

Chapter 23: Importing Skins into Flex Builder

This topic describes how to create skins for Adobe Flex applications by using Adobe Flash CS3, Adobe Illustrator CS3, Adobe Photoshop CS3, and Adobe Fireworks CS3.

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About skinning

Skinning is the process of changing the appearance of a component by modifying or replacing its visual elements. These elements can be made up of bitmap images, SWF files, or class files that contain drawing methods that define vector images.

Skins can define the entire appearance, or only a part of the appearance, of a component in various states. For example, a Button control has eight possible states, and eight associated skin properties, as the following example shows:

State	Skin property	Default skin class
down	downSkin	mx.skins.halo.ButtonSkin
over	overSkin	mx.skins.halo.ButtonSkin
up	upSkin	mx.skins.halo.ButtonSkin
disabled	disabledSkin	mx.skins.halo.ButtonSkin
selectedDisabled	selectedDisabledSkin	mx.skins.halo.ButtonSkin
selectedDown	selectedDownSkin	mx.skins.halo.ButtonSkin
selectedOver	selectedOverSkin	mx.skins.halo.ButtonSkin
selectedUp	selectedUpSkin	mx.skins.halo.ButtonSkin

The default skins for the up, over, and down states appear as follows:



A. up B. over C. down

Other controls have similar states with associated skins. For example, the `RadioButton` and `RadioButton` controls, which are subclasses of `Button`, also have an up, down, and over skins. The `ComboBox` control has skins that define the appearance of the control when it is in the disabled, down, and over states.

All Flex components have a default skin class that ships with Flex, where a skin class can represent more than one state of the component. As you can see in the previous table, the eight states of the `Button` control use the same default skin class, `mx.skins.halo.ButtonSkin`, to draw the skin. Logic within the class determines the appearance of the `Button` control based on its current state.

For more information on Flex skins, see "Creating Skins" in *Flex Developer's Guide*.

Types of skins

You typically define a skin as a bitmap graphic or as a vector graphic. Bitmap graphics, called *graphical skins* in Flex, are made up of individual pixels that together form an image. The downside of a bitmap graphic is that it is typically defined for a specific resolution and, if you modify the image by scaling or transforming it, you might notice a degradation in image quality.

A vector graphic, called a *programmable skin* in Flex, consists of a set of line definitions that specify the starting and end point of a line, its thickness, color, and other information required by Flash Player to draw the line. When a vector graphic is scaled, rotated, or modified in some other way, it is relatively simple for Flash Player to calculate the new layout of the vector graphic by transforming the line definitions. Therefore, you can perform many types of modifications to vector graphics without noticing any degradation in quality.

One advantage of programmable skins is you can create vector graphics that allow you a great deal of programmatic control over the skin. For example, you can control the radius of a `Button` control's corners by using programmatic skins, something you cannot do with graphical skins. You can develop programmatic skins directly in your Flex authoring environment or any text editor, without using a graphics tool such as Adobe Flash. Programmatic skins also tend to use less memory because they contain no external image files.

The following table describes the different types of skins:

Skin type	Description
Graphical skins	Images that define the appearance of the skin. These images can be JPEG, GIF, or PNG files, or they can be symbols embedded in SWF files. Typically you use drawing software such as Adobe Photoshop or Fireworks to create graphical skins.
Programmable skins	ActionScript or MXML classes that define a skin. To change the appearance of controls that use programmable skins, you edit an ActionScript or MXML file. You can use a single class to define multiple skins. Typically you use drawing software such as Adobe Flash or Illustrator to create graphical skins.
Stateful skins	A type of programmable skin that uses view states, where each view state corresponds to a state of the component. The definition of the view state controls the look of the skin. Since you can have multiple view states in a component, you can use a single component to define multiple skins.

For more information on Flex skins, see "Creating Skins" in *Flex Developer's Guide*.

About skinning with Adobe tools

You can create Flex skins using several tools from Adobe, including: Flash CS3, Illustrator CS3, Photoshop CS3, and Fireworks CS3. By supporting these different tools, Flex lets you use the tool that you are most familiar with to create your skins.

The main difference between these tools is that Flash Professional and Illustrator let you create vector graphics for you skins, while Photoshop and Fireworks let you create bitmap graphics for your skins. For more information on the different types of skins, see “Types of skins” on page 674.

Adobe supplies an extension for each tool that you install before you create your Flex skins. The extension includes utilities to create and export skins, and templates that let you edit the existing Flex skins, rather than having to create skins from scratch.

Naming skin assets

By default, Flex Builder only recognizes skins that use the following naming convention:

Style_Selector_Part

where:

- *Style* specifies the CSS style type, and is typically the name of the component being skinned.
- *Selector* optionally specifies the CSS style selector.
- *Part* specifies the style property of the component that corresponds to the skin, such as `upSkin` or `downSkin` for the Flex Button control.

For example, the skin named `Button_upSkin` defines the skin for the up state of the Button control and the skin named `Tree_borderSkin` defines the skin for the border of the Tree control. The Flex skins that you can modify by using one of the Adobe tools all use this naming convention.

If you define a custom component, and create skins for it using the Adobe tools, use the same naming convention to enable Flex Builder to recognize it and assign it to your component. For example, if you have a custom component named `MyComponent` with skin properties named `borderSkin` and `mainSkin`, your skins could be named `MyComponent_borderSkin` and `MyComponent_mainSkin`.

If you do not use this naming convention, you can still assign your skins to a component, but you will have to explicitly assign the skin when you import the skin into your Flex Builder project.

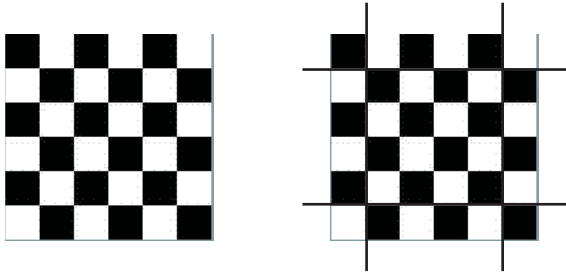
Importing skins into Flex Builder

After you create and export your custom skins, you import them into your Flex application by using Flex Builder. When you import the skins, Flex Builder automatically adds the skins and a CSS file to your project, where the CSS file contains the style definitions necessary to assign your custom skins to Flex components. You can modify the CSS file as required by your application. Flex Builder also automatically add an `<mx:Style>` tag to your application to reference the CSS file.

Using 9-slice scaling with skins

Flex supports the 9-slice scaling of skins. The 9-slice scaling feature lets you define nine sections of a skin that scale independently. The nine regions are defined by two horizontal lines and two vertical lines running through the image, which form the inside edges of a 3 by 3 grid. For skins with borders or fancy corners, 9-slice scaling provides more flexibility than full-graphic scaling.

The following example show an image, and the same image with the regions defined by the 9-slice scaling borders:



When you scale skin that uses 9-slice scaling, all text and gradients are scaled normally. However, for other types of objects the following rules apply.

- Content in the center region is scaled normally.
- Content in the corners is not scaled.
- Content in the top and bottom regions is scaled only horizontally. Content in the left and right regions is scaled only vertically.
- All fills (including bitmaps, video, and gradients) are stretched to fit their shapes.

If you rotate the image, all subsequent scaling is normal, as if you did not define any 9-slice scaling.

For more information on 9-slice scaling, see "*Embedding Assets*" in *Flex Developer's Guide*.

Tips for creating skins

Before you get started, here are a few tips for working with the skin template files that are part of the extensions added to each tool:

- Make your skins the same size as the skins in the template. If you change the size, you might have to edit the 9-slice scaling grids as well.
- The CSS file created by Flex Builder assumes that the exported symbols names for the skins have specific names, so you should avoid changing the names of the symbols when creating skins.
- The default Halo skins are semi-transparent, so that they can pick up the background color of their container.
- Because of the way Flex handles scrollbars, the symbols for the different states of the scrollbar thumb skins are offset to the right by one pixel from the registration point. The Slider control and its highlight use similar adjustments for alignment. Make sure any custom skins that you create are offset in the same way.

Creating skins in Adobe Flash CS3

You can use Flash CS3 to create vector graphics for Flex skins. Before you can create Flex skins in Flash CS3, you must install the Flex Component Kit for Flash CS3. The Flex Component Kit installs the SWC file that contains the classes necessary to create assets compatible with Flex.

System requirements

Your system must meet the following requirements to install the Flex Component Kit for Flash CS3:

- Flex 3
- Flash CS3 Professional
- Adobe Extension Manager 1.8. You can download the Extension Manager from http://www.adobe.com/exchange/em_download/.
- Flex Component Kit for Flash CS3. For information on installing the Flex Component Kit for Flash CS3, see "Importing Flash CS3 Assets into Flex" in *Flex Developer's Guide*.

Install the Flex skins for Flash CS3

- 1 If you have not done so already, install the Flex Component Kit for Flash CS3.
 - a Change the directory to *install_dir*/frameworks/flash-integration, where *install_dir* is the Flex installation directory.
 - b Double-click the FlexComponentKit.mxp file to install the necessary files in Flash CS3.
- 2 Download the flexbuilder3_sdext_b2_fl_100107.mxp file that contains the Flex skins and extensions for Flash CS3 from http://download.macromedia.com/pub/labs/flex/3/flexbuilder3_sdext_b2_fl_100107.mxp.
- 3 Double-click the flexbuilder3_sdext_b2_fl_100107.mxp file to install the necessary files in Flash CS3.

Edit an existing skin in Flash CS3

- 1 Launch Flash.
- 2 Select File > New.
- 3 Select the Templates tab in the New Document dialog box.
- 4 Select Flex Skins in the list of template categories.
- 5 Select the skin that you want to edit in the list of templates, or select flex_skins to edit all skins at once.
- 6 Double-click the skin part to edit it in place.
- 7 Modify the existing skin, or delete the existing skin and draw your own.

When editing a symbol, make sure that you are aware of the registration point (the + sign in the upper-left corner of the symbol). Flex always aligns the registration point with the upper-left corner of the component. Therefore, make sure your skin's upper-left point is at the + sign, except for scrollbar thumbs, which need to be offset one pixel to the right.
- 8 If the shape of your custom skin is substantially different from the original skin, for example, your corners are more rounded, or you made the skin larger, you might have to edit the 9-slice scaling grid.
 - a Right-click on the skin on the Stage and choose Edit. This opens a view that shows just the symbol you selected.
 - If you do not see dashed lines, then the symbol does not use a 9-slice scaling grid.
 - If you see dashed lines, they represent the 9-slice scaling grid. Drag the lines to specify how the skin should be scaled in each direction. For example, if you have rounded corners, make sure that they are fully contained in the corner quadrants of the 9-slice scaling grid.
 - b When you're done adjusting the 9-slice scaling, click on the back button in the upper-left corner of the document window to return to the main Stage.
- 9 Save your skins as a .fla file.
- 10 Select File > Publish to publish your skin as a SWC file in the same directory as the .fla file.

Create a new skin in Flash CS3

If you install the Flex Component Kit for Flash CS3, you can create new skins in Flash CS3. The basic workflow is as follows:

- 1 In Flash CS3, select File > New to open the New Document dialog box.
- 2 Select Flash File (ActionScript 3.0) as the file type.
- 3 Create the skin.
- 4 Select the skin in the Library panel.
- 5 Select Command > Convert Symbol to Flex Component.
- 6 Save the .fla file
- 7 Select File > Publish to publish your skin as a SWC file in the same directory as the .fla file.

For more information and examples on creating skins using the Flex Component Kit for Flash CS3, see "Importing Flash CS3 Assets into Flex" in *Flex Developer's Guide*.

Import skins into Flex Builder

- 1 Start Flex Builder.
- 2 Select a project that uses your custom skins.
- 3 Select File > Import > Skin Artwork to open the Import Skin Artwork dialog box.
- 4 Under Import skins from, select SWC or SWF file.
- 5 Browse to the SWC file that contains your skins.
- 6 When you select the SWC file, Flash automatically creates a CSS file with the same name as the SWC file, and adds the extension `.css`. You can rename this file by entering a different file name in the Create skin style rules in field.
- 7 Select Next to open the Import Skin Artwork dialog box.
- 8 Choose the Flex components that you want to skin

Remember that skins use the following naming convention `Style_Selector_Part`. By default, Flex Builder assigns skins to components based on the skin names. You can optionally use Style Selector and Skin Part in the Import Skin Artwork dialog box to explicitly assign a skin to a component. For more information on skin names, see "Naming skin assets" on page 675.
- 9 Select Finish. Flex Builder adds the SWC and CSS files to your project, and adds an `<mx:Style>` tag to your application file.
- 10 Save, then run your application to see your custom skins, or view them in Design View in Flex Builder.

Creating skins in Adobe Illustrator CS3

Adobe Illustrator lets you create vector artwork for Flex skins. Some features of Illustrator are not supported when you export skins to a SWF file. For example, blend modes and effects, including drop shadows, may not display correctly. If you want to use these or other advanced Illustrator features, first test them with a single skin.

System requirements

Your system must meet the following requirements to install the Flex Component Kit for Flash CS3:

- Flex 3
- Illustrator CS3

Install the Flex skins for Illustrator CS3

- 1 Download the `flexbuilder3_sdext_b2_ai_100107.zip` file that contains the Flex skins and extensions for Illustrator CS3 from http://download.macromedia.com/pub/labs/flex/3/flexbuilder3_sdext_b2_ai_100107.zip.
- 2 Double-click the zip file and extract its contents to a temporary directory.
- 3 Copy the directory `FlexSkinning/Scripts/Flex Skin` folder to `Illustrator_install_dir/Presets/Scripts`, where `Illustrator_install_dir` is the installation directory of Illustrator CS3.
- 4 Copy the directory `Templates/FlexSkins` to `Illustrator_install_dir/Cool Extras/Templates`.

Create a skin in Illustrator CS3

- 1 Start Illustrator.
- 2 Set grid and snap preferences.

Your skins look best in Flex if all items are “on-pixel”, meaning their x, y, width and height values are integers, with no fractional part, and you set snap to a one-pixel grid. All symbol instances in the skin template are already placed on-pixel.

 - a Choose `Edit > Preferences > Guides and Grid`.
 - b Under `Grid`, change `Gridline every:` to 10 px, and `Subdivisions` to 10.
 - c make sure that the `View > Snap to Grid` option has been selected.
- 3 Select `File -> Scripts -> Flex Skin -> Create Flex Skin`.
- 4 In the `New Flex Skin` dialog box, choose `Multiple Flex Components` to edit all Flex skins, or choose a specific component to skin. If you choose `Multiple Flex Components`, Illustrator opens a file containing all of the Flex skins.
- 5 Modify the skins as necessary.
 - a Double-click the skin part to edit it in place. (You can also find and open the symbol from the `Symbols` palette.)
 - b Modify the existing skin, or delete it and draw your own.
 - c Some symbols have a 9-slice scaling grid, represented by dotted lines crisscrossing the symbol. If the shape of your artwork is substantially different from the original artwork, for example your corners are more rounded or you made the skin part larger, then drag the dotted lines to specify which parts should be scaled in which directions.

Note: Flex expects each skin symbol to have its registration point set at its upper left corner. All of the symbols in the skin template are preset with the correct registration point; if you create new skins, make sure to set “Flash Registration” to the upper left corner in the `New Symbol` or `Symbol Properties` dialog.
- 6 Save the .ai file
- 7 Select `File -> Scripts -> Flex Skin -> Export Flex Skin` and specify the name of a SWF file name to hold your custom skins.

Import skins into Flex Builder

- 1 Start Flex Builder.
- 2 Select the project that uses your custom skins.
- 3 Select File > Import > Skin Artwork to open the Import Skin Artwork dialog box.
- 4 Under Import skins from, select SWC or SWF file.
- 5 Browse to the SWF file that contains your skins.
- 6 When you select the SWF file, Flash automatically creates a CSS file with the same name as the SWF file, and the extension `.css`. You can rename this file by entering a different file name in the Create skin style rules in field.
- 7 Select Next to open the Import Skin Artwork dialog box.
- 8 Choose the Flex components that you want to skin.

Remember that skins use the following naming convention `Style_Selector_Part`. By default, Flex Builder assigns skins to components based on the skin names. You can optionally use Style Selector and Skin Part in the Import Skin Artwork dialog box to explicitly assign a skin to a component. For more information on skin names, see “Naming skin assets” on page 675.

- 9 Select Finish. Flex Builder adds the SWF and CSS files to your project, and adds an `<mx:Style>` tag to your application file. You can edit the CSS file as necessary for your application.

Note: - You might get warnings from Flex Builder in the form: “The CSS type selector ‘AccordionHeader’ was not processed, because the type was not used in the application.” These warnings occur when you do not use a skin referenced in the CSS file.

- 10 Save, then run your application to see your custom skins, or view them in Design View in Flex Builder.

Creating skins in Adobe Photoshop CS3

If you're using Adobe Photoshop to create Flex skins, you create bitmap graphics instead of vector graphics. When using bitmap graphics for skinning, there are a few issues you should be aware of:

- Gradients in bitmaps only scale well in one direction. If you need to create artwork with gradients, and they might need to stretch in both directions, you might consider using Flash or Illustrator instead.
- Make sure that your custom skins use a single layer.
- Photoshop does not currently support for 9-slice scaling grids.
- Photoshop outputs individual `.png` files for each skin, rather than a single file containing all the skins.
- Some features of Illustrator are not supported when exporting to SWF. For example, blend modes and effects, including drop shadows, may not display correctly. If you want to use these or other advanced Illustrator features, first test them with a single skin.

System requirements

Your system must meet the following requirements to install the Flex Component Kit for Flash CS3:

- Flex 3
- Photoshop CS3

Install the Flex skins for Photoshop CS3

- 1 Download the file `flexbuilder3_sdext_b2_ps_100107.zip` that contains the Flex skins and extensions for Photoshop CS3 from http://download.macromedia.com/pub/labs/flex/3/flexbuilder3_sdext_b2_ps_100107.zip.
- 2 Double-click the zip file and extract its contents to a temporary directory.
- 3 Copy the directory `Presets` to `Photoshop_install_dir/Presets`.

Create a skin in Photoshop CS3

- 1 Start Photoshop.
- 2 Select `File -> Scripts -> New Flex Skin`.
- 3 In the `New Flex Skin` dialog box, choose `Multiple Flex Components` to edit all Flex skins, or choose a specific component to skin. If you choose `Multiple Flex Components`, Photoshop opens a file containing all of the Flex skins.
- 4 Modify the skins as necessary.
 - a Select the layer for the skin you want to edit. You can do this one of two ways:
 - Find the skin in the `Layers` palette. The skins are organized by component name.
 - Select the `Move` tool and then go to the `Tool Options` bar at the top of the screen, check `Auto Select Layer`, and clear `Auto Select Groups`. Now click on the skin you want to edit on the canvas, and the relevant layer is automatically selected.
 - b Edit the selected layer.
 - c Make sure that the rest of the layer outside of your skin remains transparent; Flex assumes that any non-transparent parts of the layer are part of your skin.
 - d Make sure that skin do not overlap.
- 5 Hide the layer named `_HIDE BEFORE EXPORTING`, and hide the `_Information` layer if it exists.
- 6 Save the `.psd` file.
- 7 Select `File -> Scripts -> Export Flex Skin` and specify an output folder. The export operation creates a directory named `assets` that contains one `.png` file for each skin.

Import skins into Flex Builder

- 1 Start Flex Builder.
- 2 Select the project that uses your custom skins.
- 3 Select `File > Import > Skin Artwork` to open the `Import Skin Artwork` dialog box.
- 4 Under `Import skins from`, select `Folder or bitmaps`.
- 5 Browse to the `assets` folder that contains your skins as `.png` files.
- 6 When you select the `assets` directory, Flash automatically creates a `CSS` file with the name `assets.css`. You can rename this file by entering a different file name in the `Create skin style rules in field`.
- 7 Select `Next` to open the `Import Skin Artwork` dialog box.
- 8 Choose the Flex components that you want to skin, and the corresponding symbol.

Remember that skins use the following naming convention `Style_Selector_Part`. By default, Flex Builder assigns skins to components based on the skin names. You can optionally use `Style Selector` and `Skin Part` in the `Import Skin Artwork` dialog box to explicitly assign a skin to a component. For more information on skin names, see [“Naming skin assets” on page 675](#).

- 9 Select Finish. Flex Builder adds the SWF and CSS files to your project, and adds an `<mx:Style>` tag to your application file. You can edit the CSS file as necessary for your application.
- 10 Save, then run your application to see your custom skins, or view them in Design View in Flex Builder.

Creating skins in Adobe Fireworks CS3

If you're using Fireworks to create Flex component skins, you'll be creating bitmap graphics instead of vector graphics. When using bitmap graphics for skinning, there are a few issues you should be aware of:

- Gradients in bitmaps only scale well in one direction. If you need to create artwork with gradients, and they might need to stretch in both directions, you might consider using Flash or Illustrator instead.
- Photoshop does not currently support for 9-slice scaling grids.
- Fireworks outputs bitmap graphics for each skin as a .png file, rather than a single file containing all the skins.
- You might not want to skin the application background as a bitmap, since it's likely to need to scale in both directions.

System requirements

Your system must meet the following requirements:

- Flex 3
- Fireworks CS3
- Adobe Extension Manager 1.8. You can download the Extension Manager from http://www.adobe.com/exchange/em_download/.

Install the Flex skins for Fireworks CS3

- 1 Download the `flexbuilder3_sdext_b2_fw_100107.mxp` file that contains the Flex skins and extensions for Fireworks CS3 from http://download.macromedia.com/pub/labs/flex/3/flexbuilder3_sdext_b2_fw_100107.mxp.
- 2 Double-click the mxp file to install the necessary files in Fireworks CS3.

Create a skin in Fireworks CS3

- 1 Start Fireworks.
- 2 Select **Commands > Flex Skinning > New Flex Skin**.
- 3 In the New Flex Skin dialog box, choose **Multiple Flex Components** to edit all Flex skins, or choose a specific component to skin. If you choose **Multiple Flex Components**, Fireworks opens a file containing all of the Flex skins.
- 4 Modify the skins as necessary.

Notice that this template doesn't use frames to represent the different states of an individual component; all skins are shown in a single frame.

- a Select the layer for the skin part you want to edit.

Adobe suggests turning on **Single Layer Editing** from the Layers panel context menu and then looking through the Layers panel to find the appropriate part to edit. Alternatively, you can leave **Single Layer Editing** off and just click on an item on the canvas, but make sure that any items you create are in the correct layer.

- b** Delete the existing artwork and create your own artwork in that layer. You can create multiple objects if you like; they'll get flattened into a single bitmap graphic on export.
- 5** Save the .png file.
- 6** Hide the `Web Layer` layer, `_Information` layer, and `_BASE` layer. There is no harm in exporting them, but they produce extraneous files.
- 7** Select `Commands > Flex Skinning > Export Flex Skin` and specify an output folder. The export operation writes one .png file for each skin to the specified directory.

Import skins into Flex Builder

- 1** Start Flex Builder.
- 2** Select the project that uses your custom skins.
- 3** Select `File > Import > Skin Artwork` to open the Import Skin Artwork dialog box.
- 4** Under Import skins from, select `Folder or bitmaps`.
- 5** Browse to the directory that contains your skins as .png files.
- 6** When you select the assets directory, Flex Builder automatically creates a CSS file with the same name as the directory that contains the .png files. You can rename this file by entering a different file name in the Create skin style rules in field.
- 7** Select `Next` to open the Import Skin Artwork dialog box.
- 8** Choose the Flex components that you want to skin.

Remember that skins use the following naming convention `Style_Selector_Part`. By default, Flex Builder assigns skins to components based on the skin names. You can optionally use Style Selector and Skin Part in the Import Skin Artwork dialog box to explicitly assign a skin to a component. For more information on skin names, see [“Naming skin assets” on page 675](#).
- 9** Select `Finish`. Flex Builder adds the SWF and CSS files to your project, and adds an `<mx:Style>` tag to your application file. You can edit the CSS file as necessary for your application.
- 10** Save, then run your application to see your custom skins, or view them in Design View in Flex Builder.