

Phillip Kerman
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Sams Teach Yourself Adobe Flash CS4 Professional in 24 Hours

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Introduction

Adobe is not exaggerating when it says that Flash CS4 Professional is the “industry-leading authoring environment for creating engaging interactive experiences.” You only need to visit a few sites that use Flash to understand how compelling it is. Using graphics, animation, sound, and interactivity, Flash can excite, teach, entertain, and provide practical information.

With this version of Flash, Adobe has introduced some valuable new features, as well as further integrated Flash CS4 into its suite of products. That’s a powerful thing—when products like Photoshop, Illustrator, and Fireworks can be used to help you create graphics for use in your Flash movies. This interoperability only increases as time goes on.

More than half a billion users already have the free Flash player that enables them to view Flash movies. As of the writing of this book, more than 95% of computers connected to the Internet not only had Flash Player version 9, but more than 55% have the latest version, Flash Player 10. The fact that Adobe continues to distribute this software so effectively means the potential audience for Flash content is huge and continues to grow.

The tools needed to create Flash movies are within your reach. After you purchase Flash, the only investment you need to make is time to learn. You can even download a trial version of Flash from www.adobe.com, and use it for 30 days for free. People can grow from fiddling with Flash to making entertaining movies. Imagine a great musician picking up and learning an instrument in a matter of days. It really is that amazing. If you’re motivated, with just a moderate time investment, you feel as though a powerful communication tool has been given to you.

Flash is so unique that sometimes it’s better to have less experience. If you have preconceived ideas about Flash or how you’re supposed to use draw-

ing tools, it might be best to try to forget everything and start fresh. This book is organized in such a way that you should start seeing successes quickly. With each task, you prove to yourself that you're acquiring knowledge and skills.

We don't need to give you a pep talk because you'll see for yourself. In just a few one-hour lessons, you are creating drawings that you might have thought you weren't capable of. In a few more hours, you are making animations. Finally, after 24 one-hour lessons, you are unstoppable. Where you take your skills is up to you, but you get a great foundation here.

You might not feel like a pro overnight, but you will feel you have a powerful communication tool in your control. When you can't wait to show others your creations, you know you're on your way. Get ready to have some fun!

What's New in This Edition

This is the sixth edition of this book. To prevent the material from getting stale, we change quite a bit in each revision, as well as cover the new CS4 features with some depth. Unlike many other dramatic software upgrades, Adobe Flash CS4 Professional is not *that* different from the CS3 version. However, the way people use Flash and Flash in general has definitely broadened significantly. It's not just Flash anymore; it's the Flash Platform. Technologies, such as Apollo and the Flex Framework, have attracted a new set of developers all delivering Flash content. The CS4 upgrade is offers a few new tools, techniques, and further integrates with other Adobe CS4 products.

This edition doesn't try to cover everything; there simply isn't time to do that in 24 one-hour lessons. Instead, we focus on animation techniques, graphics, and delivering to the web. You also spend a whole hour exploring new features including video with the full-screen mode; Inverse Kinematics, the art of animating things connected to other things; and 3D animation.

This book contains minimal, but crucial, coverage of ActionScript. We try not to go too much in-depth, but we cover enough to give you an idea of how it works. ActionScript is an entire computer language on its own, and once you have a sense of how it works, you'll be comfortable learning more using additional resources. ActionScript isn't getting any less complex; it is becoming much more consistent. So, what you learn in the ActionScript introductory hour (Hour 16, "Basic Interactivity") applies to the rest of the code you see pop up in the book. We do cover Flash Components—ready-built and self-contained objects that include advanced ActionScript code, but also keep you insulated from that code. This edition also includes hours

HOUR 3

Importing Graphics into Flash

In the last two hours, you've seen how you can create sophisticated custom graphics quickly in Flash. Despite how powerful Flash's graphic creation tools are, eventually you might need to import graphics created elsewhere. You might need to use photographic images or existing graphics created from another graphics program. In this hour, you learn how to import external graphics into Flash.

Vector Graphics Versus Raster Graphics

Vector graphics have certain characteristics that are due to how they are stored by a computer. A vector graphics file contains the math to redraw the image onscreen. For example, a circle includes information such as the radius, the line thickness, and the color. All the graphics you create inside Flash are vector based. Vector graphics have two advantages: The file size tends to be small (therefore, it downloads fast), and the image can be scaled to any size without any degradation of the image quality (a circle is still a circle, even if it's a large circle).

Vector graphics are great, but it's important to realize their disadvantages. Vector graphics require the user's computer to work hard to display the image, so you may see slower performance if an animation contains complicated vector graphics. Also, vector graphics can look "computery" or antiseptic because they tend to involve geometric shapes. Both disadvantages can be overcome, but you should be aware of them. Vector graphics are predominately used in Flash movies because, as you see in later hours, you have more control over how they can be animated.

WHAT YOU'LL LEARN IN THIS HOUR:

- ▶ Differences between vector and raster graphics
- ▶ Ways to avoid imported graphics
- ▶ How to import vector graphics
- ▶ How to import bitmap (raster) graphics
- ▶ How to optimize and maintain the best quality possible when importing

Bitmapped graphics (also called *raster graphics*) are fundamentally different from vector graphics. A raster graphics file contains the color information for each pixel. If the image is 100 pixels by 100 pixels, that's 10,000 pixels, each of which has a color value. As a result, raster graphics are almost always relatively large files. Raster graphics also can't be scaled effectively. They tend to get grainy, similar to a photograph that has been enlarged. An advantage of raster graphics is they appear onscreen very quickly.

It might seem that vector graphics are obviously the better choice. However, the decision of whether to use vector graphics or raster graphics should be based on the nature of the image. If the image is geometric, with clear delineations of color, a vector graphic is the best choice. If the image is a photograph of a person or a geographic location, nothing but a bitmap will do. Selecting which format to use is pretty easy when you know the considerations of each type.

Reasons to Avoid Importing Graphics

Flash's capability to create nice vector graphics can be the best justification for this warning: Don't import graphics into Flash unless you have to! In this section, you learn how to import graphics—but that doesn't mean it's always a good idea. If there's one way to make your Flash movie download or play more slowly, it's importing graphics unnecessarily. You need to find ways to avoid importing graphics.

Wanting to import graphics is a natural tendency. If you show a graphics professional who's an expert with Adobe Illustrator or Adobe Photoshop how to draw in Flash, his first question is how to bring his Illustrator or Photoshop files into Flash. We will show you how in the next section.

Designers can create amazing and complicated vector graphics with other drawing tools. Some of the ways graphics files get more complicated include the use of gradients, intricate text, and lots of individual objects. Using such complicated graphics in Flash causes two problems. First, Flash can't always handle all the intricacies in a complicated file, so sometimes the imported file doesn't look as it was designed. Second, a complicated file downloads and plays more slowly than one that isn't as complicated—so consider why you would want such a file in a Flash movie. The number one consideration when deciding whether to import a graphic into Flash should be whether a simpler version can be recreated in Flash or whether the graphic can at least be simplified before being imported into Flash. If

you ask the graphics person to recreate the image in Flash, he might say it doesn't enable him to do what he intended. In that case, perhaps the solution lies in making the graphic simpler—not by squeezing it into Flash.

Having said all this, you probably still need to import graphics at some point—maybe you have a raster graphic, like a photograph, that you want to use, or perhaps you have a simple existing vector graphic, such as a company logo, that you don't want to redraw in Flash. We discuss raster graphics in the section “Using Bitmaps (Also Known as Raster Graphics),” later in this hour, but first let's look at importing vector graphics.

Importing Vector Graphics

There might be times when you have an existing vector graphic that you need to include in a Flash movie. In general, unless it's complicated, you are able to import it into Flash.

Although Flash can import several vector file formats, the two most reliable formats are Adobe Illustrator files (.ai) and Adobe Flash SWF files (.swf). The main choice is whether you try to import a native .ai file, or first generate a .swf from your graphics program and import that .swf. You can use Flash to export a .swf, but we are referring to using a graphics tool to export a .swf file. Illustrator and Freehand, as well as many other tools, have special export features that take care to generate a .swf that's free from any special features only supported in those tools.

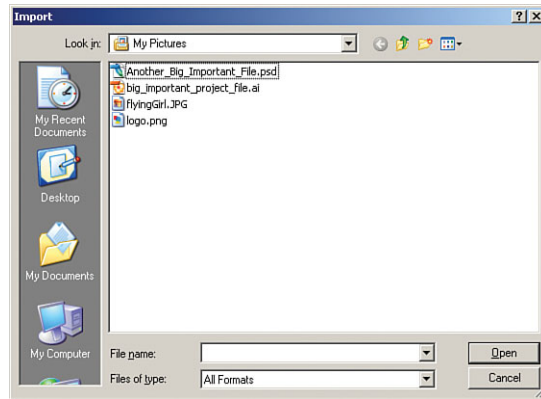
Importing from file is as simple as selecting File, Import, and then pointing to the file you want, as shown in Figure 3.1. You see several file types listed, but that doesn't mean they all work equally well. Not only are several image file formats listed, both raster and vector, but video and audio file formats also appear. Let's first look at the best choices for vector image imports: Illustrator and SWF.

Importing Illustrator Files

Flash CS4 has an extremely seamless Illustrator importer feature. All you do is select **File, Import, Import to Stage**, and select an .ai file. The import dialog appears as shown in Figure 3.2, and you see all the layers and even the nested hierarchy of groups and path layers as it was laid out in Illustrator. This means it is as simple or as complex as the graphic artist made it. Having so many layers listed can seem complicated, but there's surprisingly little to learn in this dialog. It's also possible to import directly from

FIGURE 3.1

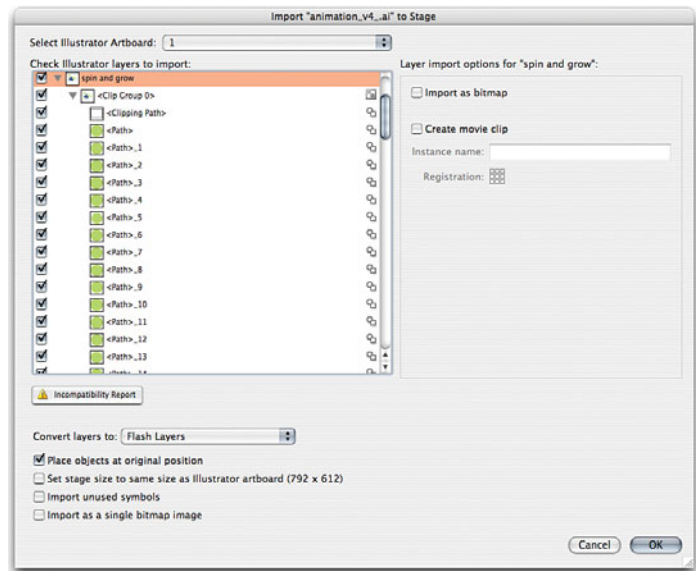
Importing images can be as simple as selecting the file you want to import.



Illustrator by using copy and paste. This achieves the same effect if you have both programs open. It also works well if you only want to selectively copy part of your Illustrator file, and not the entire thing.

FIGURE 3.2

When you import an Illustrator file, you see all the layers in the original file.



The basic approach to importing is to first decide which layers you want to import, and then decide (either individually or globally) the manner in which you want to import those elements. You might want to leave everything in a vector form or treat some elements as bitmapped graphics. Additionally, options let you create movie clips as you import. We talk about them in Hour 4, “Staying Organized with the Library and Layers,” but

briefly, movie clips are self-contained objects that can be easily recycled throughout your Flash movie. To exclude specific layers from import, click to remove the check mark next to that layer. Unchecking a layer that contains nested layers excludes all the nested layers, as shown in Figure 3.3.

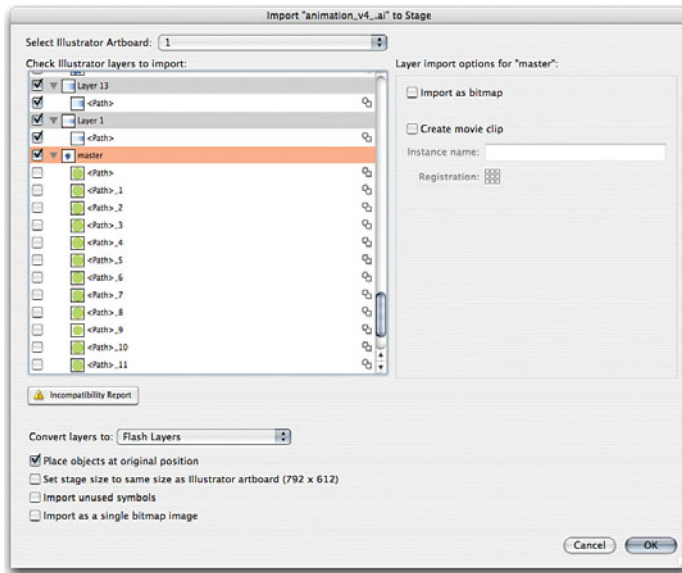


FIGURE 3.3

The settings at the bottom left of the Illustrator Import dialog affect every layer you're importing. Individual layer options appear on the right side.

TIP

Quick Layer Selecting

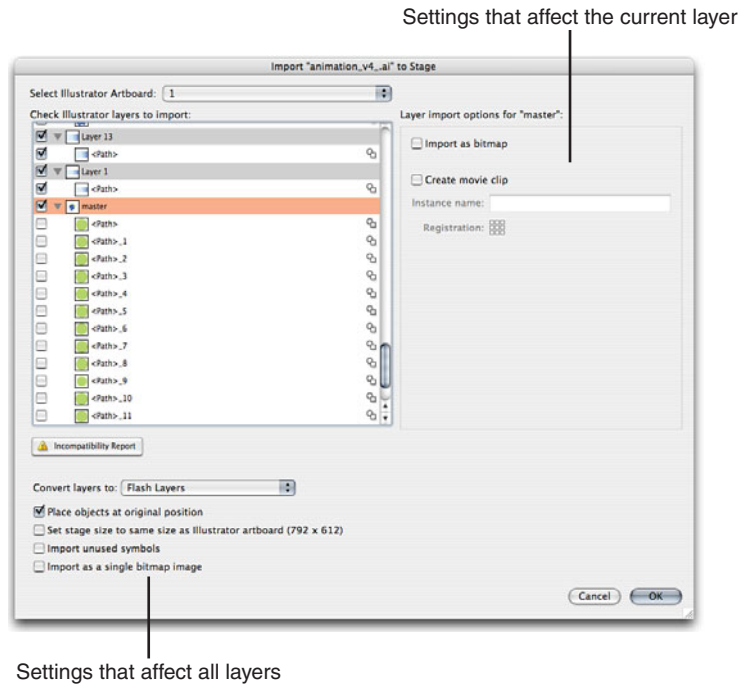
You can quickly check or uncheck a series of layers if, when you click one layer's check mark, you keep your mouse pressed and continue to drag over other layers' check marks.

After you've decided which layers you're going to import, you can decide how those elements should be imported. The global settings that appear at the bottom left of the import dialog (as shown in Figure 3.4) affect everything you import. The simplest way to import every selected layer is to select the option **Import as a single bitmap image**. Although this retains the image and all the fidelity created by the artist, the imported image can't be scaled without losing quality. That is, if you convert the image to a bitmap, the image has all the characteristics of bitmaps. Such an imported bitmap supports transparency and behaves as a PNG file, which you learn more about in the section "Using Bitmaps" later this hour.

A few more global options worth noting appear in the bottom-left area of the dialog box. The option to Place Objects At Original Position is a no-brainer. Even if you don't force your Stage size to match the Illustrator file (the second check box), having items placed in their relative position is vastly more convenient. You can always move the items to a new location if you want, but it would be tedious to move them into place later. Finally, the Convert Layers To drop-down menu defaults to turn Illustrator layers into

FIGURE 3.4

The settings at the bottom left of the Illustrator Import dialog affect every layer you're importing. Individual layer options appear on the right side.



Flash layers. This makes sense because Flash, just like Illustrator, has layers that affect the visual stacking. You can also choose to place all imported layers into a single Flash layer, and you still get the visual stacking you'd expect. Flash layers do more than just affect the visual stacking; they also let you maintain independent animations. The point is that you don't have to create a new Flash layer for each layer in the Illustrator file.

Finally, the option to turn Illustrator layers into Flash keyframes is useful if the artist created an animation frame by frame but put each step of the animation into a new layer. Naturally, this takes some coordination with the artist, and most artists don't use Illustrator as an animation tool.

Assuming you aren't opting to import everything as a single bitmap image, you can individually set options for each layer you're importing. Click the layer, not the check mark, and to the right you see the options shown in Figure 3.4.

The options available for individual layers present you with two decisions: First, do you import as an editable vector graphic (editable path) or as a bitmap? Second, do you want to create a movie clip while you're importing? If you're never going to scale the object and you're either planning to

animate the object or the image is very complex, then you may consider converting it to a bitmap. In most cases, you want to leave it as a vector. Next hour you learn all about movie clips, and you can consider revisiting this dialog then.

Importing Flash Player Files

The simplest and most consistently reliable option for importing vector graphics into Flash is to import Flash SWF files. Most graphics people don't think of `.swf` as an image file format—it's even listed as Flash Movie in the import dialog. A one-frame movie is really a graphic. Of course, a `.swf` file is not like a FreeHand file or an Illustrator file because it's not fully editable. When using newer versions of Illustrator, you can export your working files directly into the `.swf` format. They export amazingly well; the final files are quite small; and the images retain all the details and quality of the originals.

The best process is to create a graphic in whatever program you prefer, and then if that program doesn't export `.swf` files, open the file in a program that does, such as Illustrator, Fireworks, and several others. Simply export it as a `.swf` file, and then import the `.swf` directly into a Flash file. Even if the graphics program you use doesn't export `.swf` files, you can open the file in a tool that supports `.swf` and export it from there. The graphics tool you select must export files in a format that is supported by the tool you use to export `.swf` files.

Using Bitmaps (Also Known as Raster Graphics)

In this section, you see how bitmap (raster) graphics can be used in Flash. Raster graphics have inherently unique characteristics that can't be created inside Flash. The only warning related to using this option is to make sure you really *need* raster graphics. The following are some cases that justify the use of raster graphics:

- ▶ **A photograph**—The only time to consider using a vector alternative to a photograph is when the picture is of a geometric object. Otherwise, photographs should be raster graphics.
- ▶ **A series of still images**—These may be extracted from frames of a short video.

NOTE

Bitmaps Import as JPG

If, when importing an Illustrator file, you choose to convert objects to bitmap graphics, know that they are treated as JPGs, not PNG. Later this hour in the section "Using Bitmaps," you learn how imported bitmaps can be treated as either JPG or PNG. For now, you might need to come through and clean up the imported bitmaps if you want to change them to PNG.

- ▶ **An image with special effects that can't be achieved with a vector tool**—Examples include clouds, fire, water, and other natural effects. Of course, this is a challenge for a talented artist to re-create such an effect by using a vector tool such as Flash.

If you're unfamiliar with the difference between vector graphics and raster graphics, learning when one choice is better than the other can take some time. The file formats `.gif`, `.jpg`, `.png`, `.bmp`, and `.pct` are all raster graphics formats. However, because a file was saved in one of these formats doesn't mean it was automatically the best possible choice. It's the nature of the image in the file that matters. If all you have is a `.gif`, for example, you need to first look at its contents to judge whether it's appropriate as a raster graphic. An easy way to decide is if you can trace or redraw the image in the file (for instance, with Flash's drawing toolbar) you're much better off redrawing it. If it's a photograph, you would never be able to re-create it with vector graphic drawing tools, so leave it as a raster graphic. If it's a picture of a plain box, maybe you could draw it and thus take advantage of raster graphics.

To make matters slightly more complex, you can use Photoshop to create and edit layered bitmapped images. When importing Photoshop documents, you can decide exactly how to import each individual layer. In addition, Photoshop supports editable text, which isn't a raster graphic. Because importing Photoshop files is more involved, a separate section, "Importing Layered Raster Graphics," that discusses importing such layered documents following the more general discussion of importing flat raster graphics.

Importing Flat Raster Graphics

Importing a flat raster graphic (that is, not a Photoshop file), is pretty simple to do. You click **File, Import**, and **Import to Stage**, to open the Import dialog box, and then point to any raster graphic that Flash supports, such as `.jpg`, `.png`, `.gif`, `.bmp`, `.tif`, or `.pct`. That's it.

Importing not only places the graphic on the Stage, but also puts a master bitmap item into the Library. If you import a raster graphic and then delete the object from the Stage, the master bitmap item is still in the Library panel, which you can open by selecting Window, Library. It's called a Bitmap Item, and it has a little icon that looks like a picture of a tree (as shown in Figure 3.5).

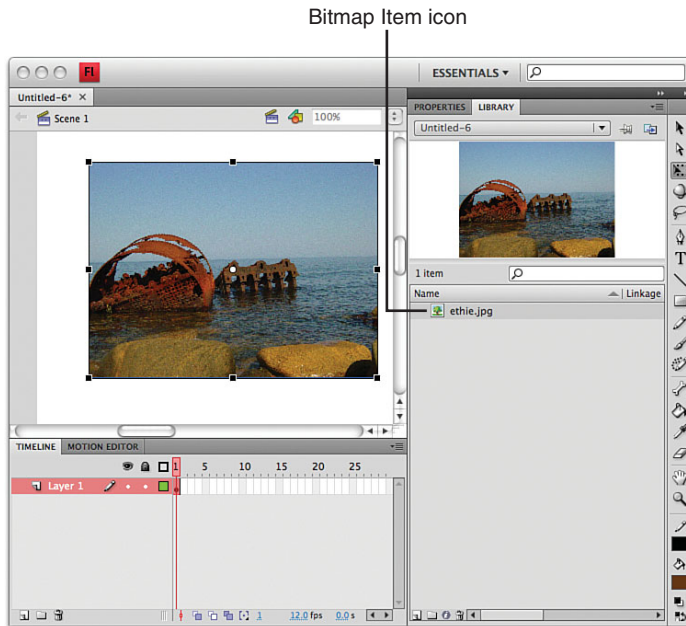


FIGURE 3.5

After you import a raster graphic, the Bitmap Item appears in your Library panel.

After a raster graphic is imported, you need to keep it in the Library. The Bitmap Item icon that appears in the Library provides a way to specify how the image should be exported when you create a movie for the web. If you leave it unchanged, your raster graphics export under the default settings. You can also specify special settings for just that image. In the following task, you import a raster graphic and explore some of these settings.

In this task, you import a raster graphic. Follow these steps:

1. In a new file, select **File, Import**, and **Import to Stage** to open the Import dialog box, and then select a .bmp, .pct, .png, .jpg, or .gif file. If you don't have an image handy, visit any web page and right-click an image to select an option to save it on your desktop. Then, use that image as the file to import into Flash. Don't import an image saved directly from a digital camera because it's probably huge.
2. Click the graphic on the Stage and delete it. Because it's a raster graphic, it's still safely stored in the Library.
3. Open your Library by selecting **Window, Library** or by pressing **Ctrl+L**.
4. Click the line in your Library that has the tree icon and the name of the file you imported.

TRY IT YOURSELF ▼

Import a Raster Graphic

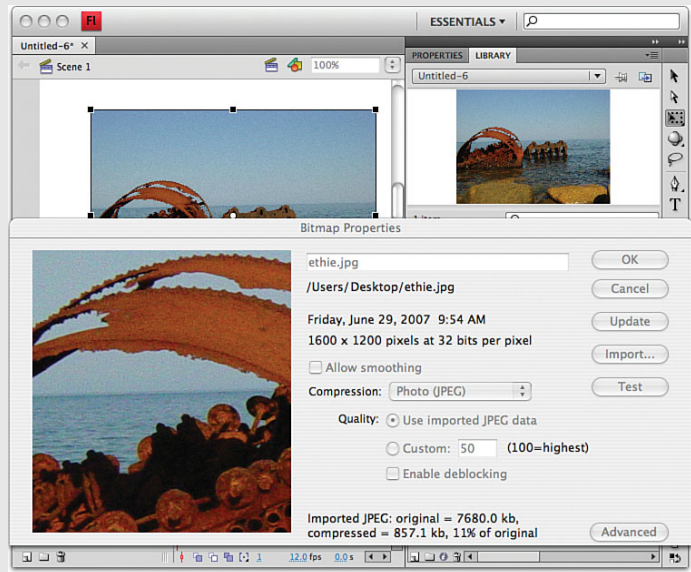
▼ TRY IT YOURSELF

Import a Raster Graphic

FIGURE 3.6

The Bitmap Properties dialog box offers control over how each bitmap item in your Library is treated during export.

- In the Library, select **Options, Properties**. The Options menu is inside the Library window at the top right. The Bitmap Properties dialog box shown in Figure 3.6 appears. Your dialog box might look slightly different, depending on what type of file you imported.
- In the Bitmap Properties dialog box, decide what export settings to use for this graphic. Leave this dialog box onscreen while you walk through the next section.



Adjusting Bitmap Properties

TIP

Zooming Compression Preview

When testing different compression settings, you can zoom in on the preview window on the Bitmap Properties dialog by right-clicking and choosing Zoom In.

Flash imports all kinds of raster formats, but uses only JPEG, GIF, or PNG in an exported movie. In addition, any raster graphic is generically called a bitmap item after it's inside Flash's Library. No matter what file type you import, you must use the **Bitmap Properties** dialog box to choose between **JPEG** (and its compression level) and lossless **GIF/PNG** for exporting. If you decide to use JPEG compression, you want to experiment with different settings and click the **Test** button after each change to see the effects on both image quality (in the little picture at the top left) and file size (in the text information at the bottom of the dialog box), as shown in Figure 3.7). The process involves experimentation—making adjustments and viewing the corresponding results.

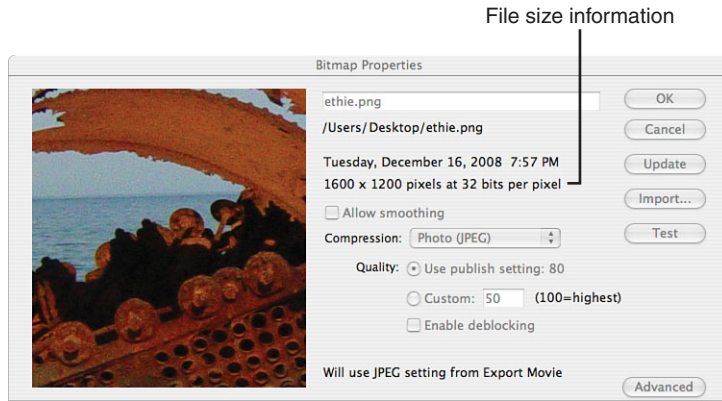


FIGURE 3.7

Selecting a low JPEG compression (10) and clicking Test provides a preview of the resulting image and its file size.

CAUTION

Three Ways to Use Imported Raster Graphics

There are three suitable approaches to using raster graphics in Flash. First, you can start with the highest-quality image possible (for instance, .png, .bmp, or .pct), and then experiment with Flash's JPEG compression to find the best compromise. Second, you can import a .bmp, .png, or .pct and leave the image uncompressed; this gives you the highest quality and also the largest file size. This is also the only option to maintain a .png's transparency settings. Finally, you can use image editing software, such as Fireworks, to create a .jpg file with the best compromise of file size and quality that can be imported into Flash. This way you can take advantage of the Selective JPEG feature in Fireworks. If you use this option, remember to leave the Use Imported JPEG Data option selected. If the image has already been compressed (using JPEG compression), you shouldn't allow Flash to recompress because the result would be a poor quality image.

JPEG compression is usually the most efficient option. Unless you import a .png or .gif, Flash sets the bitmap properties to JPEG by default. It's slightly confusing because if you import a .jpg file, Flash uses Imported JPEG Data by default, as shown in Figure 3.8. This option tells Flash to maintain the imported file's original compression (that is, don't recompress). Leaving this option selected is generally desirable because it's a bad idea to recompress.

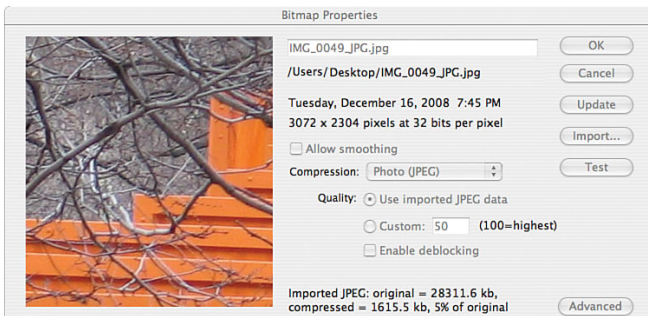


FIGURE 3.8

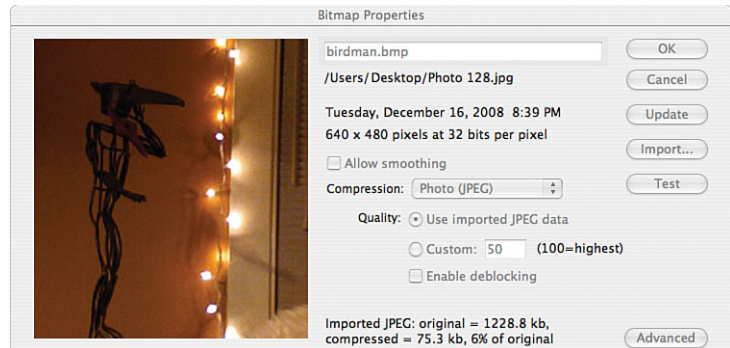
Only imported .jpg files enable you to use the JPEG compression contained in the original file.

Importing other popular formats, such as .bmp and .pct, also causes Flash to opt for JPEG compression by default. And even though you are using a Bitmap file type and not JPEG, as shown in Figure 3.9, the options remain the same.

You can control what compression method is used on individual imported images by deselecting Use Document Default Quality or deselecting Use Imported JPEG Data, but keep in mind the earlier caution about recompression. When this option is deselected, a field appears where you can type the

FIGURE 3.9

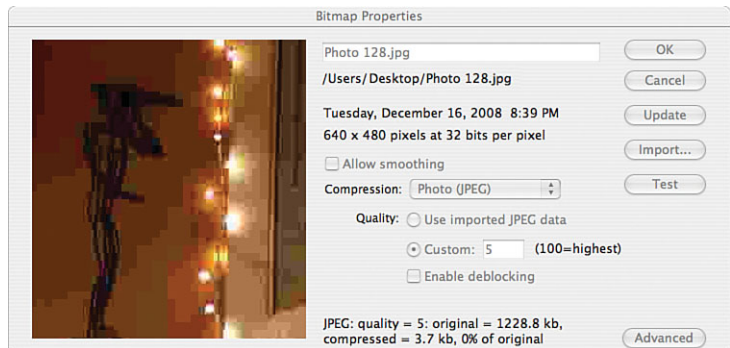
When you import non-.jpg files, you can still use JPEG compression settings.



JPEG compression level you desire. Instead of guessing what compression level is best, you can use the **Bitmap Properties** dialog box to experiment. A lower number results in a smaller file but also lowers the quality. If you click **Test** after each change, you see a drastic difference between 100 and 1. After you make each change, you can click the **Test** button to review the effect on file size and quality, as shown in Figure 3.10. You should experiment until you get the best compromise of image quality and file size.

FIGURE 3.10

Setting the quality to 5 cuts this image size to less than 1/100 of its original, but the quality is visibly affected.



The image portion shown in the image window at the top left of the Bitmap Properties dialog box shows exactly how the image looks when it is exported. You can zoom into this window by right-clicking, and then you can pan around to get a better view.

If you plan on compressing an image inside Flash, you might want to use PNG. This file type compresses better than JPEG and results in a better quality final image.

Figure 3.11 shows the results of using several different compression levels on the same image. Notice JPEG 80 and JPEG 100 are almost identical in quality, but JPEG 80 has a much smaller file size.

You get the ultimate quality by using the compression option Lossless (GIF/PNG). It is selected by default when you import .png and .gif files, but you can select it any other time you want to use it. When this option is



FIGURE 3.11
The results of different compression settings on the same image shows how quality degrades and file size shrinks.

selected, Flash leaves the image in its original state. This option always provides the best quality—but not without a price. File size is highest when this option is selected. This is a suitable alternative if you're making a movie that doesn't need to download from the web—for example, if you're making a presentation that you are delivering on your hard drive or CD-ROM. Otherwise, you should use this option only on images where you want to retain the best quality possible. If your imported image is a .gif that already has a small file size, selecting **Lossless** is perfectly suitable. Because even 100% JPEG compression causes *some* image degradation, the Lossless option is suitable for images that are particularly important. Finally, the only way Flash supports 32-bit graphics (that is, raster images with varying degrees of transparency) is through .png items that you set to Lossless. The fact that PNG is the only format that supports transparency is another perfectly legitimate reason to use PNG.

Smoothing

Regardless of which compression option you use for your imported bitmaps, Allow Smoothing (as shown earlier in Figure 3.10) is another option in the Bitmap Properties dialog. If you plan to scale or rotate the raster graphic, you want to click that check mark. Normally, a bitmap with its explicit number of pixels looks fine without smoothing. However, smoothing lets Flash apply a tiny bit of blur when the image's pixels don't align perfectly with the screen's pixels, which is the case when you rotate or scale an image. You can see the effect of smoothing in a side-by-side comparison in Figure 3.12.

FIGURE 3.12

Applying smoothing to the image on the left improves it when rotated, but the same effect makes the image look soft.



The downside of smoothing is images can look a bit fuzzy, so don't use it if you're not rotating or scaling the image. If you're using the image in a detailed animation, you want to opt for smoothing. Compared to how raspy a modified image looks without smoothing, you probably want to click the check mark to enable smoothing when appropriate.

Importing Layered Raster Graphics

Flash CS4 can import Photoshop .psd files. The value is that artists can work in Photoshop, and you can conveniently import the graphics they create. Compared to having the artist individually export each element and then you import it and place it in the correct position, this is a huge workflow improvement. What's doubly great about this new feature is that it's so intuitive there's not a whole lot to learn.

Like the Illustrator Import dialog, when you select **File, Import, Import to Stage** and point to a Photoshop file, you see all the layers and folders contained in the source Photoshop file, as shown in Figure 3.13.

There are some striking similarities between the Photoshop import dialog and the Illustrator one discussed earlier—though this one is more advanced. You can see similar global options at the bottom left as to whether

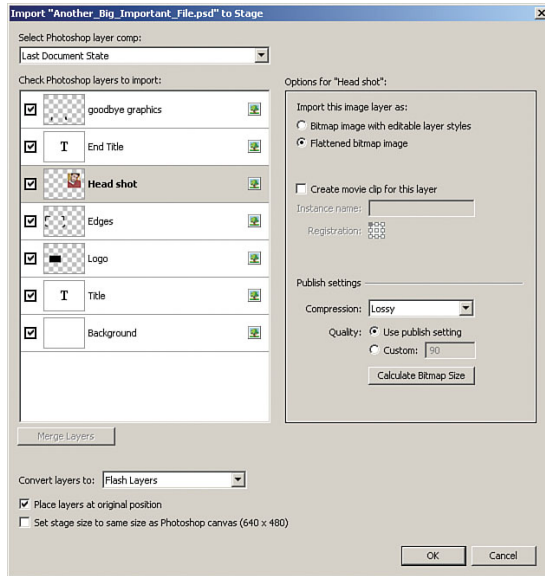


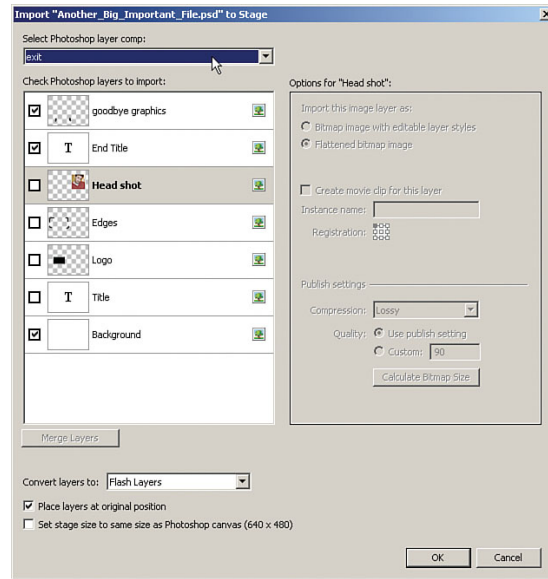
FIGURE 3.13 Importing a Photoshop document allows you to select how to import each layer.

to keep objects in position and or to convert layers into Flash layers or keyframes. Also similar is the way you can include or exclude layers by clicking check marks.

A particularly handy feature in Photoshop, called *layer comps*, lets you save multiple arrangements of your layers and their contents. Artists can include tons of layers with all the graphics for an entire project in a single Photoshop file. Then, they can make multiple compositions—for example, one where only the layers related to the home screen in your project are visible and another where the layers for a video section are visible. With layer comps, artists can quickly view different arrangements without going through and turning layers on and off. When you import a Photoshop document with layer comps, you see them listed at the top left, as shown in Figure 3.14. This gives you a quick way to select all the layers related to a particular layout.

FIGURE 3.14

You can use the Layer Comp drop-down to quickly select the layers related to a particular layout.



After you've selected the layers you want to import, you can set the options for how each layer gets imported on the right side of the import dialog. Provided you don't want to accept the defaults, you individually select each layer and make adjustments to the options on the right. All layer types can be imported as a flattened bitmap, which is the best way to retain the exact look created by the artist. You see slightly different options in text layers and shape layers, but the big difference from the Illustrator importer discussed earlier is that for each layer you import as a flattened bitmap, you can individually set the publish settings.

The publish settings for each imported layer affect the Bitmap properties for the contained objects when they appear in the Library. These settings are the same ones you learned about in the previous section "Adjusting Bitmap Properties." This way, you can make the decision between JPEG and PNG/GIF and whether to use Flash document's publish settings for compression or set them individually for each item. The odd thing is that the terms are slightly different than the ones you just learned. Where the Photoshop importer says Lossy Compression, it means JPEG in the Bitmap Properties dialog (accessible by double-clicking an item after it's in the Library). Where the Photoshop importer says Lossless, it means PNG.

Although you always see the best quality by importing layers as flattened bitmaps, other options also have some value. In the case of text layers, you can opt to import as editable text. You can make edits to the actual wording

later, but realize you immediately lose any layer effects applied to the text. Photoshop supports very detailed text effects that are unmatched in Flash.

For both shape and text layers, you can choose to keep paths and layer styles editable. Not only does this mean you see subtle differences in the image after it's inside Flash, but a complex Photoshop document translates to a complex Flash document. Be prepared to test any import process if you're not importing as flattened bitmaps.

To summarize the suggested workflow, select the layers you want to import, either by clicking the check marks or by selecting a layer comp, which effectively selects the layers for you. Then, go through each layer to adjust the publish settings or do this later via the Library item's bitmap properties.

Summary

When possible, you should create graphics inside Flash. But sometimes you can't. There are times when you need to import graphics, such as when you have an existing graphic that would be impossible or difficult to recreate in Flash or when a graphic requires a raster file type, such as a photograph. When you're certain you want to import, Flash provides you with mechanisms to do so.

Q&A

- Q. Importing Photoshop and Illustrator files looks pretty cool, but I don't have those programs. How can I test out some of what I learned this hour?**
- A.** You can find some sample .ai and .psd files in the downloads section of the publisher's website.
- Q. I'm having trouble importing images from a digital camera. I have some great shots of my potato chip collection, but they're huge after I import them. How can I resize them?**
- A.** Because multi-megapixel cameras produce originals that can be thousands of pixels wide, you don't want to import these directly. First use an image editing program, such as Fireworks, to resize the image to fit comfortably on a normal screen size—that is, less than 1024×768 or 800×600. Taking a megapixel image and scaling it down inside Flash does not improve the sharpness and actually does the opposite if you don't select the Allow Smoothing option. Worse still, the file size will be huge. Don't do that; instead resize and optimize the image before importing!

- Q.** I have a photograph that I use as a raster graphic in my Flash movie. After I scan it into the computer and touch it up, what file format should I choose? There are so many.
- A.** Generally, you want to keep all your raster graphics in the highest-quality format possible before importing into Flash. One exception is when you use a tool, such as Fireworks, to produce an optimally compressed image. If you use an outside program to compress the image, make sure you don't recompress in Flash; leave the default setting Use Imported JPEG Quality. Alternatively, if you import a high-quality .pct, .bmp, or .png, you can compress it in Flash until you're satisfied with the compression level. JPEGs are all right, but they always have some compression that could result in artifacts. GIFs are not a good alternative because they can't have more than 256 explicit colors. Changing the file format of an existing image never makes a graphic better and potentially makes it worse. You should start with the best quality possible, and then reduce it as the very last step.
- Q.** How do you determine how much one graphic is contributing to the final movie's file size?
- A.** If it's a raster graphic, you can explore the Bitmap Properties dialog box, which tells you exactly how big a graphic is. With vector graphics, determining the size is more difficult. Ultimately, you should copy the graphic into a new file and export a .swf of that file by selecting File, Export. You can look at the file size. Sometimes it's not so important how much one graphic is contributing, especially if it's an important graphic; your concern should always be to not add to the file size unnecessarily.
- Q.** I have a fairly simple Illustrator file graphic that I would like to import into Flash. It's impossible to redraw in Flash, so I have to import it, right?
- A.** If the file is simple, it should be possible to create it in Flash. Make sure you're fully exploiting the potential of Flash. Read Hour 2, "Drawing and Painting Original Art in Flash," again, if necessary. Of course, if you have to import the image, do so. You might still have luck if you first export it from Illustrator as a .swf before importing.

Workshop

The Workshop consists of quiz questions and answers to help you solidify your understanding of the material covered in this hour. You should try to answer the questions before checking the answers.

Quiz

1. What's the most appropriate image file format to import into Flash?
 - A. Raster.
 - B. Vector.
 - C. It depends on the nature or content of the image.
2. If you import a .gif image into Flash, what kind of compression does Flash use on the image when it exports the entire movie?
 - A. It depends on the Compression setting in the Bitmap Properties dialog box.
 - B. Flash always uses JPEG compression, but it's up to you to specify what quality level to use.
 - C. GIFs are exported as GIFs.
3. How do you import photographs created with a digital camera?
 - A. You can't; you must use conventional film.
 - B. It's simple; click **File, Import**.
 - C. Be sure to resize the image in an outside program first, then click **File, Import**.

Quiz Answers

- 1. C.** Although a vector graphic has benefits over a raster graphic, the most appropriate image file format to import into Flash depends on the graphic. Photographs usually have to stay as raster graphics.
- 2. A.** Each image imported can have a unique compression setting that is not dependent on its original format. By default, however, imported `.gifs` get exported as `.gifs`.
- 3. C.** Maybe we're being tricky including a question whose explanation is only found in the Q&A section, but be sure to read the second question in that section if you didn't get this answer right because it's important.

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