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

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 \hypcapredef.

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.

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

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

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

```
\hypcapredef{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 (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 '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
```

```
    \hyper@makecurrent\@captype
    \global\let\hc@currentHref\@currentHref
    \vspace*{-\hypcapspace}%
    \begingroup
      \let\leavevmode\relax
      \hyper@@anchor\@currentHref\relax
    \endgroup
    \vspace*{\hypcapspace}%
    \hc@hyperref{\let\caption\hc@caption}%
    \global\@capstarttrue
    \global\advance\csname c@\@captype\endcsname\m@ne
  \fi
}

\@ifpackagelater{hyperref}{2007/04/09}{%
  \let\hc@hyperref\@gobble
}{%
  \let\hc@hyperref\@firstofone
}
```

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

```
\def\hc@caption{%
  \global\advance\csname c@\@captype\endcsname\@ne
  \@dblarg{\hc@@caption\@captype}%
}
```

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

```
\long\def\hc@@caption#1[#2]#3{%
  \let\caption\hc@org@caption
  \global\@capstartfalse
  \ifHy@hypertexnames
    \hyper@makecurrent\@captype
  \else
    \global\let\@currentHref\hc@currentHref
  \fi
  \par\addcontentsline{%
    \csname ext@#1\endcsname}{#1}{%
    \protect\numberline{%
      \csname the#1\endcsname
    }{\ignorespaces #2}%
  }%
  \begingroup
    \@parboxrestore
    \normalsize
    \@makecaption{\csname fnum@#1\endcsname}{%
      \ignorespaces#3%
    }%
    \par
  \endgroup
}
```

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

```
\def\hypcapredef#1{%
  \expandafter\hc@redef\csname hc@org#1\expandafter\endcsname
                      \csname hc@orgend#1\expandafter\endcsname
                      \expandafter{#1}%
}
```

\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).

```
\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\\%
      #1\relax
    \else
      #1[##1]% hash-ok (compatibility for float)
    \fi
    \capstart
  }{%
    \if@capstart
      \PackageError{hypcap}{You have forgotten to use \string\caption}%
      \global\@capstartfalse
    \else
    \fi
    #2%
  }%
}
```

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
```

⟨/package⟩

3 Installation

3.1 Download

Package. This package is available on CTAN[1]:

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:install/macros/latex/contrib/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.

[1] http://ctan.org/pkg/hypcap

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 (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

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{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 pdfLATEX:

```
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.

```
⟨*catalogue⟩
<?xml version='1.0' encoding='us-ascii'?>
<!DOCTYPE entry SYSTEM 'catalogue.dtd'>
<entry datestamp='$Date$' modifier='$Author$' id='hypcap'>
  <name>hypcap</name>
  <caption>Adjusting the anchors of captions.</caption>
  <authorref id='auth:oberdiek'/>
  <copyright owner='Heiko Oberdiek' year='1999-2001,2006-2008,2011'/>
  <license type='lppl1.3'/>
  <version number='1.12'/>
  <description>
    The package offers a solution to the problem that when you link to
    a float using <xref refid='hyperref'>hyperref</xref>, the link
    anchors to below the float's caption, rather than the beginning of
    the float.
    <p/>
    Hypcap defines a separate \capstart command, which you put where
    you want links to end; you should have a \capstart command for each
    \caption command.  Package options can be used to auto-insert a
    \capstart at the start of a float environment.
    <p/>
    The package is part of the <xref refid='oberdiek'>oberdiek</xref> bundle.
  </description>
  <documentation details='Package documentation'
      href='ctan:/macros/latex/contrib/oberdiek/hypcap.pdf'/>
  <ctan file='true' path='/macros/latex/contrib/oberdiek/hypcap.dtx'/>
  <miktex location='oberdiek'/>
  <texlive location='oberdiek'/>
  <install path='/macros/latex/contrib/oberdiek/oberdiek.tds.zip'/>
</entry>
⟨/catalogue⟩
```

5 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).

[2]Url: http://groups.google.com/group/comp.text.tex/msg/5c9b47b001a9379c

[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.

[2016/05/16 v1.12]

- Documentation updates.

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