

The `hycap` package

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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.

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

1 Usage

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

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

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 `\hycapredef`.

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.

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

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

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

```
\hycapredef{myfloat}
```

Only environments with one optional parameter are supported.

`\capstartfalse` **\capstartfalse, \capstarttrue:** Since 2008/09/08 v1.10.
`\capstarttrue` They disable and enable `\capstart`. They can be used to cancel the effect of a redefined float environment. Example:

```

\documentclass{article}
\usepackage{hyperref}
\usepackage[figure]{hypcap}[2008/09/08]

\begin{document}
\section{Hello World}
\begin{figure}
\caption{Figure with caption A}
\end{figure}
\capstartfalse
\begin{figure}
Figure without caption
\end{figure}
\capstarttrue
\begin{figure}
\caption{Figure with caption B}
\end{figure}
\end{document}

```

1.3 Limitations

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

2 Implementation

```
1 (*package)
```

Package identification.

```
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{hypcap}%
4 [2016/05/16 v1.12 Adjusting the 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 }{}
9 \RequirePackage{letltxmacro}[2008/06/24]
```

`\hc@org@caption` Save the original meaning of `\caption`:

```
10 \newcommand*\hc@org@caption{}
11 \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.

```
12 \newif\if@capstart
```

`\hypcapSPACE` The anchor is raised by `\hypcapSPACE`.

```
13 \newcommand*\hypcapSPACE{.5\baselineskip}
```

`\ifcapstart`

```
14 \newif\ifcapstart
15 \capstarttrue
```

`\capstart` The macro `\capstart` contains the first part of the `\caption` command: Incrementing the counter and setting the anchor.

```

16 \newcommand*\capstart{%
17   \ifcapstart
18     \H@refstepcounter\@captype % first part of caption
19     \hyper@makecurrent\@captype
20     \global\let\hc@currentHref\@currentHref
21     \vspace*{-\hypcapspace}%
22     \begingroup
23       \let\leavevmode\relax
24       \hyper@@anchor\@currentHref\relax
25     \endgroup
26     \vspace*{\hypcapspace}%
27     \hc@hyperref{\let\caption\hc@caption}%
28     \global\@capstarttrue
29     \global\advance\csname c@\@captype\endcsname\m@ne
30   \fi
31 }

32 \@ifpackagelater{hyperref}{2007/04/09}{%
33   \let\hc@hyperref\@gobble
34 }{%
35   \let\hc@hyperref\@firstofone
36 }

```

`\hc@caption` The new `\caption` command without the first part is defined in the macro `\hc@caption`.

```

37 \def\hc@caption{%
38   \global\advance\csname c@\@captype\endcsname\@ne
39   \@dblarg{\hc@@caption\@captype}%
40 }

```

`\hc@@caption` This is a copy of package `hyperref`'s `\@caption` macro without making the anchor, because this is already done in `\capstart`.

```

41 \long\def\hc@@caption#1[#2]#3{%
42   \let\caption\hc@org@caption
43   \global\@capstartfalse
44   \ifHy@hypertexnames
45     \hyper@makecurrent\@captype
46   \else
47     \global\let\@currentHref\hc@currentHref
48   \fi
49   \par\addcontentsline{%
50     \csname ext@#1\endcsname}{#1}{%
51     \protect\numberline{%
52       \csname the#1\endcsname
53     }}{\ignorespaces #2}%
54 }%
55 \begingroup
56   \@parboxrestore
57   \normalsize
58   \@makecaption{\csname fnum@#1\endcsname}{%
59     \ignorespaces#3%
60   }%
61 \par
62 \endgroup
63 }

```

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

```

64 \def\hyccapredef#1{%
65   \expandafter\hc@redef\csname hc@org#1\expandafter\endcsname
66                               \csname hc@orgend#1\expandafter\endcsname
67                               \expandafter{#1}%
68 }

```

`\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).

```

69 \def\hc@redef#1#2#3{%
70   \newcommand#1{%
71     \expandafter\LetLtxMacro\expandafter#1\csname#3\endcsname
72     \expandafter\LetLtxMacro\expandafter#2\csname end#3\endcsname
73     \renewenvironment*{#3}[1] []{%
74       \ifx\##1\%
75         #1\relax
76       \else
77         #1[##1]% hash-ok (compatibility for float)
78       \fi
79       \capstart
80     }{%
81       \if@capstart
82         \PackageError{hyccap}{You have forgotten to use \string\caption}%
83         \global\@capstartfalse
84       \else
85         \fi
86       #2%
87     }%
88 }

```

At last the options are defined and processed.

```

89 \DeclareOption{figure}{\hyccapredef{\CurrentOption}}
90 \DeclareOption{figure*}{\hyccapredef{\CurrentOption}}
91 \DeclareOption{table}{\hyccapredef{\CurrentOption}}
92 \DeclareOption{table*}{\hyccapredef{\CurrentOption}}
93 \DeclareOption{all}{%
94   \hyccapredef{figure}%
95   \hyccapredef{figure*}%
96   \hyccapredef{table}%
97   \hyccapredef{table*}%
98 }
99 \ProcessOptions\relax
100 \end{package}

```

3 Installation

3.1 Download

Package. This package is available on CTAN¹:

[CTAN:macros/latex/contrib/oberdiek/hyccap.dtx](https://ctan.org/ctan/packages/macros/latex/contrib/oberdiek/hyccap.dtx) The source file.

[CTAN:macros/latex/contrib/oberdiek/hyccap.pdf](https://ctan.org/ctan/packages/macros/latex/contrib/oberdiek/hyccap.pdf) Documentation.

¹[CTAN:pkg/hyccap](https://ctan.org/ctan/packages/pkg/hyccap)

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:[install/macros/latex/contrib/oberdiek.tds.zip](https://ctan.org/install/macros/latex/contrib/oberdiek.tds.zip)

TDS refers to the standard “A Directory Structure for \TeX Files” ([CTAN:tds/tds.pdf](https://ctan.org/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 hycap.dtx
```

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

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

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{hycap.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_hyppcap.dtx
makeindex_s_gind.ist_hyppcap.idx
pdflatex_hyppcap.dtx
makeindex_s_gind.ist_hyppcap.idx
pdflatex_hyppcap.dtx
```

4 History

[1999/02/13 v1.0]

- A beginning version, published in newsgroup `comp.text.tex`:
“Re: `hyperref` and figures”²

[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).

²Url: <https://groups.google.com/group/comp.text.tex/msg/5c9b47b001a9379c>

[2008/04/14 v1.8]

- `\hc@redef` fixed to get package float work (Axel Sommerfeldt).

[2008/08/11 v1.9]

- Code is not changed.
- URLs updated.

[2008/09/08 v1.10]

- `\capstartfalse` and `\capstarttrue` added.

[2011/02/16 v1.11]

- `\hc@redef` fixed by using package `letltxmacro`.

[2016/05/16 v1.12]

- Documentation updates.

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; plain numbers refer to the code lines where the entry is used.

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