How-to

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Packing Light. Using Acrobat's font features to create PDFs that travel well

The hardest part of getting ready for a trip is often packing—you want the comforts of home with you on the road, but you don't want to have to lug those comforts around with you. What you do and don't bring will surely depend on your personal priorities, where you're going, and how you'll get there: if you're going car-camping, you could probably cram half your kitchen into the back seat and whip up some first-class meals en route. But if you're backpacking, you'd be better off learning to be creative with a single knife, a fork, and some freeze-dried rations.



Every time you turn a document into a PDF file, it's a bit like packing for a trip. If that PDF will be traveling extensively via the World Wide Web, you probably want it to stay as unencumbered by nonessential data as possible, so it's easy for others to download. If it will be published on CD-ROM only, the PDF file can probably stand to carry a little more data.

Fortunately, Adobe Acrobat gives you a lot of flexibility in how you "pack" your PDF files, and offers compression features that let you include quite a lot of data in PDF files without making them unwieldy. One of the most powerful sets of tools it offers for this is its font-handling capabilities. Acrobat will let you pack as many or as few of your typefaces as you really need in the PDF. Understanding these features will help you produce compact PDF files that still offer as much typographic fidelity and editing flexibility as you need.

What follows is an overview of what these options do, when to use them, and the trade-offs that are involved. Due to space constraints, we won't be able to review the specifics of how you use these features, but these steps are well explained in the PDF files in the Help folder within your Acrobat folder.

Why pack a typeface?

Before we get into a detailed explanation of Acrobat's specific font options, let's go over why this is worth discussing. Why do you need to put a typeface in a PDF file?

If you've had the chance to work with various files from people working on other systems, you've probably seen what can happen if you don't have the same typefaces they used to lay out a document. Depending on the program and your setup, you might have received an alert message about a missing font. Or your software may have automatically assigned a substitute typeface—perhaps one that wasn't at all similar to the original—that significantly changed the layout by altering line endings and column breaks, not to mention the general look and feel of the document.

These problems are exactly what Acrobat is designed to solve. Acrobat lets you turn your documents into PDF files that anyone on any system with Acrobat Reader or Exchange can view with their original layout intact. The text itself can display either in the original typeface or in a simulation of that typeface.

The key to understanding how Acrobat handles typefaces is simple—you have three basic choices. You can do any one of the following to each typeface you want to use in your PDF file:

- Pack (embed) the entire typeface in the PDF file
- Embed just the characters you've used from that typeface (this is called *subsetting*)
- Not embed the typeface at all

Each option has a different effect on typographic fidelity, the size of the PDF file, and how easy it is to edit that PDF file later.

Embedding a typeface

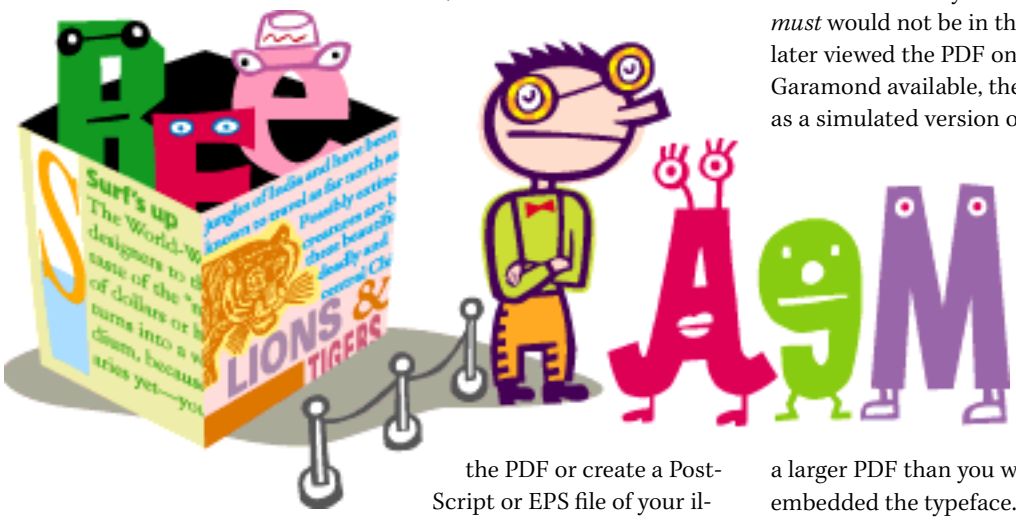
There are several benefits to fully embedding a typeface in a PDF file. First, you get maximum typographic fidelity—your text will appear in the PDF file exactly

as it did in the original document, regardless of which typefaces are installed on the system that's used to view the PDF file.

Fully embedding a typeface also gives you the most flexibility for editing the PDF file later in Acrobat Exchange (version 3.0 comes with a TouchUp plug-in that lets you edit individual lines of text under certain circumstances). If you open the PDF file on a system on which the embedded typeface is available, you'll be able to make any changes to individual lines of text without altering the typeface in which those lines display and print. If you want to edit the PDF file on a system that doesn't have the embedded typeface installed, you'll receive the alert "Warning: This embedded font is not installed on your system. To edit text in this font you must unembed the font. Unembed the font now?" By clicking Yes, you can edit the text, which will be unembedded thereafter. In other words, it will be simulated with Adobe Sans MM or Adobe Serif MM on any system that doesn't have the original typeface installed (more on how that works later in this article).

The trade-off for the typographic fidelity and editing flexibility you get by fully embedding a typeface is file size. Every time you fully embed a typeface, you'll add between 20 and 100 K to your PDF file—35 to 45 K for most typefaces. That might not sound like much, and it isn't if you're not using many typefaces. But remember that every time you use a different style variation on a typeface (such as the italic or bold variation), you add another full-fledged typeface to your file. The same goes for multiple-master instances—each is treated as a separate typeface by Acrobat.

Note: If you're planning to embed fonts in a PDF you're creating from an Adobe Illustrator 7.0 file, don't use the save-to-PDF option (it never embeds fonts). Instead, use PDF Writer to make the PDF or create a PostScript or EPS file of your illustration and then process it through Acrobat Distiller.



You should also be aware that Acrobat never embeds Times, Helvetica, and Courier (or their bold, bold-italic, and italic variations), or Symbol and Zapf Dingbats. These typefaces are always installed with Acrobat Exchange and Reader and therefore should be available on all systems with those applications, so there's no need to embed them.

Subsetting a typeface

Subsetting is a great option if you need maximum typographic fidelity with minimal impact on file size. If you use only a few characters of a given typeface (you've italized a couple of words—or used a unique font for a few short headings), you can embed in a PDF file only the characters you've actually used. When you do so, Acrobat embeds an abbreviated version of the typeface in the PDF file. As with full embedding, any subsetted typefaces will appear exactly as the original typeface, regardless of what typefaces are installed on the system on which the PDF is viewed.

Subsetted typefaces can take up far less space in a PDF file than a fully embedded typeface does. If you embed less than 35 percent of a typeface (Acrobat's default), it will probably add between 2 and 30 K of data to your PDF file, depending on the typeface and how many characters you're embedding.

The trade-off with subsetting is that it can make editing a PDF file later a bit more complicated. If you try to edit text in a subsetted typeface that's not installed on the system you're using, you won't be able to edit the text at all. If the typeface is installed on the system you're using, Acrobat will let you edit the text by using the installed typeface. But any text you add will be in an unembedded typeface, so it'll display as a variation on Adobe Sans MM or Adobe Serif MM if the PDF file is later opened on a system that doesn't have the original typeface available. For example, say you have the text "Your carry-on baggage should fit . . ." in a subset of Garamond, and you try to edit it on a system that has Garamond installed. If you change the text to "Your carry-on baggage must fit . . . ," the word *must* would not be in the Garamond subset. If you later viewed the PDF on a system that didn't have Garamond available, the word *must* would appear as a simulated version of Garamond.

Subsetting presents another potential complication for PDF file editing. If you combine several PDF files that all contain subsets of the same typeface, Acrobat stores *all* the subsets in the combined PDF. You could end up with redundant subsets—and a larger PDF than you would have had if you had fully embedded the typeface.

PDF Writer will subset a typeface if you've used less than 35 percent of its characters (approximately 90 characters in most roman typefaces). If you've used more than that amount, it will fully embed the typeface. If you want to change the percentage threshold at which your fonts get subsetted, use Acrobat Dis-

tiller to create your PDF file instead. In the Font Embedding section of Distiller's Job Options dialog box, you can adjust that threshold setting. (But we recommend that you use the default 35 percent threshold unless you're doing something unusual.)

Not embedding a typeface

Acrobat gives you a third option for each typeface—you can not embed them at all.

When you don't embed a typeface, Acrobat adds to the PDF file some basic descriptive information about the typeface, including its height, weight (thickness), and spacing characteristics. Later, if that PDF file is viewed on a system that has the original typeface installed or available, Acrobat will display the text in the original typeface.

If the system doesn't have that typeface installed, Acrobat will simulate the original typeface. To do so, it uses one of two special multiple-master typefaces, Adobe Serif MM (if the original typeface had serifs) or Adobe Sans MM (if the original was a sans-serif face), and, based on the original typeface's description embedded in the PDF file, adjusts the weight and width so that it matches the original typeface as closely as possible and positions the characters so the layout will be preserved exactly.

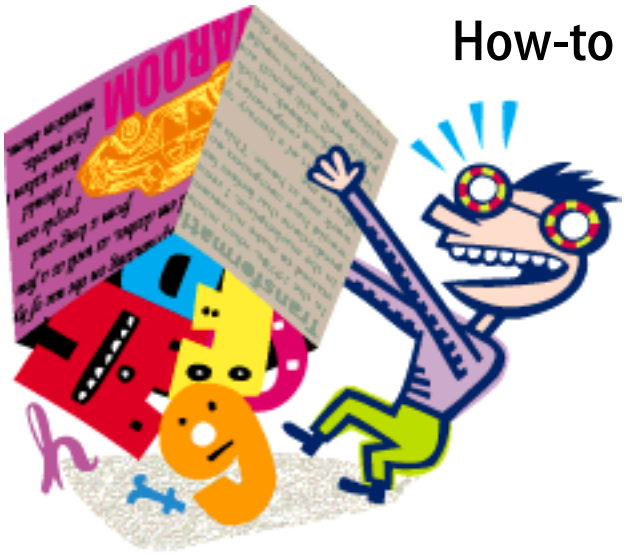
Not embedding typefaces can have some significant benefits. First, it keeps your PDF file sizes to an absolute minimum. For each typeface you use in a PDF file but don't embed, you add only about 1.5 to 2.5 K of data (for the typeface's descriptive information). And it's easy to edit text in a nonembedded typeface—whether or not the original typeface is available, you can edit individual lines in the simulated typeface.

The trade-off with not embedding fonts, of course, is typographic fidelity. The simulated typefaces generated from the Adobe Serif MM and Adobe Sans MM typefaces can make excellent facsimiles of many typefaces. But the individual characters never look exactly like those of the original typefaces, and can look significantly different from those of decorative or highly stylized typefaces.

Packing strategies

So just how many of your typefaces should you pack? Should you embed, subset, or not embed your fonts? It depends on where and how your PDF file will be traveling. Here are some rough guidelines.

- If your PDF will be distributed via the Web, e-mail, or any medium in which small files perform much better than large ones, consider not embedding your fonts or subsetting only decorative or stylized typefaces that you've used sparingly (as in headlines).
- If the PDF will be used in such a way that a relatively large file size won't be a problem (if it will be distributed on CD-ROM, via an intranet that offers fast download, or via a network), you might as well opt for the typographic fidelity of full embedding or subsetting. Unless you think the PDF will need to be edited, use subsetting to take advantage of the file-size savings that it offers.
- If you think the PDF file will need to be edited, avoid subsetting your typefaces. Choose full embedding if typographic fidelity is a priority; otherwise, don't embed your fonts at all.



Other traveling tips

Here are a few other things you can do to ensure that your PDF files stay as easy to transport as possible, even if you want to embed fonts.

- If you add or replace PDF pages in Acrobat Exchange, be sure to optimize your PDF files (in the Save As dialog box, select Optimize). When you optimize your file, Exchange weeds out redundant images and page backgrounds—but not font subsets, as we mentioned earlier.
- Whenever appropriate, save your PDF files with Acrobat 3.0 Compatibility selected (this option is in the General section of Distiller's Job Options dialog box or PDF Writer's Compression dialog box). This allows Acrobat to use a more sophisticated compression method than the one compatible with Acrobat 2.1. However, don't choose Acrobat 3.0 compatibility if you think anyone will need to view your PDF file in Acrobat 2.1.
- Keep the Compress Text and Line Art option selected (it is by default) in the Compression section of Distiller's Job Options dialog box and the PDF Writer's Compression dialog box. This form of compression has no negative side effects that we're aware of and is particularly effective on text-heavy documents that don't have a lot of font changes.

Bon voyage

Packing always involves trade-offs. If you want to travel light, you can't bring your entire Fonts folder—or your entire closet. But such compromises have their rewards. If you're smart about what you pack, you'll travel with ease *and* you'll look good. ◆

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