The **hypcap** 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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1 Usage

The package \texttt{hypcap} requires that \texttt{hyperref} is loaded first:

\begin{verbatim}
\usepackage[..]{hyperref}
\usepackage[..]{hypcap}
\end{verbatim}

1.1 Package options

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

Option \texttt{all} enables the redefinitions of all four float environments. For other environments see the user command \texttt{\hypcapredef}.

1.2 User commands

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

The package expects the following structure of a float environment:

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

There can be several \texttt{\caption} commands. For these you need \texttt{\capstart} again:

\begin{verbatim}
\capstart ... \caption... \capstart ... \caption...
\end{verbatim}

And the \texttt{\caption} command itself can be put in a group.

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

\texttt{\hypcapspace} \texttt{\hypcapspace}: Because it looks poor, if the link points exactly at top of the figure, there is additional space: \texttt{\hypcapspace}, the default is 0.5\texttt{\baselineskip}, examples:

\begin{verbatim}
\renewcommand{\hypcapspace}{0pt} removes the space
\renewcommand{\hypcapspace}{1pt} sets a fix value
\end{verbatim}

\texttt{\hypcapredef} \texttt{\hypcapredef}: If there are other float environments, that should automatically execute \texttt{\capstart}, then a redefinition with \texttt{\hypcapredef} can be tried:

\begin{verbatim}
\hypcapredef{myfloat}
\end{verbatim}

Only environments with one optional parameter are supported.

\texttt{\capstartfalse} \texttt{\capstarttrue}: Since 2008/09/08 v1.10.

They disable and enable \texttt{\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}
\caption{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 [2011/02/16 v1.11 Adjusting the anchors of captions (HO)]

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 \emph{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}
13 \hypcapspace The anchor is raised by \hypcapspace.
14 \newcommand*{\hypcapspace}{.5\baselineskip}

\ifcapstart
15 \newif{\ifcapstart}
16 \capstarttrue
17 \capstart
18 \@ifrefstepcounter{\@c@type} % first part of caption

3
The new `caption` command without the first part is defined in the macro \hc@caption. This is a copy of package `hyperref`'s `\caption` macro without making the anchor, because this is already done in `\capstart`.

\hypcapredef

The macro `\hypcapredef` prepares the call of `\hc@redef` that will redefine the environment that is given in the argument.
The old meaning of the environment is saved. Then \texttt{\textbackslash capstart} is appended in the begin part. The end part contains a check that produces an error message in case of \texttt{\textbackslash capstart} without \texttt{\textbackslash \textbackslash capstart} (\texttt{\textbackslash capstart} has incremented the counter).

\begin{verbatim}
def\hc@redef#1#2#3{%
    \newcommand#1{}%
    \expandafter\LetLtxMacro\expandafter#1\csname#3\endcsname
    \expandafter\LetLtxMacro\expandafter#2\csname end#3\endcsname
    \renewenvironment*{#3}[1][]{%
        \ifx\##1\%
            \else
            \else
        \fi
        \capstart
    }{%
        \if@capstart
            \PackageError{hypcap}{You have forgotten to use \string\caption}%
            \global\@capstartfalse
        \else
        \fi
        \capstart
    }%
}\

At last the options are defined and processed.
\DeclareOption{figure}{\hypcapredef{\CurrentOption}}
\DeclareOption{figure*}{\hypcapredef{\CurrentOption}}
\DeclareOption{table}{\hypcapredef{\CurrentOption}}
\DeclareOption{table*}{\hypcapredef{\CurrentOption}}
\DeclareOption{all}{\hypcapredef{figure}\hypcapredef{figure*}\hypcapredef{table}\hypcapredef{table*}}
\ProcessOptions\relax
\end{verbatim}

3 Installation

3.1 Download

Package. This package is available on CTAN:\footnote{ftp://ftp.ctan.org/tex-archive/}

\url{CTAN:macros/latex/contrib/oberdiek/hypcap.dtx} The source file.

\url{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.

\url{CTAN:install/macros/latex/contrib/oberdiek.tds.zip}

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

\footnote{ftp://ftp.ctan.org/tex-archive/}
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):

```
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 (teTeX, miktex, ...) relies on file name databases, you must refresh these. For example, teTeX users run texhash or mktexlsr.

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 \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 pdf\TeX:

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

4 Catalogue

The following XML file can be used as source for the \TeX Catalogue. The elements
caption and description are imported from the original XML file from the
Catalogue. The name of the XML file in the Catalogue is hypcap.xml.

101 (*catalogue)
102 <xml version='1.0' encoding='us-ascii'?>
103 <!DOCTYPE entry SYSTEM 'catalogue.dtd'>
104 <entry datestamp='$Date$' modifier='$Author$' id='hypcap'>
105 <name>hypcap</name>
106 <caption>Adjusting the anchors of captions.</caption>
107 <authorref id='auth:oberdiek'/>
110 <version number='1.11'/>
111 <description>
112 The package offers a solution to the problem that when you link to
113 a float using \xref{hyperref}, the link
114 anchors to below the float's caption, rather than the beginning of
115 the float.
116 \p/
117 Hypcap defines a separate \capstart command, which you put where
118 you want links to end; you should have a \capstart command for each
119 \caption command. Package options can be used to auto-insert a
120 \capstart at the start of a float environment.
121 \p/
122 The package is part of the \xref{oberdiek} bundle.
123 </description>
124 <documentation details='Package documentation'
125 href='ctan:/macros/latex/contrib/oberdiek/hypcap.pdf'/>
126 <ctan file='true' path='//macros/latex/contrib/oberdiek/hypcap.dtx'/>
127 <miktex location='oberdiek'/>
128 <texlive location='oberdiek'/>
129 <install path='//macros/latex/contrib/oberdiek/oberdiek.tds.zip'/>
130 </entry>
131 </catalogue>

5 History

[1999/02/13 v1.0]

• A beginning version, published in newsgroup comp.text.tex:
  "Re: hyperref and figures"\textsuperscript{2}

\textsuperscript{2}Url: http://groups.google.com/group/comp.text.tex/msg/5c9b47b001a9379c
[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 hypertexnames=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).

[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.

6 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.

Symbols
\@capstartfalse  ............... 43, 83