

# The `fnbreak` package

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## Abstract

This package detects footnotes that are split over several pages. It writes a warning into the log file.

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## 1 The user interface

To use this package place

```
\usepackage{fnbreak}
```

in the preamble of your document.

If a footnote is split over a page break, a warning like the following is put into the log:

```
Package fnbreak Warning: Footnote number 1
(fnbreak)                (label 'a')
(fnbreak)                has been split over different pages:
(fnbreak)                page 1 to page 2.
```

Sometimes, complicated footnote labels are used (for example, when using symbols):

```
Package fbreak Warning: Footnote number 1
(fbreak)                (label '\ensuremath {*}')
(fbreak)                has been split over different pages:
(fbreak)                page 1 to page 2.
```

In some cases may complex footnote labels may prevent `fbreak` from functioning.

`nolabel` To avoid these problems, you may give the package option `nolabel`:

```
label \usepackage[nolabel]{fbreak}
```

Then the label is omitted in the warning:

```
Package fbreak Warning: Footnote number 1
(fbreak)                has been split over different pages:
(fbreak)                page 1 to page 2.
```

`\fbreaknolabel` You may switch on and off printing of the footnote label in the warnings also by  
`\fbreaklabel` using the macros `\fbreaknolabel` and `\fbreaklabel`.

If the document is set two-sided, `fbreak` tries to determine whether the footnote spans over a double page or flipsides. The result is shown in the warning:

```
Package fbreak Warning: Footnote number 1
(fbreak)                has been split over different pages (flipsides):
(fbreak)                page 1 to page 2.
```

or:

```
Package fbreak Warning: Footnote number 1
(fbreak)                has been split over different pages (double page):
(fbreak)                page 2 to page 3.
```

This only works if the page numbers are (arabic) numerical.

`verbose` When using the package option `verbose` the `fbreak` package writes a message for  
`nonverbose` every footnote, even if it is completely on one page:

```
\usepackage[verbose]{fbreak}
```

The output looks as follows:

```
Package fbreak Note:    Footnote number 2
(fbreak)                (label '2')
(fbreak)                completely on page 3.
```

`\fbreaknonverbose` You may switch on and off printing footnote information for non-split footnotes  
`\fbreakverbose` using the macros `\fbreaknonverbose` and `\fbreakverbose`.

## 2 The implementation

The approach of this package is very simple: At the begin and the end of each footnote text, the footnote number and current page are written to the aux file. Then, it is tested if both pages are the same for each footnote.

Heading of the package:

```
1 <package>\ProvidesPackage{fnbreak}
2 <version>\ProvidesFile{fnbreak-v.tex}
3 <package|version> [2012/01/01 v1.30 Warning for pagebreak in footnote (HH)]
4 <*package>
```

Declare an option to show not only the footnote number but also the label.

```
5 \RequirePackage{ifthen}
```

Declare an option to show not only the footnote number but also the label.

```
6 \newif\iffnb@showlabel
7 \newif\iffnb@verbose
8 \DeclareOption{label}{\fnb@showlabeltrue}
9 \DeclareOption{no-label}{\fnb@showlabelfalse}
10 \DeclareOption{verbose}{\fnb@verbosetrue}
11 \DeclareOption{nonverbose}{\fnb@verbosefalse}
12 \ExecuteOptions{label,nonverbose}
13 \ProcessOptions\relax
```

`\fnbreakverbose` Switch on or off verbose printing of footnotes.

```
\fnbreaknonverbose 14 \newcommand*\fnbreakverbose{\fnb@verbosetrue}
15 \newcommand*\fnbreaknonverbose{\fnb@verbosefalse}
```

`\fnbreaklabel` Switch on or off printing of footnote labels in the warnings.

```
\fnbreaknolabel 16 \newcommand*\fnbreaklabel{\fnb@showlabeltrue}
17 \newcommand*\fnbreaknolabel{\fnb@showlabelfalse}
```

Define new counter and boolean for determining whether a split footnote spans over a double page or flipsides.

```
18 \newcounter{fnb@@numberpages}
19 \newif\iffnb@@isdoupage
```

Define default values in order to avoid possible problems:

```
20 \xdef\fnb@@footnotestartnum{0}
21 \xdef\fnb@@footnotestartpage{0}
```

When the aux file is read the first time (before `\begin{document}`), do nothing:

```
22 \def\fnb@footnotestart#1#2#3{}
23 \def\fnb@footnoteend#1#2#3{}
```

Define the working commands at `\begin{document}` in order to activate them when the aux file is read at the end of the document:

```
24 \AtBeginDocument{%
```

If the start of a footnote has been found, just define commands containing the footnote number (only for debugging) and the start page:

```

25 \def\fnb@footnotestart#1#2#3{%
26   \xdef\fnb@@footnotestartnum{#1}%
27   \gdef\fnb@@footnotestartpage{#3}%
28 }%
```

If the end of a footnote has been found, test whether the footnote numbers fit and whether the start and end pages are the same. If one of the tests fails, generate a warning:<sup>1</sup>

```

29 \def\fnb@footnoteend#1#2#3{%
30   \xdef\fnb@@footnoteendnum{#1}%
31   \def\fnb@@footnoteendpage{#3}%
```

Test if start and end refer to the same footnote.

```

32   \ifx\fnb@@footnotestartnum\fnb@@footnoteendnum
```

Test if the footnote ends on the same page it has started.

```

33   \ifthenelse{\equal{\fnb@@footnotestartpage}{\fnb@@footnoteendpage}}{%
```

Yes, the footnote is completely on one page. Print a message if `verbose` mode is requested. Simulate a variant of `\PackageInfo` which is also written to the output rather than only to the log file.

```

34     \iffnb@verbose
35     \begingroup
36       \def\MessageBreak{^^J(fnbreak)\@spaces\@spaces\@spaces\@spaces}%
37       \set@display@protect
38       \immediate\write\@unused{^^JPackage fnbreak Note:%
39         \space\space\space\space Footnote number #1
40         \iffnb@showlabel\MessageBreak (label '#2') \fi
41         \MessageBreak
42         completely on page #3.^^J}%
43     \endgroup
44     \fi
45 }{%
```

No, the footnote contains a pagebreak.

If the page labels are plain numbers we can determine whether a footnote spans over a double page or a flipside.<sup>2</sup> `fnb@@numberpages = 0` is used if the code cannot find out whether a footnote spans over a double page (i. e., for non-integer page numbers or single-side documents).

```

46     \setcounter{fnb@@numberpages}{0}%
```

Do the effort only if the document is two-sided. This code required the boolean `\if@twoside` to be defined. If this is not the case please report to the author including a minimal example file.

```

47     \if@twoside
```

---

<sup>1</sup>Thanks to Bastien Roucaries for pointing at a problem with symbol footnote marks.

<sup>2</sup>Thanks to Martin Münch for the idea of determining double pages.

We can find double pages only if the start page as well as the end page are numbers.

```
48         \ifnum\number0<0\fnb@@footnoteendpage{}%  
49         \ifnum\number0<0\fnb@@footnotestartpage{}%
```

Calculate the number of pages covered by the footnote. If it is more than two, a flipside occurs anyways.

```
50         \setcounter{fnb@@numberpages}{\fnb@@footnoteendpage}%  
51         \addtocounter{fnb@@numberpages}{-\fnb@@footnotestartpage}%  
52         \addtocounter{fnb@@numberpages}{1}%
```

If the footnote starts on an odd page, flipside occurs in any case.

```
53         \ifodd \fnb@@footnotestartpage{}%  
54         \fnb@@isdoublepagefalse
```

If the footnote starts on an odd page, a double page is found if the number of pages equals two.

```
55         \else  
56         \ifnum \thefnb@@numberpages=2{}%  
57         \fnb@@isdoublepagetrue
```

If the number of pages is larger, flipside.

```
58         \else  
59         \fnb@@isdoublepagefalse  
60         \fi  
61         \fi  
62         \fi  
63         \fi  
64         \fi
```

Print a warning.

If not determined whether a double page occurs:

```
65         \ifnum\thefnb@@numberpages=0  
66         \PackageWarningNoLine{fnbreak}{Footnote number #1  
67         \iffnb@showlabel\MessageBreak (label '#2')\fi  
68         \MessageBreak  
69         has been split over different pages:\MessageBreak  
70         page \fnb@@footnotestartpage\space to page #3}%
```

For a double page:

```
71         \else  
72         \iffnb@@isdoublepage  
73         \PackageWarningNoLine{fnbreak}{Footnote number #1  
74         \iffnb@showlabel\MessageBreak (label '#2')\fi  
75         \MessageBreak  
76         has been split over different pages (double page):\MessageBreak  
77         page \fnb@@footnotestartpage\space to page #3}%
```

For a flipside:

```
78         \else  
79         \PackageWarningNoLine{fnbreak}{Footnote number #1  
80         \iffnb@showlabel\MessageBreak (label '#2')\fi  
81         \MessageBreak
```

```

82         has been split over different pages (flipside):\MessageBreak
83         page \fnb@@footnotestartpage\space to page #3}%
84     \fi
85 \fi

```

Redefine the `\fnb@globalwarning` to print a warning at the end of the log file.

```

86     \def\fnb@globalwarning{%
87         \PackageWarningNoLine{fmbreak}{There are footnotes with a
88         pagebreak.\MessageBreak
89         Check if they are acceptable}%
90     }%
91 }%
92 \else

```

This macro trys to handle different footnotes. This may not happen and is an internal error.

```

93     \PackageError{fmbreak}{Internal problem:\MessageBreak
94     Start and stop marker of footnote do not fit:\MessageBreak
95     start: \fnb@@footnotestartnum, page \fnb@@footnotestartpage,
96     end: #1, page #3}{%
97     This error may not happen.
98     Please try to make a short example which shows this behaviour
99     and send a bug report to harald.harders@gmx.de.}%
100 \fi
101 }%
102 }

```

Define command that writes the footnote start marker to the aux file:

```

103 \def\fnb@fnstart{\@bsphack
104     \protected@write\@auxout{}{%
105         \string\fnb@footnotestart{\the\c@footnote}{\thefootnote}{\thepage}%
106     }%
107     \@esphack
108 }

```

Define command that writes the footnote end marker to the aux file:

```

109 \def\fnb@fnend{\@bsphack
110     \protected@write\@auxout{}{%
111         \string\fnb@footnoteend{\the\c@footnote}{\thefootnote}{\thepage}%
112     }%
113     \@esphack
114 }

```

Redefine `\@footnotetext` by patching the calls `\fnb@fnstart` and `\fnb@fnend` after all other packages have been loaded.<sup>3</sup>

```

115 \AtBeginDocument{%
116     \newcommand\fnb@orig@footnotetext{}%
117     \let\fnb@orig@footnotetext\@footnotetext
118     \long\def\@footnotetext#1{\fnb@orig@footnotetext{\fnb@fnstart#1\fnb@fnend}}%

```

---

<sup>3</sup>Thanks to Bastien Roucaries for that patch

Append `\fnb@globalwarning` to `\@dofilelist` in order to print the global warning `\fnb@globalwarning` after all other messages, e.g., the `\listfiles` list.

```
119 \newcommand\fnb@dofilelist{%
120 \let\fnb@dofilelist\@dofilelist
121 \def\@dofilelist{\fnb@dofilelist\fnb@globalwarning}%
122 }
```

Initialise `\fnb@globalwarning` to print no warning by default.

```
123 \newcommand\fnb@globalwarning{%
124 \let\fnb@globalwarning\relax
125 \</package>
```

## Change History

0.01		Write a warning at the end of the log file	7
General: First version	1		
1.00		1.11	
General: Correct some internal macro names	3	General: Allow commands in page number	3, 4
No need to have numerical page numbers anymore	4	1.20	
Patch <code>\@footnotetext</code> instead of re-writing it	6	General: Distinguish between split over double page or flipsides	3, 4
Use the footnote number instead of the label, show both in the warning	4	1.30	
1.10		General: Add options ‘nonverbose’ and ‘label’	3
General: Add option ‘verbose’	3	Fix verbose mode for non-numeric labels	4

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