

# PrintToPDF

©2001 by James W. Walker <<mailto:pdf@jwwalker.com>>  
<<http://www.jwwalker.com/pages/pdf.html>> (also see my [FAQ page](#))

## What it Does

PrintToPDF is a shareware Macintosh printer driver that creates PDF (Adobe Acrobat™) files from within your application programs. You can create PDF bookmarks to your section and subsection headings, and URLs will become hot links. PrintToPDF is not as powerful as the full Acrobat package, but it creates simple PDFs for a much lower price (\$20).

## Compatibility

PrintToPDF has been primarily tested on PowerPC machines running Mac OS 9.0, but most of it should work with systems back to 7.0. Some of the Asian language functionality requires a PowerMac and the Text Encoding Converter extension. For the URL function, you need to have at least version 2.0 of the Internet Config extension. The JPEG compression option requires that you have QuickTime installed. Of course, since PrintToPDF is shareware, you can find out whether it works well with your system and applications before paying for it.

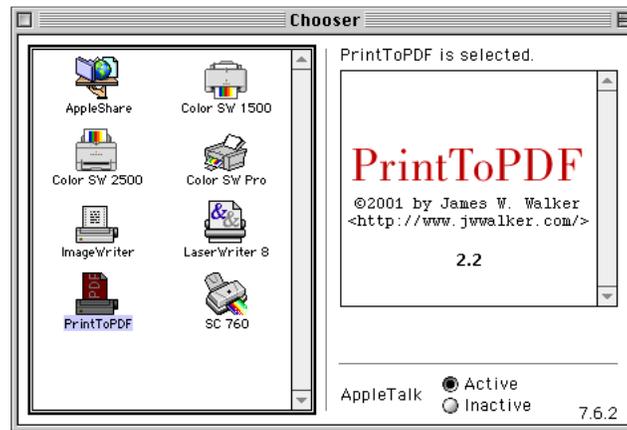
Some desktop publishing applications, such as Quark XPress, are intended primarily for use with PostScript printers. PrintToPDF functions as a QuickDraw printer, therefore such applications may not produce high-quality output with PrintToPDF.

Although PrintToPDF goes in the Extensions folder, it is a “Chooser extension”, not a “system extension”. This means that it has no code that runs at system startup, and is not likely to be involved in extension conflicts.

## Installing or Updating PrintToPDF

If you're installing PrintToPDF for the first time, move the PrintToPDF file into your Extensions folder inside your System Folder. (If you drop it onto the System

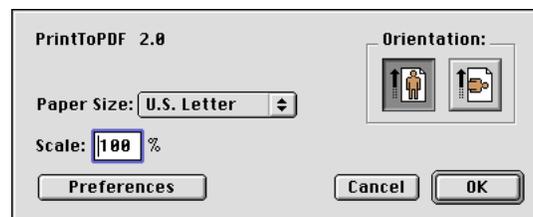
Folder icon, the Finder will offer to move it to the Extensions Folder.) Then select the Chooser from the Apple menu, and click on the PrintToPDF icon. Then close the Chooser. (The AppleTalk setting is irrelevant to PrintToPDF.)



If you are updating from a previous version of PrintToPDF, a bit of care is needed to work around bugs in Apple's desktop printing software. First, go to the Chooser and select any printer driver other than PrintToPDF. Then move the new version of PrintToPDF to the Extensions folder, replacing the old one. Then restart your Mac. After the computer has restarted, you can go back to the Chooser and select PrintToPDF.

## Using PrintToPDF

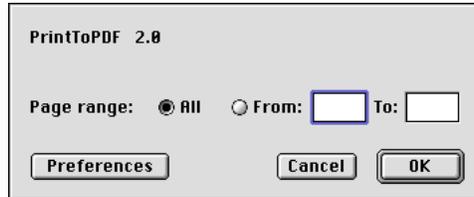
To use PrintToPDF, open the document that you want to turn into a PDF file, and choose Page Setup... from the File menu of the application. You should see a dialog like that shown below, but possibly with extra application-specific items on the bottom.



You should normally use a scale of 100% and the "portrait" orientation, as shown. Click OK.

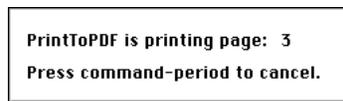
In a few applications (such as Excel, PowerPoint, and QuarkXPress) the Page Setup command displays a non-standard dialog, but you can click a button to get to the standard dialog shown above.

Next, choose Print... from the File menu, and you should see another dialog, like that below. Again, there may be extra application-specific settings.

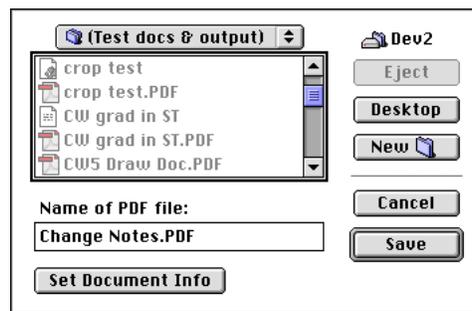


If you want to print the whole document, leave it as shown, otherwise fill in the starting and ending page numbers. Then click OK.

During the printing process, you will see a PrintToPDF progress dialog, and possibly also an application-specific progress dialog, depending on the application.



When it is done, you will see a standard Save dialog in which you can specify the name and location of the PDF file.



If you click the Set Document Info button in the Save dialog, you get another dialog in which you can set certain document attributes that appear in the Document Info: General... window in Acrobat Reader. The initial value for Author comes from the user name that you set in the File Sharing control panel.

You can specify default values for the info items in the Info panel of PrintToPDF's preferences dialog.

Title:

Subject:

Author:

Keywords:

Both the Page Setup dialog and the Print dialog contain a Preferences button, which opens the dialog shown below. The settings in this dialog will be discussed in later sections. When you click OK in the preferences dialog, your changes are saved, regardless of whether you click OK in the Page Setup or Print dialog.

Bookmarks Fonts Images **Output** Sizes Info

Output Location:

Always Ask for Name and Folder

Desktop of Startup Disk

Specified Folder

Path:

File Name:

Guess from Window

Use Name Folder

If File Exists:

Replace Existing

Modify Name

## Output Preferences

If you don't want to see a Save dialog each time you make a PDF file, open the preferences dialog and go to the Output tab. You can specify that the PDF files be saved to your desktop or to any folder you choose. When you specify a location, PrintToPDF will use its best guess for a file name. If the document you are printing is named "MyDoc", then the file name will probably be MyDoc.PDF. If that file already exists in the folder, and you leave the "Modify Name" option selected, PrintToPDF will use the name MyDoc-1.PDF. If that name too is taken, PrintToPDF will try the names MyDoc-2.PDF through MyDoc-9.PDF, then give up.

The "Use Name Folder" option is intended for workflow automation solutions. If this option is selected, PrintToPDF will look for a folder named "PrintToPDF Output File Name" in your Preferences folder. The name of the first file or folder within that folder will serve as the name of the PDF file.

## PrintToPDF as a Desktop Printer

If you are using Mac OS 8.5 or later, installing and choosing PrintToPDF will cause a PrintToPDF icon to appear on your desktop, as shown.



The heavy border indicates that it is your current default printer. If you click on a desktop printer icon, a Printing menu will appear in the Finder. This menu has a Set Default Printer command (shortcut command-L), which you can use to switch between different desktop printers without going to the Chooser. If you double-click the desktop printer icon, a print queue window will open. This window is not useful for PrintToPDF, because PrintToPDF does not use background printing.

## Fonts and Substitutions

PrintToPDF knows the names and metrics of a limited number of PostScript fonts, most of which are available in plain, bold, italic, or bold-italic style. The underline style is simulated. The built-in fonts substitute for the Mac fonts used in your document. Any Mac font not listed below will be replaced with a default font, which you can select in the Fonts section of the preferences dialog.

- AvantGarde, substituted for Avant Garde.
- Bookman
- Courier, substituted for Courier, Courier New, and Monaco
- Helvetica, substituted for Geneva, Helvetica, Arial, and Verdana
- Helvetica-Condensed, substituted for Helvetica Compressed
- Helvetica-Narrow, substituted for N Helvetica Narrow
- NewCenturySchlbk, substituted for New Century Schlbk
- Palatino
- Symbol
- Times, substituted for New York, Times, and Times New Roman
- ZapfChancery-MediumItalic, substituted for Zapf Chancery
- ZapfDingbats, substituted for Zapf Dingbats
- HeiseiMin-W3 will substitute for most Japanese fonts
- STSong-Light substitutes for any font in the Chinese Simplified script
- MSung-Light substitutes for any font in the Chinese Traditional script
- HYSMyeongJo-Medium substitutes for Korean fonts

There are certain characters that are present in most Mac TrueType fonts but not in

their PostScript equivalents:  $\neq$ ,  $\infty$ ,  $\leq$ ,  $\geq$ ,  $\partial$ ,  $\Sigma$ ,  $\Pi$ ,  $\pi$ ,  $\int$ ,  $\Omega$ ,  $\sqrt{\quad}$ ,  $\approx$ ,  $\Delta$ ,  $\text{€}$ , and  $\text{ø}$ . When you print these characters in any Roman font but Symbol or Zapf Dingbats, PrintToPDF replaces them with the equivalent symbols from the Symbol font.

The **⌘** character is present in many Mac TrueType fonts, but is not even in the PostScript version of Symbol, so there doesn't seem to be any reliable way to put it in PDF as text. Therefore I have a special case, that an isolated **⌘** character in the Symbol font will be entered into the PDF as a bitmap.

There are some fonts for which no substitution makes sense, such as dingbats fonts other than Zapf Dingbats and symbol fonts other than Symbol. You can specify that PrintToPDF should treat such fonts as bitmaps (at 288 dpi) rather than text. To make this setting, open the preferences dialog and click the Fonts tab. You will see a list of fonts with checkboxes. Checking the box next to a font makes PrintToPDF treat that font as bitmaps.

Use the bitmap substitution feature only for special symbols, not for text fonts. Using bitmaps for text fonts would prevent readers from copying or searching for text in the PDF. Also, using bitmapped text can greatly increase the amount of RAM needed to create the PDF file and the amount of disk space taken up by the PDF file.

## Making Pictures Magnify and Print Well

To make images in your PDFs look good when magnified and printed, you can take one of two approaches. First, you can use vector graphics (also known as “draw” type pictures), which look sharp at any resolution. Second, if you need to use bitmapped graphics (also known as pixmaps or “paint” type pictures), you can start with a large image and then scale it down.



The first of the examples above is a vector graphic. You'll find that it remains reasonably sharp however much you magnify it in Acrobat Reader. The second, a bitmapped picture, starts getting jagged at greater than 100% magnification. To make the third example, I made a bitmap twice as big as the others, pasted it into the word-processing layer of AppleWorks, and then scaled it down by 50%. This picture looks pretty good up to 200% magnification. I'm not sure if this scaling technique will work with all word processors, but it seems to work with AppleWorks,

WordPerfect, and Microsoft Word. In the case of Word, you'll need to increase PrintToPDF's resolution setting to make this work. See the later section on [Miscellaneous Preferences](#).

In the Images section of the preferences dialog, you can set a preference to save bitmapped images in 24-bit color or 12-bit color. Using 24-bit color will display photographic images more accurately, at the expense of using more RAM and disk space.

## JPEG Compression

The Images section of the preferences dialog has a checkbox for an option to try JPEG compression. Briefly, if your PDFs will contain photographs, and you want your PDF files to be as small as possible, you should probably turn this on, otherwise leave it off. For more detail, read on.

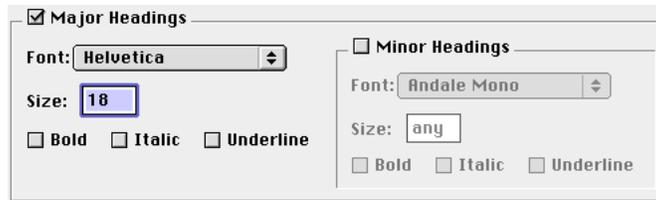
Bitmapped images can be roughly classified into two types: Photographs, which tend to have many smooth changes of color and shade, and diagrams, which have large areas of constant color separated by sharp boundaries. Screen shots, as in this manual, are more like diagrams than like photographs. The JPEG (Joint Photographic Experts Group) algorithm takes advantage of the characteristics of photographs to compress them very well, often far better than a general-purpose data compression algorithm. JPEG compression does lose a little information, but it is usually not noticeable in photographs. However, if you use JPEG compression on a diagram, you get poor compression, and the compressed image looks bad.

I don't know a simple way for a computer program to examine an image and tell whether it is a photograph or a diagram. Therefore, if you turn on the JPEG option, PrintToPDF tries both JPEG compression and general-purpose compression on each image, and uses whichever results in better compression. Naturally, this will take a little more time than using general-purpose compression everywhere.

## Bookmarks

PrintToPDF can turn your section and subsection headings into PDF bookmarks. To do this, you must choose a unique combination of font and size for section headings, and likewise for subsection headings. For example, in this document, each section heading is set in Helvetica 18, and nothing else is in Helvetica 18.

In the preferences dialog, clicking the Bookmarks tab presents these options:



If you don't want to put any bookmarks in your PDF file, uncheck Major Headings. If you want to make two levels of bookmarks, check both boxes. In the Size fields, you can either type a specific font size, or type "any" to match all sizes of that font.

The style checkboxes specify the minimum required style for your headings. For instance, checking Bold means that the heading must be all bold, but if part of a heading is also italic or underlined, that's OK.

## Recognition of URLs

PrintToPDF will look for URLs in your text and turn them into links. When you click such a link, Acrobat Reader will attempt to open it in an appropriate helper application, such as a web browser. In order for this to work:

- You must have Internet Config 2.0 or later installed when printing, to help PrintToPDF identify URLs. This free extension comes with recent versions of the Mac OS and various Internet-related software.
- The URL must belong to one of these common schemes: http, https, ftp, mailto, news, nntp, file.
- The URL must not be broken across lines.
- The URL must be all one style run. That is, there must be no changes of font, size, style, or color within the URL text.

Unfortunately Acrobat Reader does not respect your Internet Config or Internet control panel settings, but has its own setting for which web browser to use. I suggest that you complain to Adobe about this misfeature.

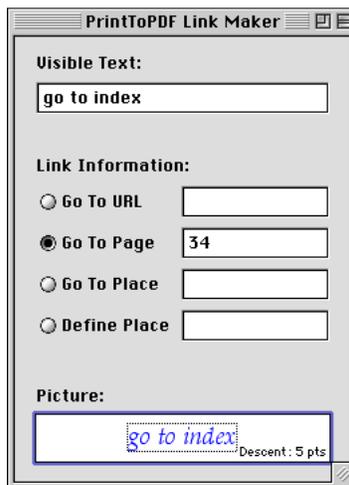
Since PrintToPDF is a printer driver, it only sees what would be printed. For example, if you print a web page that has a link Apple Computer, PrintToPDF has no way of knowing that this link is associated with the URL <http://www.apple.com/>.

## Making Links with Link Maker

PrintToPDF comes with a program called PrintToPDF Link Maker, which makes it

possible to create cross-reference links from one part of a document to another, as well as more general Internet links.

First, let's discuss how to make a link that will jump to a specific page number in your document. Decide how you want the link to appear, and type that in the Visible Text field of the Link Maker window. Use the Font, Size, Style, and Color menus to further specify the appearance of the link, which you'll see in the Picture box below. Type a page number in the Go To Page box. (This is a PDF page number, starting with 1, which is not necessarily the same as your document's page numbering.)



When you are finished filling in the information, click on the picture of the link, and drag it or copy and paste it into your word processing document.

After placing one of these special pictures into your word processing document, you may need to adjust it so that it blends in with the rest of the text. In AppleWorks, just double-click the picture, and you'll see a dialog in which you can type a number called Descent. If you enter the Descent value that you may have noticed in the corner of Link Maker's picture area, then the base line of the link will line up with the base line of the surrounding text. In MS Word, it's a bit more complicated: First go to the Format Picture dialog and uncheck "Float over text", to make the picture act like a piece of text. Then open the Format: Font dialog, and under the Character Spacing tab, choose to have the position lowered by a certain number of points, the descent.

If you need to modify a link later, you can drag or paste the picture back into the Picture area of PrintToPDF Link Maker.

The problem with linking to a specific page is that as you edit your document, the page numbers change. But there's another way to make links, where you use special pictures for both the links and the destinations. At the destination, place a picture

made using the Define Place radio button in Link Maker. In the Define Place field, type a name for the place. This name will never be visible in the PDF document, it's only to help PrintToPDF make a connection between a place and references to the place. To link to that place, use the Go To Place radio button and the same place name. If you've ever written HTML code, Define Place and Go To Place are analogous to `<a name="some-name">` and `<a href="#some-name">`.

To make your work a little easier, every bookmark automatically defines a place. So for example, if I wanted to link to the start of this section, I'd use a Go To Place link with the place name "Making Links with Link Maker".

Finally, you can make a Go To URL link to go to an Internet URL. This way, the visible text of the link doesn't need to be the same as the URL.

## Custom Sizes

The Sizes section of the preferences dialog makes it possible to define your own pages sizes. You can see but not modify the 4 built in page sizes, U.S. Letter, U.S. Legal, A4, and B5. Suppose, for example, you want to define a size called "Golden" that is 377 points wide and 610 points tall. You would begin by clicking the New button. Then you would type in the name, set the units to Points, and fill in the height and width.

## Watermark Pictures

In the Images panel of the preferences dialog, you can select a picture to be used as a backdrop for every page of the PDF. For instance you might use this to put a corporate logo at the top of each page, or to put the word CONFIDENTIAL in gray on the middle of each page. To use this feature, you need to save the picture as a PICT file. The picture's upper left corner will be positioned at the upper left corner of the PDF's page rectangle. If your watermark picture includes a bitmapped image, PrintToPDF will cleverly put only one copy of the image data into the PDF file, rather than one copy for each page.

## Miscellaneous Preferences

The Misc. panel of the preferences dialog shows a pop-up menu of maximum printer resolutions. In most applications, this setting won't make any noticeable difference. In Vectorworks, if you set this value greater than 72, you'll be able to get more precisely-drawn graphics by setting a resolution value in the Page Setup

dialog. Yet other applications, such as Quark XPress, will simply use the highest allowed resolution without asking your opinion. This may make some parts of an image sharper, but also make the PDF file larger.

The Misc. section has another setting, Margin, which specifies a margin in points around the edges of the page. Ordinarily you should leave this set to 0. Most applications have their own margin settings, and only look at the printer's margin when deciding whether to warn you that your margin setting is too small.

## Memory Shortage

It is possible that PrintToPDF will run out of memory when processing a document with many pages or many images. (If you use the feature that represents certain fonts as bitmaps, that can vastly increase the number of images.) PrintToPDF uses memory that is not currently owned by any application or the system. You can get a rough idea of how much memory is available to PrintToPDF by looking at the "Largest Available Block" in the "About This Computer" window.

Here are some ways you could deal with a memory shortage:

- Quit all applications other than the one you're printing from.
- Set the Image Depth option to 12.
- Open the Memory control panel, increase the virtual memory setting, and restart.
- If you had previously increased the memory allocation for the application you're printing from, set it back to the suggested value.

## Limitations

- Vector graphic pictures will not reproduce patterns.
- Pictures in EPS (Encapsulated PostScript) form, or which otherwise rely on PostScript code, may not be rendered faithfully. Similarly, applications that are optimized for use with PostScript printers may not work well with PrintToPDF.
- Fonts can't be embedded. See the earlier section on **available fonts**. In particular, languages using non-Roman alphabets cannot be used, except for Chinese, Japanese, and Korean.
- To create bookmarks in Chinese, Japanese, or Korean, you must be using a PowerMac with the Text Encoding Converter extension.
- Ironically enough, PrintToPDF does not work well within Acrobat Reader, since Acrobat Reader does not draw text using normal Macintosh methods. Not that you'd want to create a PDF from a PDF.
- Acrobat Reader 3.0 or later is needed to view the PDFs created by PrintToPDF.

Certain features may require Acrobat Reader 4.0 or later. To determine the recommended version of Acrobat Reader, open the PDF file in Acrobat Reader, use the menu command File:Document Info:General..., and look at "PDF Version". If the version is 1.2, the document should work OK in Acrobat Reader 3.0, whereas if the version is 1.3, then Acrobat Reader 4.0 or later is recommended.

- To view PDFs containing Chinese, Japanese, or Korean text, you must install the Asian Font Pack for Acrobat Reader.
- It is unlikely that PrintToPDF will ever work with Mac OS X, except in the "Classic" compatibility environment.

## Shareware Fee

After trying PrintToPDF for a couple of weeks, you should either register PrintToPDF or stop using it. A single license costs US \$20. You may interpret that as either for a single user (possibly using several computers) or a single computer (possibly used by several people.) Site license rates are also available. Benefits of registration:

- I will tell you how to remove the word "Unregistered" from the Page Setup and Print dialogs and from the Keywords line of the document's General Info.
- I will have your e-mail address for notification of updates. However I will not sell or give your e-mail address to anyone else.
- You will probably feel better.
- I will certainly feel better.

My shareware payments are processed through the Kagi service. You can pay on the web at <<http://order.kagi.com/?JW>>, or you can use the Register-JW program to generate a form to e-mail, FAX, or mail.

## Distribution

PrintToPDF may not be sold or offered for sale, or included with another software product offered for sale, except with the express written permission of the author. The author's failure to give permission promptly should not be taken as consent. Companies that distribute public domain/freeware/shareware software for profit are expressly prohibited from distributing PrintToPDF. This restriction does not apply to bulletin boards, commercial on-line services such as America Online, CompuServe and NiftyServe, and nonprofit Macintosh user groups which hold regularly scheduled public meetings. However, PrintToPDF must be distributed in full, as I released it, with no documentation or software missing.

## Author's address

Internet: <<mailto:jwwalker@kagi.com>> or <<mailto:pdf@jwwalker.com>>.

Also, drop by my Web site, <<http://www.jwwalker.com/>>. This will be the first place that new versions appear.

Hard mail (do not send Kagi forms to this address!):  
3689 Martha Street  
San Diego, CA 92117 USA

## Am I In Trouble?

Several people have written to ask me whether I have heard from Adobe lawyers. The answer is no, and I don't expect to. Adobe published the specifications for PDF, <<http://partners.adobe.com/asn/developer/acrosdk/DOCS/PDFRef.pdf>>, and there are many other non-Adobe programs that create or manipulate PDF files.

## Warranty

This program should work as described in this document. If it does not, you can simply stop using it. If you pay me, and within a month find that it does not do what I have described here, or bugs or conflicts prevent you from using it, then you can notify me and I will refund your money and cancel your license.

I will attempt to fix any bug that I can duplicate on my own machines, but will not buy other people's software for compatibility testing.

## Acknowledgements

PrintToPDF uses ClibPDF from FastIO Systems, <<http://www.fastio.com>>. Thanks to Jean-loup Gailly and Mark Adler for the zlib compression library. Thanks to Leonard Rosenthol for a couple of good suggestions.