



**Chart FX
for Lasso**

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Chapter 1 Introduction

This guide provides instructions for how to install, configure, and get started with Chart FX For Lasso 8.5.

- *Background* includes background information about Chart FX.
- *System Requirements* details the minimum requirements for running Chart FX.
- *Configuring Chart FX* documents important steps which must be taken to configure Chart FX.
- *Examples* documents how to install the Chart FX Example which provides an overview of the range of charts which can be created using Chart Fx for Lasso.
- *Activating Chart FX* includes instructions for activating Chart FX prior to deployment.

Background

LassoSoft has partnered with Software FX to bring Chart FX to the Lasso platform. Chart FX for Lasso enables developers to add graphically dynamic charts to their Web applications quickly and easily.

<http://www.chartfx.com/>

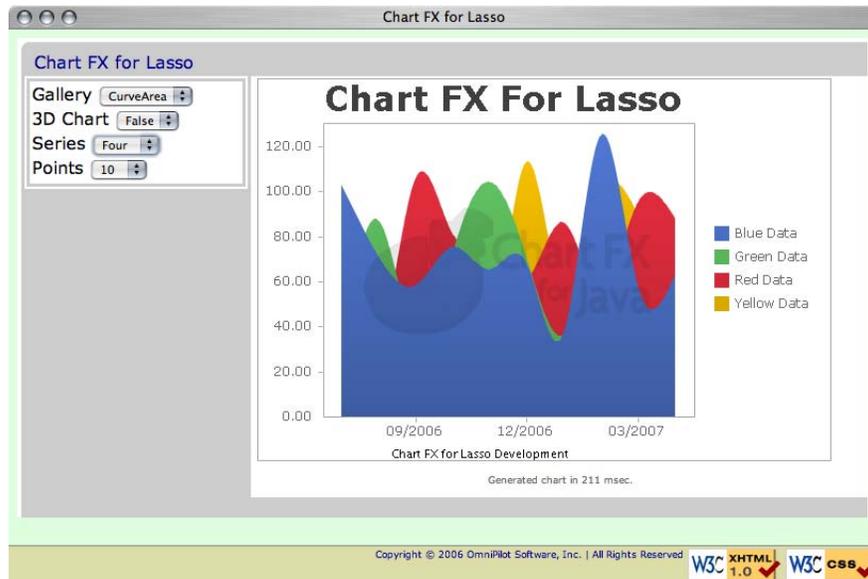
Chart FX, by Software FX, is the leading charting solution for enterprise developers wishing to add data visualization capabilities to their applications. Software FX has engineered Chart FX for Lasso for LassoSoft to deliver to the thriving Lasso development market. Lasso developers can make use of many of the Chart FX for Lasso features, including borders, 2D & 3D, rotation & perspective, transparency & anti-aliasing, labeling, gradients, constants, series attributes, customized legends and many more.

Chart FX for Lasso requires a separate serial number from Lasso 8.5. Chart FX for Lasso will run in developer mode without a serial number, but Chart FX must be activated before its charts can be deployed on a Web site. See the LassoSoft store for more information.

<http://store.lassosoft.com/>

Chart FX for Lasso is pre-installed in Lasso 8.5. The instructions below show how to activate Chart FX for Lasso. On Windows and Linux it may also be necessary to install Java. See the Lasso 8.5 Setup Guide for details about installing Java.

Figure 1: Chart FX



Note that the chart includes a watermark. This watermark is present on all charts created when Chart FX is in developer mode. The watermark can be removed by activating Chart FX following the instructions in the *Activating Chart FX* section.

System Requirements

Chart FX for Lasso supports all of the operating systems which Lasso 8.5 supports including:

- **Mac OS X** – Supports Mac OS X 10.4 Tiger (including universal support for both PowerPC and Intel-based computers) and Mac OS X 10.3 Panther.
- **Windows** – Supports Windows 2003 Server, Windows 2000, and Windows XP Pro. A valid Java installation is required (see the Lasso 8.5 Setup Guide).
- **Linux** – Supports Red Hat Enterprise Linux 4. A valid Java installation is required (see the Lasso 8.5 Setup Guide).

Configuring Chart FX

Chart FX requires some manual configuration before it can be used with Lasso. follow these steps to configure Chart FX before using it.

Note: This configuration is required to use the [ChartFX->Render] tag. If you use the [ChartFX->Data] tag exclusively then this configuration is unnecessary.

- 1 Open the ChartFX.Internet.config file located in the JavaLibraries folder in the Lasso Professional 8 application folder in a text editor and modify the path between the <Absolute> tags to the actual path to your Web server root and then the folders chartfx62/temp. The most common values are shown below.

Windows – C:\Temp\chartfx62\temp

Mac OS X – /Library/WebServer/Documents/chartfx62/temp/

Linux – /var/www/html/chartfx62/temp/

- 2 Create the folder chartfx62 with a folder temp inside it within your Web server root (should be the same path you set above). Do not choose different names for these folders. Ensure that the lasso user can read and write to both the chartfx62 folder and the temp folder within.
- 3 Restart Lasso Service.

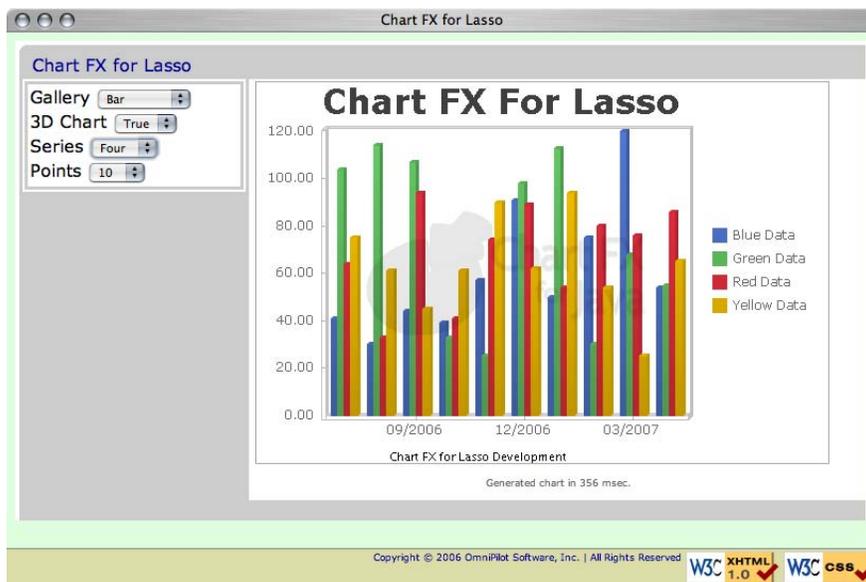
Examples

An example is included which demonstrates many of the capabilities of Chart FX for Lasso. In order to access the example, copy the Chart FX Example folder into your Web server root and load the index.lasso file within.

<http://localhost/Chart FX Example/index.lasso>

The example is shown below. The chart includes random data which can be manipulated by modifying the settings on the left. The Gallery includes many of the different chart types which can be created. 3D Chart selects whether to show the 2D or 3D version of each chart. Series controls how many data series are plotted on the chart. Points controls how many random data points are created.

Figure 2: Chart FX Example



Note that the chart includes a watermark. This watermark is present on all charts created when Chart FX is in developer mode. The watermark can be removed by activating Chart FX following the instructions in the next section.

Activating Chart FX

Chart FX for Lasso is pre-installed in Lasso 8.5. No additional installation is necessary. All of the files which are referenced in this guide can be found in the Chart FX folder within the Lasso Professional 8 application folder.

Activating Chart FX for Lasso

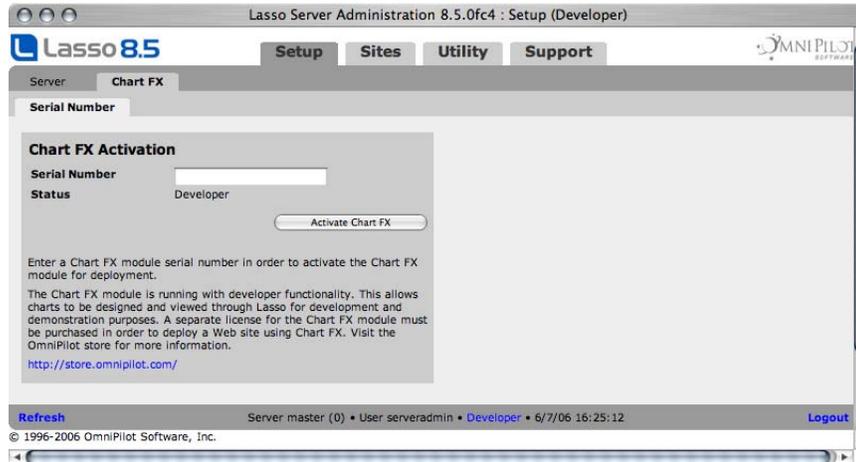
Chart FX for Lasso can be activated by acquiring a serial number from the LassoSoft store.

<http://store.lassosoft.com/>

The serial number should be entered into the *Setup > Chart FX > Serial Number* section of Lasso Server Administration. The Server Administration interface can be found at the following URL on most Lasso servers. Note that only the server administrator can activate Chart FX for Lasso. See the Lasso 8.5 Setup Guide for more information about accessing Lasso Server Administration.

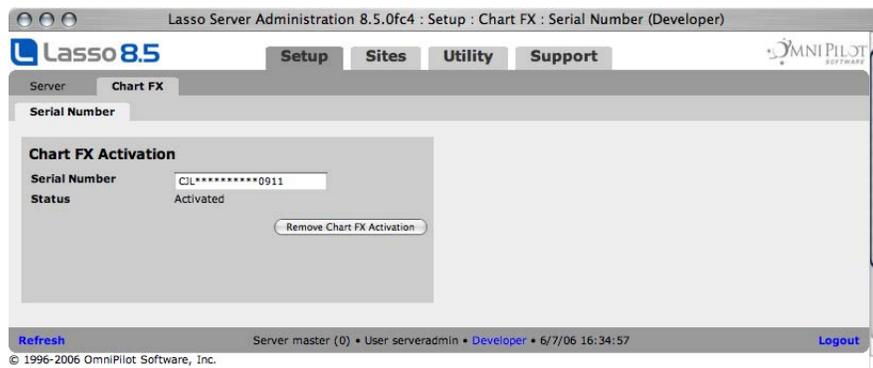
<http://localhost/ServerAdmin.LassoApp>

Figure 3: Chart FX Activation



After activating Chart FX the following screen will be shown. This indicates that Chart FX is now activated and can be used on any of the Lasso sites on this machine.

Figure 4: Chart FX Activation Success



If an error occurs while activating Chart FX then the following manual activation screen will be shown. For example, if the machine on which Lasso is hosted does not have Internet access then you may need to activate Chart FX manually.

Copy the provided Challenge String and transfer it to a machine which has Internet access. Visit the provided URL and follow the instructions to obtain an Activation Code which can be entered into the provided input to complete the activation process.

2

Chapter 2

Chart FX Tags

This chapter includes documentation of Chart FX data which is used to create and serve charts with Chart FX for Lasso.

- *Chart FX Data Type* documents the [ChartFX] data type and its member tags.

Chart FX Data Type

The [ChartFX] tag creates a charting object which can then be manipulated using the member tags detailed in the table below. Creating a chart requires the following basic steps.

- 1 The [ChartFX] tag is used to create a new Chart FX object.

```
[Var: 'myChart' = (ChartFX)]
```

- 2 The [ChartFX->SetWidth] and [ChartFX->SetHeight] tags are used to set the dimensions of the chart.

```
[$myChart->(SetWidth: 288)]
[$myChart->(SetHeight: 288)]
```

- 3 The template for the chart is either read from a file using [ChartFX->SetTemplate] or is passed as a string using [ChartFX->SetTemplateStr]. See the following chapter for details about how to design a chart template.

```
[$myChart->(SetTemplateStr: '<CFX6> ... </CFX6>')]
```

- 4 The data for the chart is provided by passing a [Records_Array] like structure to the [ChartFX->SetLassoData] tag or by reading in text data using the [ChartFX->SetTextData] or [ChartFX->SetXMLData] tags. In the following code a database is searched for data and [Records_Array] is used to pass the data into Chart FX. The type of each column in the data is set using [ChartFX->SetDataType].

```
[Inline: -Search,
  -Database='Contacts',
  -Table='Phone_Records',
  -KeyField='id',
  -Op='eq', 'Last_Name' = 'Doe',
  -ReturnField='Date',
  -ReturnField='MinutesUsed']
[$myChart->(SetDataType: 0, 'LABEL')]
[$myChart->(SetDataType: 1, 'VALUE')]
[$myChart->(SetLassoData: Records_Array)]
[/Inline]
```

There are two different methods for serving the chart.

- 5 The chart can be served in place of the current Lasso page using the [ChartFX_Serve] tag.

```
[ChartFX_Serve: $myChart]
```

The current Lasso page serves the dynamic generated image of the chart directly. It is generally necessary to create two files. The first file e.g. chart.lasso generates and serves the chart using [ChartFX_Serve] as shown above. The second file e.g. default.lasso includes an HTML tag which displays the chart to the site visitor.

```
<IMG SRC="chart.lasso" WIDTH="540" HEIGHT="360" />
```

- 6 Alternately, the chart can be rendered into a temporary file and displayed on the page using the [ChartFX->Render] tag. This tag returns an HTML tag which references the src for the chart in the /chartfx62/tmp/ folder in the Web server root.

```
[$myChart->(Render)]
```

```
<IMG SRC="/chartfx62/tmp/CFT0607_06270716E41.png" WIDTH="540" HEIGHT="360" />
```

The following table include descriptions of all of the Chart FX for Lasso tags.

Table 1: Chart FX Tags

| Tag | Description |
|---------------------------|--|
| [ChartFX] | Creates a new Chart FX object. |
| [ChartFX->SetWidth] | Sets the width of the desired chart. Requires a single integer value. |
| [ChartFX->SetHeight] | Sets the height of the desired chart. Requires a single integer value. |
| [ChartFX->SetTemplateStr] | Sets the template file as a Lasso string. Either a Lasso include can be used or the template can be generated programatically. |
| [ChartFX->SetLassoData] | Passes a set of records into ChartFX. The records array is ideally generated by the [Records_Array] tag, but can also be an array of arrays. Each top-level array represents one record and each sub-array represents one field in the record. |
| [ChartFX->SetDataType] | Instructs ChartFX how to use data from the [Records_Array] arrays. Requires an index parameter and a data type parameter. The index is the 0-based position of the field in the array. The type should be selected from the list in the following table. Each column in the [Records_Array] should have a corresponding [ChartFX->SetDataType] tag. |
| [ChartFX->Data] | Generates the chart and returns the raw data of the chart so it can be served using [ChartFX_Serve] or otherwise manipulated. |
| [ChartFX_Serve] | Serves a chart in place of the current Lasso page. The tag requires a single parameter, the chart to be served. Optional parameters include -Inline which specifies the chart should always be displayed in the browser and never downloaded. -File specifies a name for the chart image file. Note this tag accepts either a [ChartFX] object or the data from the [ChartFX->Data] tag. |
| [ChartFX_Records] | Returns a records array which is formatted in the proper format to be passed to the [ChartFX->SetLassoData] tag. The field names are included as the first row of the records array. If one or more -ReturnField parameters are specified then only those fields will be included in the records array. If one more -ExcludeField parameters are specified then those fields not be included in the records array. -Fields=(Array) can be used to specify an array of alternate field names to use. If -Inverse is specified then the arrays are inverted. |

Note: The following tags are used less often than those listed above.

| | |
|------------------------|--|
| [ChartFX->Render] | Generates the chart and returns an tag which links to it. |
| [ChartFX->SetTemplate] | Sets the path to a template file for the chart. The path should be an absolute file path in platform-specific format. |
| [ChartFX->SetTextData] | Sets the path to a tab or comma delimited data file for the chart. The path should be an absolute file path in platform-specific format. |
| [ChartFX->SetXMLData] | Sets the path to an XML data file for the chart. The path should be an absolute file path in platform-specific format. |

The following values can be used in the [ChartFX->SetDataType] tag.

Table 2: [ChartFX->SetDataType] values:

| Type | Description |
|------------|---|
| DEFAULT | Numeric data is used as a data series. String data is used as a legend. |
| LABEL | The field will be read as a string and used as a legend. |
| VALUE | The field will be read as a number and used as a data series. |
| XVALUE | The field will be read as a number and used as the x-axis value for XY plots. |
| INI_VALUE | The field will be read as a number and used to set the the initial value for data points for floating bars and area charts. |
| NOT_USED | Instructs Chart FX to ignore this field from the result set. |
| KEY_LEGEND | The file will be read as a string and used as the key label for the x-axis. |

Chapter 3

Designing Charts

This chapter includes an introduction to the Chart FX template format and an overview of the Chart FX for Java Designer which can be used to create templates.

- *Chart FX For Java Designer* describes the visual design environment for Chart FX templates.
- *Chart FX Templates* provides an overview of the XML format of Chart FX templates.

Chart FX for Java Designer

The Chart FX for Java Designer allows Chart FX templates to be created visually. This is the easiest way to create a template since the designer handles most of the formatting details and provides an overview of all the options which are available.

The Chart FX for Java Designer can be found in the Chart FX folder within the Lasso Professional 8 application folder. Open the Chart FX for Java Designer folder and then follow the appropriate instructions to launch the designer on each platform.

- **Mac OS X** – Double click on the `chartfx.designer.jar` file.
- **Windows** – Double click on the `Launch Chart FX Designer.cmd` file.
- **Linux** – Type the following command into a terminal window.

```
java -jar chartfx.designer.jar &
```

The interface of the designer is split into two parts. The left side contains either a preview of the Chart that is being designed or the XML which defines the template for the chart. The right side contains a list of properties for the chart. Properties with a + symbol can be expanded to see their sub-properties. Many properties include pop-up menus of possible values or bring up color pickers or other helpers when clicked.

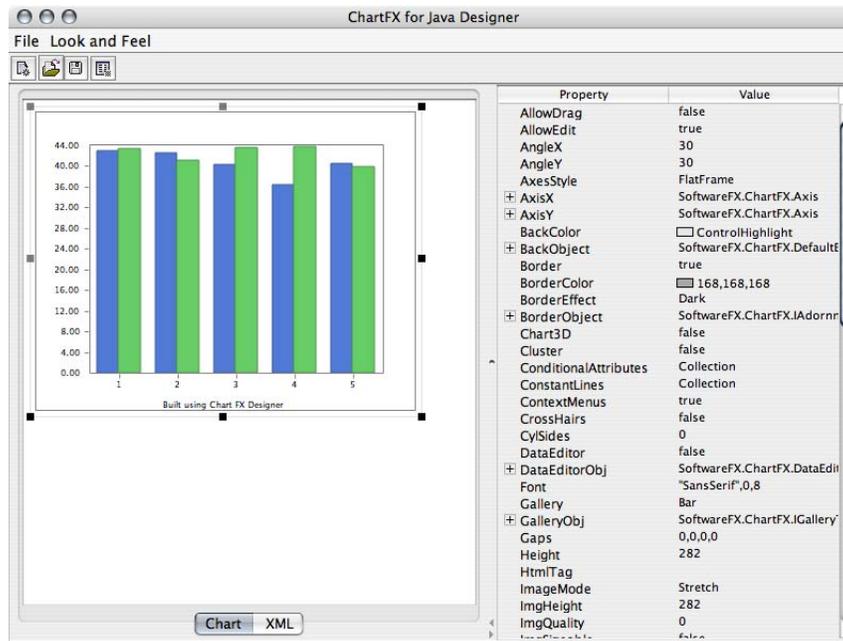
Any properties which have a value of `Collection` can be double-clicked to bring up a sub-editor that allows new elements to be added to the collection or any of the elements of the collection to be edited individually.

A few of the possible properties include:

- **AxisX and AxisY** – Control how the axes of the chart are rendered including printing values horizontally or vertically, font choice, and more.
- **Border** – The `BorderObject` can be set to a default border or an image border. Each border style includes many options which customize the overall look of the chart.
- **Chart3D and View3D** – Controls whether the chart is rendered in 3D or in 2D. `Chart3D` controls whether the chart is in 3D and `View3D` controls whether the chart is flat against the screen or rendered with more depth. The depth and light source for 3D charts can also be modified.
- **Gallery** – The gallery controls what type of chart is generated. Possible values include `Lines`, `Bar`, `Area`, `Scatter`, `Curve`, `Pie`, `Doughnut`, and more. See the Chart FX Example for an interactive overview of many of the different chart types that can be generated.
- **Legend** – Controls whether a legend is shown which details the names of the data series in the chart.

- **NSeries and NValues** – The chart preview is rendered with the specified number of data series and random data values per series. By adjusting these values the chart preview can be set to more closely simulate the data which you will be plotting on the actual chart.
- **Palette** – Allows a color palette for the chart to be selected.
- **Series** – A collection of data series for the chart. Chart FX will use default values for new data series based on the current color scheme, or specific settings can be established for individual data series by modifying the elements in this collection.
- **Titles** – A collection of titles that will be rendered onto the chart.

Figure 1: Chart FX for Java Designer



After designing the chart using the preview the XML for the chart can be viewed by selecting the XML option at the bottom of the preview on the left. The XML can either be copied directly out of the window and pasted into a Lasso page. Or, the File menu can be used to save the XML data as a template file. In addition, existing template files can be opened and modified by the Chart FX for Java Designer.

Figure 2: Chart FX for Java Designer XML

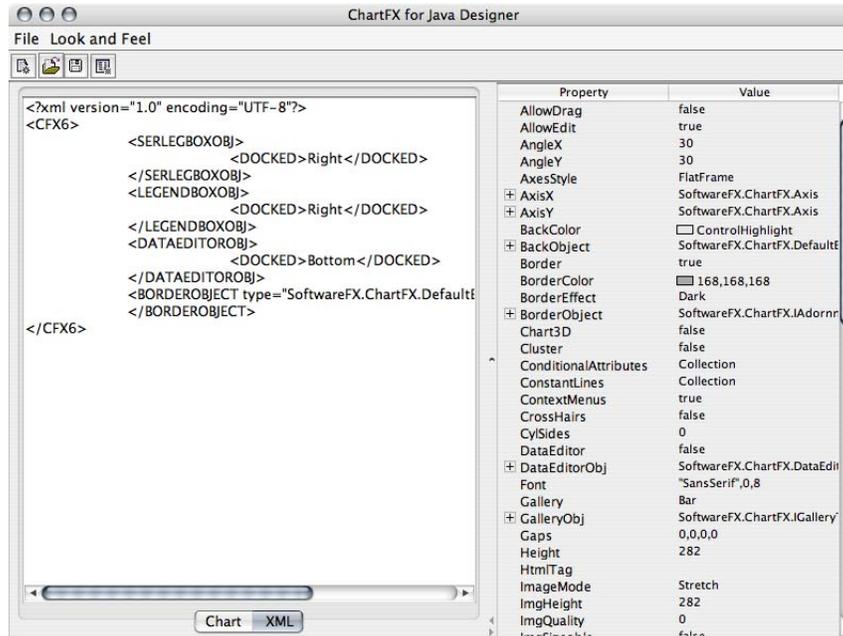


Chart FX Templates

Chart FX templates are XML documents. The following code shows a typical Chart FX template for use with Lasso. This code could be saved into a file `template.lasso` and then `[Include: 'template.lasso']` would be used to read in the file so it could be passed to `[ChartFX->SetTemplateStr]`. See the source code of the Chart FX Example for a real world example.

Chart FX will fill in default values for nearly all template parameters so it is sometimes easiest to start with a simple template and add parameters only to customize particular elements of the chart.

```
<?xml version="1.0" encoding="UTF-8"?>
<CFX6>
  <BACKCOLOR>#00000000</BACKCOLOR>
  <INSIDECOLOR>#ffffff</INSIDECOLOR>
  <ALLOWEDIT>>false</ALLOWEDIT>
  <CONTEXTMENUS>>false</CONTEXTMENUS>
  <SHOWTIPS>>false</SHOWTIPS>
  <FONT>
    <NAME>Verdana</NAME>
    <SIZE>9.0</SIZE>
  </FONT>
  <CHART3D>>false</CHART3D>
  <SERLEGBOX>true</SERLEGBOX>
  <BORDEREFFECT>None</BORDEREFFECT>
  <SCHEME>Gradient</SCHEME>
  <GALLERY>CurveArea</GALLERY>
  <TITLES>
    <ITEM>
      <TEXT>Chart FX For Lasso</TEXT>
      <COLOR>#ff404040</COLOR>
      <FONT>
        <NAME>Verdana</NAME>
        <SIZE>24.0</SIZE>
        <BOLD>true</BOLD>
      </FONT>
    </ITEM>
  </TITLES>
</CFX6>
```

```
</ITEM>  
</TITLES>  
<PALETTE>Default.ChartFX6</PALETTE>  
<HTMLTAG>Auto</HTMLTAG>  
</CFX6>
```