The ltcaption package[*]

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Abstract

This package fixes caption problems with other-than-centered aligned longtables.
(solves LaTeX PR tools/3387)

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[*]This package has version number v1.2, last revised 2008/03/28.

1 The user interface

The content of `\caption` in longtables is usually centered to the content of the longtable itself. This is sufficient for centered longtables, but for left or right aligned longtables this results in captions moved into the left or right page margin.

To solve this problem just include this package *after* the longtable package[1], e.g.:

```
\usepackage{longtable,ltcaption}
```

Afterwards the captions of all longtables should be aligned as expected, even for not-centered longtables.

1.1 Further justification

`\LTcapskip` This length is controlling the skip between the caption and the contents below the caption (which is usually the longtable contents if you place the caption above the longtable), and it can be altered with `\setlength\LTcapskip{...}`. When the ltcaption package is loaded it will be set to `\abovecaptionskip` which usually represents the skip between caption and contents in floating environments. (Without this package, the longtable package uses `\baselineskip` here.)

`\LTcapleft` You can alter the centering of the caption box (of width `\LTcapwidth`) by setting the
`\LTcapright` lengths `\LTcapleft` & `\LTcapright` to appropriate values. These are set to `\fill` by default, just like the values `\LTleft` & `\LTright`.

`\LTcapmarginsfalse` Another option is the usage of the command `\LTcapmarginsfalse` which makes the ltcaption package using the values `\LTleft` & `\LTright` instead of `\LTcapleft` & `\LTcapright`.

Note: If the ltcaption package will be used with one of the NTG document classes[2], `\CaptionLabelFont` & `\CaptionTextFont` will not only be used for `figure` & `table` captions, but for `longtable` captions as well.

Note: These lengths & commands do not work when the ltcaption package is used with one of the KOMA-Script classes[3] scrartcl, scrreprt or scrbook, the KOMA-Script settings for captions are used instead. Same with the caption package which also uses its own options and settings.

1.2 Bonus features

`\LTcaptype` As a bonus feature this package patches the longtable package so `\LTcaptype` will be used internally instead of the fixed caption type 'table'. So for example this code snipped:

```
\renewcommand\LTcaptype{figure}
\begin{longtable}{ll}
\caption{An example longtable}\\
  A & B \\
\end{longtable}
```

will result in a longtable like this:

Figure 7: An example longtable

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`longtable*`   Another bonus feature is the addition of the environment `longtable*` which does not increment the `table` counter. (As a consequence, `\caption` is not available for such longtables, but `\caption*` still is.)

2 Spot the difference

Without the ltcaption package:

Table 1: Left aligned longtable left aligned longtable left aligned longtable

This is only a test

Table 2: Right aligned longtable right aligned longtable right aligne
longtable

This is only a test

Table 3: Centered longtable centered longtable centered longtable centered longtable

This is only a test

With the ltcaption package (and the default value of `\LTcapwidth`):

Table 4: Left aligned longtable left aligned longtable left aligned longtable

This is only a test

Table 5: Right aligned longtable right aligned longtable right aligned longtable

This is only a test

Table 6: Centered longtable centered longtable centered longtable centered longtable

This is only a test

With the ltcaption package and `\LTcapwidth=\linewidth`:

Table 7: Left aligned longtable left aligned longtable left aligned longtable left aligned longtable

This is only a test

Table 8: Right aligned longtable right aligned longtable right aligned longtable right aligned longtable

This is only a test

Table 9: Centered longtable centered longtable centered longtable centered longtable

This is only a test

With the ltcaption package and `\LTcapleft=0pt` resp. `\LTcapright=0pt`:

Table 10: Left aligned longtable left aligned longtable left aligned longtable

This is only a test

Table 11: Right aligned longtable right aligned longtable right aligned longtable

This is only a test

With the ltcaption package and `\LTcapleft=\tabcolsep` resp. `\LTcapright=\tabcolsep`:

Table 12: Left aligned longtable left aligned longtable left aligned longtable

This is only a test

Table 13: Right aligned longtable right aligned longtable right aligned longtable

This is only a test

With the ltcaption package and `\LTcapmarginsfalse`:

Table 14: Left aligned longtable left aligned longtable left aligned longtable

 This is only a test

Table 15: Right aligned longtable right aligned longtable right aligned longtable

This is only a test

Table 16: Centered longtable centered longtable centered longtable centered longtable

This is only a test

3 The Implementation

3.1 Identification

```
1 \NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 \ProvidesPackage{ltcaption}[2008/03/28 v1.2 longtable captions (AR)]
```

3.2 User interface

`\LTcaptype` `\LTcaptype` is preset to `table`.

```
3 \providecommand*\LTcaptype{table}
4 \providecommand*\ext@table{lot}
```

`\ext@lstlisting` Since the listings package do not define `\ext@lstlisting`, but we needed it when `\renewcommand\LTcaptype{lstlisting}` was done by the end user, we define it here.

```
5 \@ifundefined{caption@AtBeginDocument}\AtBeginDocument\caption@AtBeginDocument{%
6   \@ifpackageloaded{listings}{%
7     \providecommand*\ext@lstlisting{lol}}{}}
```

To save TEX memory some stuff will not be defined if the caption package is loaded.

```
8 \@ifpackageloaded{caption}{}{%
```

`\LTcapskip`

```
9   \newskip\LTcapskip \LTcapskip=\abovecaptionskip
```

`\LTcapleft` Our skips and the flag belonging to them.
`\LTcapright` (Default: Use these skips (and not `\LTleft` & `\LTright`.)
`\ifLTcapmargins`
```
10   \newskip\LTcapleft \LTcapleft=\fill
11   \newskip\LTcapright \LTcapright=\fill
12   \newif\ifLTcapmargins \LTcapmarginstrue
```

`\CaptionLabelFont` These commands are provided by the NTG document classes. To make this package
`\CaptionTextFont` work with other document classes as well, we need to define `\CaptionLabelFont` & `\CaptionTextFont` here.
```
13   \providecommand*\CaptionLabelFont{}
14   \providecommand*\CaptionTextFont{}
```

```
15 }
```

3.3 The longtable patch

`\LT@array` We insert our stuff into the definition of `\LT@array` here. Since the hyperref package patches `\LT@array` as well and since this only works with the original definition of `\LT@array`, we have to do this after the hyperref package, i.e. `\AtBeginDocument`.

```
16 \@ifundefined{caption@AtBeginDocument}\AtBeginDocument\caption@AtBeginDocument{%
17   \let\ltcaption@ORI@LT@array\LT@array
18   \renewcommand*\LT@array{%
```

We modify `\refstepcounter` resp. `\H@refstepcounter` and `\hyper@make-current`, so `\LTcaptype` is used instead of `table`.

```
19     \let\caption@LT@refstepcounter\refstepcounter
20     \def\refstepcounter{%
```

```
21          \caption@LTtype\caption@LT@refstepcounter}%
22      \let\caption@LT@Hrefstepcounter\H@refstepcounter
23      \def\H@refstepcounter{%
24          \caption@LTtype\caption@LT@Hrefstepcounter}%
25      \let\caption@LT@makecurrent\hyper@makecurrent
26      \def\hyper@makecurrent{%
27          \caption@LTtype\caption@LT@makecurrent}%
```

We redefine `\lst@@caption` so `\thelstlisting` will printout its counter, too.

```
28      \def\lst@@caption{\relax}%

29      \ltcaption@ORI@LT@array}}

30 \newcommand*\caption@LTtype[2]{%
31   \edef\caption@LT@tempa{#2}%
32   \ifx\caption@LT@tempa\caption@LT@table
33     \caption@LT@type#1%
34   \else
35     #1{#2}%
36   \fi}%

37 \newcommand*\caption@LT@type[1]{%
38   \expandafter#1\expandafter{\LTcaptype}}

39 \newcommand*\caption@LT@table{table}%
```

`\LT@c@ption` The original implementation:

```
\def\LT@c@ption#1[#2]#3{%
  \LT@makecaption#1\fnum@table{#3}%
  \def\@tempa{#2}%
  \ifx\@tempa\@empty\else
     {\let\\\space
     \addcontentsline{lot}{table}{\protect\numberline{\thetable}{#2}}}%
  \fi}
```

Our implementation simply uses `\LTcaptype` instead of `{table}`:

```
40 \long\def\LT@c@ption#1[#2]#3{%
41   \LT@makecaption#1{\csname fnum@\LTcaptype\endcsname}{#3}%
42   \def\@tempa{#2}%
43   \ifx\@tempa\@empty\else
44      {\let\\\space
45      \addcontentsline{\csname ext@\LTcaptype\endcsname}{\LTcaptype}%
46        {\protect\numberline{\csname the\LTcaptype\endcsname}{#2}}}%
47   \fi}
```

`\LT@makecaption` `\LT@makecaption{`⟨*cmd*⟩`}{`⟨*label*⟩`}{`⟨*text*⟩`}`

Original code:

```
\def\LT@makecaption#1#2#3{%
  \LT@mcol\LT@cols c{\hbox to\z@{\hss\parbox[t]\LTcapwidth{%
    % Based on article class "\@makecaption", "#1" is "\@gobble" in star
    % form, and "\@firstofone" otherwise.
    \sbox\@tempboxa{#1{#2: }#3}%
    \ifdim\wd\@tempboxa>\hsize
      #1{#2: }#3%
```

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```
      \else
        \hbox to\hsize{\hfil\box\@tempboxa\hfil}%
      \fi
      \endgraf\vskip\baselineskip}%
    \hss}}}
```

Our code:[1]

```
48 \renewcommand\LT@makecaption[3]{%
49   \LT@@makecaption{%
50     \sbox\@tempboxa{#1{{\CaptionLabelFont#2:} }\CaptionTextFont#3}%
51     \ifdim\wd\@tempboxa>\hsize
52       #1{\CaptionLabelFont{#2:} }\CaptionTextFont#3%
53     \else
54       \hbox to\hsize{\hfil\box\@tempboxa\hfil}%
55     \fi
56     \endgraf\vskip\LTcapskip}}
57 \newcommand\LT@@makecaption[1]{%
58   \caption@LT@make{\hb@xt@\hsize{%
59     \ifLTcapmargins
60       \hspace\LTcapleft
61       \FBifLTcapwidth{\advance\LTcapwidth-\LTcapleft}%
62     \else
63       \hspace\LTleft
64       \FBifLTcapwidth{\advance\LTcapwidth-\LTleft}%
65     \fi
66     \FBifLTcapwidth{\advance\LTcapwidth-%
67       \ifLTcapmargins\LTcapright\else\LTright\fi}%
68     \parbox[t]\LTcapwidth{#1}%
69     \ifLTcapmargins
70       \hskip\LTcapright
71     \else
72       \hskip\LTright
73     \fi}}}
```

This one will be usually defined by the fr-longtable package, which is part of the floatrow package[4]:

```
74 \AtBeginDocument{\providecommand*\FBifLTcapwidth[1]{}}
```

`\caption@LT@make` Typesets the caption as `\multicolumn`...

```
75 \newcommand\caption@LT@make[1]{%
76   \noalign{\caption@LT@config}%
```

Note: If used with the array package `\caption@LTfmt` needs to be expanded, therefore we need some `\expandafter` here.

```
77   \expandafter\LT@mcol\expandafter\LT@cols\expandafter{\caption@LTfmt}{%
78     \hb@xt@\z@{%
79       \hspace\caption@LTleft
80       \parbox[t]\linewidth{#1}%
81       \hspace\caption@LTright}}}%
```

`\caption@LT@config` `\caption@LT@config` analyses `\LTleft` & `\LTright` and set `\caption@LTleft` & `\caption@LTright` accordingly to the 'opposite' values, e.g., `\LTleft=1cm`

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[1]Adapted to the floatrow package by Olga Lapko

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will result to `\caption@LTleft=-1cm` and `\LTleft=0pt plus 1fill` will result to `\caption@LTleft=0pt minus 1fill`. Furthermore `\caption@LTfmt` is set to the according multicolumn format; this is far away from being bulletproof (e.g., a stretch or shrink will always be treated as 'fill') but will hopefully cover all 'real' cases.

```
82 \newcommand*\caption@LT@config{%
```

```
83   \caption@LT@parse\LTleft\caption@LTleft\caption@ifLTleft
84   \caption@LT@parse\LTright\caption@LTright\caption@ifLTright
```

```
85   \xdef\caption@LTfmt{%
86     @{}\caption@ifLTleft{\caption@ifLTright{c}{r}}{l}@{}}}}
```

`\caption@LT@parse`   Parsing of the skip, we collect a `\@fixpart`, a `@pluspart`, and a `\@minuspart` and make our definitions based on that.

```
87 \newcommand*\caption@LT@parse[3]{%
```

```
88   \let\@pluspart\@undefined
89   \let\@minuspart\@undefined
90   \expandafter\caption@LT@parse@\expandafter\@fixpart\the#1 x %
```

```
91   \xdef#2{-\@fixpart
92     \ifx\@minuspart\@undefined\else
93       \space\@plus\space\@minuspart
94     \fi
95     \ifx\@pluspart\@undefined\else
96       \space\@minus\space\@pluspart
97     \fi}%
```

```
98   \let#3\@firstoftwo
99   \ifx\@pluspart\@undefined
100    \ifx\@minuspart\@undefined
101      \let#3\@secondoftwo
102    \fi
103  \fi}
```

```
104 \def\caption@LT@parse@#1#2 {%
```

Note: `\def\@tempa{#2}\ifx\@tempa\@plus`... would not work here because of different catcodes.

```
105  \edef\@tempa{\@car#2\@nil}%
106  \if p\@tempa
107    \def\next{\caption@LT@parse@\@pluspart}%
108  \else\if m\@tempa
109    \def\next{\caption@LT@parse@\@minuspart}%
110  \else\if x\@tempa
111    \let\next\relax
112  \else
113    \def#1{#2}%
114    \def\next{\caption@LT@parse@ @}%
115  \fi\fi\fi
116  \next}
```

3.4   The **longtable*** environment

`longtable*`   A `longtable` environment without reference counter and hyperlink anchors.

```
117 \newenvironment{longtable*}{%
```

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We simply supress anything which has to do with reference counters here.

```
118    \let\caption@LT@type\@gobble
```

Unfortunately this is not so easy with `\Hy@raisedlink` (which actually sets the hyperlink anchor), so we assume that we have to supress the first usage.

```
119    \let\caption@LT@raisedlink\Hy@raisedlink
120    \def\Hy@raisedlink{%
121      \let\Hy@raisedlink\caption@LT@raisedlink
122      \@gobble}%
```

Finally we are redefining `\caption` so the non-starred variant issues an error.

```
123    \let\ltcaption@ORI@LT@c@ption\LT@c@ption
124    \def\LT@c@ption##1[##2]##3{%
125      \ifx##1\@firstofone
126        \PackageError{ltcaption}%
127          {Not allowed in longtable* environment}%
128          {If you do not understand this error, please take a closer
129           look\MessageBreak at the documentation of the 'ltcaption'
130           package.\MessageBreak \@ehc}%
131      \else
132        \ltcaption@ORI@LT@c@ption{##1}[{##2}]{##3}%
133      \fi}%
134  \longtable}%
135 {\endlongtable}
```

3.5 Adaption for KOMA-Script

```
136 \@ifundefined{@komalongtablefalse}{}{%
137  \if@komalongtable

138    \renewcommand{\LT@makecaption}[3]{%
139      \noalign{%
140        \if@captionabove
141          \vskip\belowcaptionskip
142        \else
143          \vskip\abovecaptionskip
144        \fi
145      }%
146      \caption@LT@make{%
147        \@@makecaption{#1}{#2}{#3}%
148        \endgraf
149        \if@captionabove
150          \vskip\abovecaptionskip
151        \else
152          \vskip\belowcaptionskip
153        \fi
154      }%
155    }%

156    \let\LT@@makecaption\@undefined

157  \fi}
```

References

[1] David Carlisle: *The longtable package*, 2004/02/01

[2] Victor Eijkhout: *An introduction to the Dutch LaTeX document classes*,
3 September 1989

[3] Markus Kohm & Jens-Uwe-Morawski: *KOMA-Script – a versatile LaTeX 2ε bundle*,
2007-01-09

[4] Olga Lapko: *The floatrow package documentation*,
2007/08/24