Make link targets
hyperref bundle

The LaTeX Project*

Version 2022-11-13 v7.00u

1   Commands to create and adapt targets

This module provides commands to create targets. Their goal is to unify and replace a number of user and internal hyperref commands and to provide a clear interface for package authors and users.

1.1   The main command

`\MakeLinkTarget`

```
\MakeLinkTarget[⟨prefix⟩]{⟨counter⟩}
\MakeLinkTarget[⟨prefix⟩]{}
\MakeLinkTarget*{⟨manual target⟩}
```

`\MakeLinkTarget` creates a target for an internal link, (called a destination if a PDF is created). In vertical mode the target is created where the command is issued, in horizontal mode it is typically (in a PDF) raised by the current `\normalbaselineskip` (similar to the targets created by `\refstepcounter`).

The arguments allow to control the name of the target/anchor/destination. While technically any unique name (e.g. some number) would work, names related to the actual counter both simplifies the debugging and referencing destinations from external documents. Also `\autoref` makes use of the name to identify the type of a label: it splits off the part until the first period and then looks up for a defined name. So if you create a target name `ABC.CDE.1.2`, `\autoref` tries to use `\ABCautorefname`.

The name is then stored *globally*[1] in `\@currentHref` and used for example in the next `\label`. A target name must be unique across a document. It is up to the users and package authors to ensure this by following the advices given below.

---

[1]This means that the deprecated hyperref option `localanchorname` is ignored.

A global `\@currentHref` means that the target name and the label name can get out of sync: if for example a numbered equation is used between a section and a `\label`, a reference will show the section number but a link will jump to the equation.

hyperref allows to switch to local assignment of `\@currentHref` and so to align with the other `\label` values with the (so-called experimental) option `localanchorname`. But while on a document level this can work, it makes it difficult for package authors to add reliable link targets that can be referenced if it is unclear if the assignment is local or global.

So the choice was made to set `\@currentHref` globally always (and to deprecate `localanchorname`): This is the default in hyperref since ever and it didn't lead to major problems. It has the advantage to allow to put an anchor in a box and move it around. E.g. in the following example the two `\ref` commands reference the section but the second jumps to the top of the rule:

```
\section{An example}\label{sec:title}
\newpage \raisebox{3cm}[0pt][0pt]{\phantomsection}%
\rule{1cm}{3cm}\label{sec:page2}
page two
\newpage
\ref{sec:title}, \ref{sec:page2}
```

Target names from counters

> `\MakeLinkTarget[⟨prefix⟩]{⟨counter⟩}`

If the mandatory argument is not empty it is interpreted as a LaTeX counter name. The counter is not stepped by the command. If the ⟨*counter*⟩ doesn't exist, a warning is issued and no target is created.

The target name is created as expansion of ⟨*prefix*⟩`.\theH`⟨*counter*⟩ (and so both the prefix and `\theH`⟨*counter*⟩ should be expandable). The default prefix is the counter name ⟨*counter*⟩.

For example:

```
\MakeLinkTarget{section}      ⇒ section.\theHsection  ⇒ section.1.1
\MakeLinkTarget[sec]{section} ⇒ sec.\theHsection
```

`\theH`⟨*counter*⟩ must be defined: `\MakeLinkTarget` does not try like other hyperref commands to construct the command on-the-fly but warns and creates no target if it doesn't exist. Be aware that if hyperref is used with the option `implicit=false` it does not predefine and create `\theH`⟨*counter*⟩ representations so targets could be missing![2]

Typically `\theH`⟨*counter*⟩ should expand to numbers and periods and make use of parent counters to give a unique representation. The prefix can be a more or less arbitrary string. Spaces are allowed (but not really recommended). A star at the end should be avoided to prevent clashes with the names created when the internal counter is used. The use of non-ASCII chars with pdflatex depends on the LaTeX version: With newer version many of them are safe and with a format 2022-06-01 or newer it should be even possible to use chars in a target name which are undeclared and can't be typeset in the document. But despite the fact that it works, it is recommended to stick to ASCII and to avoid spaces: It is unclear if all PDF viewers and editors can handle them, also they give rather unreadable names in the PDF like (\360\237\246\206) and so make debugging harder.

Using a special prefix can be useful if the actual counter has an internal name like e.g. `tcb@cnt@example`. `\MakeLinkTarget[tcbexample]{tcb@cnt@example}` then gives

---

[2]It is planed that LaTeX directly defines the `\theH`⟨*counter*⟩ for all counters created with `\newcounter`.

a nicer looking target name. Care should be taken not to clash with existing counter names and names for \autoref should be adjusted if needed.

Targets using the internal counter

> \MakeLinkTarget[⟨*prefix*⟩]{}

If the mandatory argument is empty a target name based on an internal absolute counter is created. The counter is stepped at every call (and also by other hyperref commands). The prefix is added with a star and a period (see above for the allowed chars). The default prefix is page.

\MakeLinkTarget{}	⇒ page*.1
\MakeLinkTarget{}	⇒ page*.2
\MakeLinkTarget[section]{}	⇒ section*.3

As an example the hyperref command \phantomsection is equivalent to \MakeLinkTarget[section]

Manual target names

> \MakeLinkTarget*{⟨*manual target name*⟩}

If the starred variant is used a manual target name is created.

\MakeLinkTarget*{destname} is roughly equivalent to \hypertarget{destname}{} but unlike the latter it also raises the destination in a PDF, there is no text argument, and—most importantly–it updates \@currentHref, that means the target name is stored by the next \label, something that \hypertarget doesn't do). The target name is expanded, see the remarks about prefixes above regarding the allowed chars.

When creating manually targets care should be taken to avoid clashes with automatic target names. As all automatic targets contain at least one period, names without a period are recommended.

> The second (text) argument of \hypertarget is only used if the option nesting is set to true— but this option isn't used anywhere (in PDF the idea of a text in the anchor or nesting of anchors makes no sense anyway but also when html is produced e.g. with make4ht it is not used). So probably the option will be deprecated and removed.

1.2 Manipulate the next target name

Targets are sometimes created in places where it is difficult to inject a label to retrieve the target name for use e.g. in a bookmark. The next command allows to change the next target name:

\NextLinkTarget \NextLinkTarget{⟨*manual target*⟩}

The command changes the next target name to ⟨*manual target*⟩. It does the same as the \hypersetup key next-anchor and also affects targets created by \refstepcounter.

A use case are bookmarks for the table of contents where you know that the heading will create a target:

```
\documentclass{book}
\usepackage{bookmark}

\begin{document}
\bookmark[dest=toc]{Table of Contents}
\NextLinkTarget{toc}
\tableofcontents
\chapter{A}
\end{document}
```

Hooks

makelinktarget The hook `makelinktarget`[3] is executed at the begin of the commands. It is inside a group and so can be used to locally change settings. See below for an example.

Suppressing the target

\LinkTargetOn   \LinkTargetOn
\LinkTargetOff \LinkTargetOff

This commands allows to switch on and off locally the creation of a target with `\MakeLinkTarget`. The switches are also honored by `\refstepcounter`[4]. This allows to suppress the target from an internal `\refstepcounter` and replace it by some manual version by using grouping:

```
\LinkTargetOff %suppress anchor in internal refstepcounter
...
\refstepcounter{...}
...
{\LinkTargetOn\MakeLinkTarget*{mytarget}} %create manual anchor
...
\LinkTargetOn
```

Raising the target

In horizontal mode the target is raised by the current value of `\normalbaselineskip`.
   To change this the hook can be used e.g. to double the value everywhere:

```
\AddToHook{cmd/MakeLinkTarget/before}
  {\setlength\normalbaselineskip{2\normalbaselineskip}}
\leavevmode\MakeLinkTarget{section}
```

---

[4]currently `\refstepcounter` doesn't use `\MakeLinkTarget` itself but this will probably change.

1.3 Changing all target names

\SetLinkTargetFilter{⟨*filter code using #1*⟩}

hyperref provides the command \HyperDestNameFilter to change all target names. It is applied[5] to every target name and is also used in references, but it doesn't change \@currentHref itself. So after

\renewcommand*{\HyperDestNameFilter}[1]{docA-#1}

you would get in the PDF everywhere the prefix docA

```
%destination names:
<<
/Names [(docA-Doc-Start) 7 0 R (docA-chapter.1) 8 0 R (docA-page.1) 6 0 R]
/Limits [(docA-Doc-Start) (docA-page.1)]
>>
%link to a chapter
/A << /S /GoTo /D (docA-chapter.1) >>
%link from the bookmark
<< /S /GoTo /D (docA-chapter.1) >>
```

but the label info in the .aux would show only chapter.1:

\newlabel{chap}{{1}{1}{Title}{chapter.1}{}}

and so \autoref is still able to extract the counter name.

\MakeLinkTarget uses this filter too: it would break internal link commands if it would ignore it. To stay compatible with future development the filter should not be redefined directly but be set with \SetLinkTargetFilter. The command can only be used in the preamble.

\SetLinkTargetFilter{docA-#1}

2 Implementation

1 ⟨@@=hyp⟩
2 ⟨*header⟩
3 \ProvidesExplPackage{hyperref-linktarget}{2022-06-20}{v7.00s}
4   {Making targets, destinations and anchors -- module of hyperref}
5 ⟨/header⟩

<package-include>

2.1 Variables

6   %<*package>

Thisbooleandecidesifatargetiscreatedatall.(itwillreplace\@skiphyperreflongterm)

7   \bool_new:N \l__hyp_target_create_bool \bool_set_true:N \l__hyp_target_create_bool

(*End definition for* \l__hyp_target_create_bool.)

Thishookisusedtoadaptforexampletheraising

8   \hook_new:n {makelinktarget}

(*End definition for* makelinktarget. *This function is documented on page 4.*)

---

[5]In the backend code, so it depends actually on the driver if it is honored or not

2.2 Helpercommands

__hyp_target_raise:n   Weneedacommandtoraisethetargets.Itismostlyacopyfromthehyperrefcommandbutweremovedthe-hooksanduse `\normalbaselineskip`.TODO:Thecodetosave/restorethespacefactorshouldbere-placedbykernelmethods.

```
9  \cs_new_protected:Npn \__hyp_target_raise:n #1 {    \mode_if_vertical:TF    { #1 }    {
```

(*End definition for* `\__hyp_target_raise:n`.)

2.3 Providingthecommands

Inanticipationoftheadditionofthemaincommandstothekernelasno-opsweprovidethem:

```
10  \ProvideDocumentCommand\LinkTargetOn{}{} \ProvideDocumentCommand\LinkTargetOff{}{} \ProvideDc
```

2.4 Targetonandoffswitch

\LinkTargetOn
\LinkTargetOff

```
11  \RenewDocumentCommand\LinkTargetOn {} {    \bool_set_true:N \l__hyp_target_create_bool  }
```

(*End definition for* `\LinkTargetOn` *and* `\LinkTargetOff`*. These functions are documented on page 4.*)

\MakeLinkTarget   Thisisthemaincommand.Tokeepitsimpleweallowanoptionalargumentalsoforthemanualcom-mandbutignoreitfornow.

```
12  \RenewDocumentCommand\MakeLinkTarget {s O{} m}   {    \bool_if:NT \l__hyp_target_create_bool
```

(*End definition for* `\MakeLinkTarget`*. This function is documented on page 1.*)

__hyp_target_manual:nn   Thisisthecodeforthemanualtargetname.Theprefixissimplyignored.

```
13  \cs_new_protected:Npn  \__hyp_target_manual:nn #1 #2 %#1 prefix, #2 name   {    \tl_gset:Nx
```

(*End definition for* `\__hyp_target_manual:nn`.)

__hyp_target_counter:nn   Thecodeforcounterrelatedtargetsmustbesplitintothecasewheretheinternalcounterisused,and-whereausercounterisused

```
14  \cs_new_protected:Npn \__hyp_target_counter:nn #1 #2  %#1 prefix, #2 counter or empty   {
```

(*End definition for* `\__hyp_target_counter:nn`.)

__hyp_target_counter_anon:n   Thiscreatesthetargetwiththeinternalcount.Weusethesame(tex)count `\Hy@linkcounter` thantheother-hyperrefcommands.

```
15  \cs_new_protected:Npn \__hyp_target_counter_anon:n #1  {    \int_gincr:N\Hy@linkcounter
```

(*End definition for* `\__hyp_target_counter_anon:n`.)

__hyp_target_counter_doc:nn   Andnowthetargetwiththeusercounter.Wewarnifthecounterortherepresentationdoesn'texist

```
16  \cs_new_protected:Npn \__hyp_target_counter_doc:nn #1 #2   {    \bool_lazy_and:nnTF { \cs_if
```

(*End definition for* `\__hyp_target_counter_doc:nn`.)

\NextLinkTarget   werelyontheinternalhooktosetthenexttargetname:

```
17  \RenewDocumentCommand\NextLinkTarget {m}   {    \hook_gput_next_code:nn {__hyp/target/setnam
```

(*End definition for* `\NextLinkTarget`*. This function is documented on page 3.*)

\SetLinkTargetFilter This is an interface to \HyperDestNameFilter

18   \NewDocumentCommand\SetLinkTargetFilter {m}   {   \cs_set:Npn \HyperDestNameFilter ##1 {#1}

(*End definition for* \SetLinkTargetFilter. *This function is documented on page 5.*)

19   %</package> %<@@=>.

⟨package-include⟩