The \texttt{hobsub} package

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Abstract

Package \texttt{hobsub} implements the idea of loading several packages in one big collection package.

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

In January 2011 the mailing list lualatex-dev discussed “quietening lualatex console output” [1]. Inspired from this, I implemented this package hobsub to load several packages in one file. The package is applied for two packages collections that are subsets of my package bundle oberdiek.

**hobsub-generic** is a collection of packages that can also be used with plain \TeX.  
**hobsub-hyperref** is a collection of packages that is used by package hyperref.

Package hobsub provides the macros that are used in the collection packages and might be used in other projects as well. But there are many caveats, some of them are discussed below.

The most serious problem is consistency. A package that is available as standalone package and is part of a collection might have different versions. Because my packages are organized in a bundle and should be installed and updated as bundle, the risk seems low to me. However, if a single package is updated manually, for example for testing, then it should be loaded before the collection that contains the package with an older version. In a collection, the package will not be loaded again if it is already loaded.

### 1.1 Usage

The collection packages **hobsub-generic** and **hobsub-hyperref** are loaded as usual:

\begin{verbatim}
\usepackage{hobsub-generic} \LATEX
\usepackage{ltxcmds}[2010/12/04]% ltx@ifblank is needed
\end{verbatim}

\begin{verbatim}
\input hobsub-generic.sty \plainTEX
\end{verbatim}

or

\begin{verbatim}
\usepackage{hobsub-hyperref}
\end{verbatim}

Of course, both \usepackage or \RequirePackage can be used.

If you need requirements on the version date of a package inside a collection, then specify them afterwards, for example:

\begin{verbatim}
\usepackage{hobsub-generic} \usepackage{ltxcmds}[2010/12/04]\% \ltx@ifblank is needed
\end{verbatim}

Also it is not guaranteed that a package will be always part of a collection. Therefore it does not harm, to make the requirements explicit after a collection is loaded, see the previous example. \LaTEX knows that a package is already loaded and does not load it again.
1.2 Supported features

No reloads: If a package is already loaded then it is not reloaded again if it is part of a collection package.

\listfiles: Each package that is loaded in a collection is also added to the output of \listfiles.

@currname, @currext are updated, they are used by \LaTeX’s \ProvidesPackage.

\AtEndOfPackage: \LaTeX’s hook mechanism that is used for \AtEndOfPackage is supported. However none of the packages in the collections are using \AtEndOfPackage, therefore this feature is completely untested.

1.3 Common limitations

\endinput: Often a package is using \endinput, either added by docstrip, or to stop package loading at an earlier time. Therefore \endinput must be caught during package loading to prevent that the collection package is closed too early before reading all packages it contains.

This redefinition of \endinput fails if the package loads other files that contain \endinput. To some degree it could be catched by redefining macros that load files. But this will not work for the primitive \input.

Options: \LaTeX’s package options are not supported. Therefore the packages that are put in a collection must not support options.

Hook packages: Some packages and classes provides hooks for packages, see packages scrlfile, filehook or class memoir. These hooks are not supported for embedded packages inside a collection package. Because of the problem with \endinput, these hooks are not supported. The hooks might contain code that loads other files that execute \endinput.

1.4 Package hobsb-sub-generic

Collection ‘generic’ contains some of the plain \TeX compatible packages of my bundle, see table 1. It adds the following restrictions to any package that is part of this collection:

Generic formats: The following formats must be supported: \LaTeX, plain \TeX and even \initEX. This applies to the collection package hobsb-sub-generic the same way.

Prefixed macros: Any package of this collection should only define macros with prefixed names to avoid name clashes. Resources like registers must not be allocated and other global states should not be changed except for added macro definitions.

Thus the package hobsb-sub-generic can also preloaded in the format file with \initEX.

1.5 Package hobsb-sub-hyperref

Collection ‘hyperref’ contains additional packages that are used by package hyperref and that does not fit in collection ‘generic’, see tabletab:hyperref. The latter collection package hobsb-sub-generic is loaded via a conventional \RequirePackage.

Because most of the packages in the collection ‘hyperref’ needs \LaTeX, the collection requires \LaTeX.
Table 1: Overview hobsub-generic

<table>
<thead>
<tr>
<th>Package</th>
<th>Release</th>
<th>Dependencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>infwarerr</td>
<td>2010/04/08 v1.3</td>
<td></td>
</tr>
<tr>
<td>ltxcmds</td>
<td>2011/11/09 v1.22</td>
<td></td>
</tr>
<tr>
<td>ifluatex</td>
<td>2010/03/01 v1.3</td>
<td></td>
</tr>
<tr>
<td>ifvtex</td>
<td>2010/03/01 v1.5</td>
<td></td>
</tr>
<tr>
<td>intcalc</td>
<td>2007/09/27 v1.1</td>
<td></td>
</tr>
<tr>
<td>ifpdf</td>
<td>2011/01/30 v2.3</td>
<td>ifluatex</td>
</tr>
<tr>
<td>etexcmds</td>
<td>2011/02/16 v1.5</td>
<td></td>
</tr>
<tr>
<td>kvsetkeys</td>
<td>2012/04/25 v1.16</td>
<td></td>
</tr>
<tr>
<td>kvdefinekeys</td>
<td>2011/04/07 v1.3</td>
<td></td>
</tr>
<tr>
<td>luatex-loader</td>
<td>2010/03/09 v0.4</td>
<td></td>
</tr>
<tr>
<td>pdftexcmds</td>
<td>2011/11/29 v0.20</td>
<td>ifluatex, ifpdf, infwarerr, ltxcmds, luatex-loader</td>
</tr>
<tr>
<td>pdfescape</td>
<td>2011/11/25 v1.13</td>
<td>ltxcmds, pdftexcmds</td>
</tr>
<tr>
<td>bigintcalc</td>
<td>2012/04/08 v1.3</td>
<td>pdftexcmds</td>
</tr>
<tr>
<td>bitset</td>
<td>2011/01/30 v1.1</td>
<td>bigintcalc, infwarerr, intcalc</td>
</tr>
<tr>
<td>uniquecounter</td>
<td>2011/01/30 v1.2</td>
<td>bigintcalc, infwarerr</td>
</tr>
</tbody>
</table>

Table 2: Overview hobsub-hyperref

<table>
<thead>
<tr>
<th>Package</th>
<th>Release</th>
<th>Dependencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>letltxmacro</td>
<td>2010/09/02 v1.4</td>
<td></td>
</tr>
<tr>
<td>hopatch</td>
<td>2016/05/16 v1.2</td>
<td></td>
</tr>
<tr>
<td>xcolor-patch</td>
<td>2011/01/30 v1.7</td>
<td></td>
</tr>
<tr>
<td>atveryend</td>
<td>2011/06/30 v1.8</td>
<td></td>
</tr>
<tr>
<td>atbegshi</td>
<td>2011/10/05 v1.16</td>
<td>ifpdf, infwarerr, ltxcmds</td>
</tr>
<tr>
<td>refcount</td>
<td>2011/10/16 v3.4</td>
<td>infwarerr, ltxcmds</td>
</tr>
<tr>
<td>hycolor</td>
<td>2011/01/30 v1.7</td>
<td>xcolor-patch</td>
</tr>
</tbody>
</table>
1.6 Package hobsub

This section is for advanced users that might want to build a collection package. Then it can be done by using hobsub:

```latex
\RequirePackage{hobsub}[2016/05/16]
\hobsub@StartPackage{foo1}
... package code of foo1.sty ...
\endinput
<hobsub>
\hobsub@StopPackage
\hobsub@StartPackage{bar2}
... package code of bar2.sty ...
\endinput
<hobsub>
\hobsub@StopPackage ...
```

But be aware of the caveats and limitations, see above. Only quite a small portion of the packages can be embedded like this.
2 Implementation

2.1 Reload check and package identification

2.1.1 Package \texttt{hobsub}

Reload check, especially if the package is not used with \LaTeX.

\begin{verbatim}
\begingroup\catcode61\catcode48\catcode32=10\relax%
\catcode13=5 \^^M\endlinechar=13 %
\catcode35=6 \#\catcode39=12 \'
\catcode44=12 \,
\catcode45=12 \-
\catcode46=12 \.
\catcode58=12 :
\catcode64=11 @
\catcode123=1 \{
\catcode125=2 \}
\expandafter\let\expandafter\x\csname ver@hobsub.sty\endcsname
\ifx\x\relax % plain-TeX, first loading
\else
\def\empty{}%
\ifx\x\empty % LaTeX, first loading,
% variable is initialized, but \ProvidesPackage not yet seen
\else
\expandafter\ifx\csname PackageInfo\endcsname\relax
\def\x#1#2{\immediate\write\jobnumber{Package #1 Info: #2.}}%
\else
\def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
\fi
\x{hobsub}{The package is already loaded}%
\aftergroup\endinput
\fi
\fi\endgroup%
\end{verbatim}

Package identification:

\begin{verbatim}
\begingroup\catcode61\catcode48\catcode32=10\relax%
\catcode13=5 \^^M\endlinechar=13 %
\catcode35=6 \#\catcode39=12 \'
\catcode40=12 \(
\catcode41=12 \)
\catcode44=12 \,
\catcode45=12 \-
\catcode46=12 \.
\catcode47=12 \/
\catcode58=12 :
\catcode64=11 @
\catcode91=12 \[
\catcode93=12 \]
\expandafter\ifx\csname ProvidesPackage\endcsname\relax
\def\x#1#2#3[#4]{\endgroup\immediate\write\jobnumber{Package: #3 #4}}%
\xdef#1{#4}%
\end{verbatim}

\end{verbatim}
\else
  \def\x[#1][#2][#3]{\endgroup
#2[#3]}
\fi
\ifx#1\@undefined
  \xdef#1{#3}\
\fi
\ifx#1\relax
  \xdef#1{#3}\
\fi
}\
\fi
\expandafter\x\csname ver@hobsub.sty\endcsname\
\ProvidesPackage{hobsub}\
[2016/05/16 v1.14 Construct package bundles (HO)]\
⟨/package⟩

2.1.2 Package hobsub-generic

⟨*generic⟩
Reload check, especially if the package is not used with \LaTeXX.
\begingroup\catcode61\catcode48\catcode32=10\relax\%
\catcode13=5 \ ^^M
\endlinechar=13 \%
\catcode35=6 \ #
\catcode39=12 \'
\catcode40=12 \(
\catcode41=12 \)
\catcode44=12 ,
\catcode45=12 -
\catcode46=12 .
\catcode58=12 :
\catcode64=11 @
\catcode123=1 \{
\catcode125=2 \}
\expandafter\let\expandafter\x\csname ver@hobsub-generic.sty\endcsname
\ifx\x\relax % plain-TeX, first loading
  \else
  \def\empty{}\%
  \ifx\x\empty % LaTeX, first loading, \ProvidesPackage not yet seen
    \else
    \expandafter\ifx\csname PackageInfo\endcsname\relax
      \def\x#1#2{\immediate\write-1{Package #1 Info: #2.}}\%
    \else
      \def\x#1#2{\PackageInfo{#1}{#2, stopped}}\%
    \fi
  \fi
  \x{hobsub-generic}{The package is already loaded}\%
  \aftergroup\endinput
\fi
\fi
\endgroup\%

Package identification:
\begingroup\catcode61\catcode48\catcode32=10\relax\%
\catcode13=5 \ ^^M
\endlinechar=13 \%
\catcode35=6 \ #
\catcode39=12 \'
\catcode40=12 \,
\catcode44=12 ,
\catcode45=12 -
\catcode46=12 .
7
2.1.3 Package hobsub-hyperref

Reload check, especially if the package is not used with \LaTeXX. \begingroup\catcode47=12 % / \catcode58=12 % : \catcode64=11 % @ \catcode91=12 % [ \catcode93=12 % ] \catcode123=1 % { \catcode125=2 % } \expandafter\ifx\csname ProvidesPackage\endcsname\relax \def\x#1#2#3[#4]{\endgroup \immediate\write-1{Package: #3 #4} \xdef#1{#4} } \else \def\x#1#2[#3]{\endgroup \#2[#3]} \liif\x1\undefined \xdef#1{#3} \fi \liif\x1\relax \xdef#1{#3} \fi }\fi \expandafter\let\expandafter\x\csname ver@hobsub-hyperref.sty\endcsname \ifx\x\relax % plain-\TeX\, first loading \begingroup\catcode47=12 % / \catcode58=12 % : \catcode64=11 % @ \catcode91=12 % [ \catcode93=12 % ] \catcode123=1 % { \catcode125=2 % } \expandafter\ifx\csname PackageInfo\endcsname\relax \def\x#1#2{\immediate\write1{Package #1 Info: #2.} \PackageInfo{#1}{#2, stopped}} \else \PackageInfo{hobsub-hyperref}{The package is already loaded} \aftergroup\endinput \else \expandafter\let\expandafter\x\csname ver@hobsub-generic.sty\endcsname \endgroup%
2.2 Catcodes
\section{Package hobsub-hyperref loads hobsub-generic}

\subsection{Preamble}

\begin{Verbatim}
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname ver@hobsub.sty\endcsname\relax
\else\hobsub@GobbleRemainingPackage\fi
\end{Verbatim}

\begin{Verbatim}
\def\hobsub@GobbleRemainingPackage{\begingroup\catcode92=14 % backslash: comment
\catcode32=14 % space: comment
\catcode35=14 % hash: comment
\catcode123=14 % left brace: comment
\catcode125=14 % right brace: comment
\catcode60=3 % less: math
\catcode62=4 % greater: align
\endlinechar=-1 %
\HOBsub@GobbleRemainingPackage}\HOBsub@GobbleRemainingPackage
\end{Verbatim}

\section{}
2.5 End of preamble for subset packages

Add the end marker for possible skipping of previous macros, if package `hobsub` was already loaded.

All macros of package `hobsub` are now available. Now we officially load the package `hobsub` inline for proper package identification.

2.6 Package list
2.7 End of packages

3 Test

3.1 Catcode checks for loading

\catcode`\{=1 %
\catcode`\}=2 %
\catcode`#=6 %
\catcode`@=11 %
\expandafter\ifx\csname count@\endcsname\relax
\countdef\count@=255 %
\fi
\expandafter\ifx\csname @gobble\endcsname\relax
\long\def\@gobble#1{}%
\fi
\expandafter\ifx\csname @firstofone\endcsname\relax
\long\def\@firstofone#1{#1}%
\fi
\expandafter\ifx\csname loop\endcsname\relax
\else
\expandafter\@gobble
\fi
{%
\def\loop#1\repeat{%
\def\body{#1}%
\iterate
}%
\def\iterate{%
\body
\let\next\iterate
\else
\let\next\relax
\fi
\next
}%
\let\repeat=\fi
%}
\def\RestoreCatcodes{}
\count@=0 %
\loop
\edef\RestoreCatcodes{%
\RestoreCatcodes
\catcode\the\count@=\the\catcode\count@\relax
}%
\ifnum\count@<255 %
\advance\count@ 1 %
\repeat
\def\RangeCatcodeInvalid#1#2{%
\count@=#1\relax
\loop
\catcode\count@=15 %
\ifnum\count@<#2\relax
\advance\count@ 1 %
\repeat
\def\RangeCatcodeCheck#1#2#3{%
\count@=#1\relax

439 \loop
440 \ifnum#3=\catcode\count@
441 \else
442 \errmessage{
443 \character \the\count@ \space
444 with \wrong \catcode \the\catcode\count@ \space
445 instead of \number#3\}%
446 \fi
447 \ifnum\count@<#2\relax
448 \advance\count@ 1 %
449 \repeat
450 \}
451 \def\space{ }
452 \expandafter\ifx\csname LoadCommand\endcsname\relax
453 \def\LoadCommand{\input hobsub.sty}\relax%
454 \fi
455 \def\Test{%
456 \RangeCatcodeInvalid{0}{47}%
457 \RangeCatcodeInvalid{58}{64}%
458 \RangeCatcodeInvalid{91}{96}%
459 \RangeCatcodeInvalid{123}{255}%
460 \catcode"\@=12 %
461 \catcode"\\=0 %
462 \catcode"\%=14 %
463 \LoadCommand
464 \RangeCatcodeCheck{0}{36}{15}%
465 \RangeCatcodeCheck{37}{37}{14}%
466 \RangeCatcodeCheck{38}{47}{15}%
467 \RangeCatcodeCheck{48}{57}{12}%
468 \RangeCatcodeCheck{58}{63}{15}%
469 \RangeCatcodeCheck{64}{64}{12}%
470 \RangeCatcodeCheck{65}{90}{11}%
471 \RangeCatcodeCheck{91}{91}{15}%
472 \RangeCatcodeCheck{92}{92}{0}%
473 \RangeCatcodeCheck{93}{96}{15}%
474 \RangeCatcodeCheck{97}{122}{11}%
475 \RangeCatcodeCheck{123}{255}{15}%
476 \RestoreCatcodes
477 }
478 \Test
479 \csname \@end\endcsname
480 \end
481 (/test1)
482

4 Installation

4.1 Download

Package. This package is available on CTAN:\footnote{\url{http://ctan.org/pkg/hobsub}}:


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 T\TeX\ Files” (CTAN:tds/tds.pdf). Directories with `texmf` in their name are usually organized this way.

4.2 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/
```

4.3 Package installation

Unpacking. The `.dtx` file is a self-extracting docstrip archive. The files are extracted by running the `.dtx` through plain \TeX:\

```
tex hobsub.dtx
```

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

```
hobsub.sty → tex/generic/oberdiek/hobsub.sty
hobsub-generic.sty → tex/generic/oberdiek/hobsub-generic.sty
hobsub-hyperref.sty → tex/generic/oberdiek/hobsub-hyperref.sty
hobsub.pdf → doc/latex/oberdiek/hobsub.pdf
test/hobsub-test1.tex → doc/latex/oberdiek/test/hobsub-test1.tex
hobsub.dtx → source/latex/oberdiek/hobsub.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.

4.4 Refresh file name databases

If your \TeX\ distribution (\TeX, \miktex, …) relies on file name databases, you must refresh these. For example, \TeX\ users run `texhash` or `mktexlsr`.

4.5 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{hobsub.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 hobsub.dtx
makeindex -s gind.ist hobsub.idx
pdflatex hobsub.dtx
makeindex -s gind.ist hobsub.idx
pdflatex hobsub.dtx
```

5 Catalogue

The following XML file can be used as source for the `LATEX` 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 `hobsub.xml`.

```
<catalogue>
  <entry datestamp='$Date$' modifier='$Author$' id='hobsub'>
    <name>hobsub</name>
    <caption>Construct package bundles</caption>
    <authorref id='auth:oberdiek'/>
    <copyright owner='Heiko Oberdiek' year='2011,2012'/>
    <license type='lppl1.3'/>
    <version number='1.14'/>
    <description>
    The package offers a means of loading a bundle of (other) packages “at once”, offering a means of reducing the amount of log output as the packages are loaded, and an aide-memoire for complicated requirements. In some ways, loading a package via `hobsub` behaves much like loading the package in the normal way; for example, reloads are suppressed, as in `LaTeX` proper, and correct \texttt{\listfiles} output is produced.
    </description>
  </entry>
</catalogue>
```

Examples provided are a `&lt;xref refid='oberdiek'>generic</xref>` bundle (comprising the author's packages that can be used with Plain TeX) and a `&lt;xref refid='oberdiek'>hyperref</xref>` bundle (comprising packages useful when generating hypertext output with `LaTeX`).
6 References


7 History

[2011/01/30 v1.0]
- First public version.

[2011/04/16 v1.1]
- Package updates.

[2011/04/17 v1.2]
- White spaces at line begins are removed or reduced in the generated collection packages.

[2011/04/18 v1.3]
- Package updates.

[2011/04/23 v1.4]
- Package updates.

[2011/06/24 v1.5]
- Package updates.

[2011/06/30 v1.6]
- Package updates.

[2011/07/01 v1.7]
- Package updates.

[2011/07/28 v1.8]
- Package updates.

[2011/08/22 v1.9]
- Package updates.

[2011/10/16 v1.10]
- Package updates.

[2011/11/29 v1.11]
- Package updates.
8 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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