



Adobe Acrobat Product Overview and Compatibility

Adobe Developer Support

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Adobe Acrobat Product Overview and Compatibility

This note provides an overview of the members of the Adobe™ Acrobat™ family of products, describes how they work with applications, and what software developers should do to take advantage of them.

1 Overview

The Adobe Acrobat family of products allows users to easily and reliably exchange and view electronic documents, independent of the platform, application, and fonts with which they were created. Documents containing any number of pages, each with an arbitrary mixture of text, graphics, sampled images, hypertext links, and text annotations, can be created and viewed. In addition, thumbnail images of each page may be present and a document can have bookmarks that directly access views of specific pages and which can be used to create an outline or table of contents for the document. Documents are represented in a format known as the Portable Document Format (PDF).

Products for Apple® Macintosh® and Microsoft® Windows™ computers shipped are now in their 2.0 release, and versions for DOS and UNIX® computers are in their 1.0 release. The Acrobat family of products currently consists of:

- Acrobat Reader — An application that allows documents to be viewed, printed, and navigated. Available on all four platforms.
- Acrobat Exchange — All the functions of Reader, plus the ability to create bookmarks, hypertext links, text annotations, thumbnail images, articles, and document information fields. Acrobat Exchange also accepts plug-ins, software enhancements written by third-party developers. Acrobat Exchange is not available on DOS.
- Acrobat Exchange LE (“Limited Edition”) — All the functions of Exchange, including the ability to accept plug-ins, but without the ability to modify and save documents. Version 2.0 is available for Apple® Macintosh® and Microsoft® Windows™. Acrobat Exchange LE is not available on DOS and is currently not available on UNIX®.

- **PDF Writer** — A system-level printer driver that creates PDF files directly from existing applications. Version 2.0 is available for Apple® Macintosh® and Microsoft® Windows™. PDF Writer is not available on DOS or UNIX® because these platforms do not support a printer driver architecture.
- **Acrobat Distiller™** application — An application that converts PostScript™ language page descriptions into PDF files. Version 2.0 is available for Apple® Macintosh® and Microsoft® Windows™; version 1.0 is available for UNIX®.
- **Acrobat Catalog™** application — An application that builds a search index from a collection of PDF files. Currently available only on Microsoft® Windows™ computers.
- **Acrobat Search** — A plug-in that enables Acrobat Exchange and Acrobat Exchange LE (version 2.0 and above) to search document collections indexed by Acrobat Catalog. Acrobat Search is available for Apple® Macintosh® and Microsoft® Windows™.

In general, applications need not be modified in order to produce PDF files. However, there are general guidelines applications should follow to ensure compatibility. In addition, it is important to understand the differences between the methods currently available for producing PDF files.

2 File format

PDF is the native file format of the Acrobat products. While PDF is not a programming language, it does use the imaging model of the PostScript language to describe text and graphics in a resolution-independent manner. To improve performance for interactive viewing, PDF defines a more structured format than that used by most PostScript language programs. The text, graphics, and images that make up the contents of a page are represented using operators based on those in the PostScript language, and closely follow the Adobe Illustrator™ 3.0 page description operators. The PDF format is designed to be extensible, and supports incremental updating of files. Because a PDF file is not a PostScript language program, it cannot be directly interpreted by a PostScript interpreter. However, the page descriptions in a PDF file can be converted into a PostScript language program. A complete definition of the file format is available in the Portable Document Reference Manual, ISBN 0-201-62628-4, published by Addison-Wesley. Acrobat version 2 enhancements to the PDF format are described in Technical Note #5156, *Updates to the Portable Document Format Reference Manual*.

3 Producing and using PDF files

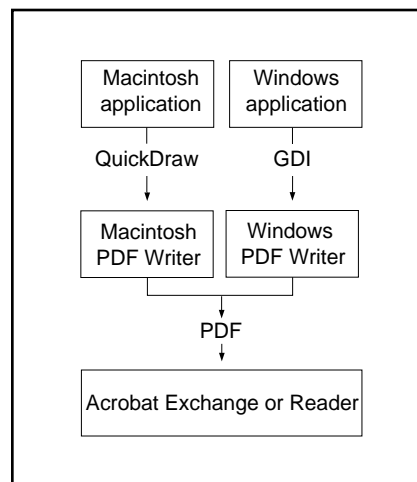
Currently, there are three ways to produce PDF files:

- Printing from an application using the PDF Writer.
- Producing a PostScript language file, which is then converted to PDF using the Distiller application.
- Directly generating PDF files from an application.

As mentioned previously, in general applications do not need to be modified to produce PDF files, but can make use of the PDF Writer or the Distiller application immediately. As PDF documents and applications that read PDF files become more prevalent, new ways of creating and using PDF files will be invented.

Many applications can produce PDF files using the PDF Writer, a printer driver available on both Apple Macintosh computers and computers running the Microsoft Windows environment. A printer driver normally converts operating system graphics and text commands (QuickDraw™ for the Macintosh and GDI for Windows) into commands understood by a printer. The printer driver embeds these commands in a stream of commands sent to a printer, and the printer produces the page. Instead of sending these commands to a printer, the PDF Writer converts them to PDF operators and embeds them in a PDF file, as shown in Figure 1.

Figure 1 Creating PDF files using PDF Writer

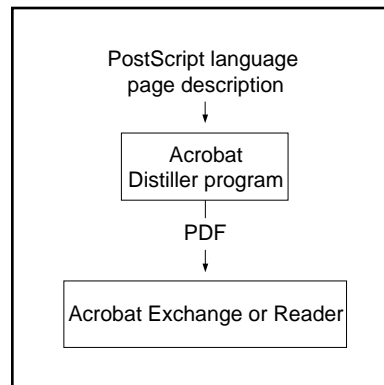


The resulting PDF files are platform-independent. Regardless of whether they were generated on a Macintosh or Windows computer, they may be viewed by a PDF viewing application on any platform.

Some applications produce PostScript language page descriptions directly because of limitations in the QuickDraw or GDI imaging models or because they run on DOS or UNIX computers, where there is no system-level printer driver. For these applications, PostScript language page descriptions can be

converted into PDF files using the Acrobat Distiller application, as shown in Figure 2. The Distiller application contains a PostScript Level 2 interpreter and accepts any PostScript page description, whether created by a program or hand-coded by a human. The Distiller application produces more efficient PDF files than PDF Writer for some application programs.

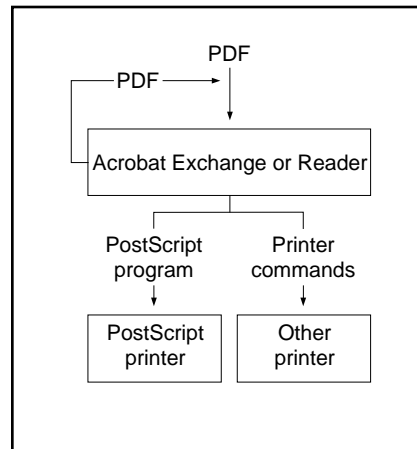
Figure 2 Creating PDF files using the Distiller application



Once a PDF file has been created, Acrobat Exchange or Acrobat Reader can be used to view and print the document contained in the file, as shown in Figure 3. Users can navigate through the document using thumbnail images, hypertext links, bookmarks, and articles. The document's text may be searched and extracted for use in other applications. In addition, an Acrobat Exchange user may modify a PDF document by creating text annotations, hypertext links, thumbnail images of each page, bookmarks, articles, and values for the four built-in Document Info fields (Title, Author, Subject, and Keywords).

Collections of PDF files can be rapidly searched using index files built by the Acrobat Catalog application. Indexed searches can be made more precise by specifying Document Info fields while searching. Document-generating applications can specify custom Document Info fields in addition to the four built-in fields.

Figure 3 Viewing and printing a PDF document



While most applications can make use of the PDF Writer, there are several reasons why certain applications may choose to use the Distiller application. Specifically:

- Current versions of the PDF Writer cannot embed outline entries, text annotations, hypertext links, articles, or Document Info fields in a document. Users of the Distiller application can embed these items in a PDF file using the **pdfmark** operator which is present in the PostScript Level 2 interpreter used in the Distiller application. This operator is described in Technical Note #5150, *pdfmark Reference Manual*.
- Users of the Distiller application can control the embedding of specific fonts and individually control the compression of each sampled image in a document. This is done using the **setdistillerparams** operator which is present in the PostScript Level 2 interpreter used in the Distiller application. This operator is described in Technical Note #5151, *Acrobat Distiller Parameters*.
- The PDF Writer cannot render an EPS image, since a PostScript interpreter is required to do this. Instead, it makes use of whatever preview image may be present in an EPS file.

Finally, some applications may wish to write PDF files directly, instead of using the PDF Writer or the Distiller application. This gives the application complete control of the resulting PDF file. The information provided in the *Portable Document Format Reference Manual* and Technical Note #5156, *Updates to the Portable Document Format Reference Manual* is sufficient to allow applications to write PDF files. In addition, the book provides a number of techniques for producing efficient PDF files.

4 Compatibility

In general, applications do not need to be modified in order to produce PDF files. Applications that print using QuickDraw or GDI should be able to use the PDF Writer, while the Distiller application should be able to convert almost any PostScript language page description.

Observe the following guidelines in order to maximize your compatibility:

- Avoid undocumented driver interfaces.
- Do not call driver interfaces multiple times unnecessarily.
- Do not draw objects that are later obscured. For example, instead of producing a circular blend by drawing a series of filled circles of various sizes, use an image to produce the blend, as described in Chapter 12 of the Portable Document Format Reference Manual.
- Use the techniques described in the PostScript Language SDK to generate device-independent and efficient PostScript language page descriptions. In addition, many of the techniques described in Chapters 8 through 11 of the Portable Document Format Reference Manual can be used to produce efficient PostScript language page descriptions.
- Wherever possible, use PostScript language forms or PDF forms for repeated sequences of text, graphics, or bitmap. The Distiller application translates PostScript language forms into PDF forms.

In general, good printing citizens are good Acrobat citizens. If an application “follows the rules,” by using the approved printing interfaces for its platform, or producing correct and efficient PostScript language page descriptions, then it will produce efficient, high-quality PDF files. “Following the rules” ensures that the PDF files generated are as small as possible and draw as quickly as possible.

In addition to the general guidelines presented in previous paragraphs, there are more specific guidelines for ensuring compatibility with the PDF Writer on the Macintosh and under Windows.

4.1 Specific guidelines for Macintosh PDF Writer

Applications should neither set nor rely on fields in the *PrintRecord* except for those listed in this section. For further information on the data structures and routines mentioned in this section, see Chapter 5 of Inside Macintosh, Volume II (published by Addison–Wesley, ISBN 0-201-17737-4).

The following *PrintRecord* fields can be read, but not written:

- *TPrint.PrInfo.rPage*
- *TPrint.rPaper*
- *TPrint.PrInfo.iVRes*
- *TPrint.PrInfo.iHRes*

The following *PrintRecord* fields can be read or written:

- *TPrint.PrJob.iFstPage*
- *TPrint.PrJob.iLstPage*
- *TPrint.PrJob.iCopies*
- *TPrint.pIdleProc*

Other compatibility guidelines are:

- Do not depend on the printer device type
- Do not use the *Xor* and *NotXor* transparent transfer modes. For further information on transfer modes, see Chapter 4 of *Inside Macintosh*, Volume V (published by Addison–Wesley, ISBN 0-201-17719-6).
- Do not call *SetOrigin* between calls to *PrOpenPage* and *PrClosePage*
- Do not use regions
- Limit clipping regions to rectangles

4.2 Specific guidelines for Windows PDF Writer

- For 1-bit deep (black-and-white) sampled images, use only the *SRCCOPY*, *NOTSRCCOPY*, *SRCPAINT*, and *MERGEPAINT* raster operations.
- For sampled images that are more than 1-bit deep, use only the *SRCCOPY* raster operation.
- When drawing shapes (such as rectangles or circles) that are filled using a brush, use the *SRCCOPY* raster operation.

- Use only font styles that actually exist on the system, as enumerated by the *EnumFontFamilies* function in the Windows API.

Appendix: Changes Since Earlier Versions

Changes since the June 19, 1993 version

- Added descriptions of Acrobat 2.0 products, features, and platforms.



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