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pdftex, pdfetex – PDF output from TeX

SYNOPSIS

pdftex [*options*] [**&format**] [*file* [*more-input*] | [**\more-input**]

DESCRIPTION

Run the pdfTeX typesetter on *file* [.tex], usually creating *file.pdf*. If the file argument has no extension, ".tex" will be appended to it. See **tex**(1) for details of command-line parsing.

pdfTeX is a descendant of TeX that can create pdf files directly as well as dvi files (determined by the value of the `\pdfoutput` primitive parameter). It includes the **etex**(1) extensions, and adds many more extensions of its own. In dvi mode, pdfTeX can be used as an upward-compatible replacement for the TeX engine.

The typical use of pdfTeX is with pregenerated TeX formats (*.fmt* files), usually with pdf output enabled. For example, the **pdftex** command uses the plain TeX format, and the **pdflatex**(1) command uses the L^ATeX format. As described in **etex**(1), the e-TeX extensions are enabled when building the *.fmt* file.

Image formats supported

In pdf mode, pdfTeX can natively handle the *pdf*, *jpg*, *jbig2*, and *png* graphics formats. It cannot include PostScript or Encapsulated PostScript (eps) graphics files; you can convert them to pdf using, for example, **epstopdf**(1). The PostScript files output by **mpost**(1), which are highly restricted in their use of PostScript, can be handled directly using the *supp-pdf.tex* macros, or converted to pdf with **mptopdf**(1).

Program variants

Starting with version 1.40 (around 2007), pdfTeX incorporated the e-TeX extensions, and the **pdfetex** and **etex** executables became symlinks to the **pdftex** binary. The **etex** executable generates dvi files by default; **pdfetex** has the same behavior as **pdftex**.

Both engine and driver

When generating pdf output, pdfTeX must have all necessary font and device information and thus is acting like a device driver with dvi output, similar to, say, **dvips**(1). Therefore there are various primitives to specify the device information, such as the height, width, resolution, and so forth. Also, pdfTeX reads glyph information for the fonts used, e.g., from Type 1 or PK bitmap files. pdfTeX also supports TrueType fonts, but it's necessary to define an encoding before using them (see references). OpenType fonts are not supported.

OPTIONS

For the common TeX command-line options and handling, see **tex**(1). The following pdfTeX-specific options are also supported:

-draftmode

Enabled `\pdfdraftmode`, in which pdfTeX doesn't write a pdf and doesn't read any included images, thus speeding up execution.

-etex Enable the e-TeX extensions. This option is only effective in combination with **-ini**. It is typically enabled implicitly, with a leading "*" on the format initialization file, as described in **etex**(1).

-output-format *format*

Set the output format mode; *format* must be either “pdf” or “dvi”.

-synctex *number*

generate SyncTeX data for previewers according to bits of *number*. See **synctex(1)**.

ENVIRONMENT

See **tex(1)**. Also, this environment variable is specific to pdfTeX:

TEXMF_DEBUG_PNG_COPY

If set to “1”, pdfTeX reports various attributes of each png image, including whether the image is copied. This is useful when a document uses numerous png images, since reencoding (instead of copying) can take considerable time. See the Graphics chapter in the pdfTeX manual for more information.

Also, these environment variables are considered for all engines except original TeX:

SOURCE_DATE_EPOCH

If set, its value, taken to be in epoch-seconds, will be used for the timestamps in the PDF output, such as the CreationDate and ModDate keys. This is useful for making reproducible builds.

FORCE_SOURCE_DATE

If set to the value “1”, the time-related TeX primitives (`\year`, `\month`, `\day`, `\time`) are also initialized from the value of SOURCE_DATE_EPOCH. This is not recommended if there is any viable alternative.

pdfTeX also has several primitives to support reproducible builds; see the manual.

FILES

See **tex(1)**. Also:

\$TEXMFMAIN/tex/plain/config/etex.ini

The driver file that builds the plain format files for pdfTeX, *pdfetex.fmt* and *pdfetex.fmt*, in TeX Live.

\$TEXMFMAIN/tex/plain/config/pdftexmagfix.tex

Make \magnification work as expected under pdfTeX. Included in the format files.

\$TEXMFMAIN/tex/generic/tex-ini-files/pdftexconfig.tex

Define shared pdf settings, such as the default pdf version, the pdf height and width, etc.

\$TEXMF[SYS]CONFIG/tex/generic/tex-ini-files/pdftexconfig.tex

The installation-specific version of the above (in TeX Live), since the default paper size is defined by the installation.

\$TEXMF[SYS]VAR/fonts/map/pdftex/updmap/pdftex.map

Mapping of tfm files to Type 1 fonts; generally maintained automatically in TeX Live.

BUGS

See **tex(1)**.

SEE ALSO

epstopdf(1), **etex(1)**, **luatex(1)**, **mptopdf(1)**, **tex(1)**.

Micro-typographic extensions to the TeX typesetting system, by Hàn The Thành (thesis describing the major new typesetting feature in pdfTeX): <https://tug.org/TUGboat/tb21-4/>

A closer look at TrueType fonts and pdfTeX, by Hàn The Thành (on using TrueType fonts with

T_EX): <https://tug.org/TUGboat/tb30-1/tb94thanh.pdf>

pdfT_EX home page: <https://www.pdfTeX.org>

Package page on CTAN: <https://ctan.org/pkg/pdfTeX>

pdfT_EX manual: <https://mirror.ctan.org/systems/doc/pdfTeX/manual/pdfTeX-a.pdf>

Web2c manual: <https://tug.org/web2c>

Kpathsea manual: <https://tug.org/kpathsea>

Sources for the T_EX-world literate programs, as pdf: <https://ctan.org/pkg/knuth-pdf>

AUTHORS

T_EX was created by Donald E. Knuth. The primary author of the pdfT_EX enhancements is Hàn The Thành, with major contributions from Petr Sojka, Jiri Zlatuska, and Peter Breitenlohner (e-T_EX).

Public discussion list for pdfT_EX-specific issues: <https://lists.tug.org/pdfTeX>

Public discussion list for T_EX Live: <https://lists.tug.org/tex-live>

Public discussion list for all things T_EX (and L^AT_EX): <https://lists.tug.org/texhax>