

The grffile package

Heiko Oberdiek
<oberdiek@uni-freiburg.de>

2007/06/13 v1.4

Abstract

The package extends the file name processing of package `graphics` to support a larger range of file names. For example, the file name may contain several dots. Or in case of pdfTeX in PDF mode the file name may contain spaces.

Contents

1	Usage	2
1.1	Option <code>multidot</code>	2
1.2	Option <code>babel</code>	2
1.3	Option <code>extendedchars</code>	2
1.4	Option <code>encoding</code>	2
1.4.1	Option <code>inputencoding</code>	3
1.4.2	Option <code>filenameencoding</code>	3
1.4.3	Example	3
1.5	Option <code>space</code>	3
1.6	General use	4
1.7	Default settings	4
2	Implementation	4
2.1	Identification	4
2.2	Catcode stuff	4
2.3	Options	4
3	Installation	8
3.1	Download	8
3.2	Bundle installation	8
3.3	Package installation	9
3.4	Refresh file name databases	9
3.5	Some details for the interested	9
4	References	10
5	History	10
	[2004/07/18 v0.5]	10
	[2006/08/15 v1.0]	10
	[2006/08/17 v1.1]	10
	[2006/11/30 v1.2]	10
	[2007/04/11 v1.3]	10
	[2007/06/13 v1.4]	10
6	Index	10

1 Usage

1.1 Option `multidot`

The file name parsing of package `graphics` is changed, in order to detect known extensions. This allows both the use of dots inside the base file name and extensions with several dots.

Assume there are two files in the current directory: `Hello.World.eps` and `Hello.World.pdf`. `\includegraphics{Hello.World}` will find `Hello.World.pdf` with driver `pdftex` or `Hello.World.eps` with driver `dvips`.

Limitations: Problem could occur on systems, which don't use the dot as extension delimiter. These systems need an own `texsys.cfg` containing definitions for `\filename@parse`. The author could not test that, due to a missing example.

1.2 Option `babel`

This option allows the use of shorthand characters of package `babel` inside the `graphics` file name. Additionally the tilde '~' is supported. The option is turned on as default. (In version v1.1 or below of this package, the features of this option were part of option `extendedchars`.)

Example:

```
\usepackage[frenchb]{babel}
\usepackage{grffile}
Image: \includegraphics{C:/path/image}
```

1.3 Option `extendedchars`

If the input encoding is the same encoding as the encoding that is used for file names and the driver allows non-ascii characters. Without option `extendedchars` the 8-bit characters are expanded, if they are active characters. For example, see the \LaTeX package `inputenc`. However a file name is not input for \LaTeX . Therefore this option `extendedchars` removes the active status and the 8-bit characters are not expandable any more.

Example:

```
\usepackage[latin1]{inputenc}
\usepackage[extendedchars]{grffile}
\includegraphics{Bäckerstraße}
```

If the `draft` option of the `graphics` package is enabled, the file name is printed with the current font encoding for `\ttfamily`. Thus it is possible, that such characters are omitted or the wrong characters are displayed, if the font encoding is not the same as the file name encoding.

1.4 Option `encoding`

Consider the following scenario. Your file system is using UTF-8 as encoding for file names. But you use `latin1` as input encoding for your \TeX files, because some packages are not ready for multi-byte encodings (`listings`, ...).

Then this option `encoding` loads support for converting encodings by loading package `stringenc`. The option is not defined after the preamble, because \LaTeX limits package loading to the preamble.

File names are converted, if package `stringenc` is loaded and the encodings known, see options `inputencoding` and `filenameencoding`.

1.4.1 Option inputencoding

Option `inputencoding` specifies the encoding of the file name in your \TeX input file.

Package `inputenx` and package `inputenc` since version 2006/02/22 v1.1a remember the name of the input encoding that is looked up by this package. Therefore option `inputencoding` is usually not mandatory.

1.4.2 Option filenameencoding

This is the encoding of the filename of your file system. This option is mandatory, file names are not converted without this option. The option is disabled, if the value is empty.

1.4.3 Example

Back to the scenario where the file system uses UTF-8 and the \LaTeX input files are encoded in `latin1`.

```
\usepackage[latin1]{inputenc}[2006/02/22]
% \usepackage[latin1]{inputenx}
\usepackage{graphicx}
\usepackage[encoding,filenameencoding=utf8]{grffile}
```

For older versions of package `inputenc` option `inputencoding` provides the necessary informations.

```
\usepackage[latin1]{inputenc}
\usepackage{graphicx}
\usepackage{grffile}
\grffilessetup{
  encoding,
  inputencoding=latin1,
  fontencoding=utf8,
}
```

1.5 Option space

This option allows graphics file names that contain spaces if possible.

In general it is not possible to use space inside file names, because \TeX considers the space character as termination in its syntax for commands that expect a file name.

Regarding graphics inclusion with the package `graphics` file names are used in two or three contexts:

1. The basic `\special` statement or primitive command for graphics inclusion. The `\special` statements for drivers `dvips` or `dvipdfm` do not allow spaces. However $\text{pdf}\text{\TeX}$'s primitive `\pdfximage` uses curly braces to delimit the file name and allows spaces.
2. `\includegraphics` checks the existence of the file. Also it looks for the right extension if the extension is not given. If $\text{pdf}\text{\TeX}$ 1.30 is given, the file existence test can be rewritten using a new primitive that allows spaces. This works in both modes DVI and PDF.
3. Sometimes files are read as \TeX input files. For example, `.bb` files or MPS files.

If $\text{pdf}\text{\TeX}$ 1.30 or greater is used in PDF mode then the graphics file names may contain spaces except for MPS files. Therefore option `space` is only enabled by default, if the supported $\text{pdf}\text{\TeX}$ in PDF mode is detected. You can enable the option manually, if you know, your DVI driver supports spaces in its `\special` syntax and if there is no need to read the image file as \TeX input file (third context).

1.6 General use

The options can be given at many places:

1. As package options:
`\usepackage[<options>]{grffile}`
2. Setup command of package grffile:
`\grffilesetup{<options>}`
3. The options are also available as options for package `graphicx`:
`\setkeys{Gin}{<options>}`
4. If package `graphicx` is loaded the options can also be applied for a single image:
`\includegraphics[<options>]{...}`

1.7 Default settings

<code>multidot</code>	<code>true</code>	
<code>babel</code>	<code>true</code>	
<code>extendedchars</code>	<code>false</code>	
<code>space</code>	<code>true</code>	if pdf \TeX 1.30 or greater is used in PDF mode
	<code>false</code>	otherwise

2 Implementation

2.1 Identification

```
1 (*package)
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{grffile}%
4 [2007/06/13 v1.4 Extended file name support for graphics (HO)]%
```

2.2 Catcode stuff

```
5 \edef\grffile@RestoreCatcodes{%
6   \catcode'\noexpand\=\the\catcode'\=\relax
7   \catcode'\noexpand\:\the\catcode'\:\relax
8   \catcode'\noexpand\.\the\catcode'\.\relax
9   \catcode'\noexpand\''\the\catcode'\'\relax
10  \catcode'\noexpand\<\the\catcode'\<\relax
11  \catcode'\noexpand\>\the\catcode'\>\relax
12  \catcode'\noexpand*\the\catcode'\*\relax
13  \catcode'\noexpand^\the\catcode'\^\relax
14  \catcode'\noexpand~\the\catcode'\~\relax
15 }
16 \@makeother\=
17 \@makeother\:
18 \@makeother\.
19 \@makeother\'
20 \@makeother\<
21 \@makeother\>
22 \@makeother\*
23 \catcode'\^=7 %
24 \catcode'\~=active
```

2.3 Options

```
25 \RequirePackage{ifpdf}
26 \RequirePackage{kvoptions}[2006/08/17]
27 \SetupKeyvalOptions{%
28   family=Gin,%
29   prefix=grffile@%
```

```

30 }
31 \DeclareBoolOption[true]{multidot}
32 \DeclareBoolOption[true]{babel}
33 \DeclareBoolOption[false]{extendedchars}
34 \DeclareBoolOption{space}
35 \DeclareVoidOption{encoding}{%
36   \RequirePackage{stringenc}\relax
37 }
38 \DeclareStringOption{inputencoding}
39 \DeclareStringOption{filenameencoding}
40 \DeclareDefaultOption{%
41   \PassOptionsToPackage{CurrentOption}{graphics}%
42 }

```

Default setting for option space.

```

43 \begingroup\expandafter\expandafter\expandafter\endgroup
44 \expandafter\ifx\csname pdffilesize\endcsname\relax
45   \grffile@spacefalse
46   \let\grffile@space@disabled\@empty
47   \def\grffile@spacetrue{%
48     \PackageWarning{grffile}{%
49       Option 'space' is not available,\MessageBreak
50       because it needs pdfTeX >= 1.30%
51     }%
52   }%
53 \else
54   \ifpdf
55     \grffile@spacetrue
56   \else
57     \grffile@spacefalse
58   \fi
59 \fi
60 \ProcessKeyvalOptions*
61 \AtBeginDocument{%
62   \DisableKeyvalOption[package=grffile]{Gin}{encoding}%
63 }
64 \RequirePackage{graphics}

\grffilesetup

65 \newcommand*{\grffilesetup}{%
66   \setkeys{Gin}%
67 }

68 \let\grffile@org@Gininclude@graphics\Gininclude@graphics
69 \renewcommand*{\Gininclude@graphics}{%
70   \ifx\grffile@fileencoding\@empty
71   \else
72     \ifx\grffile@inputencoding\@empty
73       \expandafter\ifx\csname inputencodingname\endcsname\relax
74         \expandafter\ifx\csname CurrentInputEncodingOption\endcsname\relax
75         \else
76           \let\grffile@inputencoding\CurrentInputEncodingOption
77         \fi
78       \else
79         \let\grffile@inputencoding\inputencodingname
80       \fi
81     \fi
82     \ifx\grffile@inputencoding\@empty
83     \else
84       \grffile@extendedcharstrue
85     \fi
86   \fi
87   \ifnum0\ifgrffile@babel 1\fi\ifgrffile@extendedchars 1\fi>\z@

```

```

88      \begingroup
Support of babel's shorthand characters.
89      \ifgrffile@babel
90      \csname @safe@activetrue\endcsname
Support of active tilde.
91      \edef~{\string~}%
Support of characters controlled by package inputenc.
92      \fi
93      \ifgrffile@extendedchars
94      \grffile@inputenc@loop\^^A\^^H%
95      \grffile@inputenc@loop\^^K\^^K%
96      \grffile@inputenc@loop\^^N\^^_%
97      \grffile@inputenc@loop\^^?\^^f%
98      \fi
99      \expandafter\grffile@extchar@Gininclude@graphics
100 \else
101 \expandafter\grffile@Gininclude@graphics
102 \fi
103 }
104 \def\grffile@extchar@Gininclude@graphics#1{%
105 \def\grffile@filename{#1}%
106 \ifx\grffile@inputencoding\@empty
107 \else
108 \ifx\grffile@filenameencoding\@empty
109 \else
110 \ifx\grffile@inputencoding\grffile@filenameencoding
111 \else
112 \expandafter\ifx\csname StringEncodingConvert\endcsname\relax
113 \PackageError{grffile}{%
114 Package 'stringenc' is not loaded,\MessageBreak
115 omitting file name conversion%
116 }\@ehc
117 \else
118 \StringEncodingConvert\grffile@temp\grffile@filename
119 \grffile@inputencoding\grffile@filenameencoding
120 \StringEncodingSuccessFailure{%
121 \let\grffile@filename\grffile@temp
122 }{%
123 \PackageError{grffile}{%
124 Filename conversion failed%
125 }\@ehc
126 }%
127 \fi
128 \fi
129 \fi
130 \fi
131 \edef\x{\endgroup
132 \noexpand\grffile@Gininclude@graphics{\grffile@filename}%
133 }%
134 \x
135 }
136 \def\grffile@inputenc@loop#1#2{%
137 \count@=#1\relax
138 \loop
139 \begingroup
140 \uccode'\~= \count@
141 \uppercase{%
142 \endgroup
143 \edef~{\string~}%
144 }%
145 \ifnum\count@<#2\relax

```

```

146     \advance\count@\@ne
147   \repeat
148 }

Support for option space
149 \def\grffile@space@getbase#1{%
150   \edef\grffile@tempa{%
151     \def\noexpand\@tempa####1#1\noexpand\@nil{%
152       \def\noexpand\Gin@base{####1}%
153     }%
154   }%
155   \grffile@ifFileExists{\filename@area\filename@base#1}{%
156     \grffile@tempa
157     \expandafter\@tempa\grffile@file@found\@nil
158     \edef\Gin@ext{#1}%
159   }{%
160   }%
161 }
162 \def\grffile@ifFileExists#1{%
163   \expandafter\ifx\expandafter\\\pdffilesize{#1}\\\%
164   \let\reserved@a\@secondoftwo
165   \ifx\input@path\@undefined
166   \else
167     \expandafter\@tfor\expandafter\reserved@b\expandafter
168     : \expandafter=\input@path\do{%
169       \expandafter\ifx\expandafter\\\pdffilesize{\reserved@b#1}\\\%
170     \else
171       \edef\grffile@file@found{\reserved@b#1}%
172       \let\reserved@a\@firstoftwo
173       \@break@tfor
174     \fi
175   }%
176   \fi
177   \expandafter\reserved@a
178 \else
179   \edef\grffile@file@found{#1}%
180   \expandafter\@firstoftwo
181 \fi
182 }
183
184 \def\grffile@Gininclude@graphics#1{%
185   \begingroup
186   \ifgrffile@space
187     \let\Gin@getbase\grffile@space@getbase
188   \fi
189   \ifgrffile@multidot
190     \let\filename@base\@empty
191     \let\filename@simple\grffile@filename@simple
192   \fi
193   \grffile@org@Gininclude@graphics{#1}%
194   \endgroup
195 }%
196
197 \def\grffile@filename@simple#1.#2\\\%
198   \ifx\\#2\\\%
199     \let\filename@ext\relax
200   \else
201     \expandafter\ifx\csname
202       Gin@rule@.\filename@dot #2\\\endcsname\relax
203     \edef\filename@base{\filename@base #1.}%
204     \grffile@ReturnAfterFiFiBase{\grffile@filename@simple #2\\\}%
205   \else
206     \edef\filename@ext{\filename@dot #2\\\}%

```

```

207 \fi
208 \fi
209 \edef\filename@base{\filename@base #1}%
210 }
211 \def\grffile@ReturnAfterFiFiBase#1#2\filename@base#3{\fi\fi#1}
    Print current option setting
212 \def\grffile@option@status#1{%
213 \begingroup
214 \let\on@line\@empty
215 \PackageInfo{grffile}{%
216 Option ‘#1’ is %
217 \expandafter\ifx\csname ifgrffile@#1\expandafter\endcsname
218 \csname iftrue\endcsname
219 set to ‘true’%
220 \else
221 \expandafter\ifx\csname grffile@#1@disabled\endcsname\@empty
222 not available%
223 \else
224 set to ‘false’%
225 \fi
226 \fi
227 }%
228 \endgroup
229 }
230 \grffile@option@status{multidot}
231 \grffile@option@status{extendedchars}
232 \grffile@option@status{space}
233 \grffile@RestoreCatcodes
234 \end{package}

```

3 Installation

3.1 Download

Package. This package is available on CTAN¹:

[CTAN:macros/latex/contrib/oberdiek/grffile.dtx](http://ftp.ctan.org/tex-archive/macros/latex/contrib/oberdiek/grffile.dtx) The source file.

[CTAN:macros/latex/contrib/oberdiek/grffile.pdf](http://ftp.ctan.org/tex-archive/macros/latex/contrib/oberdiek/grffile.pdf) Documentation.

Bundle. All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

[CTAN:macros/latex/contrib/oberdiek/oberdiek-tds.zip](http://ftp.ctan.org/tex-archive/macros/latex/contrib/oberdiek/oberdiek-tds.zip)

3.2 Bundle installation

Unpacking. Unpack the oberdiek-tds.zip in the TDS tree (also known as texmf tree) of your choice. Example (linux):

```
unzip oberdiek-tds.zip -d ~/texmf
```

Script installation. Check the directory TDS:scripts/oberdiek/ for scripts that need further installation steps. Package attachfile2 comes with the Perl script pdfatfi.pl that should be installed in such a way that it can be called as pdfatfi. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

¹[ftp://ftp.ctan.org/tex-archive/](http://ftp.ctan.org/tex-archive/)

3.3 Package installation

Unpacking. The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain- \TeX :

```
tex grffile.dtx
```

TDS. Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

```
grffile.sty → tex/latex/oberdiek/grffile.sty
grffile.pdf → doc/latex/oberdiek/grffile.pdf
grffile.dtx → source/latex/oberdiek/grffile.dtx
```

If you have a `docstrip.cfg` that configures and enables `docstrip`'s TDS installing feature, then some files can already be in the right place, see the documentation of `docstrip`.

3.4 Refresh file name databases

If your \TeX distribution (`te \TeX` , `mik \TeX` , ...) relies on file name databases, you must refresh these. For example, `te \TeX` users run `texhash` or `mktextlsr`.

3.5 Some details for the interested

Attached source. The PDF documentation on CTAN also includes the `.dtx` source file. It can be extracted by AcrobatReader 6 or higher. Another option is `pdftk`, e.g. unpack the file into the current directory:

```
pdftk grffile.pdf unpack_files output .
```

Unpacking with \LaTeX . The `.dtx` chooses its action depending on the format:

plain- \TeX : Run `docstrip` and extract the files.

\LaTeX : Generate the documentation.

If you insist on using \LaTeX for `docstrip` (really, `docstrip` does not need \LaTeX), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{grffile.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

Generating the documentation. You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by the configuration file `ltxdoc.cfg`. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with `pdf \LaTeX` :

```
pdflatex grffile.dtx
makeindex -s gind.ist grffile.idx
pdflatex grffile.dtx
makeindex -s gind.ist grffile.idx
pdflatex grffile.dtx
```

4 References

- [1] David Carlisle, Sebastian Rahtz: *The graphics package*; 2006/02/20 v1.0o;
[CTAN:macros/latex/required/graphics/graphics.dtx](#).
- [2] Sebastian Rahtz, Heiko Oberdiek: *The graphicx package*; 1999/02/16 v1.0f;
[CTAN:macros/latex/required/graphics/graphicx.dtx](#).

5 History

[2004/07/18 v0.5]

- First version.

[2006/08/15 v1.0]

- File existence check by new primitives of pdfTeX 1.30.
- Implementation partly rewritten.
- New DTX framework.

[2006/08/17 v1.1]

- Adaptation to version 2.3 of package kvoptions.

[2006/11/30 v1.2]

- New option babel. Before this feature was part of option extendedchars.

[2007/04/11 v1.3]

- Line ends sanitized.

[2007/06/13 v1.4]

- Encoding support added with options encoding, inputencoding, and filenameencoding.

6 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols		
\'	9, 19	\@ne 146
*	12, 22	\@nil 151, 157
\.	8, 18	\@secondoftwo 164
\:	7, 17	\@tempa 151, 157
\<	10, 20	\@tfor 167
\=	6, 16	\@undefined 165
\>	11, 21	\\ ... 163, 169, 197, 198, 202, 204, 206
\@break@tfor	173	\^ 13, 23, 94, 95, 96, 97
\@ehc	116, 125	\~ 14, 24, 140
\@empty	46,	
	70, 72, 82, 106, 108, 190, 214, 221	A
\@firstoftwo	172, 180	\active 24
\@makeoother	16, 17, 18, 19, 20, 21, 22	\advance 146
		\AtBeginDocument 61

C	
\catcode	6, 7, 8, 9, 10, 11, 12, 13, 14, 23, 24
\count@	137, 140, 145, 146
\csname	44, 73, 74, 90, 112, 201, 217, 218, 221
\CurrentInputEncodingOption	76
\CurrentOption	41
D	
\DeclareBoolOption	31, 32, 33, 34
\DeclareDefaultOption	40
\DeclareStringOption	38, 39
\DeclareVoidOption	35
\DisableKeyvalOption	62
\do	168
E	
\endcsname	44, 73, 74, 90, 112, 202, 217, 218, 221
F	
\filename@area	155
\filename@base	155, 190, 203, 209, 211
\filename@dot	202, 206
\filename@ext	199, 206
\filename@simple	191
G	
\Gin@base	152
\Gin@ext	158
\Gin@getbase	187
\Gin@include@graphics	68, 69
\grffile@extchar@Gin@include@graphics	99, 104
\grffile@extendedcharstrue	84
\grffile@file@found	157, 171, 179
\grffile@fileencoding	70
\grffile@filename	105, 118, 121, 132
\grffile@filename@simple	191, 197, 204
\grffile@filenameencoding	110, 119
\grffile@Gin@include@graphics	101, 132, 184
\grffile@IfFileExists	155, 162
\grffile@inputenc@loop	94, 95, 96, 97, 136
\grffile@inputencoding	72, 76, 79, 82, 106, 110, 119
\grffile@option@status	212, 230, 231, 232
\grffile@org@Gin@include@graphics	68, 193
\grffile@RestoreCatcodes	5, 233
\grffile@ReturnAfterFiFiBase	204, 211
\grffile@space@disabled	46
\grffile@space@getbase	149, 187
\grffile@spacefalse	45, 57
\grffile@spacetrue	47, 55
\grffile@temp	118, 121
\grffile@tempa	150, 156
\grffilesetup	65
\grffile@filenameencoding	108
I	
\ifgrffile@babel	87, 89
\ifgrffile@extendedchars	87, 93
\ifgrffile@multidot	189
\ifgrffile@space	186
\ifnum	87, 145
\ifpdf	54
\ifx	44, 70, 72, 73, 74, 82, 106, 108, 110, 112, 163, 165, 169, 198, 201, 217, 221
\input@path	165, 168
\inputencodingname	79
L	
\loop	138
M	
\MessageBreak	49, 114
N	
\NeedsTeXFormat	2
\newcommand	65
O	
\on@line	214
P	
\PackageError	113, 123
\PackageInfo	215
\PackageWarning	48
\PassOptionsToPackage	41
\pdffilesize	163, 169
\ProcessKeyvalOptions	60
\ProvidesPackage	3
R	
\renewcommand	69
\repeat	147
\RequirePackage	25, 26, 36, 64
\reserved@a	164, 172, 177
\reserved@b	167, 169, 171
S	
\setkeys	66
\SetupKeyvalOptions	27
\StringEncodingConvert	118
\StringEncodingSuccessFailure	120
T	
\the	6, 7, 8, 9, 10, 11, 12, 13, 14
U	
\uccode	140
\uppercase	141
X	
\x	131, 134
Z	
\z@	87