

The **hypcap** package

Heiko Oberdiek
<oberdiek@uni-freiburg.de>

2007/04/09 v1.7

Abstract

This package tries a solution of the problem with `hyperref`, that links to floats points below the caption and not at the beginning of the float. Therefore this package divides the task into two part, the link setting with `\capstart` or automatically at the beginning of a float and the rest in the `\caption` command.

Contents

| | | |
|----------|---------------------------------|----------|
| 1 | Usage | 1 |
| 1.1 | Package options | 2 |
| 1.2 | User commands | 2 |
| 1.3 | Limitations | 2 |
| 2 | Implementation | 2 |
| 3 | Installation | 5 |
| 3.1 | Download | 5 |
| 3.2 | Bundle installation | 5 |
| 3.3 | Package installation | 5 |
| 3.4 | Refresh file name databases | 5 |
| 3.5 | Some details for the interested | 6 |
| 4 | History | 6 |
| | [1999/02/13 v1.0] | 6 |
| | [2000/08/14 v1.1] | 6 |
| | [2000/09/07 v1.2] | 6 |
| | [2001/08/27 v1.3] | 6 |
| | [2001/09/06 v1.4] | 6 |
| | [2006/02/20 v1.5] | 7 |
| | [2007/02/19 v1.6] | 7 |
| | [2007/04/09 v1.7] | 7 |
| 5 | Index | 7 |

1 Usage

The package `hypcap` requires that `hyperref` is loaded first:

```
\usepackage[...]{hyperref}
\usepackage[...]{hypcap}
```

1.1 Package options

The names of the four float environments `figure`, `figure*`, `table`, or `table*` can be used as option. Then the package redefines the environment in order to insert `\capstart` (see below) in the beginning of the environment automatically.

Option `all` enables the redefinitions of all four float environments. For other environments see the user command `\hyccapredef`.

1.2 User commands

`\capstart` **\capstart:** First this command increments the counter (`\@captype`). Then it makes an anchor for package `hyperref`. At last `\caption` is redefined to remove the anchor setting part from `hyperref`'s `\caption`.

The package expects the following structure of a float environment:

```
\begin{float}...
\capstart
...
\caption{...}
...
\end{float}
```

There can be several `\caption` commands. For these you need `\capstart` again:

```
\capstart ... \caption... \capstart ... \caption...
```

And the `\caption` command itself can be put in a group.

With the options, described above, the extra writing of `\capstart` can be avoided. Consequently, there must be a `\caption` in every environment of this type, specified by the option. If you want to use more than one `\caption` in this environment, you have to state `\capstart` again.

`\hyccapspace` **\hyccapspace:** Because it looks poor, if the link points exactly at top of the figure, there is additional space: `\hyccapspace`, the default is `0.5\baselineskip`, examples:

```
\renewcommand{\hyccapspace}{0pt} removes the space
\renewcommand{\hyccapspace}{1pt} sets a fix value
```

`\hyccapredef` **\hyccapredef:** If there are other float environments, that should automatically execute `\capstart`, then a redefinition with `\hyccapredef` can be tried:

```
\hyccapredef{myfloat}
```

Only environments with one optional parameter are supported.

1.3 Limitations

- Packages that redefine `\caption` or `\@caption`.

2 Implementation

```
1 (*package)
```

Package identification.

```
2 \NeedsTeXFormat{LaTeX2e}
```

```
3 \ProvidesPackage{hyccap}%
```

```
4 [2007/04/09 v1.7 Adjusting anchors of captions (H0)]
```

For unique command names this package uses `hc@` as prefix for internal command names.

```

    First we check, if package hyperref is loaded:
5 \ifundefined{hyper@@anchor}{%
6   \PackageError{hypcap}{You have to load 'hyperref' first}\@ehc
7   \endinput
8 }{}

\hc@org@caption Save the original meaning of \caption:
9 \newcommand*\hc@org@caption{}
10 \let\hc@org@caption\caption

\if@capstart The switch \if@capstart helps to detect \capstart commands with missing
\caption macros. Because \caption can occur inside a group, assignments to
the switch have to be made global.
11 \newif\if@capstart

\hypcapspace The anchor is raised by \hypcapspace.
12 \newcommand*\hypcapspace{.5\baselineskip}

\capstart The macro \capstart contains the first part of the \caption command: Incre-
menting the counter and setting the anchor.
13 \newcommand*\capstart{%
14   \H@refstepcounter\@captype % first part of caption
15   \hyper@makecurrent\@captype
16   \global\let\hc@currentHref\@currentHref
17   \vspace*{-\hypcapspace}%
18   \begingroup
19     \let\leavevmode\relax
20     \hyper@@anchor\@currentHref\relax
21   \endgroup
22   \vspace*{\hypcapspace}%
23   \hc@hyperref{\let\caption\hc@caption}%
24   \global\@capstarttrue
25   \global\advance\csname c@\@captype\endcsname\m@ne
26 }

27 \@ifpackagelater{hyperref}{2007/04/09}{%
28   \let\hc@hyperref\@gobble
29 }{%
30   \let\hc@hyperref\@firstofone
31 }

\hc@caption The new \caption command without the first part is defined in the macro
\hc@caption.
32 \def\hc@caption{%
33   \global\advance\csname c@\@captype\endcsname\@ne
34   \@dblarg{\hc@caption\@captype}%
35 }

\hc@@caption This is a copy of package hyperref's \@caption macro without making the anchor,
because this is already done in \capstart.
36 \long\def\hc@@caption#1[#2]#3{%
37   \let\caption\hc@org@caption
38   \global\@capstartfalse
39   \ifHy@hypertextnames
40     \hyper@makecurrent\@captype
41   \else
42     \global\let\@currentHref\hc@currentHref
43   \fi
44   \par\addcontentsline{%
45     \csname ext@#1\endcsname}{#1}{%
46     \protect\numberline{%
47       \csname the#1\endcsname

```

```

48   }\ignorespaces #2}%
49 }%
50 \begingroup
51   \@parboxrestore
52   \normalsize
53   \@makecaption{\csname fnum@#1\endcsname}{%
54     \ignorespaces#3%
55   }%
56   \par
57 \endgroup
58 }

```

\hycapredef The macro `\hycapredef` prepares the call of `\hc@redef` that will redefine the environment that is given in the argument.

```

59 \def\hycapredef#1{%
60   \expandafter\hc@redef\csname hc@org#1\expandafter\endcsname
61   \csname hc@orgend#1\expandafter\endcsname
62   \expandafter{#1}%
63 }

```

\hc@redef The old meaning of the environment is saved. Then `\capstart` is appended in the begin part. The end part contains a check that produces an error message in case of `\capstart` without `\capstart` (`\capstart` has incremented the counter).

```

64 \def\hc@redef#1#2#3{%
65   \newcommand#1{%
66     \expandafter\let\expandafter#1\csname#3\endcsname
67     \expandafter\let\expandafter#2\csname end#3\endcsname
68     \renewenvironment*{#3}[1][1]{%
69       \ifx\##1\%
70         #1\relax
71       \else
72         #1[{\##1}]%
73       \fi
74       \capstart
75     }{%
76       \if@capstart
77         \PackageError{hycap}{You have forgotten to use \string\caption}%
78         \global\@capstartfalse
79       \else
80         \fi
81       #2%
82     }%
83 }

```

At last the options are defined and processed.

```

84 \DeclareOption{figure}{\hycapredef{\CurrentOption}}
85 \DeclareOption{figure*}{\hycapredef{\CurrentOption}}
86 \DeclareOption{table}{\hycapredef{\CurrentOption}}
87 \DeclareOption{table*}{\hycapredef{\CurrentOption}}
88 \DeclareOption{all}{%
89   \hycapredef{figure}%
90   \hycapredef{figure*}%
91   \hycapredef{table}%
92   \hycapredef{table*}%
93 }
94 \ProcessOptions\relax
95 \</package>

```

3 Installation

3.1 Download

Package. This package is available on CTAN¹:

[CTAN:macros/latex/contrib/oberdiek/hypcap.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/hypcap.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](#)

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

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/
```

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 hypcap.dtx
```

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

```
hypcap.sty → tex/latex/oberdiek/hypcap.sty
hypcap.pdf → doc/latex/oberdiek/hypcap.pdf
hypcap.dtx → source/latex/oberdiek/hypcap.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 , mi \TeX , ...) relies on file name databases, you must refresh these. For example, te \TeX users run `texhash` or `mktextlsr`.

¹<http://ftp.ctan.org/tex-archive/>

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 hypcap.pdf unpack_files output .
```

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{hypcap.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 pdfL^AT_EX:

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

4 History

[1999/02/13 v1.0]

- A beginning version.

[2000/08/14 v1.1]

- Global assignments of `\if@capstart` in order to allow `\caption` in groups.
- Option `all` added.

[2000/09/07 v1.2]

- Package in `dtx` format.

[2001/08/27 v1.3]

- Bug fix with `hyperref`'s `pdfmark` driver
(`\leavevmode` in `\hyper@@anchor/\pdf@rect`).

[2001/09/06 v1.4]

- Small fixes in the `dtx` file.

[2006/02/20 v1.5]

- Code is not changed.
- New DTX framework.

[2007/02/19 v1.6]

- Fix for `hypertextnames=false`.

[2007/04/09 v1.7]

- Stuff in `\caption` moved to `hyperref`. This avoids redefinitions of `\caption` and `\@caption` (idea of Axel Sommerfeldt).
- Fix for subfigure (Marco Kuhlmann, Amilcar do Carmo Lucas).

5 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 | |
|---|---------------------------------------|
| <code>\@capstartfalse</code> | 38, 78 |
| <code>\@capstarttrue</code> | 24 |
| <code>\@captype</code> | 14, 15, 25, 33, 34, 40 |
| <code>\@currentHref</code> | 16, 20, 42 |
| <code>\@dblarg</code> | 34 |
| <code>\@ehc</code> | 6 |
| <code>\@firstofone</code> | 30 |
| <code>\@gobble</code> | 28 |
| <code>\@ifpackagelater</code> | 27 |
| <code>\@ifundefined</code> | 5 |
| <code>\@makecaption</code> | 53 |
| <code>\@one</code> | 33 |
| <code>\@parboxrestore</code> | 51 |
| <code>\@</code> | 69 |
| <code>\hc@currentHref</code> | 16, 42 |
| <code>\hc@hyperref</code> | 23, 28, 30 |
| <code>\hc@org@caption</code> | 9, 37 |
| <code>\hc@redef</code> | 60, 64 |
| <code>\hycapredef</code> | 2, 59, 84, 85, 86, 87, 89, 90, 91, 92 |
| <code>\hycapspace</code> | 2, 12, 17, 22 |
| <code>\hyper@anchor</code> | 20 |
| <code>\hyper@makecurrent</code> | 15, 40 |
| I | |
| <code>\if@capstart</code> | 11, 11, 76 |
| <code>\ifHy@hypertextnames</code> | 39 |
| <code>\ifx</code> | 69 |
| <code>\ignorespaces</code> | 48, 54 |
| L | |
| <code>\leavevmode</code> | 19 |
| M | |
| <code>\m@ne</code> | 25 |
| N | |
| <code>\NeedsTeXFormat</code> | 2 |
| <code>\newcommand</code> | 9, 12, 13, 65 |
| <code>\newif</code> | 11 |
| <code>\normalsize</code> | 52 |
| <code>\numberline</code> | 46 |
| P | |
| <code>\PackageError</code> | 6, 77 |
| <code>\par</code> | 44, 56 |
| <code>\ProcessOptions</code> | 94 |
| <code>\protect</code> | 46 |
| <code>\ProvidesPackage</code> | 3 |
| R | |
| <code>\renewenvironment</code> | 68 |
| V | |
| <code>\vspace</code> | 17, 22 |
| A | |
| <code>\addcontentsline</code> | 44 |
| <code>\advance</code> | 25, 33 |
| B | |
| <code>\baselineskip</code> | 12 |
| C | |
| <code>\capstart</code> | 2, 13, 74 |
| <code>\caption</code> | 10, 23, 37, 77 |
| <code>\csname</code> | 25, 33, 45, 47, 53, 60, 61, 66, 67 |
| <code>\CurrentOption</code> | 84, 85, 86, 87 |
| D | |
| <code>\DeclareOption</code> | 84, 85, 86, 87, 88 |
| E | |
| <code>\endcsname</code> | 25, 33, 45, 47, 53, 60, 61, 66, 67 |
| <code>\endinput</code> | 7 |
| H | |
| <code>\H@refstepcounter</code> | 14 |
| <code>\hc@caption</code> | 34, 36 |
| <code>\hc@caption</code> | 23, 32 |