The **hypcap** package

Heiko Oberdiek

<oberdiek@uni-freiburg.de>

2006/02/20 v1.5

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

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.

1.3 Limitations

- Package subfigure does not work.

- Packages that redefine \caption or \@caption.

2 Implementation

1 ⟨∗package⟩

Package identification.

2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{hypcap}%
4   [2006/02/20 v1.5 Adjusting 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 }{}

\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: Incrementing the counter and setting the anchor.

```
13 \newcommand*\capstart{%
14   \H@refstepcounter\@captype % first part of caption
15   \hyper@makecurrent\@captype
16   \vspace*{-\hypcapspace}%
17   \begingroup
18     \let\leavevmode\relax
19     \hyper@@anchor\@currentHref\relax
20   \endgroup
21   \vspace*{\hypcapspace}%
22   \let\caption\hc@caption
23   \global\@capstarttrue
24 }
```

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

```
25 \def\hc@caption{%
26   \@dblarg{\hc@@caption\@captype}%
27 }
```

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

```
28 \long\def\hc@@caption#1[#2]#3{%
29   \let\caption\hc@org@caption
30   \global\@capstartfalse
31   \hyper@makecurrent\@captype
32   \par\addcontentsline{%
33     \csname ext@#1\endcsname}{#1}{%
34     \protect\numberline{%
35       \csname the#1\endcsname
36     }{\ignorespaces #2}%
37   }%
38   \begingroup
39     \@parboxrestore
40     \normalsize
41     \@makecaption{\csname fnum@#1\endcsname}{%
42       \ignorespaces#3%
43     }%
44     \par
45   \endgroup
46 }
```

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

```
47 \def\hypcapredef#1{%
48   \expandafter\hc@redef\csname hc@org#1\expandafter\endcsname
49                        \csname hc@orgend#1\expandafter\endcsname
50                        \expandafter{#1}%
51 }
```

\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).

```
52 \def\hc@redef#1#2#3{%
53   \newcommand#1{}%
54   \expandafter\let\expandafter#1\csname#3\endcsname
55   \expandafter\let\expandafter#2\csname end#3\endcsname
56   \renewenvironment*{#3}[1][]{%
57     \ifx\\##1\\%
58       #1\relax
59     \else
60       #1[##1]%
61     \fi
62     \capstart
63   }{%
64     \if@capstart
65       \PackageError{hypcap}{You have forgotten to use \string\caption}%
66       \global\@capstartfalse
67     \else
68     \fi
69     #2%
70   }%
71 }
```

At last the options are defined and processed.

```
72 \DeclareOption{figure}{\hypcapredef{\CurrentOption}}
73 \DeclareOption{figure*}{\hypcapredef{\CurrentOption}}
74 \DeclareOption{table}{\hypcapredef{\CurrentOption}}
75 \DeclareOption{table*}{\hypcapredef{\CurrentOption}}
76 \DeclareOption{all}{%
77   \hypcapredef{figure}%
78   \hypcapredef{figure*}%
79   \hypcapredef{table}%
80   \hypcapredef{table*}%
81 }
82 \ProcessOptions\relax
83 ⟨/package⟩
```

3 Installation

CTAN. 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.

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`.

---

[1]ftp://ftp.ctan.org/tex-archive/

Refresh file databases. If your TeX distribution (teTeX, mikTeX, . . .) rely on file databases, you must refresh these. For example, teTeX users run `texhash` or `mktexlsr`.

3.1   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{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   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.

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.