

Chart FX OLAP

Chart FX Maps

Chart FX Statistical

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Pocket Chart FX

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Chart FX for .NET and SharePoint

Windows SharePoint Services allows teams to create Web sites for information sharing and document collaboration, benefits that help increase individual and team productivity. Windows SharePoint Services is a component of the Windows Server 2003 information worker infrastructure and provides team services and sites to Microsoft Office System and other desktop programs.

Since SharePoint is extensible, it only makes sense developers would be incorporating advanced components such as Chart FX into their SharePoint portal.

The following paper explains how to integrate Chart FX for .NET into a Microsoft SharePoint through a custom Web Part. There are other ways to include Chart FX, such as referencing an URL already configured to run Chart FX, however, this document focuses on creating a Chart FX chart through the more customizable Web Part feature.

Creating a Chart FX Web Part

This section will guide you through the entire process of downloading and installing the Visual Studio .NET add-on for building SharePoint Web Parts. Once installed within Visual Studio, this document explains step-by-step procedures for creating the Web Part, including some sample code you can use to create you own.

Downloading the Web Part Library Templates

First you will need to download and install the Web Part Library templates from Microsoft's website. This may be found at the following Url:

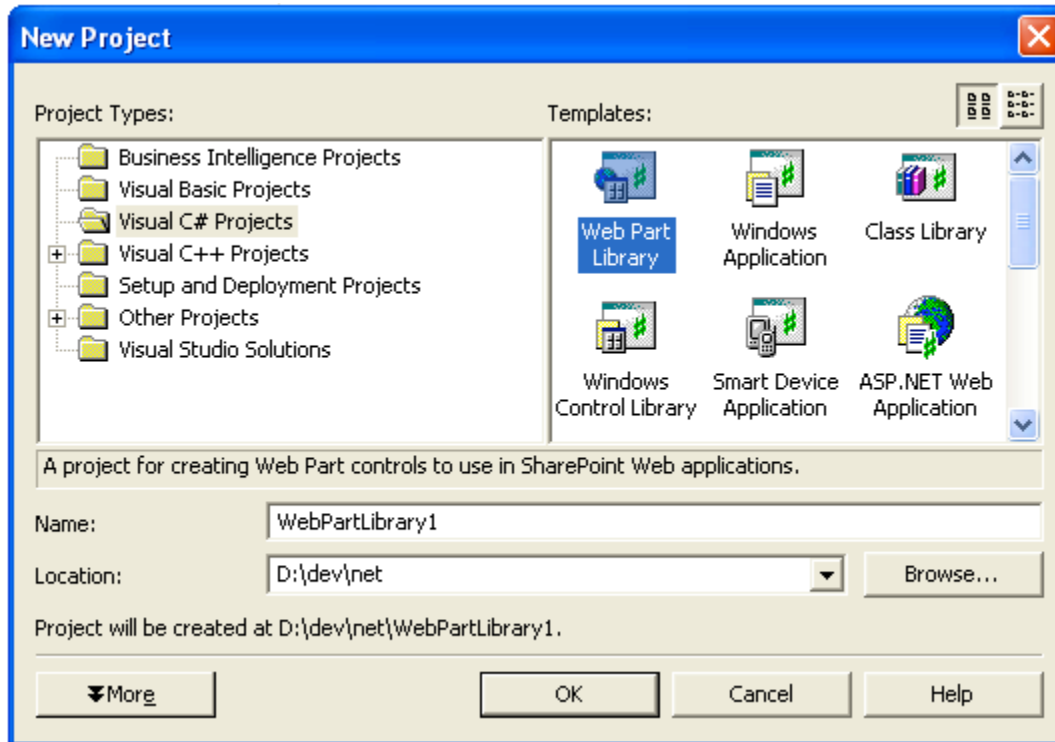
<http://www.microsoft.com/downloads/details.aspx?familyid=CAC3E0D2-BEC1-494C-A74E-75936B88E3B5&displaylang=en>

Note: During the installation, you will be prompted to add the path to the Microsoft.SharePoint.dll. This assembly is typically located on the SharePoint server at the following path:

```
local_drive\Program Files\Common Files\Microsoft Shared\Web Server  
Extensions\60\ISAPI\
```

Creating a Web Part Project

Once installed on a development machine, a Web Part Library template project will be available in both C# and VB projects. Open a new project, and select the Web Part Library template as the type of project. In this sample we are creating a C# Web Part project.



Referencing the Chart FX Assemblies

Add the following references to your Web Part project. These are the core components for Chart FX for .NET Web Forms. If you are using additional functionality (DataProviders or Extensions), you will also need to add those dependencies as well:

The core Chart FX for .NET dependencies include:

ChartFX.Internet.dll
ChartFX.Base.dll
ChartFX.Borders.dll

Programmatically Adding the Chart

Due to the lack of design time support for Web Part libraries, the Chart object should be created and accessed through code.

The Web Part project will have a CodeBehind page. In this case, a .cs file is included as C# was the selected development language. There is some unnecessary code in this file which may be deleted. You can remove this code from the project if you desire:

```
private const string defaultText = "";
private string text = defaultText;

[Browsable(true),
    Category("Miscellaneous"),
    DefaultValue(defaultText),
    WebPartStorage(Storage.Personal),
    FriendlyName("Text"),
    Description("Text Property")]

public string Text
{
    get
    {
        return text;
    }
    set
    {
        text = value;
    }
}

/// <summary>
/// This method gets the custom tool parts for this Web Part by
/// overriding the
/// GetToolParts method of the WebPart base class. You must implement
/// custom tool parts in a separate class that derives from
/// Microsoft.SharePoint.WebPartPages.ToolPart.
/// </summary>
///<returns>An array of references to ToolPart objects.</returns>
//      public override ToolPart[] GetToolParts()
//      {
//          ToolPart[] toolparts = new ToolPart[2];
//          WebPartToolPart wptp = new WebPartToolPart();
//          CustomPropertyToolPart custom = new
CustomPropertyToolPart();
//          toolparts[0] = wptp;
//          toolparts[1] = custom;
//          return toolparts;
//      }
/// <summary>
/// Render this Web Part to the output parameter specified.
/// </summary>
/// <param name="output"> The HTML writer to write out to </param>
```

Once you have removed the unnecessary sample code, you can now programmatically create the chart and begin configuring the desired attributes and data. Here is some chart related code used to create our sample:

```
public class WebPart1 : Microsoft.SharePoint.WebPartPages.WebPart
{
    Chart Chart1 = null;
    protected override void RenderWebPart(HtmlTextWriter output)
    {
        EnsureChildControls();
        this.Chart1.RenderControl( output );
    }

    protected override void CreateChildControls()
    {
        base.CreateChildControls();

        //add custom controls here
        Chart1 = new Chart();
        Chart1.BackColor = System.Drawing.Color.FromArgb( 220, 240,
240 );

        Chart1.BorderObject = new ImageBorder(
229 ) );
            ImageBorderStyle.Butterfly, Color.FromArgb( 244, 243,

        Chart1.Gallery = Gallery.Curve;
        Chart1.Chart3D = true;
        Chart1.Titles[0].Text = "Chart FX WebPart Chart!";

        Random r = new Random();
        //Open Communication channel for 3 series with 10 data
points
        Chart1.OpenData( COD.Values, 3, 10 );
        for (int i=0;i<3;i++)
        {
            for (int j=0;j<10;j++)
            {
                Chart1.Value[i,j] = r.NextDouble()*100;
            }
        }
        Chart1.CloseData( COD.Values );        //close comm channel

        this.Controls.Add( Chart1 );
    }
}
```

Building your Web Part Project

Now you are ready to build your Web Part application. The Chart FX dependencies and the Web Part assembly will be found in the bin folder of the Web Part project. In the root of the project, you will find the dwp file:

- bin/ChartFX.Internet.dll
- bin/ChartFX.Base.dll
- bin/ChartFX.Borders.dll
- bin/WebPartChartTest.dll
- WebPart1.dwp

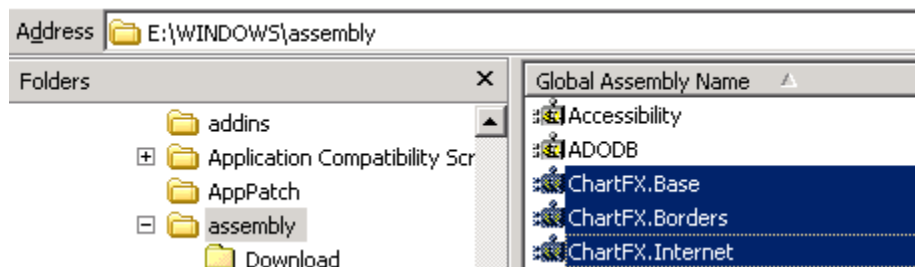
Note: The Web Part assembly will have the same name as the project.

Adding the Chart FX components to the Global Assembly Cache (GAC)

The Chart FX dependencies need be added to the GAC of the SharePoint server. At this time we are researching how Chart FX maybe utilized without adding these assemblies to the GAC:

- ChartFX.Internet.dll
- ChartFX.Base.dll
- ChartFX.Borders.dll

One of the easier ways of accomplishing this is by simply dragging the respective assemblies listed above into assembly folder within your windows installation folder.



Note: You must drag and drop the assemblies using windows explorer. Copying them using the command prompt will not invoke the necessary registration commands required. Also, if you are using any other Chart FX dependencies, they will also need to be added to the GAC.

Deploying the Web Part Assembly to the SharePoint Server

If it does not already exist, you will need to create a /bin folder at the root of the server (e.g. C:\inetpub\wwwroot\bin). Place the assembly generated from the Web Part project into this bin folder. In this sample, the Web Part assembly created was *WebPartChartTest.dll*.

Configuring the Web Part Assembly as Safe

Share Point must be configured to trust assemblies intended to be used through SharePoint. To accomplish this, the Web Part assembly must be identified as being a "Safe Control" within SharePoint's configuration file (e.g. c:\inetpub\wwwroot\web.config). To do this, simply add the reference to the Web Part assembly placed in the bin directory of the SharePoint Server:

```
<SafeControl Assembly="WebPartChartTest, Version=1.0.0.0, Culture=neutral" Namespace="WebPartChartTest" TypeName="*" Safe="True"/>
```

Note: The version number should match the version number set within the Web Part project. The Namespace should match the namespace where the Web Part exists.

Adding the Web Part to a SharePoint

Using the SharePoint user interface, Import the newly created Web Part file (dwp) into a page you wish to display the chart. This interface is located in the top right corner of the administrative page (e.g. <http://localhost/>).



Once you have selected to import a Web Part, a dialog will be prompted allowing you to browse for the Web Part to include. Browse to the folder Release or Debug folder of your Web Part project and select the .dwp file.

Excluding the Chart FX Virtual Directory in SharePoint

Since SharePoint portal assumes total control over the web application settings, it is necessary to specify which folders SharePoint should ignore and exclude from its management. Since Chart FX requires a temporary folder (e.g. ChartFX62) for generating images and stream files, this temporary folder must be excluded from SharePoint's control for Chart FX to function correctly.

This may be done via the WSS Administration Site found at the Administrative Tools of the SharePoint server (SharePoint Central Administration).

- In the Virtual Server Configuration section, select **Configure Virtual Server Settings**.
- From the Virtual Server List, select the appropriate website (i.e. **Default Web Site**).
- In the Virtual Server Management section, select **Define managed paths**.
- Add ChartFX62 to the excluded paths:

Excluded Paths

This list specifies which paths within the URL namespace are not managed by Windows SharePoint Services. Excluded paths take precedence over included paths.



	Path
<input type="checkbox"/>	uddi
<input type="checkbox"/>	uddipublic
<input type="checkbox"/>	chartfx62

Conclusion

Your Web Part, when rendered within SharePoint, should now display a default Chart FX chart. You may now customize the code in your Web Part, add other form elements, or any custom programming to enhance the functionality of the chart within SharePoint.

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About Software FX

Software FX was founded in 1993 with one idea in mind, creating the most powerful, yet easy to use, data analysis and reporting solutions for developers. The company continues to be 100% committed to not only providing top of the line components but also supplying the best possible customer and technical support. Today, Chart FX positions itself as the worldwide leader in helping developers integrate and display graphical information between and among diverse markets, platforms and environments. The Chart FX product line includes the core Chart FX for .NET, Chart FX Internet, Chart FX Client Server, Pocket Chart FX and Chart FX for Java. The added functionality of the Chart FX Extensions include Real-Time, OLAP, Financial, Wireless, Maps and Statistical.

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