

The grfext package

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Abstract

This package provides macros for adding and reordering graphics extensions of package `graphics`.

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*Please report any issues at <https://github.com/ho-tex/grfext/issues>

1 Documentation

1.1 Introduction

If you are not familiar with L^AT_EX's graphics bundle, please read its documentation `grffile` [1]. The bundle contains two packages for graphics inclusion: `graphics` and `graphicx`. The first one is loaded by the second one that adds a key value interface.

Graphics files are included in both cases by macro `\includegraphics`. The file name extension can be omitted. Then the graphics package goes through a list of known extensions until it finds the graphics file. This extension list is set by `\DeclareGraphicsExtensions`. The previous contents of the list is overwritten.

1.2 User interface

This package `grfext` provides macros that adds entries to the list or remove them. The list may be empty or even undefined before. It is always defined afterwards, but can be empty (especially after removing entries).

```
\AppendGraphicsExtensions * {\langle ext-list \rangle}
\PrependGraphicsExtensions * {\langle ext-list \rangle}
```

The argument `\langle ext-list \rangle` is a comma separated list whose entries are file name extensions including the dot. But first the entries are removed from `graphics`' extension list to avoid multiple occurrences of the same extension.

Then macro `\AppendGraphicsExtensions` adds the entries after the end of `graphics`' list, whereas macro `\PrependGraphicsExtensions` puts them in front of the list. The order matters if a graphics file is available in different acceptable formats. Then the first extension wins.

The star version of these commands only adds an extensions, if a specific graphics rule exists for that extension.

```
\RemoveGraphicsExtensions {\langle ext-list \rangle}
```

All occurrences of file extensions in `\langle ext-list \rangle` are removed from `graphics`' extension list.

1.3 Package loading

The package does not define any options. It is loaded as usual in L^AT_EX, e.g.:

```
\usepackage{grfext}
```

```
\PrintGraphicsExtensions
```

Macro `\PrintGraphicsExtensions` writes the current graphics extensions list in the `.log` file. The macros described before do this automatically after their operation.

1.4 Option support for package `graphicx`

Package `graphicx` uses the interface of package `keyval` in order to specify options for `\includegraphics`. The options can also be set using

```
\setkeys{Gin}{\langle options \rangle}
```

The four user macros with the two star forms are available as options in family `Gin` as well:

```
AppendGraphicsExtensions={\langle ext-list \rangle}  
AppendGraphicsExtensions*={\langle ext-list \rangle}  
PrependGraphicsExtensions={\langle ext-list \rangle}  
PrependGraphicsExtensions*={\langle ext-list \rangle}  
RemoveGraphicsExtensions={\langle ext-list \rangle}  
PrintGraphicsExtensions
```

This makes it easier to locally change the extension list for an included graphics, e.g.:

```
\includegraphics[RemoveGraphicsExtensions={.pdf,PDF}]{image}
```

1.5 plain T_EX

L^AT_EX's graphics packages can also be used with plain T_EX. The necessary basic L^AT_EX macros are defined in `miniltx.tex`. This package `grfext` also relies on it. Example:

```
\input miniltx.tex\relax  
\def\Gin@driver{pdftex.def}  
\input graphicx.sty\relax  
\input grfext.sty\relax  
\resetatcatcode
```

2 Implementation

```
1 (*package)
```

2.1 Reload check and identification

Reload check, especially if the package is not used with L^AT_EX.

```
2 \begingroup\catcode61\catcode48\catcode32=10\relax%  
3 \catcode13=5 % ^M  
4 \endlinechar=13 %  
5 \catcode35=6 % #  
6 \catcode39=12 % '  
7 \catcode44=12 % ,  
8 \catcode45=12 % -  
9 \catcode46=12 % .  
10 \catcode58=12 % :  
11 \catcode64=11 % @  
12 \catcode123=1 % {  
13 \catcode125=2 % }  
14 \expandafter\let\expandafter\x\csname ver@grfext.sty\endcsname  
\ifx\x\relax % plain-TeX, first loading  
15 \else  
16 \def\empty{}%  
17 \ifx\x\empty % LaTeX, first loading,  
18 % variable is initialized, but \ProvidesPackage not yet seen  
19 \else  
20 \else  
21 \expandafter\ifx\csname PackageInfo\endcsname\relax  
22 \def\x#1#2{%  
23 \immediate\write-1{Package #1 Info: #2.}%
```

```

24     }%
25     \else
26         \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
27     \fi
28     \x{grfext}{The package is already loaded}%
29     \aftergroup\endinput
30     \fi
31     \fi
32 \endgroup%

```

Package identification:

```

33 \begingroup\catcode61\catcode48\catcode32=10\relax%
34 \catcode13=5 % ^~M
35 \endlinechar=13 %
36 \catcode35=6 % #
37 \catcode39=12 % '
38 \catcode40=12 % (
39 \catcode41=12 % )
40 \catcode44=12 % ,
41 \catcode45=12 % -
42 \catcode46=12 % .
43 \catcode47=12 % /
44 \catcode58=12 % :
45 \catcode64=11 % @
46 \catcode91=12 % [
47 \catcode93=12 % ]
48 \catcode123=1 % {
49 \catcode125=2 % }
50 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
51     \def\x#1#2#3[#4]{\endgroup
52         \immediate\write-1{Package: #3 #4}%
53         \xdef#1{#4}%
54     }%
55 \else
56     \def\x#1#2[#3]{\endgroup
57         #2[#{#3}]%
58         \ifx#1\@undefined
59             \xdef#1{#3}%
60         \fi
61         \ifx#1\relax
62             \xdef#1{#3}%
63         \fi
64     }%
65 \fi
66 \expandafter\x\csname ver@grfext.sty\endcsname
67 \ProvidesPackage{grfext}%
68 [2019/12/03 v1.3 Manage graphics extensions (H0)]%

```

2.2 Catcodes

```

69 \begingroup\catcode61\catcode48\catcode32=10\relax%
70 \catcode13=5 % ^~M
71 \endlinechar=13 %
72 \catcode123=1 % {
73 \catcode125=2 % }
74 \catcode64=11 % @
75 \def\x{\endgroup
76     \expandafter\edef\csname grfext@AtEnd\endcsname{%
77         \endlinechar=\the\endlinechar\relax

```

```

78     \catcode13=\the\catcode13\relax
79     \catcode32=\the\catcode32\relax
80     \catcode35=\the\catcode35\relax
81     \catcode61=\the\catcode61\relax
82     \catcode64=\the\catcode64\relax
83     \catcode123=\the\catcode123\relax
84     \catcode125=\the\catcode125\relax
85   }%
86 }%
87 \x\catcode61\catcode48\catcode32=10\relax%
88 \catcode13=5 % ^^M
89 \endlinechar=13 %
90 \catcode35=6 % #
91 \catcode64=11 % @
92 \catcode123=1 % {
93 \catcode125=2 % }
94 \def\TMP@EnsureCode#1#2{%
95   \edef\grfext@AtEnd{%
96     \grfext@AtEnd
97     \catcode#1=\the\catcode#1\relax
98   }%
99   \catcode#1=#2\relax
100 }
101 \TMP@EnsureCode{42}{12}% *
102 \TMP@EnsureCode{44}{12}% ,
103 \TMP@EnsureCode{47}{12}% /
104 \TMP@EnsureCode{58}{12}% :
105 \TMP@EnsureCode{60}{12}% <
106 \TMP@EnsureCode{62}{12}% >
107 \TMP@EnsureCode{91}{12}% [
108 \TMP@EnsureCode{93}{12}% ]
109 \edef\grfext@AtEnd{\grfext@AtEnd\noexpand\endinput}

```

2.3 plain T_EX

`\@expandtwoargs` Requirement is `miniltx.tex`, but we need also L^AT_EX's `\@expandtwoargs`.

```

110 \@ifundefined{@expandtwoargs}{%
111   \def\@expandtwoargs#1#2#3{%
112     \edef\reserved@a{\noexpand#1{#2}{#3}}%
113     \reserved@a
114   }%
115 }{}

```

2.4 Add

`\AppendGraphicsExtensions`

```

116 \newcommand*{\AppendGraphicsExtensions}{%
117   \@ifundefined{Gin@extensions}{%
118     \let\Gin@extensions\@empty
119   }{}%
120   \@ifstar{\grfext@Append\grfext@Check}{\grfext@Append\grfext@@Add}%
121 }%

```

`\grfext@Append`

```

122 \def\grfext@Append#1#2{%
123   \let\grfext@Print\@gobble
124   \edef\grfext@next{%
125     \noexpand\grfext@Add\noexpand#1{%

```

```

126     \zap@space#2 \@empty
127     }{\noexpand\Gin@extensions,}{}%
128 }%
129 \grfext@next
130 \let\grfext@Print\grfext@@Print
131 \grfext@Print\AppendGraphicsExtensions
132 }

```

\PrependGraphicsExtensions

```

133 \newcommand*\PrependGraphicsExtensions}{%
134   \@ifundefined{Gin@extensions}{%
135     \let\Gin@extensions\@empty
136   }{}%
137   \@ifstar{\grfext@Prepend\grfext@Check}{\grfext@Prepend\grfext@@Add}%
138 }%

```

\grfext@Prepend

```

139 \def\grfext@Prepend#1#2{%
140   \let\grfext@Print@gobble
141   \edef\grfext@next{%
142     \noexpand\grfext@Add\noexpand#1{%
143       \zap@space#2 \@empty
144     }{, \noexpand\Gin@extensions}%
145   }%
146   \grfext@next
147   \let\grfext@Print\grfext@@Print
148   \grfext@Print\PrependGraphicsExtensions
149 }

```

\grfext@Add

```

150 \def\grfext@Add#1#2{%
151   #1{#2}%
152 }

```

\grfext@@Add

```

153 \def\grfext@@Add#1#2#3{%
154   \RemoveGraphicsExtensions{#1}%
155   \ifx\Gin@extensions\@empty
156     \def\Gin@extensions{#1}%
157   \else
158     \edef\Gin@extensions{#2#1#3}%
159   \fi
160 }

```

2.5 Check

\grfext@Check

```

161 \def\grfext@Check#1{%
162   \let\grfext@tmp\@empty
163   \@for\grfext@ext:=#1\do{%
164     \@ifundefined{Gin@rule@\grfext@ext}{%
165       }{}%
166     \ifx\grfext@tmp\@empty
167       \let\grfext@tmp\grfext@ext
168     \else
169       \edef\grfext@tmp{\grfext@tmp,\grfext@ext}%
170     \fi

```

```

171   }%
172 }%
173 \ifx\grfext@tmp\@empty
174   \def\grfext@next##1##2{%
175   \else
176     \edef\grfext@next{%
177       \noexpand\grfext@@Add{\grfext@tmp}%
178     }%
179   \fi
180   \grfext@next
181 }

```

2.6 Remove

\RemoveGraphicsExtensions

```

182 \newcommand*\RemoveGraphicsExtensions}[1]{%
183   \@ifundefined{Gin@extensions}{%
184     \def\Gin@extensions{%
185     }{%
186       \edef\grfext@tmp{\zap@space#1 \@empty}%
187       \@for\grfext@ext:=\grfext@tmp\do{%
188         \def\grfext@next{%
189           \let\grfext@tmp\Gin@extensions
190           \@expandtwoargs
191           \@removeelement\grfext@ext\Gin@extensions\Gin@extensions
192           \ifx\grfext@tmp\Gin@extensions
193             \let\grfext@next\relax
194           \fi
195           \grfext@next
196         }%
197         \grfext@next
198       }%
199     }%
200   \grfext@Print\RemoveGraphicsExtensions
201 }

```

2.7 Print

```
202 \RequirePackage{infwarerr}[2007/09/09]
```

\PrintGraphicsExtensions

```

203 \def\PrintGraphicsExtensions{%
204   \grfext@Print\PrintGraphicsExtensions
205 }

```

\grfext@Print

```

206 \def\grfext@Print#1{%
207   \@PackageInfo{grfext}{%
208     Graphics extension search list:\MessageBreak
209     \@ifundefined{Gin@extensions}{%
210       <unavailable>%
211     }{%
212       [\Gin@extensions]%
213     }\MessageBreak
214     \string#1%
215   }%
216 }

```

`\grfext@@Print`

```
217 \let\grfext@@Print\grfext@Print
```

2.8 Defining options for package `graphicx`

```
218 \RequirePackage{kvdefinekeys}[2010/03/01]
219 \kv@define@key{Gin}{AppendGraphicsExtensions}{%
220   \AppendGraphicsExtensions{#1}%
221 }
222 \kv@define@key{Gin}{AppendGraphicsExtensions*}{%
223   \AppendGraphicsExtensions*{#1}%
224 }
225 \kv@define@key{Gin}{PrependGraphicsExtensions}{%
226   \PrependGraphicsExtensions{#1}%
227 }
228 \kv@define@key{Gin}{PrependGraphicsExtensions*}{%
229   \PrependGraphicsExtensions*{#1}%
230 }
231 \kv@define@key{Gin}{RemoveGraphicsExtensions}{%
232   \RemoveGraphicsExtensions{#1}%
233 }
234 \kv@define@key{Gin}{PrintGraphicsExtensions}[]{%
235   \PrintGraphicsExtensions
236 }
237 \grfext@AtEnd%
238 </package>
```

3 Installation

3.1 Download

Package. This package is available on CTAN¹:

CTAN:macros/latex/contrib/grfext/grfext.dtx The source file.

CTAN:macros/latex/contrib/grfext/grfext.pdf Documentation.

Bundle. All the packages of the bundle ‘grfext’ 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:install/macros/latex/contrib/grfext.tds.zip

TDS refers to the standard “A Directory Structure for \TeX Files” (CTAN:pkg/tds). Directories with `texmf` in their name are usually organized this way.

3.2 Bundle installation

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

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

¹CTAN:pkg/grfext

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 grfext.dtx
```

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

```
grfext.sty → tex/latex/grfext/grfext.sty
grfext.pdf → doc/latex/grfext/grfext.pdf
grfext.dtx → source/latex/grfext/grfext.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 (`TEX Live`, `mikTEX`, ...) relies on file name databases, you must refresh these. For example, `TEX Live` users run `texhash` or `mktexlsr`.

3.5 Some details for the interested

Unpacking with L^AT_EX. The `.dtx` chooses its action depending on the format:

plain T_EX: Run `docstrip` and extract the files.

L^AT_EX: Generate the documentation.

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

```
latex \let\install=y\input{grfext.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 `pdfLATEX`:

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

4 References

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

5 History

[2007/09/30 v1.0]

- First public version.

[2010/08/19 v1.1]

- User macros are also made available as keyval options for package `graphicx`.

[2016/05/16 v1.2]

- Documentation updates.

[2019/12/03 v1.3]

- Documentation updates.

6 Index

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