

Preparing PDF files for high resolution printing using Adobe® Acrobat® 4.0

User Guide for Print Publishers Adopting a PDF-based workflow

Commercial printers and service providers are working to improve their ability to produce reliable, consistent, and predictable output on increasingly tight schedules. The current digital prepress process works, but it's fraught with problems that challenge this goal. Most commercial printers and service providers receive files in their native file format. These handoffs invariably have problems: missing components (fonts or graphics), missed deliveries (problems with modem or other electronic delivery methods), accidental changes, unpredictable PostScript® language files (created from native applications), and enormous file sizes. In addition, service providers have to maintain different versions of many applications to support the range of requests they get from you and other customers—a requirement that adds training and software/hardware compatibility issues to the mix. What's needed is a more streamlined process that meets high-quality standards, while preserving capital investments in existing PostScript-based prepress tools and printing technologies.

Adobe Systems has a solution that supports this goal. The solution is based on two Adobe core technologies: Adobe Acrobat 4.0 software with its version 1.3 Portable Document Format (PDF) files and Adobe PostScript 3™ printing technology. We developed these solutions by listening to service providers and customers like you about how to improve Acrobat 3.0 and support key features in Adobe PostScript 3. The result is a portable, device-independent solution that overcomes many of the problems encountered in the old process. Here's how it works:

Note: Depending on the content of your document, you'll either create a composite PDF file or a traditional pre-separated PostScript file. A composite PDF file contains all of the information necessary for printing separations, but the separations occur on the host computer or in-RIP at your service provider's shop. For additional information see Appendix A, "Using a pre-separated PostScript workflow" on page 12.

1. You develop your illustrations and/or publications using your favorite software.
2. Before handing off your final document to your commercial printer or service provider, you use Adobe Acrobat Distiller® 4.0 to create a composite color or black-and-white PDF file. This PDF file contains all of the fonts, graphics, and other layout information necessary to print a high-resolution version of your document.
3. You deliver a single-file PDF to your service provider electronically or using traditional delivery methods.

This document guides you through the basic steps of producing high-quality PDF files for high-resolution output. It focuses mainly on the composite PDF workflow, but it also provides some basic information about the pros and cons of a pre-separated PostScript workflow. It explains the importance of producing good PostScript files for distilling (the step that creates PDF files) and describes the processes that'll get you there. The document also walks you through the following:

- Key job option settings in Acrobat Distiller® 4.0
- New features in Acrobat Distiller 4.0
- Baseline recommendations to ensure you create optimal PDF files

Benefits of a PDF-based workflow

PDF files streamline the printing process, while providing more consistent and reliable results. In particular, they reduce or eliminate delays from missing components or unstable files, enhance communication between you and your printer, and result in less frequent rework costs. Why? Because PDF files have the benefit of being:

- **Complete.** They contain all of the fonts, graphics, and page-layout information necessary to display and print the file exactly as you laid it out.

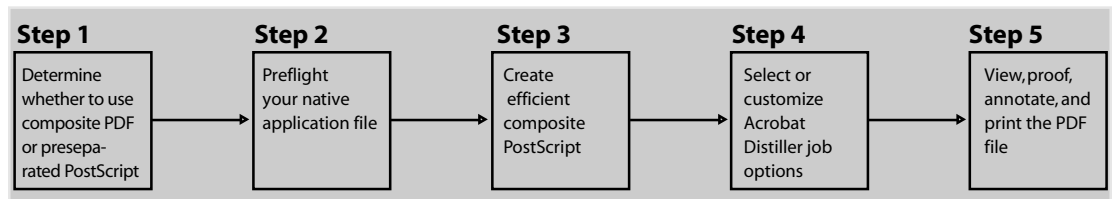
- **Compact.** The PDF standard supports a variety of lossy and lossless compression methods, creating smaller files that are easier to transmit and faster to print than native application files.
- **Portable.** One of the key benefits of a PDF file is its page, platform, application, and device independence. You can print high-resolution PDF files on any Adobe PostScript Level 2 or PostScript 3 output device with the same high-quality results from each. This gives you greater flexibility than in a PostScript workflow.
- **Reliable.** Acrobat Distiller interprets your PostScript or EPS file, creating cleaner, more reliable PostScript for final output.
- **Editable.** If you create composite PDF files, you maintain editing control over the final file. You or your service provider can do simple, late-stage text and image editing in Acrobat software using the improved TouchUp tool or a third-party plug-in. PDF files are page independent—allowing you to sort, extract, or insert pages without returning to the native application file.
- **Extensible.** You can add third-party plug-ins to your Acrobat toolkit to perform a number of supplementary tasks. (For details, visit the Adobe Web site at: <http://www.adobe.com/products/plugins>.)

In addition, your service provider will benefit from the following:

- **Adobe PostScript 3.** The latest version of PostScript provides in-RIP technologies (e.g., separations, trapping, and late-stage binding) enabling a more efficient composite PostScript workflow. This new approach replaces the less efficient “host-based” (multi-file) color-separated workflow.
- **Direct PDF Printing.** Some PostScript 3 printing devices support Direct PDF Printing, which means that a prepress operator can print PDF files without selecting the print command in the native application file. This capability increases productivity and decreases operator errors because it uses drop or hot folders defined with specific printing parameters and job specifications. Check with your service provider or printer manufacturer for details about whether they support direct PDF printing.

Note: Direct PDF Printing is not recommended for most OPI workflows unless the OPI image replacement is done in-RIP instead of on a traditional OPI server.

We recommend working closely with your service provider to develop a smooth PDF-based workflow that works for both of you. Producing quality PostScript files, and therefore quality PDF files, involves planning. A complete workflow for creating high-resolution PDF files is a five-step process:



Step 1: Composite PDF file versus pre-separated PostScript file

The first step in preparing your document for printing is deciding whether to create a composite PDF file or a traditional pre-separated PostScript file. As a rule, we recommend choosing a composite PDF workflow because it offers these key benefits:

- **On-screen viewing (or soft proofing).** You can review the file in its final form before it’s printed. You can double-check graphic placement, wording, and other file details. That way, you can catch problems before going to press, and avoid costly rework.
- **Simple text and graphics editing.** You can edit the PDF file if you find a problem or have an eleventh-hour change.
- **Device-independent color.** In Acrobat 4.0, you can preserve device-independent CMYK color information, allowing to print your document to a variety of output devices.
- **Faster, more efficient file transfers.** Composite PDF files are tiny by comparison to typical, high-resolution PostScript files. A typical PostScript file with an 8-up imposition and embedded high-resolution images can consume anywhere from 600 MB to 1 GB of disk space. In addition, your service provider has to transfer it over their network multiple times, once for each separation. A PDF file offers a compact, one-shot transfer, making it simpler for everyone.

- **The right use of in-RIP functionality.** Your service provider can perform trapping, separations, and late binding and file editing, all at the RIP. Furthermore, page independence in PDF files supports the Adobe PostScript Extreme™ workflow. (For details about Adobe PostScript Extreme, see the Adobe Web site at: <http://www.adobe.com/print/>.)

If your service provider uses a PostScript Level 2 RIP to color separate in-RIP, then you must use a preprepared PostScript workflow for documents that contain certain graphics file formats or features; such as duotone EPS files, colorized TIFF files, and spot-color-to-spot-color gradients. In addition, DCS images were designed to support a preprepared PostScript workflow, and don't include the information necessary to color separate them from a composite PostScript file.

Adobe Photoshop® 5.0.2 resolves the multitone image (duotone EPS) issue, as long as you use Distiller 4.0/ PDF 1.3 file format and an Adobe PostScript 3 RIP to correctly interpret and color separate (in-RIP) the duotone EPS. These provisions are necessary because this version of Photoshop uses the DeviceN colorspace operator (a PostScript 3 construct) to define the multitone color information. Adobe is continuing to work with its industry partners to resolve the remaining issues in the near future. For details on creating preprepared PostScript files, see Appendix A, "Using a preprepared PostScript workflow," on page 12.

Preserving high-quality printing information in Adobe PDF files

One of the challenges you faced with earlier versions of Acrobat was understanding how to consistently create PDF files that retain the necessary information (e.g., fonts, color, links to high-resolution images, and overprint settings) for high-resolution printing. In Acrobat 4.0, we've made this process much easier by including predefined Job Option Settings and by providing the ability to create, name, and save customized settings. If you're going to create a custom set of job options, understanding the relationship between PostScript and Acrobat Distiller, and how this relationship affects the resulting PDF file, is important. The PostScript imaging model is at the heart of PDF files. In fact, Acrobat Distiller 4.0 and earlier only accepts PostScript or Encapsulated PostScript (EPS) files. You need to know what variables affect this relationship and how to handle them quickly and efficiently.

Like a PostScript printing device, Acrobat Distiller interprets PostScript code. However, instead of creating printed output on paper, film, or a printing plate, as a PostScript printing device would, Distiller creates a PDF 1.3 file. Just as a document printed from a PostScript printing device is an exact representation of the original electronic document, so too is a PDF file. While Acrobat Distiller 4.0 is an Adobe PostScript 3 interpreter, Distiller does not actually "rasterize" the file, and it isn't a PostScript RIP (raster image processor).

PDF files represent text and graphics using the imaging model of the PostScript language. Like a PostScript language program, a PDF page description draws a page by placing 'paint' on selected areas. The quality of the page description drawing process is directly related to the quality of the PostScript file that Distiller interprets. If, for example, the PostScript does not include required fonts, proper paper sizes, or custom/spot color information, neither will the resulting PDF file. The next few sections detail how to ensure efficient, high-quality PostScript and PDF files.

Step 2: Preflighting your native application file

Before creating a PostScript file for distilling, you must start with a "print-ready" native application file. What do we mean by print-ready? This is a file that adheres to your service provider's specifications for high-resolution printing. For example, the file:

- doesn't include any RGB images or RGB colors in a four-color process printing job
- maintains links to placed graphics and images
- includes all document fonts
- contains only high-resolution image data (no 72 dpi images)
- includes paper size with bleed-and-page-mark allocation

Preflighting is the industry-standard name for this process. Ignoring this step in the process can result in missed deadlines or unexpected charges for rework. We recommend asking your service provider which software they recommend for preflighting files. This will ensure consistency throughout the production process. Make sure the recommended software opens your native application files, as well as PostScript, EPS, and PDF files. You'll find the initial investment worthwhile as it will save you valuable time and money.

Step 3: Creating efficient composite PostScript files

Preparing composite PostScript files for high-resolution printing is not as simple as deselecting color separations in your native application's Print dialog box. Here is a list of variables you need to consider:

- Printer driver and PPD selection
- Paper size
- Font inclusion
- Spot-color information
- Trapping information
- OPI workflows

Selecting a printer driver and PPD

For optimal results, we recommend using the Adobe PostScript printer driver (AdobePS™) and the Acrobat Distiller PostScript Printer Description (PPD) file. This will ensure you're creating consistent, device-independent PDF files for printing on more than one device. When you create PostScript files for distilling, make sure you're using the latest version of the AdobePS driver (version 8.51 for the Macintosh, version 4.2.4 for Windows 95 and 98, and version 5.0.1 for Windows NT® 4.0). You can download the latest versions of the AdobePS printer drivers from the Adobe Web site at:

Macintosh

<http://www.adobe.com/supportservice/custsupport/LIBRARY/4cea.htm>

Windows 95 and 98

<http://www.adobe.com/supportservice/custsupport/LIBRARY/5066.htm>

Windows NT 4.0

<http://www.adobe.com/supportservice/custsupport/LIBRARY/52d6.htm>

Acrobat 4.0 installs a PPD file: Acrobat Distiller (Macintosh) and ADIST4.PPD (Windows). Earlier versions of the Acrobat software installed a PPD, which included default settings not appropriate for high-resolution printing, such as RGB for the default color space. The new 4.0 PPD includes appropriate default settings for high-resolution print-publishing—so you no longer have to edit the PPD. We recommend using the Distiller 4.0 PPD because it doesn't write device-specific information in the resulting PostScript file, yet it allows you to select certain high-end controls, such as custom paper sizes for oversized jobs.

Specifying the appropriate paper size

If your document's page size (usually specified in an application's Document Setup dialog box) does not account for image bleeds or printer's marks, you'll want to create a custom paper size using your application's Print dialog box. The Acrobat Distiller PPD, like an imagesetter PPD, supports custom paper sizes. Specify a paper size that is large enough to accommodate the document's page size, as well as any image bleeds, printer's marks, or printer information you want. As a general rule, increase paper size by one inch when printing with crop marks.

Including all document fonts

When you create a PostScript file for distilling, make sure you include all PostScript Type 1 and TrueType fonts to ensure that fonts are available for viewing and printing. Unlike Type 1 fonts, Acrobat Distiller 4.0 can only embed TrueType fonts in a PDF file if they're included in the original PostScript or EPS file.

If you plan to use TrueType fonts for high-resolution printing, we recommend discussing it with your service provider. They may have printing devices or post-processing applications that do not contain a TrueType rasterizer, which is required for printing these fonts, resulting in your document fonts printing in Courier.

Note: QuarkXPress® 4.0x and earlier does not include document fonts when you save pages as EPS files (rather than printing a file to disk as a PostScript file).

Spot-color information

Some page layout applications, such as Adobe PageMaker® and QuarkXPress, preserve spot colors applied to their native elements when you output composite PostScript files. However, files from other page layout applications or certain graphic files containing spot colors may not color separate properly from a resulting composite PDF file. For additional information, see Appendix A “Using a pre-separated PostScript workflow,” on page 12.

Note: Some raster-based prepress workflows ignore application trapping information, so check with your service provider about which of you should handle trapping.

Including trapping information

For Acrobat Distiller to preserve trapping information in a PDF file, that information must be included in the composite PostScript file. The page layout application you are using determines what document trapping information you can include in a composite PostScript file. (By “document trapping,” we are not referring to line art created in a graphics application and placed in a page layout application. Instead, we’re referring to trapping applied to native application elements, such as text and drawn elements.)

QuarkXPress 4.0x and earlier includes document trapping information only when creating pre-separated PostScript files. On the other hand, Adobe PageMaker 6.01 and later includes document trapping information in both composite and pre-separated PostScript files. Therefore, if you are using QuarkXPress, you may need to modify your workflow (e.g., use a pre-separated workflow, a post-processing application to trap the file, or an output device that supports in-RIP trapping). If your service provider is using Adobe in-RIP Trapping, trap information can be specified using the in-RIP Trapping plug-in for Adobe PageMaker 6.52 (available for downloading from the Adobe Web site).

When you distill a PostScript file that contains Adobe in-Rip trapping specifications using Distiller 4.0, those trapping instructions are stored in a Portable Job Ticket Format (PJTF). This workflow is supported by Distiller 4.0 and the Adobe Normalizer within an Adobe PostScript Extreme Printing System. For additional information on PJTF, see “Save Portable Job Ticket Inside PDF File” on page 11.

Preserving OPI comments

You can now specify that Acrobat Distiller 4.0 preserve Open Prepress Interface (OPI) 1.3 and 2.0 comments in the resulting PDF file. Earlier versions of Distiller only preserved OPI 1.3 comments. If you are using OPI proxy files, preserving OPI comments in Distiller 4.0, and then replacing OPI images on a traditional OPI server, you cannot use Direct PDF Printing to your PostScript 3 printing device.

Step 4: Evaluating and customizing Acrobat Distiller job options for high-resolution printing

The next step is to evaluate the Acrobat Distiller 4.0 predefined job option settings with your service provider and decide whether to use those or to create a custom set based on their prepress and post-processing requirements. The selections you make affect how Distiller interprets PostScript or EPS files, determining, for example, whether the document fonts will be embedded, how graphics and images will be compressed and/or sampled, and whether the resulting PDF includes high-end printing information such as OPI comments. We recommend working closely with your service provider on the choices you make.

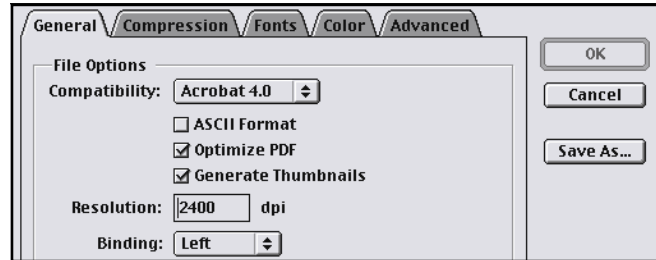
When you prepare PDF files for high-resolution printing, always use Acrobat Distiller to create the PDF file and not the Acrobat PDFWriter. PDFWriter enables you to convert documents to PDF files quickly, but it uses the on-screen display (QuickDraw commands on the Macintosh or GDI commands in Windows) to make this conversion. Acrobat Distiller, on the other hand, supports PostScript technology-based applications and can preserve high-resolution printing and color information.

Acrobat Distiller 4.0 now provides three predefined sets of default job options to help you select the options appropriate to your final output: *PressOptimized* (commercial printing press), *PrintOptimized* (digital copiers), and *ScreenOptimized* (Internet/intranet). You can also use a predefined set as a baseline for customizing options to suit specific printing devices, processes, or workflows. The *PressOptimized* settings are designed to maintain all the necessary high-end printing information so your service provider process and print the document. We’ll review the specific *PressOptimized* settings and options in detail.

To evaluate the *PressOptimized* settings, start Acrobat Distiller 4.0. Then click the popup menu for Job Options and select *PressOptimized*. To access specific settings, choose Settings > Job Options, or press Command + J (Macintosh) or Control + J (Windows). A dialog box appears with five tabs: General, Compression, Fonts, Color, and Advanced.

Recommendations for General job options

The General tab includes file settings and device settings options for compatibility, resolution, and binding.



Compatibility. Select Acrobat 4.0 from the Compatibility popup menu, so your PDF file can support these new Acrobat 4.0 features:

- Adobe PostScript 3 operators like DeviceN, smooth shading, and masked images
- ICC-profile color management
- Page sizes up to 200 inches (Windows 95/98 has a maximum page size of 129 inches because of a 16-bit addressing limitation.)
- Double-byte font embedding
- TrueType font searching
- PDF 1.3 file format

When you select Acrobat 4.0 Compatibility, ask your service provider what level of PostScript device they use for your job. In some cases, your composite PDF file will properly color separate in-RIP to a PostScript 3 RIP, but not to a PostScript Level 2 RIP. For example, if your composite PostScript or EPS file contains a duotone EPS file from Photoshop 5.0.2 and you've selected Acrobat 4.0 Compatibility, then a Level 2 RIP will not correctly separate the duotone.

ASCII Format. Leave the ASCII format option deselected so that Distiller saves the PDF file in binary format, creating a smaller file.

Optimize PDF. Select this setting to reduce the PDF file size by removing repeated background text, line art, and images and replacing them with pointers to the first occurrences of those objects.

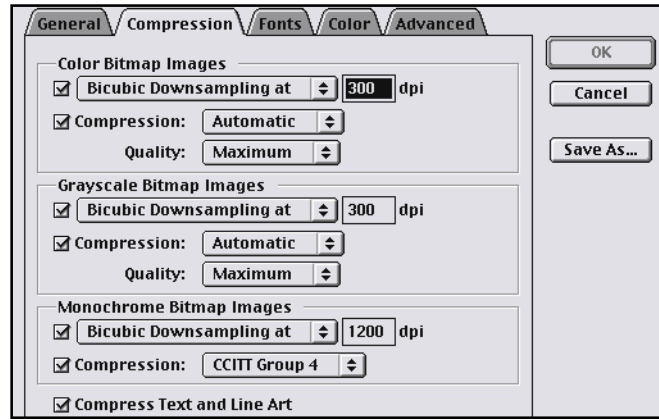
Generate Thumbnails. Select this option to create a thumbnail preview of each page. Then use the thumbnails to easily preview the resulting PDF file.

Default Resolution. Enter the resolution (dpi) of the PDF file's final output device in the Default Resolution text box. The value you enter here affects only vector (object-oriented) EPS files. For example, Distiller may use this value to determine the appropriate number of steps for a blend in an EPS file.

Binding. Select Left or Right from the popup menu depending on your final binding method.

Recommendations for Compression job options

The Compression tab contains settings for compressing images, graphics, and text. The settings you select can have a significant impact on the quality of your final printed results. The settings recommended below can serve as a baseline, but you should also consult with your service provider. For more in-depth explanations of the compression settings, see Appendix B on page 13.



Note: The sampling and compression settings in Distiller 4.0 now match those in Photoshop 5.0x.

Compress Text and Line Art. Make sure the Compress Text And Line Art option is selected (it's selected by default). The compression method Distiller uses for text and line art, such as vector EPS graphics, is lossless, so it doesn't affect the quality of these elements in your PDF file.

Color Bitmap Images. If you want Distiller to downsample color images, select the Bicubic Downsampling At option and specify the appropriate dpi value. If you enter a value such as 300 dpi, Distiller only downsamples the image when its resolution exceeds one and a half times the value specified here. If all your images contain the appropriate amount of image data and the images have not been scaled smaller, deselect the downsampling option. For compression, we recommend choosing Automatic, and setting Quality to Maximum.

Grayscale Bitmap Images. If you want Distiller to downsample grayscale images, select the Bicubic Downsampling At option and specify the appropriate dpi value. If you enter a value such as 300 dpi, Distiller only downsamples the image when its resolution exceeds one-and-a-half times the value specified here. If all your images contain the appropriate amount of image data and the images have not been scaled smaller, deselect the downsampling option. For compression, we recommend choosing Automatic, and setting Quality to Maximum.

Monochrome Bitmap Images. Select the Bicubic Downsampling At option and enter the resolution of the final output device. Then, select CCITT Group 4 for the greatest lossless compression.

Acrobat Distiller 4.0 provides CCITT Group 3 and Group 4 compression options. CCITT Group 3, which is used by most fax machines, compresses monochrome bitmaps one row at a time. Another option, Run Length, is a lossless compression option that produces the best results for images that contain large areas of solid white or black.

If you want to control the downsample threshold for Acrobat Distiller you can create a custom Prologue.ps file that overrides the Distiller 4.0 default at one-and-a-half times the specified sampling value. To override this default do the following:

1. Open the PressOptimized file or your custom job option settings file in a text editor.
2. Locate the lines of text that read:

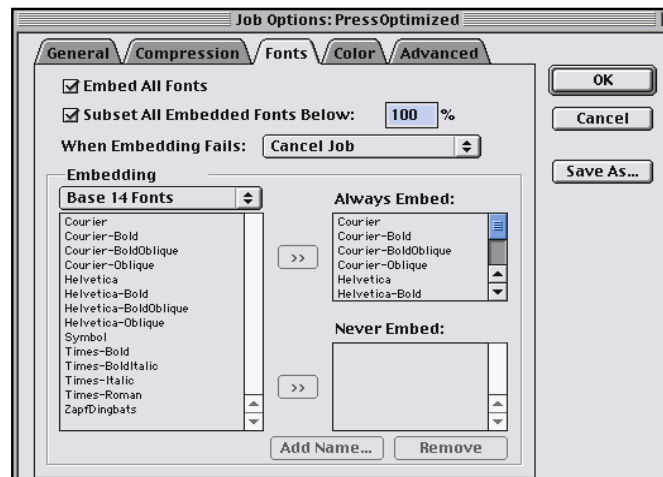

```
/ColorImageDownsampleThreshold 1.50
/GrayImageDownsampleThreshold 1.50
/MonoImageDownsampleThreshold 1.50
```
3. Edit the value 1.50 to be the desired ratio. For example, enter 1.0 to set your downsampling threshold to a 1:1 ratio with your downsampling resolution.

Recommendations for Font job options

In the Font Embedding tab, you can specify which fonts to embed in a PDF file to prevent font substitution at print time. Distiller 4.0 can now embed ITC Zapf Dingbats® and Base 14 fonts (Helvetica®, Times™, Courier, and Symbol font families), whereas the previous version did not allow you to embed these fonts. When you select the Subset All Embedded Fonts Below option, Distiller embeds only the font characters (glyphs) used in the document. It also ensures that your fonts and font metrics are used at print time by creating a custom font name—so your version of Adobe Garamond® will always be used for viewing and printing, not your service provider's. (Subsetting fonts may limit your ability to do late-stage editing. However, you can use the improved TouchUp tool in Acrobat 4.0, or a third party plug-in such as Enfocus PitStop plug-in version 1.5, to add font characters for late-stage editing as long as the font is installed on your system. For details, visit the Adobe Web site at: (<http://www.adobe.com/products/plugins>.)

Note: In order to subset fonts in a PDF file, you must first select Embed All Fonts or add a list of commonly used document fonts to the Always Embed font list.

The value you enter for the Subset Fonts Below option determines the point at which Distiller will include the entire font. For example, if you specify Subset Fonts Below 25%, and more than 25% of a font's characters are used in the document, Distiller will embed the entire font. If you always want to subset fonts, enter a higher value, such as 100%.



Embed All Fonts. Select this option to prevent font substitution at print time. (Distiller embeds all PostScript fonts used in the document and all TrueType fonts included in the PostScript file.) This option also enables Distiller to subset fonts.

Subset Fonts Below. Select the Subset Fonts Below option and specify 100% so that Distiller will embed only the font characters used in the document. Distiller also renames the subsetted fonts in the PDF file to prevent an available font with the same name from being used for viewing or printing.

When Embedding Fails. Select Cancel from the popup menu to ensure that a PDF file will not be created when distilling a PostScript or EPS file with one or more missing document fonts. A log file is created indicating which fonts are missing.

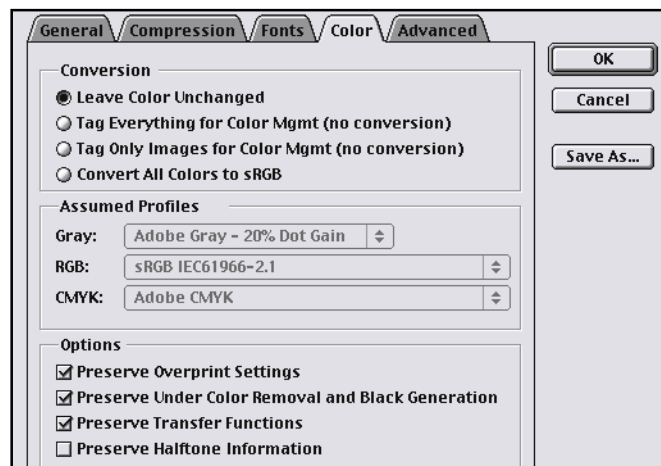
With earlier versions of Acrobat Distiller, we instructed you to rename the font database (Superatm.db for the Macintosh and Distsadb.dos for Windows) to avoid the possibility of font substitution. In Acrobat 4.0, you no longer need to rename these files: simply select Cancel from the When Embedding Fails popup menu, and rest assured that Distiller 4.0 won't substitute missing fonts.

Recommendations for Color job options

Most problems associated with accurately reproducing colors in a software program stem from reconciling the differences between the wide set of colors, or gamut, produced by the red, green, and blue phosphors of a computer monitor and the more restricted gamut produced by the cyan, magenta, yellow, and black inks of a commercial printing press. To help minimize these color reproduction issues, Acrobat 4.0 supports color management using ICC profiles. We're aware that the high-end print-publishing industry has not yet adopted a complete, device-independent color-managed workflow. Instead, we're pointing out how to take some small, well-planned steps toward adopting a long-term color-managed workflow. Here are three common scenarios and solutions:

Note: When you assign an ICC tag, Distiller does not alter the actual color pixels. Instead, it associates the images or the entire document with a specific device profile, which defines the source color space for your service provider to use in their prepress/post-processing workflow.

- If you are color managing and embedding device profiles when you save color images in Photoshop 5.0x, then Acrobat Distiller 4.0 will use your images' color source information when it distills the PostScript or EPS file.
- If you're not embedding device profiles when you save your color images, you can still color-manage images that are produced from one, consistent color space. Simply select the device profile that characterizes the color space in the Assumed Profiles section for RGB or CMYK in Photoshop 5.0x. This will "tag" the untagged images or the entire document with a source profile, which Distiller can use for color management.
- If your images were not saved with embedded device profiles and they come from a variety of color sources (different RGB monitor color spaces or Separation Tables for CMYK images), then we recommend not tagging or converting your color images or documents.



Note: If you want to preserve overprinting, UCR/BG, transfer functions, or halftone screens, be sure to communicate this information to your service provider. Their RIPs may not be configured to "honor" this information if it deviates from the default settings.

Conversion. Select Leave Color Unchanged for conversion so no color conversion takes place when you're in a non color-managed workflow. If you're choosing to tag your images or entire document, we recommend checking with your service provider.

Preserve Overprint Settings. If the PostScript or EPS file includes overprint settings and you want Distiller to include them in the PDF file, select this option. This option will override any overprint settings your service provider may specify at print time. If you want to specify overprint settings at print time, deselect this option.

Under Color Removal/Black Generation. If the PostScript or EPS file includes Under Color Removal (UCR) or Black Generation information, select this option. This option will override any Under Color Removal/Black Generation settings your service provider may specify at print time. If you want to specify Under Color Removal/Black Generation settings at print time, deselect this option.

Transfer Function. If the PostScript or EPS file includes transfer functions, select this option. This option will override any transfer functions your service provider may specify at print time. If you want to specify a transfer function at print time, deselect this option.

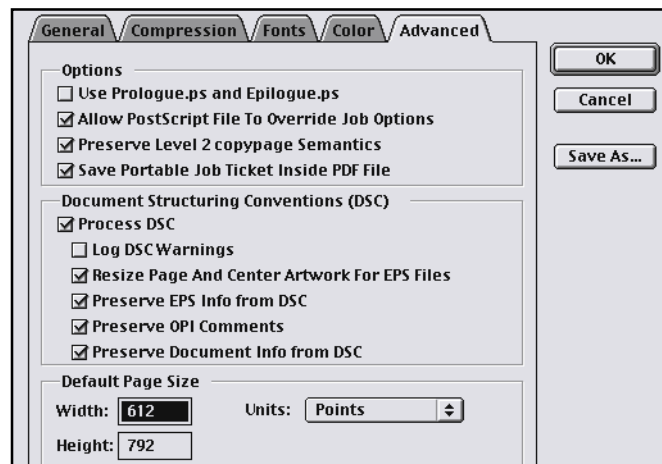
Preserve Halftone Screen Information. If the PostScript or EPS file includes custom halftone screen information and you want Distiller to include it in the PDF file, select the Preserve Halftone Screen Information option. The halftone screen information will override any halftone screens you specify at print time. If you want to specify halftone screens at print time, deselect this option.

Recommendations for Advanced job options

Distiller uses the Advanced job options to specify whether to preserve certain document structuring comments in the resulting PDF file, define a default page size, and set other options that affect the conversion from PostScript.

In a PostScript file, document structuring conventions (DSC) comments contain information about the file (such as the originating application, the creation date, and the page orientation) and provide structure for page descriptions in the file (such as beginning and ending statements for a prologue section). DSC comments can be useful when your document is going to print or press.

The default page size is used if a PostScript file does not specify a page size. Typically, PostScript files include this information, except for Encapsulated PostScript (EPS) files, which give a bounding box size but not a page size. Therefore, if you're distilling EPS files make sure you adjust the default page size to ensure that your file does not clip your original EPS file. Overall, it's best to accept the defaults for Advanced job options. Only choose otherwise with experienced input from your service provider.



Use Prologue.ps and Epilogue.ps. Select this option to send a prologue and epilogue file with each job. These files have many purposes. For example, prologue files can be edited to specify cover pages or custom watermarks; epilogue files can be edited to resolve a series of procedures in a PostScript file. Acrobat Distiller 4.0 does not require you to select this option to preserve spot or custom colors—they're preserved automatically. A sample Prologue.ps and Epilogue.ps file is located in the Distiller/Data (Windows) or Distiller/Data (Mac OS) folder.

Be sure to place your prologue and epilogue files in the appropriate location for your workflow. If you're using a Watched-folder workflow, place these files in the Watched folder at the same level as the In and Out folders. If you're doing a non-Watched-folder workflow, put the prologue and epilogue files in the same folder as the Distiller application.

Note: We recommend checking with your service provider before using Allow PostScript File to Override Job Options. That way, you can make sure that the resulting PDF files do not override key settings that the service provider needs to process and image your PDF files.

Allow PostScript File to Override Job Options. Select this option to use settings stored in a PostScript file rather than your current job options. Before processing a PostScript file, you can place Distiller parameters in the file to control compression of text and graphics, downsampling and encoding of sampled images, and embedding of Type 1 fonts and instances of Type 1 multiple master fonts. For additional information, see the Acrobat Distiller Parameters, Technical Note 5151 (DST_PRM.PDF) on the Acrobat 4.0 CD.

Preserve Level 2 Copypage Semantics. Select this option when printing to a PostScript Level 2 device if you want to use the copypage operator defined in PostScript Level 2 rather than in PostScript 3. The copypage operator has been redefined in Postscript 3. Now you can use this operator to “copy page” elements for personalized or forms printing. If you have a custom PostScript 3 file and select this option, Distiller will make the copypage a showpage to ensure Level 2 compatibility; otherwise the copypage elements will image on top of one another.

Save Portable Job Ticket Inside PDF File. Select this option to create a portable job ticket “placeholder” in your PDF file. A portable job ticket contains document-specific information, such as page size, resolution, and trapping information, rather than content. For example, you must select this option to preserve trapping information in your composite PostScript or EPS file for post-processing. Then the trapping information is stored in a portable job ticket placeholder. (Remember that you can only include trapping information when using the Adobe in-RIP Trapping plug-in with Adobe PageMaker 6.52. For details, see page 5.)

Process DSC Comments (Windows) or Process DSC (Mac OS). Select this option to maintain particular document structuring information from a PostScript or EPS file, along with these related options:

Log DSC Warnings. Select this option to display warning messages about problematic DSC comments in a PostScript or EPS file during the distilling process and then add that information to a log file for further reviewing.

Resize Page and Center Artwork for EPS Files. Select this option to center an EPS file and subsequently resize the PDF page to closely fit the original bounding box dimensions of the EPS file. If you deselect this option, the EPS page is sized and centered based on the top-left corner of the top-left object and bottom-right corner of the bottom-right object on the page.

Preserve EPS Information from DSC (Windows) and Preserve EPS Info from DSC (Mac OS). Select this option to retain information such as the native application and creation date for an EPS file.

Preserve OPI Comments. Select this option to retain OPI version 1.3 and 2.0 comments needed to replace low-resolution proxy files (FPO images) with the high-resolution images located on an OPI server.

Preserve Document Information from DSC (Windows) and Preserve Document Info (Mac OS). Select this option to retain information such as the title, creation date, and time in the resulting PDF file. When you open a PDF file in Acrobat, this information appears in the General Info dialog box (through File > Document Info > General).

Default Page Size. If the PostScript file you’re distilling includes paper size information (and most do), you can ignore the Default Page Size option. On the other hand, if you’re distilling an EPS file, enter a page size for the EPS file. (EPS files include a bounding box size, but not a paper size.) Distiller uses the values you enter in these text boxes when a PostScript file, such as an EPS file, doesn’t include a paper size.

Note: The Resize Page and Center Artwork for EPS Files option applies only to jobs that consist of a single page EPS file.

Appendix A: Using a preprepared PostScript workflow

If you use certain graphic file formats, such as duotone EPS files, colorized TIFF files, DCS images, or spot-to-spot color gradients in your workflow, then you'll need to create a preprepared PostScript file instead of composite PDF files.

Working with multitonned EPS files or colorized TIFF files

If you're using Adobe Photoshop 5.0.2 and Acrobat Distiller 4.0 (with 4.0 compatibility selected in the General job option tab), and your service provider has an Adobe PostScript 3 RIP, then you do not need to preprepare your PostScript files when your document contains one or more duotone EPS files. They'll color separate properly from a composite PDF file to an Adobe PostScript 3 RIP.

If your multitonned EPS files were not created and saved from Photoshop 5.0.2, they will not color separate properly when included in a document printed to disk as a composite PostScript file. Photoshop 5.0.2 uses the DeviceN color space operator, so that Distiller 4.0 (when set to Acrobat 4.0 Compatibility) can interpret and later color separate these images in-RIP to an Adobe PostScript 3 RIP.

Colorized TIFF images fall into a similar category; however, you can create colorized TIFFs in a variety of applications. Therefore, you'll need to check with your software vendor to ensure that these TIFF images use the DeviceN color space operator, so that they can be color separated properly in-RIP to an Adobe PostScript 3 RIP.

DCS files

DCS files, by nature, are not intended to be used for final output in a composite PostScript workflow. Instead, DCS files will print the low-resolution composite placeholder EPS on the black plate. Here are your options for handling most DCS files:

- Create a preprepared "fat" PostScript file that contains all the image data separated into the four process-color channels.

Or:

If you want to use a composite PostScript/PDF workflow with your DCS images, do one or more of the following:

- Open the DCS file in an image-editing program such as Adobe Photoshop and save it as a CMYK TIFF or EPS file. Then, link the new image to your document. This will allow you to maintain a composite PostScript workflow.
- In QuarkXPress 4.0x and earlier, use the SmartXT Xtension from Total Integration (<http://www.totalint.com>) to recombine the DCS file into a single file when creating a composite PostScript file. You can then maintain a composite PostScript workflow. No similar plug-in is available for PageMaker at this time.
- Check with your service provider to see if their OPI server software can handle the picture replacement of a five-file DCS 1.0 image in a composite PostScript workflow. (No information is currently available about whether these OPI vendors have a similar solution for DCS 2.0 files.)

Working with vector graphics containing custom color gradients or blends

Gradients or blends of two custom/spot colors in vector EPS files will be converted to process colors when you create a composite PostScript file. They will then separate on the process color plates at the RIP.

Appendix B: Additional information on sampling and compression options

Setting sampling and compression options has a significant effect on the quality of your final printed output: you want to reduce your file size as much as possible without losing crucial data that your images, graphics, and text need to print correctly on higher resolution printing devices. Acrobat Distiller 4.0 gives you various sampling options and a range of lossy and lossless compression options for images, graphics, and text.

Sampling images

Acrobat Distiller 4.0 can subsample or downsample bitmap images. When Distiller subsamples an image, it chooses a pixel in the center of the sample area and replaces the entire area with that pixel at the specified resolution. Subsampling significantly reduces distilling time compared with downsampling but results in images that appear less smooth and continuous.

Downsampling reduces the amount of information in the image so that only the image data that the printer can use is included (Distiller never resamples images to a higher resolution, only to a lower one). There are two methods for downsampling: *average* and *bicubic*. When you select average downsampling, it averages the pixels in a sample area and replaces the entire area with the average pixel color at the specified resolution. When you select bicubic downsampling, it uses a weighted average to determine pixel color and usually yields better results than average downsampling. We recommend using bicubic downsampling because it's a more precise—though slower—method, which results in the smoothest tonal gradations.

You should downsample your images when they contain more image data than your service provider's final output device can use. Higher image resolution is not always the better choice when you're working with images. If their printing device can't use the information, the extra resolution only increases the time it takes the printer to process the image. Smaller PDF files are easier to transmit, take less time to RIP, and less space to archive.

To help you determine a value to "downsample to," we've provided a table that includes common printer types and their resolution measured in dots per inch (dpi), their default screen ruling measured in lines per inch (lpi), and a downsampling resolution for color or grayscale images measured in pixels per inch (ppi). For example, if your service provider will image your file at 2400 dpi /150 lpi, you should enter 300 for downsampling.

Printer resolution	Default line screen	Image resolution
300 dpi (laser printer)	60 lpi	120 ppi
600 dpi (laser printer)	85 lpi	170 ppi
1200 dpi (imagesetter)	125 lpi	240 ppi
2400 dpi (imagesetter)	150 lpi	300 ppi

Note: Downsampling images creates a baseline—catching those bitmap image files that have been scanned at a specific resolution, and then scaled smaller in a layout or graphic application, which unnecessarily increases the image resolution and sometimes causes printing problems.

Lossy versus lossless compression methods

While compression decreases the file size of images and produces smaller PDF files, it may also cause an image's quality to decrease. The ZIP compression method is lossless (that is, it doesn't eliminate data to reduce the file size and thus doesn't affect the image's quality), while the JPEG compression method is lossy (that is, it does eliminate image data and so may decrease the image's quality). Because it's eliminating image data, JPEG compression achieves smaller file sizes than ZIP compression.

To apply compression to color or grayscale bitmap images, select the compression option for color or grayscale, and choose a compression method (Automatic, JPEG, or ZIP) and quality setting. Acrobat applies the compression to all color or grayscale bitmap images in a PDF file.

If you select the Automatic option, Acrobat determines the best compression method (JPEG or ZIP) for your color or grayscale bitmap images. JPEG is applied to 8-bit grayscale images and to 8-bit, 16-bit, and 24-bit color images when the images have continuous, smooth tones; ZIP is applied to 2-bit, 4-bit, and 8-bit grayscale images, to 4-bit color images and indexed 8-bit color images, and to 16-bit and 24-bit color images when the images have sharp color changes. Choosing the Automatic option does increase the time to distill the file as Distiller must first examine each image to determine the proper compression method to apply.

Appendix C: Using a custom prologue.ps for Scitex APR files

Scitex Corporation provides a custom prologue file to prevent Distiller from removing low-resolution APR (Automatic Picture Replacement) proxy-file information as it distills PostScript files. (This prologue file is available on the Brisque CD.) Scitex provided the information below about installing and using this prologue file.

Note: This information is provided directly from Scitex Corporation. You can download the custom prologue.ps file at: <http://www.scitex.com/supp/software/downloads.htm#Brisque>:

Instructions for using the ‘ScitexDistillerStartup.ps’ file:

The ‘ScitexDistillerStartup.ps’ file contains PostScript Code that enables distilling of PostScript files with Scitex PSMages in the Acrobat Distiller. PSMages are the base for Scitex’s Automatic Picture Replacement (APR) workflow.

If this file is not used, a PostScript file with encapsulated PSMages will lose the PSMages information once distilled. If you want to preserve the PSMages in your resulting PDF, you must install this Startup file before distilling.

To install the ‘ScitexDistillerStartup.ps,’ do the following:

- Make sure the Acrobat Distiller application is NOT running.
- Place the ‘ScitexDistillerStartup.ps’ file in the Distiller Startup folder (right next to the Example.ps file)
- Launch the Distiller application. You should see the line “(Loaded Scitex Distiller Startup)” in the Distiller’s messages window.

Once these steps are complete, you’ll be able to distill PostScript files containing Scitex PSMages. The resulting PDFs can be output directly on a Scitex RIP that supports PDF or they can be exported back to PostScript and ripped on any Scitex PostScript RIP.

Known Limitations:

- If the PDF file contains Spot CT, it cannot be output directly. You must first export the PDF back to PostScript through the Adobe Acrobat ExportPS plug-in.
- Direct Rip of a file with LW APR (LowRes created by the Brisque translator pointing at a LW high Res) is not supported. You must first export the PDF back to PostScript through the Adobe Acrobat ExportPS plug-in.
- A PostScript file containing both OPI comments printed with Omit Tiff or Omit Tiff&EPSF in QuarkXpress and a PSMage file (.e) is not supported.

Conclusion

This document has presented detailed information to help you produce efficient, high-quality, composite PostScript files for converting to PDF. A composite PDF workflow offers numerous benefits that a native application, preprepared PostScript workflow can't match. Many designers and service providers are creating and receiving PDF files for high-resolution printing. These Adobe technologies are saving time and money while adding flexibility to an often inflexible process.

We've also provided a "baseline" set of Acrobat Distiller 4.0 settings for a typical high-resolution print-production workflow. Remember that these settings are only recommendations and may actually differ slightly from the job options settings your service provider uses. Therefore, we encourage you to contact your service provider to ensure you follow their recommendations.

While composite PostScript files create smaller PDF files than preprepared PostScript files, not all graphic file formats will color separate properly from a composite PostScript/PDF workflow. This is something Adobe Systems is working hard with industry partners to correct. Adobe PostScript 3 and Adobe PostScript Extreme Printing Systems will help solve some of these problems, while others need to be addressed on an application level. As new information becomes available, we'll keep you up-to-date.

For more information

For more information about Adobe PostScript 3, Adobe PostScript Extreme Printing Systems, Adobe in-RIP Trapping, and high-end PDF-based workflows, see the Adobe PostScript and Printing Technologies page on the Adobe Web site at: <http://www.adobe.com/print/>

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