
```

Note how all buttons bind the **Command** property to a command in **C1ReportViewer**. Also, you can easily bind to the **PageNumber** and **PageCount** properties to display the current page and total number of pages. Finally, a **ComboBox** is bound to the **Zoom** property allowing the user to control the zoom factor.

Several additional buttons can be customized using various commands. This is the list of commands:

Command	**Description**
SaveCommand	Saves the document.
PrintCommand	Prints the document.
FirstPageCommand	Navigates to the first page in the document.
PreviousPageCommand	Navigates to the previous page in the document.
NextPageCommand	Navigates to the next page in the document.
LastPageCommand	Navigates to the last page in the document.
DecreaseZoomCommand	Zooms out of the document.
IncreaseZoomCommand	Zooms into the document.
FindPreviousCommand	Finds the previous instance of the searched text.
FindNextCommand	Finds the next instance of the searched text.

C1PdfViewerToolbar's template also expects **ToggleButtons** with the following names:

Option	Description
FitWidth	Fits the width of the document to the size of the control.
OnePage	Displays one page.
TwoPages	Displays two pages side-by-side.

To use one of these ToggleButtons, for example TwoPages, inside a custom toolbar scenario, you would need to put the TwoPages ToggleButton inside the **C1ReportViewer** template. If you are making your own toolbar outside of the control, add a **Button** and set **C1ReportViewer.ViewMode = ViewMode.TwoPages** in the click handler.