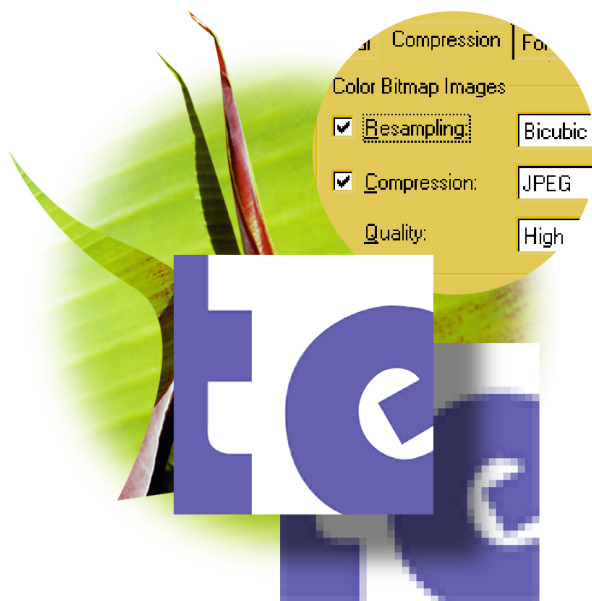


# Customizing PDF Output Quality



*You control the output quality of your files by specifying appropriate compression and resampling options used by Acrobat Distiller to convert the files to PDF. In addition to default options designed to produce satisfactory results for common output needs, Distiller lets you customize individual conversion options for your specific needs.*

In this lesson, you'll learn how to do the following:

- Choose Acrobat Distiller compression and resampling options.
- Compare the output of PDF files converted with different options.
- Set up watched folders for batch-processing of PDF files.
- Convert PostScript files to PDF using the drag-and-drop method.


This lesson will take approximately 50 minutes to complete.

If needed, remove the previous lesson folder from your hard drive, and copy the Lesson12 folder onto it.

## Controlling PDF output quality

Acrobat Distiller produces PDF files that accurately preserve the look and content of the original document. Distiller also uses various methods to compress text, line art, and bitmap images so that they use less file space in the resulting PDF file. In this lesson, you'll learn how to choose and customize compression options to create the PDF quality and file size appropriate to your output needs.

In Lesson 3, "Creating PDF from Authoring Programs," you learned how to convert a source document directly to PDF using Distiller. Behind the scenes of this conversion process, Distiller creates an intermediate file in PostScript format before producing the final PDF file. For greater control over the creation of PDF files, you may want to create your own PostScript file from the source document and then process the PostScript file manually using Distiller. Creating PostScript files manually gives you greater control over page descriptions and compression options, and allows you to automate the creation of PDF files using watched folders. Although you'll not do so in this lesson, you can easily create PostScript files from many source applications.

 For information on setting up your system to create PostScript files, see "Creating PostScript files with Distiller" in Chapter 2 of the online Adobe Acrobat User Guide.

## About compression and resampling

Distiller lets you choose from a variety of file compression methods designed to reduce the file space used by color, grayscale, and monochrome images in your document. Which method you choose depends on the kind of images you are compressing.

In addition to choosing a compression method, you can *resample* bitmap images in your file to reduce the file size. A bitmap image consists of digital units called *pixels*, whose total number determines the file size. When you resample a bitmap image using Distiller, the information represented by several pixels in the image is combined to make a single larger pixel. This process is also called *downsampling* because it reduces the number of pixels in the image.

## Using default compression settings

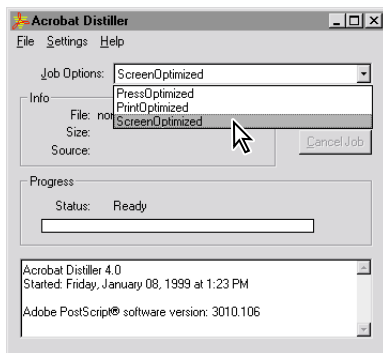
In this part of the lesson, you'll apply default compression settings to a sample file using Distiller's predefined ScreenOptimized, PrintOptimized, and PressOptimized job options. These options use preset compression methods to control the quality of the resulting PDF document for different distribution and printing needs.

## Processing the color file with default settings

You'll convert a sample PostScript file to PDF three times, using a different predefined set of job options each time. You convert PostScript files to PDF by opening them in Acrobat Distiller.

- 1 Start Distiller.
- 2 Choose ScreenOptimized from the Job Options menu.

The ScreenOptimized setting creates output appropriate for on-screen display, such as on the World Wide Web.



3 Choose File > Open. Select Color.ps in the Lesson12 folder, located inside the Lessons folder within the AA4\_CIB folder on your hard drive, and click Open.

4 Name the resulting PDF file **Color1.pdf**, and save it in the Lesson12 folder. Notice that Distiller shows the status of the conversion process to PDF.

5 Repeat steps 2 through 4, but this time choose PrintOptimized from the Job Options menu, name the resulting PDF file **Color2.pdf**, and save it in the Lesson12 folder.

The PrintOptimized setting creates output appropriate for printing on a typical desktop laser printer.

6 Repeat steps 2 through 4, but this time choose PressOptimized from the Job Options menu, name the resulting PDF file **Color3.pdf**, and save it in the Lesson12 folder.

The PressOptimized setting creates output appropriate for printing to high-end presses.

### Comparing the color files

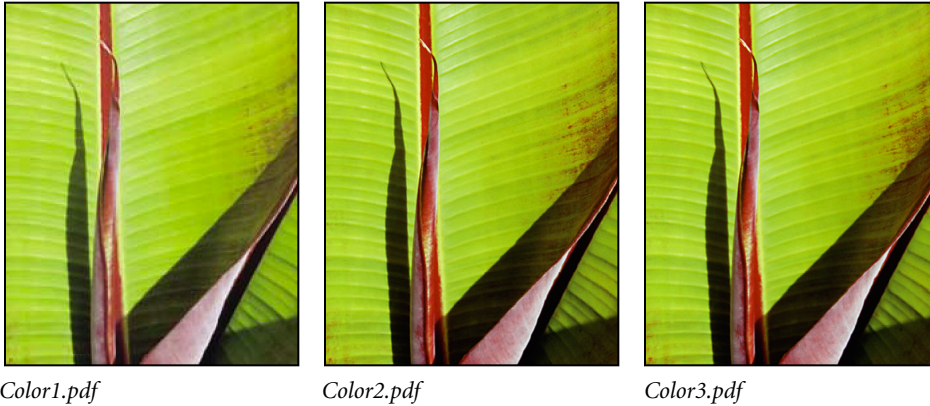
Now you'll open the three PDF files in Acrobat and compare their quality and file size.

1 Start Acrobat.

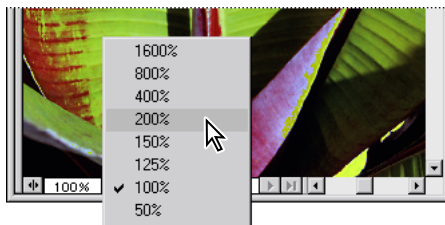
2 Open the PDF files you just created: Color1.pdf, Color2.pdf, and Color3.pdf, located in the Lesson12 folder.

3 Choose Window > Tile > Vertically to display the files side by side. If needed, use the scroll bars to display the same area in each of the files.

At 100% magnification, all three images should look very similar.



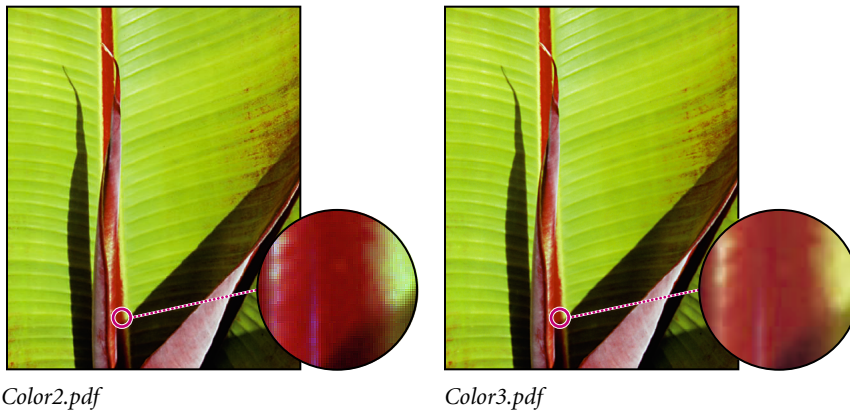
- 4** Use the magnification pop-up menu to display each image at 200% magnification. Scroll as needed so that you can see the same area in each of the files.



In comparison with the other images, Color1.pdf (the screen-optimized file) has a more jagged display quality. Since Color1.pdf is intended for low-resolution, on-screen use, it does not require as detailed a display quality. Screen-optimized files will also display more quickly than higher resolution images.

- 5** Now display Color2.pdf and Color3.pdf at 800% magnification, and scroll as needed to display the same area in the two files.

Notice that Color2.pdf (the print-optimized file) now has a coarser display quality than Color3.pdf (the press-optimized file). Since Color3.pdf is intended for high-resolution printing, it contains the most detailed image quality.



**6** Choose Window > Close All to close all three files without saving them.

Now you'll compare the file sizes of the three PDF files.

**7** In Windows, use Windows Explorer to open the Lesson12 folder, and note the sizes of the three files. In Mac OS, open the Lesson12 folder, shift-click both Color2.pdf and Color3.pdf, and choose Get Info from the File menu. Notice that Color1.pdf has the lowest image quality and the smallest file size, while Color3.pdf has the highest image quality and the largest file size.

PDF creation involves a trade-off between image quality and file compression. More compression means smaller file sizes but also coarser image quality, while finer image quality is achieved at the expense of larger file sizes. For information on the default job options, see “Creating a PDF file with Acrobat Distiller” on page 78.

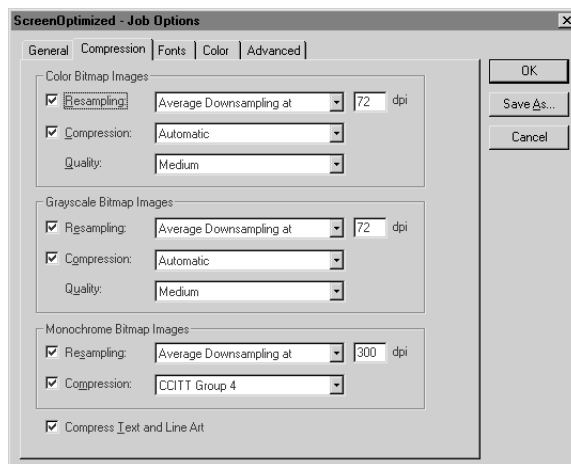
## Using custom compression settings

The default Distiller job options are designed to produce good results in most cases. However, you can set job options manually if you are dissatisfied with the results produced by the default settings or if you want to fine-tune the compression methods used by Distiller. In this part of the lesson, you'll practice applying custom compression and resampling settings to the color PostScript file.

## Changing the job options

By combining the appropriate compression and downsampling job options, you can greatly reduce the file size of the PDF document without losing noticeable detail in the image. You'll apply your custom settings to the original high-resolution PostScript file Color.ps.

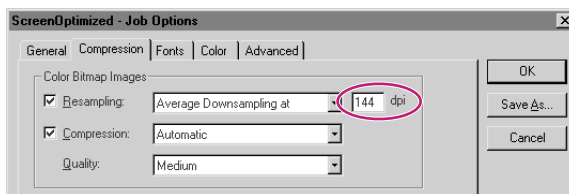
- 1 In Distiller, choose ScreenOptimized from the Job Options menu.
- 2 Choose Settings > Job Options, and click the Compression tab.



The default compression values associated with the ScreenOptimized setting are displayed. You already saved the file color1.pdf at 72 dots per inch (dpi) resolution. You'll now adjust several options to produce your own custom setting for optimizing on-screen PDF display.

- 3 In the Color Bitmap Images area, enter **144** for the resampling value.

This will downsample the original PostScript color image file down to a resolution of 144 dpi. Options you enter in the Color Bitmap Images section of the dialog box will affect only color images. Any changes you make to the grayscale or monochrome options will have no effect on color images. Distiller recognizes the type of PostScript image file, and applies the appropriate color, grayscale, or monochrome compression settings.



Now you'll save the custom setting that you have specified so that you can use it again in the future.

- 4 Click Save As. Name the custom setting **ScreenOptimized(1).joboptions**, and click Save.

Your custom setting will now be available from the Job Options menu, along with the default settings.

- 5 Click OK to exit the job options.

### About methods of compression

Distiller applies ZIP compression to text and line art; ZIP or JPEG compression to color and grayscale bitmap images; and ZIP, CCITT Group 3 or 4, or Run Length compression to monochrome images.

- ZIP is a compression method that works well on images with large areas of single colors or repeating patterns, such as screen shots and simple images created with paint programs, and for black-and-white images that contain repeating patterns. Acrobat provides 4-bit and 8-bit ZIP compression options. If you use 4-bit ZIP compression with 4-bit images, or 8-bit ZIP with 4-bit or 8-bit images, the ZIP method is lossless, which means it does not remove data to reduce file size and so does not affect an image's quality. However, using 4-bit ZIP compression with 8-bit data can affect the quality, since data is lost.
- The JPEG (Joint Photographic Experts Group) compression method is suitable for grayscale or color images, such as continuous-tone photographs that contain more detail than can be reproduced on-screen or in print. JPEG is lossy, which means that it removes image data and may reduce image quality, but it attempts to reduce file size with the minimum loss of information. Because JPEG eliminates data, it can achieve much smaller file sizes than ZIP compression.



*Acrobat provides five JPEG options, ranging from Maximum quality (the least compression and the smallest loss of data) to Minimum quality (the most compression and the greatest loss of data). The loss of detail that results from the Maximum and High quality settings are so slight that most people cannot tell an image has been compressed; at Minimum and Low, however, the image may become blocky and acquire a mosaic look. The Medium quality setting usually strikes the best balance in creating a compact file while still maintaining enough information to produce high-quality images.*

- *The CCITT (International Coordinating Committee for Telephony and Telegraphy) compression method is appropriate for black-and-white images made by paint programs and any images scanned with an image depth of 1 bit. CCITT is a lossless method.*

*Acrobat provides the CCITT Group 3 and Group 4 compression options. CCITT Group 4 is a general-purpose method that produces good compression for most types of monochrome images. CCITT Group 3, used by most fax machines, compresses monochrome bitmaps one row at a time.*

- *Run Length is a lossless compression option that produces the best results for images that contain large areas of solid white or black.*

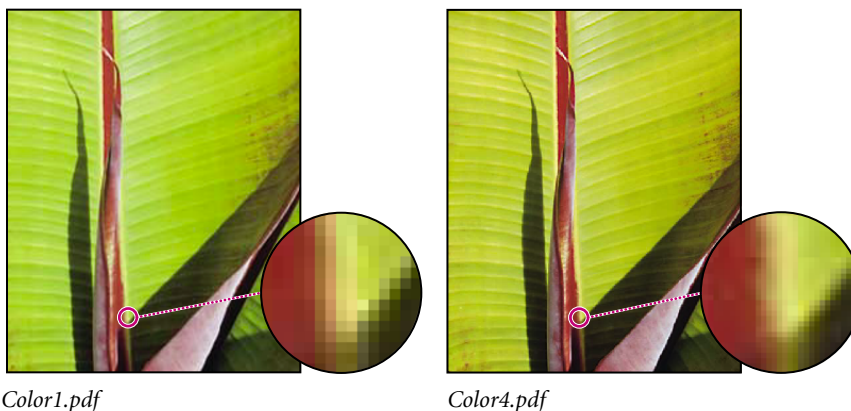
—From the online Adobe Acrobat User Guide, Chapter 3

## Processing the color file with custom settings

Now you're ready to try out your new job option setting.

- 1 In Distiller, choose File > Open. Select Color.ps in the Lesson12 folder, located inside the Lessons folder within the AA4\_CIB folder on your hard drive, and click Open.
- 2 Name the resulting PDF file **Color4.pdf**, and save it in the Lesson12 folder.
- 3 In Acrobat, open Color4.pdf and then open Color1.pdf, the other screen-optimized PDF file.
- 4 Choose Window > Tile > Vertically to display the files side by side, and view both files at 200% magnification. If needed, use the scroll bars to display the same area in each of the files.

Notice that Color4.pdf is smoother than Color1.pdf. Because Color4.pdf has a higher resolution (144 dpi rather than 72 dpi), it contains more pixel detail and finer image quality.



- 5 Choose Window > Close All to close the files without saving them.
- 6 In Windows Explorer (Windows), compare the file sizes of the two images. In Mac OS, use Get Info again, and notice that Color4.pdf is somewhat larger than Color1.pdf.

## Processing grayscale and monochrome images

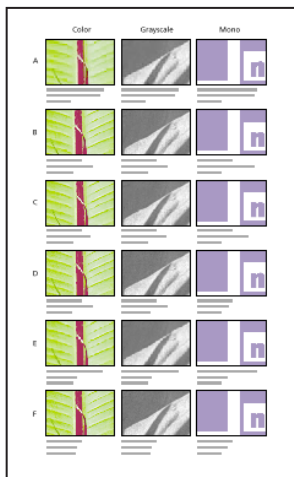
If you want, you can experiment with applying default compression and resampling settings to a grayscale and a monochrome PostScript image file. This part of the lesson is optional; if desired, you can skip to the next section to examine a gallery of different PDF output qualities.

- 1 Follow the instructions in “Processing the color file with default settings” on page 287, this time using the files Gray.ps and Mono.ps instead of Color.ps. These files are located in the Lesson12 folder.
- 2 Compare their quality and file sizes, the same as you did for the Color1.pdf, Color2.pdf, and Color3.pdf files in “Comparing the color files” on page 288.

## Comparing color, grayscale, and monochrome images

Now you'll examine a gallery that shows the same area from each of the three images that you have worked on. The images have been converted with the ScreenOptimized job option in Distiller using a variety of compression and downsampling settings appropriate for display on different devices.

**1** In Acrobat, choose File > Open. Select Compare.pdf in the Lesson12 folder, located inside the Lessons folder within the AA4\_CIB folder on your hard drive, and click Open.



**2** Zoom in as needed to compare detail between the different image versions.

You'll notice that images with larger file sizes do not necessarily yield better display quality. Downsampling a monochrome file may not significantly reduce its size. When converting your images to PDF, choose compression and resampling options that will give you adequate quality at the smallest file size possible.

## Using watched folders

To automate the process of creating PDF files, you can set up a *watched folder* on your system or network server. When Distiller watches a folder, it periodically checks the folder for PostScript files. When a PostScript file is saved or copied into a watched folder, Distiller automatically converts the file to PDF and moves it to an Out folder.

In this part of the lesson, you'll set up a watched folder on your machine and use it to convert a PostScript file to PDF.

## Setting up a watched folder

You'll configure Distiller to check a folder periodically for PostScript files, and to process these files for on-screen PDF output.

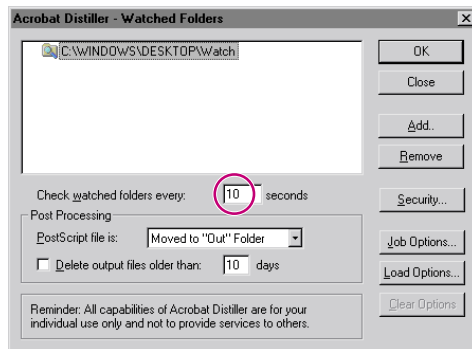
- 1 Create a folder on your desktop, and name it **Watch**.
- 2 In Distiller, choose ScreenOptimized from the Job Options menu.
- 3 Choose Settings > Watched Folders.

The Watched Folders dialog box lets you specify how frequently Distiller checks a watched folder and how to handle files after they are processed.

- 4 Click Add.
- 5 Select the Watch folder on your desktop, and click OK (Windows) or click Select "Watch" (Mac OS).

The Watch folder appears in the Watched Folder list.

- 6 Select Watch from the list. For Check Watched Folders Every, enter **10** to process PostScript files every 10 seconds. Under Post-Processing, choose Moved to "Out" Folder.



- 7 Click Job Options. You can set different options for each watched folder.
- 8 Click the Compression tab to display the compression and resampling options. Under Color Bitmap Images and Grayscale Bitmap Images, choose High for the compression quality. Then click OK.
- 9 Click OK again to close the Watched Folders dialog box.

## Converting a file using a watched folder

Your new Watch folder has an In folder and an Out folder in it, as well as a job options file. You'll place a sample PostScript file in the In folder. When Distiller is finished processing the file, you'll retrieve the resulting PDF file from the Out folder.

- 1 In Windows Explorer (Windows) or the Finder (Mac OS), open the Watch folder.
- 2 Open the Lesson12 folder. Drag Drop.ps from the Lesson12 folder to the In folder within the Watch folder.

If Distiller is still visible, you should be able to see information about the processing in the Distiller window.

- 3 Open the Out folder within the Watch folder. You should now have a Drop.pdf file and a Drop.ps file in this folder.
- 4 Double-click Drop.pdf to view it in Acrobat.
- 5 When you are finished viewing the file, close it and drag it to the Lesson12 folder.
- 6 Exit or quit Acrobat.

## Removing watched folders

If you no longer need Distiller to watch a particular folder, you should remove it from the list of watched folders. If you do not remove it from the list, Distiller will waste resources checking that folder and ultimately slow down the processing of other tasks.

If you haven't done so already, you should drag Drop.pdf to the Lesson12 folder.

- 1 In Distiller, choose Settings > Watched Folders.
- 2 Select Watch from the list.
- 3 Click Remove, and then click OK.
- 4 Exit or quit Distiller.

In this lesson, you learned several methods to convert PostScript files to PDF, and how to manage output quality. The method you use depends on your system resources and working habits. You may not always use the same settings. You should experiment to find the best solution for your needs.

## Exploring on your own

Dragging one or more PostScript files onto the Acrobat Distiller window will launch Distiller and begin the conversion to PDF. You can also drag the file onto the Distiller icon.

By default, Distiller does not display the Save As dialog box when you use the drag-and-drop method. Instead, it places PDF files into the same folder as the source PostScript files and adds the extension .pdf or .PDF to the original filename. It also uses the current job options defined in Distiller.

- 1** In Windows Explorer (Windows) or the Finder (Mac OS), open the folder containing the PostScript file you want to process.
- 2** Drag the PostScript file from the source folder to the Distiller window or icon.
- 3** When Distiller is finished processing, double-click the resulting PDF file located in the source folder to view it in Acrobat.

***Note:** To display the Save As dialog box by using the drag-and-drop method, select the PostScript file, hold down Ctrl (Windows) or Option (Mac OS), and drag to the Distiller window.*

## **Review questions**

- 1 How do you specify different compression and resampling methods in Distiller?
- 2 What is resampling? What is downsampling?
- 3 How often does Distiller check a watched folder for a PostScript file?
- 4 When you drag and drop a PostScript file onto the Distiller window, where is the resulting PDF file saved?

## **Review answers**

- 1 You can specify default compression and resampling methods by choosing a predefined setting (ScreenOptimized, PrintOptimized, PressOptimized) from the Job Options menu. You can also specify custom settings by choosing Settings > Job Options.
- 2 Resampling refers to reducing the number of pixels in an image to minimize the file size. Multiple pixels in the original image are combined to make a single, larger pixel that represents approximately the same image area. Downsampling is the same as resampling.
- 3 Distiller checks watched folders as frequently as you specify. Choose Settings > Watched Folders, and enter a value for Check Watched Folders Every.
- 4 When you drag and drop a PostScript file onto the Distiller window, the resulting PDF file is saved by default in the source folder containing the PostScript file.